

Cash King, or Two-Year One-Off?

Outperform, TP up to PLN85.1

PSCMI1 index more than doubled over 2022 y/y, hence Bogdanka's late-December same-scale coal re-pricing came quite unsurprising. A 95% y/y thermal coal price increase unlocks benefits of LWB's operating leverage, implying 1) +PLN5bn EBITDA generation in two years, 2) 2023/24E FCF yield at 190%, 3) potential 2023-25E dividend yield at 67%, and 4) turning the company's EV/EBITDA negative in early 2024E, we calculate. All these come in the highest at the WSE, we believe, not to mention that positive 2023E volume surprises and further PSCMI1 growth could offer more upside. However, thermal coal outlook weakens substantially, and the global nuclear / renewable / gas capacity expansion plans might potentially oust coal to non-investable grade in several years. In Poland, regulations and governance issues may remain very itching (other coal mine, JSW, trades well below EV/EBITDA of 1.0x for a reason), and the hypothetical delayed windfall tax, government's decision to build new mine or direct support to PGG, could all cancel out LWB's upside, we ascertain. The blended upside at 74%) warrants our Outperform rating for the stock unchanged. Still, gas price is the key driver: we believe LWB would be a strong buy if l-t plateau would have been achieved (2.5x above past averages), or its share price may suffer further if gas price is only half-way down.

Bogdanka: 2023/24E FCF / ROIC / Cash King... As we had expected, 2022's doubling of PSCMI1 index triggered re-pricing of Bogdanka's long-term thermal coal contracts, implying its price likely increasing ~95% y/y to PLN555/t in 2023E. Keeping 2023E production at 8.3mt, we expect the company to deliver PLN2.2bn / PLN2.8bn EBITDA in years 2023/24E. It should result in respective annual cash generation at PLN1.1bn and PLN1.8bn, representing probably the highest cash generation yield at the WSE (67% in 2023E, 108% in 2024E). LWB paid dividend last year (a 30% pay-out), and stellar 2023/24E results should offer total 2023-25E DY at 61%, yet we expect the company's EV/EBITDA ratio should turn negative in 1Q2024E.

...or two-year one-off covering dismal outlook? ESG was the key EU theme prior to the Russian assault on Ukraine, but 2022's gas / coal price spikes / uncertainty should accelerate all-way escape from coal. Surprisingly warm winter might ease pressure on gas price at the turn of 2023/24, further worsening coal price outlook. Also, the Chinese / Indian coal production remains on the rise, and it is rational to believe that the Russian volumes would come back to the market one day, we conclude. Finally, while we believe that PGG's coal prices may remain on the rise in 2023E, potential very wide discrepancy between the Polish and European / world thermal coal prices might result in major shake-up in the local market in 2024E, we ascertain.

Risks vs Upsides. The EU pro-renewable policy and continued investors' ESG approach to asset allocation represent the key risks. In Poland, potential easing of on-shore / PV regulations, and/or upped off-shore goals, could all further limit the room for coal in several years. Carve-out of LWB from Enea might take place via a call for all LWB shares, direct transfer of Enea's stake in LWB to State entity (neutral), or public placement (strong negative), we assume. Macro downturn (and reduced Polish electricity consumption) could pose downside risk to coal-fired generation volumes, and maintained PGG output could pose risk to LWB sales. Changes to PSCMI1 benchmark could expose LWB as of 2024E. LWB might transfer coal sale to the Ukraine, potentially offering multi-year sales support, we believe.

Forecasts, Target Price, Recommendation. We increase our 2023/24E coal price to PLN555/t and cancel out windfall tax, which results in +100% upside to 2023E figures and 2024E bottom line. Despite increased capex and assumed 30% pay-out dividends, we arrive at PLN3bn net cash position in year-end 2024E, with LWB likely turning negative at EV/EBITDA in 1Q24E. Our cautious view on thermal coal price beyond 2024E trims DCF valuation to PLN67/sh, JSW-based comparative one settles at PLN128/sh, and blended 74% share upside warrants Outperform recommendation.

Bogdanka: Financial summary

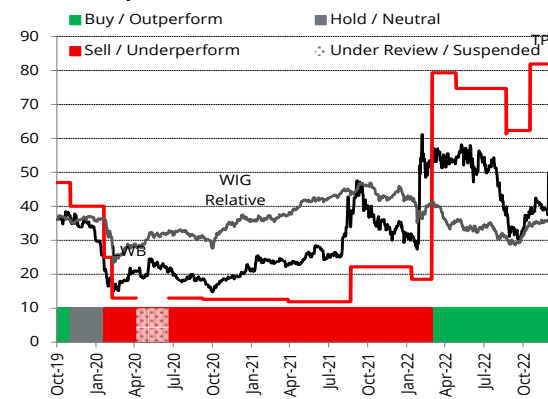
Year to Dec, PLNmn	2019	2020	2021	2022E	2023E	2024E
Sales	2,158	1,822	2,371	2,423	4,671	5,339
EBITDA	767	466	798	628	2,221	2,783
EBIT	375	95	367	206	1,794	2,335
Net profit	309	73	288	159	1,435	1,877
P/E (x)	4.5	9.7	3.4	9.7	1.1	0.8
EV/EBITDA* (x)	1.9	2.0	1.0	2.1	0.1	-0.4
DY	1.8%	0.0%	0.0%	4.6%	3.1%	27.6%
FCF yield	17.5%	-19.2%	36.5%	4.3%	72.2%	118.1%

Source: Company data, Santander Brokerage Poland estimates, * includes provisions

Recommendation	Outperform
Target Price [Dec'2023, PLN]	85.1
Price (PLN, January 16, 2023)	45.14
Market cap. (PLNmn)	1,535
Free float (%)	35.1
Number of shares (mn)	34.0

What has changed

- TP upped 4% to PLN85.1 from PLN81.9, recommendation Outperform maintained
- Bogdanka's long-term contracts were upped ~95% in late December 2022, driving 2023E realized price to PLN555/t, substantially above our expectations...
- ...which should drive 2023/24E EBITDA at +PLN5bn, two-year FCF yield at 190% and 2023-25E total DY at 67%, the two latter likely representing the highest readings at the WSE
- Short-term upsides: PSCMI1 index on the rise in 1H20223E (upside to 2024E results), positive Bogdanka volume developments in 2023E
- Downsides / Risks: global accelerated focus on renewables/nuclear and acute coal avoidance; local regulations and control potentially detrimental to value creation; return of Russian volumes to the market, and rising Asian thermal coal production; unknown details of pending Bogdanka takeover by the State; incorporation of PGG into NABE, or contractual long-term NABE-PGG linkage; strong recession in Europe; warm weather or high gas supply, depressing gas prices
- Gas price is the key driver: we believe LWB would be a strong buy if l-t plateau would have been achieved (2.5x above past averages), or its share price may suffer further if gas price is only half-way down



The chart measures performance against the WIG index

Main shareholders	% of votes
Enea	64.9

Source: stooq.pl

Company description

Bogdanka is the most efficient thermal coal producer in Poland, with 2021 annual output at 10.0mt.

Analyst

Pawel Puchalski, CFA

Senior Analyst

+48 22 586 80 95 pawel.puchalski@santander.pl

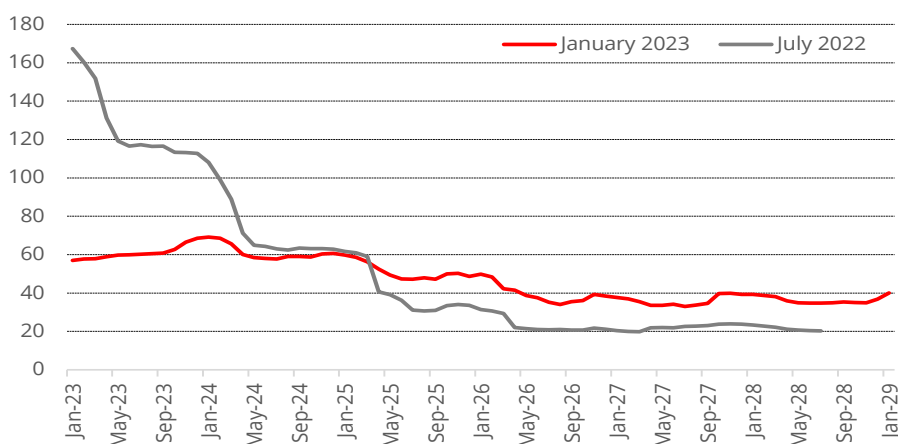
Key Stories

European gas / coal forwards – developments

Exceptionally high winter temperatures in Europe result in lower-than-expected demand for gas and coal. Such circumstances, substantially changed the rhetoric of the European leaders, from “2022/23 winter will be difficult, 2023/24 winter will be much tougher” to “never say never, but it is impossible to empty gas reserves”. These resulted in significant decline of gas prices, with Jan 2024 contract down to EUR69/MWh (Jan 2023 reading) from EUR108/MWh (July 2022 reading), down 36% in six months. As thermal coal is a gas substitute, its Jan 2024 contract fell to USD173/t from USD238/t, down 27% in six months.

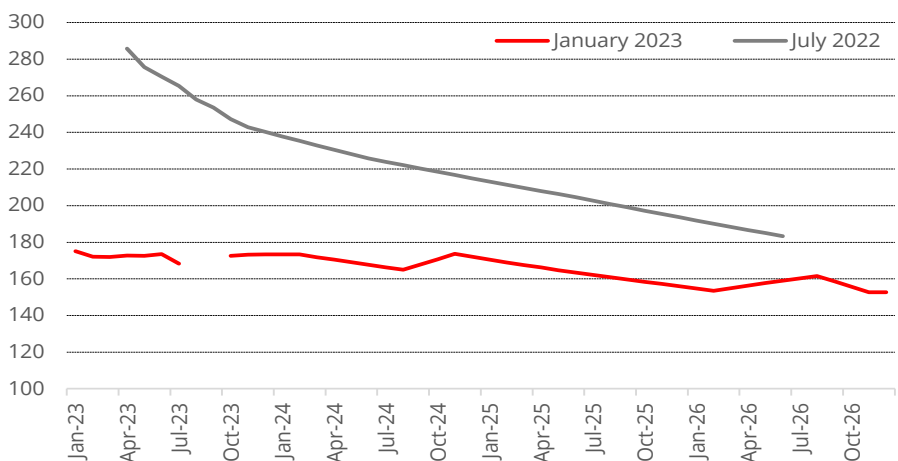
Comment: It's clear that high gas prices come in supportive of thermal coal price, and valuation of thermal coal producers. However, please note that warm winter temperatures seem to be priced in, and gas price still settles at EUR69/MWh for Jan2024 and at EUR50/MWh, both very substantially above past levels at EUR15-20/MWh. Similarly, coal prices still remain high at USD150/t in long-term, implying PLN645/t. hence, if current coal price curve is not overstated, outlook for Bogdanka's coal prices would remain rosy.

Fig. 1. Gas forwards: monthly contracts, January 2023 vs July 2022 [EUR/MWh]



Source: Bloomberg

Fig. 2. Thermal coal forwards: monthly contracts, January 2023 vs July 2022



Source: Bloomberg

Metals & Mining: Take advantage of 4Q2022E results to build 2023E position

[excerpt from Flash note published on December 23, 2022]

Bogdanka: 4Q22E loss, Strong 2023E. The official FY2022 post-force majeure volume guidance implies 4Q22E's production at mere 1.14mt (down 29% q/q and down 53% y/y), the lowest quarterly coal production in dozen years. We also assume the entire coal will be sold to Enea, offering no q/q upside to 3Q22's realized coal price despite favourable environment. While realized opex should come smaller due to low production, inflationary pressures and assumed intensive underground works (new longwalls, idled longwall) should keep LW cost line relatively elevated in 4Q2022E, we believe. Hence, we expect company's EBITDA at negative PLN49mn, clear (and expected) negative. **2023E outlook: Stellar. The assumed strong upside to coal price and hypothetical volume upside should yield very strong LWB results / cash generation in 2023E.**

Fig. 3. Bogdanka: 4Q2022E results preview

PLNmn	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22E	y/y	q/q
Sales	468.7	543.7	502.9	621.9	702.8	731.8	730.8	567.5	340.5	-51.5%	-40.0%
EBITDA	144.3	170.2	160.4	207.7	258.7	276.5	338.9	61.0	-49.0	n.m.	n.m.
EBITDA margin	30.8%	31.3%	31.9%	33.4%	36.8%	37.8%	46.4%	10.7%	-14.4%	-51.2	-25.1
EBIT	40.3	64.5	52.4	95.9	154.0	179.7	232.3	-38.0	-148.0	n.m.	n.m.
EBIT margin	8.6%	11.9%	10.4%	15.4%	21.9%	24.6%	31.8%	-6.7%	-43.5%	-65.4	-36.8
Net profit	31.7	50.3	41.7	72.8	123.5	143.2	192.8	-25.7	-112.8	n.m.	n.m.
Net margin	6.8%	9.3%	8.3%	11.7%	17.6%	19.6%	26.4%	-4.5%	-33.1%	-50.7	-28.6

Source: Company data, Santander Brokerage Poland estimates

[+] November PSCMI1 index up 132% y/y...

According to ARP data, PSCMI1 index settled at PLN551/t in November 2022, a 132% increase y/y and 2% increase m/m. PSCMI2 index stood at PLN1,043/t, 204% higher y/y and 5% lower m/m.

Fig. 4. PSCMI1 Polish thermal coal index

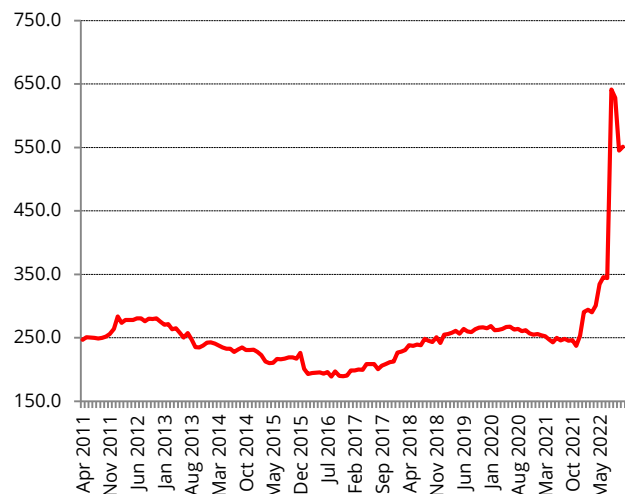
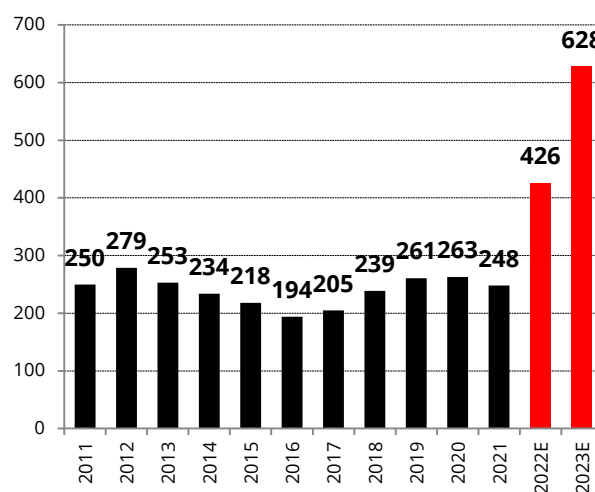


Fig. 5. PSCMI1 Polish thermal coal index, annual averages [PLN/t]



Source for both graphs: ARE, Santander Brokerage Poland estimates

[+] ...followed by Bogdanka's long-term contract price renegotiation

In late December 2022 Bogdanka announced renegotiation of its two key long-term coal sales contracts, both with Enea's generation complexes. Below we present their details:

- **Kozienice.** The entire value of long-term contract was upped 81.3% vs previous report published in late 2021. Of these, total value of coal deliveries in years 2023-2036 should settle at PLN27.97bn net, vs PLN14.2bn (value of 2022-2036 deliveries) announced in June 2022;
- **Polaniec.** Coal supply agreement is prolonged by one year, till 2028. Total value of contract (years 2013-2028) increases 71.4% vs previously presented figures. Value of multi-year agreement in years 2023-2028 settles at PLN6.8bn net, vs PLN3.04bn for years 2022-2027 (acc. to communicate published in May 2022).

Comment: Positive. Doubled price of 2022 PSCMI1 index suggested Bogdanka prices should more or less double in 2023E y/y, and in late December 2022 we got its confirmation. These suggest LWB thermal coal price at some PLN555/t in 2023E, substantially above our early estimates.

[+] Polish miners' 2023E wages growing y/y in line with inflation, up some 17%?

The State Assets Minister suggested in early January that PGG employees should be rewarded for their work with 2023 wages' increase matching the Polish inflation rate (at some 17% y/y). Additionally, JSW unionists want their salaries to grow by 25% y/y, and unionists-management dispute continues.

Comment: Negative. We believe that in pre-election period miners might be allowed to increase their personnel costs in line with inflation, and we expect communicate of salaries' growth at some 17% may be published by Bogdanka sooner or later. Bogdanka would still remain by far the most effective Polish mine, and the scale of negative valuation impact would be limited by low number of employees working at Bogdanka, yet this news would be naturally negative to the company's valuation.

Valuation

DCF valuation

Fig. 6. Bogdanka: WACC calculation

	Years 2023-25E	Years 2026E onwards
Risk-free rate	7.0%	5.0%
Unlevered beta	1.2	1.2
Levered beta	1.2	1.2
Equity risk premium	6.0%	6.0%
Cost of equity	14.2%	12.2%
Risk-free rate	7.0%	5.0%
Debt risk premium	1.0%	1.0%
Tax rate	19%	19%
After tax cost of debt	6.5%	4.9%
%D	0%	0%
%E	100%	100%
WACC	14.2%	12.2%

Source: Company data, Santander Brokerage Poland estimates

Fig. 7. Bogdanka: DCF valuation

PLNm	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
Revenues	2,423	4,671	5,339	3,860	3,175	2,737	2,473	2,222	1,984	1,758
EBIT	206	1,794	2,335	892	308	-36	-255	-443	-616	-776
Cash taxes on EBIT	39	341	444	169	58	-7	-49	-84	-117	-147
NOPAT	167	1,454	1,891	722	249	-29	-207	-359	-499	-629
Depreciation	421	427	448	455	461	467	489	493	497	501
Change in operating WC	22	25	-27	-7	-3	7	7	6	6	6
Capital expenditure*	500	750	550	550	550	801	550	550	550	550
Free cash flow	67	1,105	1,817	634	164	-369	-274	-422	-558	-684
WACC	0.0%	14.2%	14.2%	14.2%	12.2%	12.2%	12.2%	12.2%	12.2%	12.2%
PV FCF 2022-2031E	2005									
Terminal growth	-2.0%									
Terminal Value (TV)	-2335									
PV TV	-787									
Total EV	1,218									
Net debt	-582									
Equity value	1800									
Number of shares (mn)	34.0									
Value per share (PLN, Jan 2022)	52.9									
Target price (Dec23, PLN)	66.7									

Source: Santander Brokerage Poland estimates, * assumed lack of capex on new shafts

Comparable valuation

Fig. 8. Bogdanka: Comparable valuation

Company	Market Cap (EURmn)	P/E			EV/EBITDA			P/CE		
		2022E	2023E	2024E	2021E	2022E	2023E	2021E	2022E	2023E
JSW	1,454	0.9	2.0	2.4	0.3	0.7	1.0	0.8	1.6	2.5
Developed countries										
Alliance Resource Partners LP	2,349	4.5	3.4	2.7	2.9	2.2	2.1	3.1	2.2	2.1
Peabody Energy Corp	3,690	4.4	4.8	9.9	1.9	2.2	3.2	2.4	2.8	4.1
New Hope Corp Ltd	3,527	5.1	2.8	3.0	3.2	1.7	1.8	4.8	2.7	2.9
Whitehaven Coal Ltd	5,079	4.8	2.2	2.7	2.5	1.4	1.7	4.0	2.2	2.6
Median		4.7	3.1	2.9	2.7	2.0	2.0	3.5	2.5	2.7
Emerging Markets										
Guizhou Panjiang Refined Coal	2,020	6.6	5.5	5.1	4.0	3.1	2.9	4.4	3.3	3.2
China Coal Energy	14,196	3.2	3.5	3.7	2.5	2.7	2.9	3.0	3.2	3.2
Datong Coal Industry	2,917	4.3	4.1	3.9	2.0	2.0	1.9	3.6	3.6	3.5
Yang Quan Coal Industry Group	4,777	5.3	5.0	4.5	3.3	3.2	2.9	3.8	3.7	3.5
Bukit Asam	2,339	3.0	3.6	4.3	1.5	1.8	2.2	2.7	3.3	4.0
Banpu	2,956	1.8	3.2	5.2	2.8	3.7	4.8	1.4	1.6	1.8
Coal India	15,044	8.2	4.4	5.8	4.0	2.3	3.0	6.7	3.9	4.8
Median		4.3	4.1	4.5	2.8	2.7	2.9	3.6	3.3	3.5

Source: Bloomberg, Santander Brokerage Poland estimates, share prices as of January 13, 2023

In this report we alter our comparative valuation weightings. As we believe the two Polish companies (JSW and Bogdanka) face the same inflationary and governance (State as key shareholder) risks, we upped JSW's weight to 90% from 50% previously. We cut weights of the two other segments (Developed Markets and Emerging Markets) to 5% each from 25% previously.

Fig. 9. Bogdanka: Multiple-based valuation implications (PLN/share)

	Weight	P/E	EV/EBITDA	P/CE	Average
		2023-24E	2023-24E	2023-24E	2023-24E
JSW	90%	108.3	123.6	128.7	120.2
Developed Markets	5%	143.7	201.8	161.1	168.9
Emerging Markets	5%	210.7	264.9	209.5	228.3
Weighted valuation		115.2	134.6	134.4	128.0

Source: Bloomberg, Santander Brokerage Poland estimates, values rounded

DDM valuation

Taking into account Bogdanka's net profit changes and company's dividend policy still in force (30% payout), we assume the company should be paying dividends in years 2023-27E the discounted value of these would settle at PLN28 a share, with the majority paid out in 2024/25E dividends, we calculate. However, as the risk remains high (taking into account State Minister's statements on low dividends from the State-controlled companies and likely tough outlook for Polish coal segment), we do not include DDM in the company's weighted valuation.

Valuation summary

Fig. 10. Bogdanka: Valuation changes **

PLN per share	New	Previous	Change
DCF valuation	66.7	85.9	-22%
Comparable valuation (based on 2023-2024E)	128.0	72.6	76%
Blended valuation *	85.1	81.9	4%

Source: Company data, Santander Brokerage Poland estimates, * 70% DCF / 30% comparable valuation, ** rounded figures

DCF remains our preferred valuation tool, as it relies more on the company's long-term outlook. As changes in financial results or changes in investors' preferences drive the comparable valuation, we see it as supportive to the DCF valuation methodology.

Fig. 11. Bogdanka: Forecasts changes

PLNmn	2022E			2023E			2024E		
	New	Previous	Change	New	Previous	Change	New	Previous	Change
Sales	2,423	2,264	7%	4,671	3,432	36%	5,339	4,857	10%
EBITDA	628	596	5%	2,221	1,095	103%	2,783	2,568	8%
EBIT	206	174	18%	1,794	655	174%	2,335	2,120	10%
Net profit	159	133	20%	1,435	329	337%	1,877	769	144%

Source: Santander Brokerage Poland estimates

Fig. 12. Bogdanka: Santander forecasts vs. market consensus

PLNmn	2022E			2023E			2024E		
	Santander	Consensus	Diff.	Santander	Consensus	Diff.	Santander	Consensus	Diff.
Sales	2,423	2,402	1%	4,671	2,912	60%	5,339	3,110	72%
EBITDA	628	715	-12%	2,221	853	160%	2,783	892	212%
EBIT	206	297	-31%	1,794	410	338%	2,335	418	459%
Net profit	159	261	-39%	1,435	491	192%	1,877	427	340%

Source: Bloomberg, Santander Brokerage Poland estimates

Financials

Fig. 13. Bogdanka: Income statement forecasts

PLNmn	2019	2020	2021	2022E	2023E	2024E
Net sales	2,158	1,822	2,371	2,423	4,671	5,339
COGS, ex. depreciation	1,254	1,209	1,399	1,623	2,272	2,368
Depreciation	393	371	431	421	427	448
Gross profit	512	242	542	379	1,972	2,523
SG&A	153	152	175	173	178	189
Other operating income, net	16	5	0	0	0	0
EBITDA	767	466	798	628	2,221	2,783
Operating profit	375	95	367	206	1,794	2,335
Net financial income (costs)	4	-2	-8	-8	0	13
Profit before tax	379	93	359	198	1,795	2,347
Income tax	70	20	71	40	359	469
Windfall tax	0	0	0	0	0	0
Net profit	309	73	288	159	1,435	1,877
Gross margin	23.7%	13.3%	22.8%	15.6%	42.2%	47.3%
EBITDA margin	35.5%	25.6%	33.6%	25.9%	47.6%	52.1%
Operating margin	17.4%	5.2%	15.5%	8.5%	38.4%	43.7%
Net profit margin	14.3%	4.0%	12.2%	6.5%	30.7%	35.2%

Source: Company data, Santander Brokerage Poland estimates

Fig. 14. Bogdanka: Per share calculations, operating data, market ratios

per share	2019	2020	2021	2022E	2023E	2024E
EPS	9.0	2.1	8.4	4.7	42.1	55.0
CEPS	20.6	13.0	21.1	17.0	54.6	68.2
BVPS	94.4	96.5	105.1	107.2	148.0	190.6
DPS	0.7	-	-	2.5	1.4	12.4
Operating CF [PLNmn]	641	478	709	559	1,837	2,353
OpCF Yield	45.8%	67.3%	72.6%	36.4%	119.7%	153.3%
FCF [PLNmn]	245	-136	356	66	1,109	1,814
FCF Yield	17.5%	-19.2%	36.5%	4.3%	72.3%	118.2%
Capex to Market Cap	28.3%	86.6%	36.2%	32.1%	47.4%	35.1%
Dividend Yield	1.8%	0.0%	0.0%	4.6%	3.1%	27.6%
Net debt [PLNmn]	-358	-220	-582	-563	-1,625	-3,016
Net debt/EBITDA [x]	-0.5	-0.5	-0.7	-0.9	-0.7	-1.1
P/E [x]	4.5	9.7	3.4	9.7	1.1	0.8
P/CE [x]	2.0	1.6	1.4	2.6	0.8	0.7
EV/EBITDA* [x]	1.9	2.0	1.0	2.1	0.1	-0.4
EV/EBIT* [x]	3.8	9.7	2.1	6.5	0.2	-0.5

Source: Company data, Santander Brokerage Poland estimates, * includes provisions

Fig. 15. Bogdanka: Balance sheet forecasts

PLNm	2019	2020	2021	2022E	2023E	2024E
Current assets	743	611	1,026	1,038	2,526	4,009
cash and equivalents	383	242	600	581	1,644	3,035
other short term investments	0	0	0	0	0	0
accounts receivable	239	268	326	333	642	733
inventories	104	91	100	123	241	241
other	17	10	0	0	0	0
Fixed assets	3,510	3,764	3,676	3,748	4,070	4,167
PPE	3,282	3,532	3,440	3,519	3,842	3,944
long-term investments	0	0	0	0	0	0
intangibles	82	84	82	82	82	82
goodwill	0	0	0	0	0	0
other	12	6	6	6	12	14
deferred taxes	134	142	148	140	133	127
Total assets	4,252	4,375	4,702	4,785	6,596	8,176
Current liabilities	374	360	516	525	947	1,073
bank debt	3	3	3	3	3	3
accounts payable	312	309	423	432	833	952
other current liabilities	2	5	22	23	44	50
Provisions	57	44	67	67	67	67
Long-term liabilities	650	715	593	593	593	593
bank debt	11	8	5	5	5	5
other long-term liabilities	308	316	289	289	289	289
Provisions	331	391	299	299	299	299
Equity	3,218	3,289	3,583	3,657	5,045	6,499
share capital	301	301	301	301	301	301
capital reserves	2,608	2,915	2,994	3,197	3,309	4,321
net income	309	73	288	159	1,435	1,877
Minority Interest	10	10	10	10	11	11
Total liabilities and equity	4,252	4,375	4,702	4,785	6,596	8,176
Net debt	-358	-220	-582	-563	-1,625	-3,016

Source: Company data, Santander Brokerage Poland estimates

Fig. 16. Bogdanka: Cash flow statement forecasts

PLNm	2019	2020	2021	2022E	2023E	2024E
Cash flow from operations	641	478	709	559	1,837	2,353
Net profit	309	73	288	159	1,435	1,877
Provisions	74	60	-92	0	0	0
Depreciation and amortization	393	371	431	421	427	448
Changes in WC, o/w	-75	-19	48	-22	-25	27
inventories	-21	13	-9	-24	-117	0
receivables	-36	-29	-57	-7	-309	-92
payables	-19	-3	115	9	401	119
Other, net	-60	-7	33	0	0	0
Cash flow from investment	-396	-615	-353	-492	-728	-539
Additions to PPE and intangibles	-428	-623	-337	-500	-750	-550
Change in long-term investments	0	0	0	0	0	0
Other, net	32	8	-16	8	22	11
Cash flow from financing	-33	-5	3	-85	-46	-423
Change in long-term borrowing	-3	-3	-3	0	0	0
Change in short-term borrowing	0	0	0	0	0	0
Change in equity and profit distribution	-5	-2	6	0	0	0
Dividends paid	-26	0	0	-85	-47	-424
Other, net	0	0	0	0	0	1
Net change in cash and equivalents	212	-141	358	-19	1,063	1,391
Beginning cash and equivalents	171	383	242	600	581	1,644
Ending cash and equivalents	383	242	600	581	1,644	3,035

Source: Santander Brokerage Poland estimates

Santander Brokerage Poland

Jana Pawła II Avenue 17
00-854 Warszawa
fax. (+48) 22 586 81 09

Equity Research

Kamil Stolarski, PhD, CFA, <i>Head of Equity Research Banks, Insurers, Strategy</i>	tel. (+48) 22 586 81 00	kamil.stolarski@santander.pl
Paweł Puchalski, CFA, <i>Equity Analyst Telecommunications, Metals & Mining, Power</i>	tel. (+48) 22 586 80 95	pawel.puchalski@santander.pl
Tomasz Krukowski, CFA, <i>Equity Analyst Oil&Gas, Pharma & Biotech, CEE Non-Financials</i>	tel. (+48) 22 586 81 55	tomasz.krukowski@santander.pl
Adrian Kyrzcz, <i>Equity Analyst Construction, Real Estate, IT</i>	tel. (+48) 22 586 81 59	adrian.kyrzcz@santander.pl
Tomasz Sokołowski, <i>Equity Analyst Consumer, E-commerce</i>	tel. (+48) 22 586 82 36	tomasz.sokolowski@santander.pl
Michał Sopieli, <i>Equity Analyst Industrials, Chemicals, Quantitative Analysis</i>	tel. (+48) 22 586 82 33	michal.sopiel@santander.pl
Piotr Zielonka, CFA, <i>Equity Analyst Gaming, Strategy</i>	tel. (+48) 22 534 16 10	piotr.zielonka@santander.pl
Marcin Działek, <i>Analyst Technical Analysis</i>	tel. (+48) 22 782 93 09	marcin.dzialek@santander.pl

Sales & Trading

Kamil Kalemba, <i>Head of Institutional Equities</i>	tel. (+48) 22 586 80 84	kamil.kalemba@santander.pl
Mateusz Choromański, CFA, <i>Head of Sales Securities Broker, Investment Advisor</i>	tel. (+48) 22 586 80 82	mateusz.choromanski@santander.pl
Alex Kamiński	tel. (+48) 22 586 80 63	alex.kaminski@santander.pl
Błażej Leśków, <i>Securities Broker</i>	tel. (+48) 22 586 80 83	blazej.leskow@santander.pl
Michał Stępkowski, <i>Securities Broker</i>	tel. (+48) 22 586 85 15	michal.stepkowski@santander.pl
Marek Wardzyński, <i>Securities Broker</i>	tel. (+48) 22 586 80 87	marek.wardzynski@santander.pl
Adam Mizera, ACCA, CFA, <i>Securities Broker</i> adam.mizera@santander.pl	tel. (+48) 22 586 85 14	

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The discounted cash flows (DCF) valuation method is based on expected future discounted cash flows. One advantage of the DCF valuation method is that it takes into account all cash streams reaching Issuer and the cost of money over time. Some disadvantages of the DCF valuation method are that a large number of parameters and assumptions need to be estimated; and the valuation is sensitive to changes in those parameters.

The comparative valuation method is based on the economic rule of "one price". Some advantages of the comparative valuation method are that the analyst need only estimate a small number of parameters; the valuation is based on current market conditions; the relatively large accessibility of indicators for companies being compared; and that there is an extensive knowledge of the comparative method among investors. Some disadvantages of valuation by the comparative method are the considerable sensitivity of the results of the valuation on the choice of companies to the comparative group; the method can lead to a simplification of the picture of the company which in turn can lead to omitting certain important factors (e.g. growth dynamics, extra-operational assets, corporate governance, the repeatability of results, differences in applied accounting standards); and the uncertainty of the effectiveness of a market valuation of companies being compared.

The mid-cycle multiple valuation is based on long-term average valuation multiples of a sector or a peer group. The methodology aims to calculate a fair, through the cycle value of the company. Among its shortfalls is that at peaks and/or troughs of the cycle, the implied fair value may deviate substantially from the market's value of an analysed stock as well as the methods' reliance on the quality of external data (we usually use Bloomberg or Damodaran databases). Simplicity and average through-cycle value allowing to capture over- as well as under-valuation of a given stock are the main advantages of this methodology.

The dividend discount model (DDM) valuation is based on the net present value of the future dividends that are expected to be paid out by the company. Some advantages of the DDM valuation method are that it takes into account real cash flows to equity-owners and that the methodology is used in respect to companies with long dividend payout history. Main disadvantage of the DDM valuation method is that dividend payouts are based on a large number of parameters and assumptions, including dividend payout ratio.

Residual income method is conceptually close to the discounted cash flows method (DCF) for non-financial stocks, the difference being that it is based on expected residual income (returns over COE) rather than expected future cash flows. One advantage of this valuation method is that it captures the excess of profit potentially available to shareholders and the cost of money over time. Main disadvantage of the valuation method is that a large number of parameters and assumptions need to be estimated; and the valuation is sensitive to changes in those parameters.

The warranted equity method (WEV) is based on the formula $P/BV = (\text{two year forward ROE less sustainable growth rate}) / (\text{Cost of equity less sustainable growth rate})$ which allows estimating a fair value (FV) of a given stock in two years' time. Subsequently the FV is discounted back to today. The main advantage of the WEV method is that it is a transparent one and based on relatively short term forecasts, hence substantially reducing the margin of forecasting error. The main disadvantage in our view is that the model is based on the principle that stock price should converge towards its fair value implied by company's ROE and COE.

SOTP valuation - different assets of a company are being valued according to different valuation methods, and the sum of these valuations represents the final valuation of the company. SOTP valuation advantages / disadvantages are identical to advantages and disadvantages of the specific valuation methods used.

Liquidation value method - liquidation value is the estimated amount of money that an asset or company could be quickly sold for, such as if it were to go out of business. Then, the estimated assets value is adjusted for liabilities and liquidation expenses. One advantage of this valuation method is its simplicity. This method does not account for intangible assets as goodwill, which is the main disadvantage.

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