

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 BOŚ 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 BOŚ 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 BOŚ's current recommendations

	Buy	Hold	Sell	Suspended	Under revision
Numbers	29	38	6	12	0
Percentage	34%	45%	7%	14%	0%

Distribution of DM BOŚ's current market relative recommended weightings

	Overweight	Neutral	Underweight	Suspended	Under revision
Numbers	33	25	15	12	0
Percentage	39%	29%	18%	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 BOŚ 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 BOŚ's current recommendations for the companies which DM BOŚ 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 BOŚ's current market relative recommended weightings for the companies which DM BOŚ 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)	
Sanok RC										
-	Buy	05.11.2014	-	-	19.04.2015	27%	23%	49.51	65.00	-
-	-	-	16.11.2014	-	-	-	-	47.60	65.00	→
-	-	-	14.12.2014	-	-	-	-	46.50	65.00	→
-	-	-	18.01.2015	-	-	-	-	48.50	65.00	→
-	-	-	10.02.2015	-	-	-	-	53.69	65.00	→
-	-	-	18.02.2015	-	-	-	-	55.99	65.00	→
-	-	-	23.03.2015	-	-	-	-	65.48	65.00	→
Tomasz Rodak	Hold	19.04.2015	-	20.04.2015	13.12.2015	-16%	5%	63.00	65.00	→
Tomasz Rodak	-	-	17.05.2015	18.05.2015	-	-	-	63.99	65.00	→
Tomasz Rodak	-	-	21.06.2015	22.06.2015	-	-	-	63.98	65.00	→
Tomasz Rodak	-	-	03.07.2015	03.07.2015	-	-	-	61.51	62.40	↓
Tomasz Rodak	-	-	16.07.2015	17.07.2015	-	-	-	64.21	62.40	→
Tomasz Rodak	-	-	31.08.2015	01.09.2015	-	-	-	59.50	62.40	→
Tomasz Rodak	-	-	22.09.2015	23.09.2015	-	-	-	58.53	62.40	→
Tomasz Rodak	-	-	15.10.2015	16.10.2015	-	-	-	57.67	62.40	→
Tomasz Rodak	-	-	16.11.2015	17.11.2015	-	-	-	53.80	62.40	→
Tomasz Rodak	Buy	13.12.2015	-	14.12.2015	04.12.2016	27%	16%	50.34	64.50	↑
Tomasz Rodak	-	-	17.01.2016	18.01.2016	-	-	-	51.00	64.50	→
Tomasz Rodak	-	-	15.02.2016	16.02.2016	-	-	-	48.80	64.50	→
Tomasz Rodak	-	-	21.03.2016	22.03.2016	-	-	-	55.51	64.50	→
Tomasz Rodak	-	-	13.04.2016	14.04.2016	-	-	-	55.70	64.50	→
Tomasz Rodak	-	-	20.04.2016	21.04.2016	-	-	-	59.70	67.00	↑
Tomasz Rodak	-	-	16.05.2016	17.05.2016	-	-	-	60.00	67.00	→
Tomasz Rodak	-	-	27.06.2016	28.06.2016	-	-	-	50.30	67.00	→
Tomasz Rodak	-	-	04.07.2016	05.07.2016	-	-	-	52.00	66.00	↓
Tomasz Rodak	-	-	24.07.2016	25.07.2016	-	-	-	58.30	66.00	→
Tomasz Rodak	-	-	31.08.2016	01.09.2016	-	-	-	65.01	66.00	→
Tomasz Rodak	-	-	12.10.2016	13.10.2016	-	-	-	67.00	66.00	→
Tomasz Rodak	-	-	24.10.2016	25.10.2016	-	-	-	68.23	80.80	↑
Tomasz Rodak	-	-	02.11.2016	03.11.2016	-	-	-	68.86	80.80	→
Tomasz Rodak	Buy	04.12.2016	-	05.12.2016	15.10.2017	-5%	-29%	62.90	80.80	→
Tomasz Rodak	-	-	12.01.2017	13.01.2017	-	-	-	59.99	80.80	→
Tomasz Rodak	-	-	08.02.2017	09.02.2017	-	-	-	55.50	80.80	→
Tomasz Rodak	-	-	28.02.2017	01.03.2017	-	-	-	64.99	80.80	→
Tomasz Rodak	-	-	07.03.2017	08.03.2017	-	-	-	63.10	80.80	→
Tomasz Rodak	-	-	20.03.2017	21.03.2017	-	-	-	62.38	80.80	→
Tomasz Rodak	-	-	11.04.2017	12.04.2017	-	-	-	57.50	80.80	→
Tomasz Rodak	-	-	30.05.2017	31.05.2017	-	-	-	68.10	80.80	→
Tomasz Rodak	-	-	04.07.2017	05.07.2017	-	-	-	63.94	77.20	↓
Tomasz Rodak	-	-	12.07.2017	13.07.2017	-	-	-	62.54	77.20	→
Tomasz Rodak	-	-	03.09.2017	04.09.2017	-	-	-	58.11	77.20	→
Tomasz Rodak	Buy	15.10.2017	-	16.10.2017	11.10.2018	-48%	-39%	56.20	77.20	→
Tomasz Rodak	-	-	15.11.2017	16.11.2017	-	-	-	48.99	77.20	→
Tomasz Rodak	-	-	10.12.2017	11.12.2017	-	-	-	43.00	65.90	↓
Tomasz Rodak	-	-	10.01.2018	11.01.2018	-	-	-	45.00	65.90	→
Tomasz Rodak	-	-	13.02.2018	14.02.2018	-	-	-	41.30	65.90	→
Tomasz Rodak	-	-	12.03.2018	13.03.2018	-	-	-	41.00	65.90	→
Tomasz Rodak	-	-	15.03.2018	16.03.2018	-	-	-	42.80	53.70	↓
Tomasz Rodak	-	-	19.03.2018	20.03.2018	-	-	-	40.20	53.70	→
Tomasz Rodak	-	-	16.04.2018	17.04.2018	-	-	-	32.50	53.70	→
Tomasz Rodak	-	-	29.05.2018	30.05.2018	-	-	-	34.00	53.70	→
Tomasz Rodak	-	-	04.07.2018	05.07.2018	-	-	-	32.90	50.70	↓
Tomasz Rodak	-	-	16.07.2018	17.07.2018	-	-	-	32.50	50.70	→
Tomasz Rodak	-	-	01.08.2018	02.08.2018	-	-	-	32.00	37.30	↓
Tomasz Rodak	-	-	02.08.2018	03.08.2018	-	-	-	31.90	37.30	→
Tomasz Rodak	-	-	30.08.2018	31.08.2018	-	-	-	28.10	37.30	→
Tomasz Rodak	Buy	11.10.2018	-	12.10.2018	09.12.2018	13%	9%	25.80	37.30	→
Tomasz Rodak	-	-	23.10.2018	24.10.2018	-	-	-	26.00	37.30	→
Tomasz Rodak	-	-	14.11.2018	15.11.2018	-	-	-	26.00	37.30	→
Tomasz Rodak	Hold	09.12.2018	-	10.12.2018	08.12.2019	-32%	-29%	29.20	31.80	↓
Tomasz Rodak	-	-	10.01.2019	11.01.2019	-	-	-	25.70	31.80	→
Tomasz Rodak	-	-	04.02.2019	05.02.2019	-	-	-	26.40	31.80	→
Tomasz Rodak	-	-	26.02.2019	27.02.2019	-	-	-	28.10	31.80	→
Tomasz Rodak	-	-	26.03.2019	27.03.2019	-	-	-	26.50	31.80	→
Tomasz Rodak	-	-	22.04.2019	23.04.2019	-	-	-	25.80	31.80	→
Tomasz Rodak	-	-	24.04.2019	25.04.2019	-	-	-	25.00	31.80	→
Tomasz Rodak	-	-	30.05.2019	31.05.2019	-	-	-	24.70	31.80	→
Tomasz Rodak	-	-	01.07.2019	02.07.2019	-	-	-	24.00	30.80	↓
Tomasz Rodak	-	-	17.07.2019	18.07.2019	-	-	-	23.20	30.80	→
Tomasz Rodak	-	-	22.07.2019	23.07.2019	-	-	-	23.60	24.10	↓
Tomasz Rodak	-	-	30.07.2019	31.07.2019	-	-	-	23.30	24.10	→
Tomasz Rodak	-	-	01.09.2019	02.09.2019	-	-	-	21.00	24.10	→
Tomasz Rodak	-	-	13.10.2019	14.10.2019	-	-	-	19.15	24.10	→
Tomasz Rodak	-	-	24.10.2019	25.10.2019	-	-	-	19.30	24.10	→
Tomasz Rodak	-	-	17.11.2019	18.11.2019	-	-	-	19.00	24.10	→
Tomasz Rodak	Hold	08.12.2019	-	09.12.2019	19.05.2020	-31%	-16%	19.00	23.40	↓
Tomasz Rodak	-	-	09.01.2020	10.01.2020	-	-	-	19.85	23.40	→
Tomasz Rodak	-	-	04.02.2020	05.02.2020	-	-	-	19.30	23.40	→
Tomasz Rodak	-	-	06.02.2020	07.02.2020	-	-	-	18.80	23.40	→
Tomasz Rodak	-	-	03.03.2020	04.03.2020	-	-	-	14.00	23.40	→
Tomasz Rodak	-	-	30.03.2020	31.03.2020	-	-	-	9.28	23.40	→
Tomasz Rodak	-	-	22.04.2020	23.04.2020	-	-	-	12.50	23.40	→
Tomasz Rodak	-	-	14.05.2020	15.05.2020	-	-	-	11.80	19.00	↓
Tomasz Rodak	Buy	19.05.2020	-	20.05.2020	Not later than 5/19/2021	-	-	13.10	19.00	→

*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
Sanok RC								
-	Overweight	-	05.11.2014	-	-	19.04.2015	49.51	23%
-	-	→	-	16.11.2014	-	-	47.60	-
-	-	→	-	14.12.2014	-	-	46.50	-
-	-	→	-	18.01.2015	-	-	48.50	-
-	-	→	-	10.02.2015	-	-	53.69	-
-	-	→	-	18.02.2015	-	-	55.99	-
-	-	→	-	23.03.2015	-	-	65.48	-
Tomasz Rodak	Neutral	↓	19.04.2015	-	20.04.2015	22.09.2015	63.00	6%
Tomasz Rodak	-	→	-	17.05.2015	18.05.2015	-	63.99	-
Tomasz Rodak	-	→	-	21.06.2015	22.06.2015	-	63.98	-
Tomasz Rodak	-	→	-	03.07.2015	03.07.2015	-	61.51	-
Tomasz Rodak	-	→	-	16.07.2015	17.07.2015	-	64.21	-
Tomasz Rodak	-	→	-	31.08.2015	01.09.2015	-	59.50	-
Tomasz Rodak	Underweight	↓	22.09.2015	-	23.09.2015	15.10.2015	58.53	-3%
Tomasz Rodak	Neutral	↑	15.10.2015	-	16.10.2015	13.12.2015	57.67	2%
Tomasz Rodak	-	→	-	16.11.2015	17.11.2015	-	53.80	-
Tomasz Rodak	Overweight	↑	13.12.2015	-	14.12.2015	04.12.2016	50.34	16%
Tomasz Rodak	-	→	-	17.01.2016	18.01.2016	-	51.00	-
Tomasz Rodak	-	→	-	15.02.2016	16.02.2016	-	48.80	-
Tomasz Rodak	-	→	-	21.03.2016	22.03.2016	-	55.51	-
Tomasz Rodak	-	→	-	13.04.2016	14.04.2016	-	55.70	-
Tomasz Rodak	-	→	-	20.04.2016	21.04.2016	-	59.70	-
Tomasz Rodak	-	→	-	16.05.2016	17.05.2016	-	60.00	-
Tomasz Rodak	-	→	-	27.06.2016	28.06.2016	-	50.30	-
Tomasz Rodak	-	→	-	04.07.2016	05.07.2016	-	52.00	-
Tomasz Rodak	-	→	-	24.07.2016	25.07.2016	-	58.30	-
Tomasz Rodak	-	→	-	31.08.2016	01.09.2016	-	65.01	-
Tomasz Rodak	-	→	-	12.10.2016	13.10.2016	-	67.00	-
Tomasz Rodak	-	→	-	24.10.2016	25.10.2016	-	68.23	-
Tomasz Rodak	-	→	-	02.11.2016	03.11.2016	-	68.86	-
Tomasz Rodak	Overweight	→	04.12.2016	-	05.12.2016	20.03.2017	62.90	-20%
Tomasz Rodak	-	→	-	12.01.2017	13.01.2017	-	59.99	-
Tomasz Rodak	-	→	-	08.02.2017	09.02.2017	-	55.50	-
Tomasz Rodak	-	→	-	28.02.2017	01.03.2017	-	64.99	-
Tomasz Rodak	-	→	-	07.03.2017	08.03.2017	-	63.10	-
Tomasz Rodak	Neutral	↓	20.03.2017	-	21.03.2017	30.05.2017	62.38	9%
Tomasz Rodak	-	→	-	11.04.2017	12.04.2017	-	57.50	-
Tomasz Rodak	Overweight	↑	30.05.2017	-	31.05.2017	15.10.2017	68.10	-19%
Tomasz Rodak	-	→	-	04.07.2017	05.07.2017	-	63.94	-
Tomasz Rodak	-	→	-	12.07.2017	13.07.2017	-	62.54	-
Tomasz Rodak	-	→	-	03.09.2017	04.09.2017	-	58.11	-
Tomasz Rodak	Neutral	↓	15.10.2017	-	16.10.2017	13.02.2018	56.20	-24%
Tomasz Rodak	-	→	-	15.11.2017	16.11.2017	-	48.99	-
Tomasz Rodak	-	→	-	10.12.2017	11.12.2017	-	43.00	-
Tomasz Rodak	-	→	-	10.01.2018	11.01.2018	-	45.00	-
Tomasz Rodak	Overweight	↑	13.02.2018	-	14.02.2018	19.03.2018	41.30	3%
Tomasz Rodak	-	→	-	12.03.2018	13.03.2018	-	41.00	-
Tomasz Rodak	-	→	-	15.03.2018	16.03.2018	-	42.80	-
Tomasz Rodak	Neutral	↓	19.03.2018	-	20.03.2018	26.02.2019	40.20	-24%
Tomasz Rodak	-	→	-	16.04.2018	17.04.2018	-	32.50	-
Tomasz Rodak	-	→	-	29.05.2018	30.05.2018	-	34.00	-
Tomasz Rodak	-	→	-	04.07.2018	05.07.2018	-	32.90	-
Tomasz Rodak	-	→	-	16.07.2018	17.07.2018	-	32.50	-
Tomasz Rodak	-	→	-	01.08.2018	02.08.2018	-	32.00	-
Tomasz Rodak	-	→	-	02.08.2018	03.08.2018	-	31.90	-
Tomasz Rodak	-	→	-	30.08.2018	31.08.2018	-	28.10	-
Tomasz Rodak	-	→	-	11.10.2018	12.10.2018	-	25.80	-
Tomasz Rodak	-	→	-	23.10.2018	24.10.2018	-	26.00	-
Tomasz Rodak	-	→	-	14.11.2018	15.11.2018	-	26.00	-
Tomasz Rodak	-	→	-	09.12.2018	10.12.2018	-	29.20	-
Tomasz Rodak	-	→	-	10.01.2019	11.01.2019	-	25.70	-
Tomasz Rodak	-	→	-	04.02.2019	05.02.2019	-	26.40	-
Tomasz Rodak	Neutral	→	26.02.2019	-	27.02.2019	26.03.2019	28.10	-5%
Tomasz Rodak	Underweight	↓	26.03.2019	-	27.03.2019	09.01.2020	26.50	-19%
Tomasz Rodak	-	→	-	22.04.2019	23.04.2019	-	25.80	-
Tomasz Rodak	-	→	-	24.04.2019	25.04.2019	-	25.00	-
Tomasz Rodak	-	→	-	30.05.2019	31.05.2019	-	24.70	-
Tomasz Rodak	-	→	-	01.07.2019	02.07.2019	-	24.00	-
Tomasz Rodak	-	→	-	17.07.2019	18.07.2019	-	23.20	-
Tomasz Rodak	-	→	-	22.07.2019	23.07.2019	-	23.60	-
Tomasz Rodak	-	→	-	30.07.2019	31.07.2019	-	23.30	-
Tomasz Rodak	-	→	-	01.09.2019	02.09.2019	-	21.00	-
Tomasz Rodak	-	→	-	13.10.2019	14.10.2019	-	19.15	-
Tomasz Rodak	-	→	-	24.10.2019	25.10.2019	-	19.30	-
Tomasz Rodak	-	→	-	17.11.2019	18.11.2019	-	19.00	-
Tomasz Rodak	-	→	-	08.12.2019	09.12.2019	-	19.00	-
Tomasz Rodak	Neutral	↑	09.01.2020	-	10.01.2020	19.05.2020	19.85	-16%
Tomasz Rodak	-	→	-	04.02.2020	05.02.2020	-	19.30	-
Tomasz Rodak	-	→	-	06.02.2020	07.02.2020	-	18.80	-
Tomasz Rodak	-	→	-	03.03.2020	04.03.2020	-	14.00	-
Tomasz Rodak	-	→	-	30.03.2020	31.03.2020	-	9.28	-
Tomasz Rodak	-	→	-	22.04.2020	23.04.2020	-	12.50	-
Tomasz Rodak	-	→	-	14.05.2020	15.05.2020	-	11.80	-
Tomasz Rodak	Overweight	↑	19.05.2020	-	20.05.2020	Not later than 5/19/2021	13.10	-

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

Institutional sales

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