



Tuesday, January 17, 2017 | update

# Synthos: sell (reiterated) SNS PW; SNS.WA | Chemicals, Poland

## Set For a Short-Term Earnings Boost in H1 2017

Prices of synthetic rubbers rebounded toward the end of 2016, in line with an upward shift in the prices of natural rubbers in China, driven by reduced supply from Thailand as demand grew on the back of increasing sales of passenger cars. Chinese imports started to normalize in November, and this, combined with the likely expiration of tax breaks on small cars this year, is expected to put downward pressure on the prices of natural, and hence also synthetic rubber. At the same time, we are anticipating a decline in the prices of butadiene in the months ahead as capacity closed for maintenance in 2016 starts to come back on line. Against this backdrop, we expect to see strong earnings results from Synthos in the fourth quarter of 2016 and the first quarter of 2017, with the respective quarterly EBITDA results likely to reach PLN 283m and PLN 335m, followed by a slowdown in the following quarters. On our current forecasts, Synthos is trading at premiums of 30% and 80%, respectively, to the respective 2017E and 2018E peer EV/EBITDA ratios. Accordingly, we are raising our price target for SNS from PLN 2.86 to PLN 3.72 per share, but we maintain a sell rating for the stock.

### Rubber prices rise on supply disruptions in Thailand

The volume of natural rubber imported by China in October 2016 showed an unexpected drop of 14% from the same month in 2015, led by a 35% slump in purchases from Thailand observed since July. November saw a stabilization in Chinese imports, with the total volume up more than 11% on the year, driven by higher incoming shipments from Indonesia and Malaysia (+40% y/y); the downturn in the monthly supplies from Thailand decelerated to an annual rate of only 4%.

### Butadiene capacity coming back from maintenance

According to estimates by Nexant, about 28% of the total butadiene capacity in Europe is currently off line — the highest ratio since 2008-2009. In the months ahead, however, most of these facilities are likely to be brought back on line, galvanized by a wide spread between the prices of butadiene and naphtha feedstock.

### Butadiene price gains outpace rubbers

With butadiene costs rising at a much faster rate than the sales prices of synthetic rubbers, non-vertically integrated SR producers have experienced a shrinkage in profit margins to the lowest levels in three years. In our view, this imbalance cannot last in the long term, and butadiene prices are set to fall under downward pressure soon.

### A slowdown in polystyrene

Margins on styrene derivatives were seen to contract toward the end of 2016, in line with the rising costs of benzene and ethylene. In 2017, we anticipate increasing pressures on the profits of Synthos's Styrene Plastics segment, stemming from a continued upshift in the costs of raw materials and a rise in fuel costs as the price of crude oil moves upward.

(PLN m)	2014	2015	2016E	2017E	2018E
Revenue	4,618.8	4,058.0	4,811.9	6,797.3	7,251.6
EBITDA	635.8	617.0	739.0	930.9	789.0
EBITDA margin	13.8%	15.2%	15.4%	13.7%	10.9%
EBIT	479.6	450.0	519.5	656.6	516.2
Net profit	356.9	426.0	376.4	480.5	365.2
DPS	0.31	0.25	0.53	0.17	0.25
DYield	5.9%	4.7%	10.0%	3.2%	4.8%
P/E	19.7	16.5	18.6	14.6	19.2
P/CE	13.7	11.8	11.8	9.3	11.0
P/BV	3.2	3.1	3.6	3.2	3.1
EV/EBITDA	12.2	12.5	11.4	9.2	11.0

Current Price	PLN 5.30
Target Price	PLN 3.72
Market Cap	PLN 7.0bn
Free Float	PLN 2.6bn
ADTV (3M)	PLN 13.47m
Ownership	
Michał Sołowow	62.46%
OFE Aviva BZ WBK	5.05%

Others 32.49%

### **Business Profile**

Synthos is a vertically integrated producer of synthetic rubbers (with annual SBR and PBR output at 375,000 tons), latex (28,000 tons), and styrene products (EPS, GPPS, HIPS, XPS; 600,000 tons). It operates through factories in Oświęcim, Poland, and Kralupy, Czech Republic, where it sells 45% of the total output. The remaining volumes are exported to other Western Europe and China. In 2016 Synthos added new styrene production assets to its portfolio, positioning itself as the leading producer in Europe.

### SNS vs. WIG



Company	Target Pri	ice	Rating			
Company	new old		new	old		
Synthos	3.72	2.86	sell	sell		
Company	Current Price		Target Price	Upside/ Downside		
Synthos	5.30		3.72	-29.9%		
Forecast change since last update	20	)16E	2017E	2018E		
Revenue	+14	1.6%	+47.8%	+38.9%		
EBITDA	+25	5.0%	+39.0%	+10.4%		
Net profit	+24	1.5%	+27.8%	-17.9%		

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## Synthetic Rubber Market Update

Prices of synthetic rubbers rebounded toward the end of 2016, following on the heels of an **upward shift in the prices of natural rubbers in China,** driven by a **temporary drop in shipments from Thailand** where local rubber production had been hit by severe floods. In October 2016, the volume of natural rubber imported into China showed an **unexpected drop of 14%** from the same month in 2015, with monthly imports from Thailand reduced by as much as 40% in the period from May to October. **November saw a stabilization in Chinese imports**, with the **total volume up over 11% year over year**, driven by higher incoming shipments from Indonesia and Malaysia (+40% y/y); the downturn in the monthly supplies from Thailand **decelerated to an annual rate of only 4%**.

At the same time, **Chinese imports of synthetic rubbers** in the latter part of 2016 **were growing in the high double digits.** 

US dollar prices per ton of natural rubber and synthetic rubber in Asian markets (2014-2016)



Source: Bloomberg, Dom Maklerski mBanku

#### 40 100% 35 80% 30 60% 25 40% 20 20% 15 0% 10 20% 5 -40% 0 -60% $\sim$ 4 4 4 4 ப ſ Mar'15 Jun'15 Mar'16 Jun'16 Sep'16 Dec'1 Jun'1 Sep'1 Dec'1 Dec' Mar' Sep' Sep'

YoY change

### Natural rubber imports into China - monthly volumes (10,000 tons, lhs) and YoY percentage change (rhs) (2013-2016)

Monthly imports —— Yo' Source: Dom Maklerski mBanku, China Customs Statistics

# Synthetic rubber imports into China - monthly volumes (10,000 tons, lhs) and YoY percentage change (rhs) (2013-2016)



Source: Dom Maklerski mBanku, China Customs Statistics

# Chinese natural rubber imports by country of origin (tons) (2012-2016)



Source: China Customs Statistics, Bloomberg, Dom Maklerski mBanku

### YoY pct. change in monthly Chinese natural rubber imports by country of origin (2012-2016)



Source: China Customs Statistics, Bloomberg, Dom Maklerski mBanku

The factor driving rubber demand in China last year were **increasing new car registrations** which in November 2016 reached an all-time high as buyers rushed to **beat the expiry of tax breaks on small-engine cars.** In the end, the reduced tax rate was upheld through 2017 after a small hike from 5% to 7.5%.

The higher **demand for vehicle tires** amid a curbed supply of natural rubbers added to the pickup in natural rubber prices, tracked by **synthetic rubber substitutes**.



Source: Bloomberg, Dom Maklerski mBanku

The upward shift in the prices of synthetic rubbers observed in late 2016 was accompanied by an even stronger upturn in the prices of the key raw material, butadiene. Butadiene prices are characterized by high **volatility**, led by fluctuations in the demand-supply balance, due to the fact that the gas can only be stored for short periods of time because of its high flammability and toxicity. During periods when demand inches even only slightly higher, and supply lags, butadiene prices tend to respond with rapid upward movement. This became evident in October 2016, when the global butadiene supply was disrupted by maintenance shutdowns on major facilities in China (including a 155kt Shell Pulau Bukom facility and a 180kt Fujian Refining Petrochemicals unit), which by December were still working at only about 60% of total capacity. Meanwhile, producers of synthetic rubbers were scrambling to find enough butadiene to stock up before the start of the two-week public holiday during the Chinese Spring Festival celebrations, starting on January 20th.





With butadiene costs rising at a much faster rate than sales prices, **non-vertically integrated producers of synthetic rubbers** toward the end of 2016 experienced a **shrinkage in profit margins to the lowest levels in three years**. Eventually, the huge butadiene-rubber price spread is bound to narrow with the restoration of butadiene capacity post-maintenance, and as the supply of natural rubber normalizes. Synthetic rubber - butadiene price spreads in India and China (US\$/t) (2014-2016)



Butadiene prices also outpaced crude oil prices in their upward climb last year, and as a result the butadienenaphtha price ratio exceeded 4x at the end of 2016 – a level not seen since 2011. Vertically-integrated producers like Synthos are less affected by this increase.



# Butadiene-naphtha price ratio (x) in Europe vs. Asia (2014-2016)





Source: Bloomberg, Dom Maklerski mBanku

The huge spread observed between butadiene prices in Asia and Europe creates **arbitrage** opportunities for synthetic rubber producers, driving their **export volumes**. Butadiene accounts for about 50% of the total SR production costs.

According to Nexant, **over 25% of the total European butadiene capacity is currently off line** (28% in November 2016) due to scheduled maintenance and unplanned failures – the highest ratio since 2008-2009. As



these facilities are restored, encouraged by high margins, the price of butadiene should decrease relative to the prices of naphtha, as well as relative to crude oil, whose price is expected to rise through 2017.

### Offline butadiene capacity in Europe (as pct. of total, Ihs) and butadiene production margins (US\$/t; rhs) (2000-2016)



Source: Nexant, Bloomberg, Dom Maklerski mBanku

As for the prices of rubber, we anticipate that a recovering supply of natural rubber from Asia will drive price lower, and as soon as natural rubber starts trading at cheaper levels than synthetic rubber, this will put downward pressure on the latter (and on butadiene).



Source: Bloomberg, Dom Maklerski mBanku

The trends that have shaped the rubber market since the fourth quarter of 2016 have had a favorable effect on the earnings of Synthos. The Company has benefitted from the higher butadiene-naphtha price spread, and the wide gap between butadiene prices in Europe and Asia gives it an advantage as an exporter. As a result, supported by a partial resumption of strategic materials deliveries to the Czech unit after a period of disruption, we expect that Synthos's Synthetic Rubber business generated EBITDA of an estimated PLN 210m in Q4 2016, representing a significant improvement from the PLN 66m posted in Q4 2015. In Q1 2017, we predict the segmental EBITDA will increase further to PLN 278m vs. PLN 55m in Q1 2016.





Source: Bloomberg, Dom Maklerski mBanku

As the butadiene-naphtha spread narrows, and the volume of natural rubber imports to China stabilizes, the profitability of synthetic rubber production is expected to normalize.

### Butadiene/naphtha price ratio (X) vs. EBITDA margins of Synthos's rubber business (PLN 1000/t) (2011-2017P)



Source: Synthos, Bloomberg, Dom Maklerski mBanku

## Styrene Plastics Update

Margins on styrene derivatives were seen to contract toward the end of 2016 in line with the rising costs of benzene and ethylene while sales prices remained stable. Margins on ethylene and benzene-based styrene also narrowed in the latter part of 2016.

In 2017, we anticipate that a continued rise in the costs of raw materials will put increasing pressures on the profits of the Styrene Plastics business of Synthos. Added to the cost pressures will be the upward trend in the prices of crude oil. Synthos has limited leeway in passing rising costs onto end customers due to risk of substitution with cheaper polystyrene alternatives.

# Polystyrene margins (EPS, HIPS, GPPS) relative to ethylene and benzene costs (US\$/t) (2011-2016)



Source: Bloomberg, Dom Maklerski mBanku



-HIPS

EPS

GPPS



Source: Bloomberg, Dom Maklerski mBanku

Only **about 15+ percent of Europe's total styrene capacity is off line at the moment** – the lowest level since 2009. Despite narrowing margins, we do not expect major plant shutdowns in the coming months because demand for styrene remains solid, supported among others by a strong European real-estate market.



Source: Bloomberg, Dom Maklerski mBanku

Supported by the EUR 80m acquisition of INEOS Styrenics in December 2016, we expect Synthos's **polystyrene sales to grow 46% to 610,000 tons in 2017**. At the same time, since INEOS is not vertically integrated, we anticipate that the rising costs of ethylene and benzene will put a **damper on the operating margins of the Styrene Plastics segment**. As a result, we predict **a drop of 44% this year to an estimated PLN 240 in the segmental per-ton EBITDA**, with the **total annual EBITDA expected to post a fall of 18% to PLN 146m despite contributions from INEOS**.

### Styrene and EPS to ethylene and benzene price ratios vs. per-ton EBITDA in Styrene Plastics (PLN 1000/t) (2011-2017P)





## Outlook for 2017

Synthos is poised for accelerated sales growth in the first half of 2017, driven by the newly-acquired expandable polystyrene producer INEOS, coupled with rising prices of synthetic rubber and butadiene. We predict that the Company's total annual sales volume of synthetic rubber will increase 14% this year to about 319,000 tons, thanks to higher NdBR capacity utilization by the Czech unit, and increasing operating rates achieved by the new SSBR facility in Poland, launched last October. At the same time, the sales volume of styrene plastics is expected to post a 46% jump to a projected 610,000 tons.

# 2017 quarterly revenue projection (PLN m, lhs) and expected percentage change relative to 2016 (rhs)



Source: Dom Maklerski mBanku

With the restoration of regular raw materials supply to the Czech unit, thanks to favorable market conditions, Synthos's **EBITDA** is set to post **strong growth in the first half of 2017**, followed by normalization in the second half led by a narrowing butadiene-naphtha spread and a stabilization in synthetic rubber prices.

# 2017 quarterly EBITDA projection (PLN m, lhs) and expected percentage change relative to 2016 (rhs)



Source: Dom Maklerski mBanku

### Synthos paid advance dividends of PLN 0.53 per share in 2016, and we expect the remaining 2017 per-share distribution to be PLN 0.17 PLN.

From an estimated 2.0x as of the end of 2016 following the dividend payout, we predict that Synthos's net **debt-to-EBITDA ratio will decrease to 1.7x by the end of 2017**, but in **subsequent years** the ratio is likely to rise and remain **above 2.0x** as profits normalize.

# Projection of DPS (PLN, lhs), Dividend Yield, and FCF/EV (rhs)



Source: Dom Maklerski mBanku

# Projection of net debt (lhs; PLN m) and net debt/EBITDA (rhs)



Source: Dom Maklerski mBanku

# Valuation

We assessed Synthos's value using DCF analysis and relative valuation. The DCF model yielded per-share valuation of PLN 3.05, and multiples comparison indicates a value of PLN 3.79.

## **Relative Valuation**

We compared Synthos with a peer group comprising synthetic rubber producers (Apar Industries, Asahi Kasei, Kumcho Petro Chemical, Lanxess, Polyone, Trinseo, TSRC, UBE Industries, ZEON), producers of styrene-based chemicals (BASF, Dow Chemical, Grand Pacific Petrochemical), and producers of adhesives and dispersions (Synthomer).

(PLN)	weight	price
Relative Valuation	60%	3.79
DCF Analysis	40%	3.05
	price	3.50
	9M target price	3.72

### **Multiples Comparison**

		P/E				EV/EBITDA	V/EBITDA	
	Country	2016E	2017E	2018E	2016E	2017E	2018E	
APAR INDUSTRIES LTD	India	23.9	15.8	13.1	8.2	6.6	5.6	
ASAHI KASEI CORP	Japan	15.6	14.4	13.7	6.3	6.8	6.2	
BASF SE	Germany	18.4	17.1	15.9	9.3	8.5	8.0	
DOW CHEMICAL CO/THE	USA	15.9	14.3	13.6	9.2	8.5	8.0	
GRAND PACIFIC PETROCHEMICAL	Taiwan	9.0	8.8	8.5	-	-	-	
KUMHO PETRO CHEMICAL CO LTD	South Korea	21.8	14.6	11.2	12.9	10.1	8.5	
LANXESS AG	Germany	26.1	21.3	16.1	6.4	7.0	5.9	
POLYONE CORPORATION	USA	15.5	14.1	12.5	-	-	-	
SYNTHOMER PLC	UK	15.5	15.0	14.1	9.9	9.3	8.5	
TRINSEO SA	USA	9.1	8.9	8.1	5.9	6.1	5.8	
TSRC CORP	Taiwan	24.7	17.1	12.6	12.5	10.5	8.1	
UBE INDUSTRIES LTD	Japan	13.0	14.1	12.1	5.9	6.6	6.1	
ZEON CORP	Japan	14.6	13.8	11.7	6.0	6.2	5.4	
Maximum		26.1	21.3	16.1	12.9	10.5	8.5	
Minimum		9.0	8.8	8.1	5.9	6.1	5.4	
Median		15.6	14.4	12.6	8.2	7.0	6.2	
Synthos		18.6	14.6	19.2	11.4	9.2	11.0	
premium (discount)		19.3%	1.3%	52.4%	39.7%	32.0%	77.3%	
Implied Valuation								
Median		15.6	14.4	12.6	8.2	7.0	6.2	
Discount		0%	0%	0%	0%	0%	0%	
Multiple weight			50%			50%		
Year weight		33%	33%	33%	33%	33%	33%	
Equity value per share (PLN)	3.79							



## **DCF Valuation**

The DCF model uses the following underlying assumptions:

- Risk-free rate: 3.5% (10Y Treasury bond yield).
- FCF growth rate after FY2026: 2%.
- Beta = 1.0.
- Future cash flows are discounted to their present value as of the beginning of January 2017.

## **Additional Assumptions**

### 2016-2023 projections factor in the special economic zone tax credits for the new SSBR plant (PLN 141m). Otherwise, we assume Synthos will be paying taxes at the statutory rates.

Price and cost projection									
	2015	2016P	2017P	2018P	2019P	2020P	2021P	2022P	2023P
Synthetic rubber (EUR/t)	1,478.6	1,539.4	1,772.1	1,745.1	1,734.9	1,737.5	1,737.5	1,737.5	1,737.5
Synthetic rubber (PLN/t)	6,136.2	6,665.5	7,673.0	7,416.7	7,199.7	7,210.5	7,210.5	7,210.5	7,210.5
SBR France (EUR/t)	1,813.0	1,760.8	2,001.7	1,971.3	1,959.7	1,962.6	1,962.6	1,962.6	1,962.6
SBR France (PLN/t)	7,524.0	7,624.2	8,667.3	8,377.8	8,132.7	8,144.9	8,144.9	8,144.9	8,144.9
EPS (EUR/t)	1,335.6	1,249.6	1,435.7	1,568.4	1,555.4	1,563.2	1,563.2	1,563.2	1,563.2
EPS (PLN/t)	5,542.7	5,410.7	6,216.6	6,665.6	6,455.0	6,487.2	6,487.2	6,487.2	6,487.2
PS HIPS (EUR/t)	1,390.0	1,377.2	1,552.1	1,671.2	1,657.4	1,665.7	1,665.7	1,665.7	1,665.7
PS HIPS (PLN/t)	5,768.5	5,963.4	6,720.7	7,102.7	6,878.2	6,912.6	6,912.6	6,912.6	6,912.6
PS GPPS (EUR/t)	1,311.7	1,296.1	1,474.5	1,611.2	1,589.4	1,597.4	1,597.4	1,597.4	1,597.4
PS GPPS (PLN/t)	5,443.4	5,611.9	6,384.7	6,847.7	6,596.1	6,629.0	6,629.0	6,629.0	6,629.0
XPS (EUR/t)	115.2	110.4	117.0	122.2	125.3	125.6	125.6	125.6	125.6
XPS (PLN/m3)	478.2	477.9	506.7	519.5	519.8	521.1	521.1	521.1	521.1
Butadiene (USD/t)	728.4	812.9	1,100.0	1,090.8	1,165.3	1,165.3	1,165.3	1,165.3	1,165.3
Butadiene (PLN/t)	2,695.1	3,341.0	4,521.0	4,417.9	4,311.7	4,311.7	4,311.7	4,311.7	4,311.7
Naphtha (USD/t)	471.3	385.5	517.9	604.2	647.4	647.4	647.4	647.4	647.4
Naphtha (PLN/t)	1,743.8	1,584.4	2,128.7	2,447.2	2,395.4	2,395.4	2,395.4	2,395.4	2,395.4
Brent crude (USD/bbl)	60.0	70.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Brent crude (PLN/bbl)	198.5	184.2	246.6	283.5	277.5	277.5	277.5	277.5	277.5
Benzene (USD/t)	667.3	659.9	730.0	803.0	851.2	855.4	855.4	855.4	855.4
Benzene (PLN/t)	2,469.2	2,712.1	3,000.3	3,252.1	3,149.4	3,165.1	3,165.1	3,165.1	3,165.1
Ethylene (USD/t)	1,040.3	927.1	1,022.0	1,124.2	1,191.7	1,197.6	1,197.6	1,197.6	1,197.6
Ethylene (PLN/t)	3,849.1	3,810.5	4,200.5	4,553.1	4,409.2	4,431.2	4,431.2	4,431.2	4,431.2
Styrene (USD/t)	1,303.9	1,148.3	1,287.0	1,401.5	1,470.8	1,478.1	1,478.1	1,478.1	1,478.1
Styrene (PLN/t)	4,824.3	4,719.7	5,289.5	5,676.2	5,441.8	5,469.0	5,469.0	5,469.0	5,469.0
Naphtha / Brent crude	1.05	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Ethylene / Brent	2.31	2.47	2.03	1.92	1.89	1.90	1.90	1.90	1.90
Benzene / Brent	1.48	1.76	1.45	1.37	1.35	1.36	1.36	1.36	1.36
Styrene / (Ethylene + Benzene)	1.68	1.59	1.57	1.56	1.54	1.54	1.54	1.54	1.54
Butadiene / Naphtha	1.55	2.11	2.12	1.81	1.80	1.80	1.80	1.80	1.80
Synthetic rubber/ Butadiene	2.28	2.00	1.70	1.68	1.67	1.67	1.67	1.67	1.67
Synthetic rubber / Styrene	1.27	1.41	1.45	1.31	1.32	1.32	1.32	1.32	1.32
EPS / (ethylene + benzene)	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8
HIPS / (ethylene + benzene)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
GPPS / (ethylene + benzene)	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9
EUR/PLN	4.15	4.36	4.33	4.25	4.15	4.15	4.15	4.15	4.15
USD/PLN	3.70	3.94	4.11	4.05	3.70	3.70	3.70	3.70	3.70

## Profitability projection for rubber, latex, and styrenics

Promability projection for rub	υει, ιατελ, α	ind styrei	lics						
EBITDA (PLN 1000/t)	2015	2016P	2017P	2018P	2019P	2020P	2021P	2022P	2023P
Rubber & Latex	1.12	1.58	2.05	1.41	1.24	1.24	1.23	1.22	1.21
Styrene Plastics	0.63	0.42	0.24	0.26	0.25	0.25	0.24	0.24	0.23
Sales volume projection									
	2015	2016P	2017P	2018P	2019P	2020P	2021P	2022P	2023P
eSBR (295kt max)	164.3	168.7	174.0	179.2	184.6	189.2	193.0	196.9	200.8
NdBR (80kt max, 100kt after expansion)	56.2	49.5	64.0	73.0	75.0	77.0	79.0	80.0	81.0
SSBR (90kt max)	6.2	41.6	59.8	76.5	81.0	81.9	82.8	83.7	84.6
LBS & LBSK (28kt max)	20.8	20.7	20.9	21.0	21.1	21.2	21.3	21.4	21.5
NdBR Brazil (90kt max)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EPS (210kt max)	187.7	228.7	336.8	338.4	340.1	341.8	343.5	345.3	347.0
PS (130kt max)	119.7	171.9	256.8	258.0	259.3	260.6	261.9	263.2	264.5
XPS (500,000 m <sup>3</sup> max)	515.9	521.4	505.8	505.8	505.8	505.8	505.8	505.8	505.8
Butadiene demand (1000 tons)	163.9	188.3	216.3	239.1	247.5	252.8	257.4	261.4	265.5
Self-sufficiency (%)	68.9%	51.4%	82.3%	74.4%	71.9%	70.4%	69.1%	68.1%	67.1%
Styrene demand (1000 tons)	377.7	475.0	671.0	680.3	685.7	690.3	694.7	699.0	703.3
Self-sufficiency (%)	79.4%	63.2%	44.7%	44.1%	43.7%	43.5%	43.2%	42.9%	42.7%

### **CAPEX** projection

(PLN m)	2015	2016P	2017P	2018P	2019P	2020P	2021P	2022P	2023P
SSBR plant	201.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NdBR pant extensions	0.0	74.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas-fired power plant in Oświęcim, PL	110.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flue gas treatment facility	50.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas-fired unit in Kralupy, cz	0.0	0.0	140.0	140.0	140.0	0.0	0.0	0.0	0.0
Maintenance	213.5	56.0	153.7	205.7	231.9	268.1	285.9	285.6	286.3
Acquisitions	0.0	352.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	575.0	502.0	367.7	345.7	371.9	268.1	285.9	285.6	286.3

Source: Dom Maklerski mBanku



## DCF Model

(PLN m)	2017P	2018P	2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	+
Revenue	6,797.3	7,251.6	7,181.7	7,300.7	7,391.3	7,474.2	7,558.5	7,644.2	7,722.8	7,807.7	7,880.4
change	41.3%	6.7%	-1.0%	1.7%	1.2%	1.1%	1.1%	1.1%	1.0%	1.1%	0.9%
EBITDA	930.9	789.0	740.1	750.8	754.0	756.5	758.8	761.3	762.5	765.6	767.2
EBITDA margin	13.7%	10.9%	10.3%	10.3%	10.2%	10.1%	10.0%	10.0%	9.9%	9.8%	9.7%
D&A	274.3	272.8	282.2	285.9	285.6	286.3	286.3	287.1	287.4	287.5	287.5
EBIT	656.6	516.2	457.9	464.9	468.4	470.2	472.5	474.2	475.1	478.1	479.7
EBIT margin	9.7%	7.1%	6.4%	6.4%	6.3%	6.3%	6.3%	6.2%	6.2%	6.1%	6.1%
Tax on EBIT	91.0	63.9	52.6	54.0	54.9	55.4	56.0	74.1	74.4	75.2	75.6
NOPLAT	565.6	452.3	405.3	410.9	413.5	414.8	416.5	400.1	400.7	402.9	404.1
CAPEX	-367.7	-345.7	-371.9	-268.1	-285.9	-285.6	-286.3	-286.3	-287.1	-287.4	-287.5
Working capital	-299.3	-62.9	9.7	-16.5	-12.5	-11.5	-11.7	-11.9	-10.9	-11.8	-10.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FCF	173.0	316.4	325.3	412.3	400.6	404.0	404.9	389.0	390.0	391.3	394.0
WACC	7.8%	7.7%	7.7%	7.7%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.9%
Discount factor	0.93	0.86	0.80	0.74	0.69	0.64	0.59	0.55	0.51	0.47	0.43
PV FCF	160.5	272.7	260.3	306.0	275.7	257.6	239.2	213.5	198.2	184.0	171.3
WACC	7.8%	7.7%	7.7%	7.7%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.9%
Cost of debt	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
Risk-free rate	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Risk premium	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
Effective tax rate	15.9%	14.9%	14.2%	14.3%	14.4%	14.4%	14.5%	19.0%	19.0%	19.0%	19.0%
Net debt / EV	18.3%	19.3%	19.7%	19.0%	18.4%	17.8%	17.2%	16.7%	16.2%	15.6%	14.9%
Cost of equity	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Risk premium	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Beta	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

FCF after the forecast period	2.0%
Terminal value	6,717.2
Present value of terminal value	3,158.8
Present value of FCF in the forecast period	2,367.6
Enterprise value	5,526.4
Net debt	1,478.0
Other noncore assets	0.0
Minority interests	13.5
Equity value	4,034.9
Number of shares (millions)	1,323.3
Equity value per share (PLN)	3.0
9M cost of equity	6.3%
Target price	3.2
EV/EBITDA ('17E) at target price	6.3
P/E ('17E) at target price	8.9
TV / EV	57.2%

## 2.0% sensitivity Analysis

17.2		FCF growth in perpetuity												
58.8		0.0%	1.0%	2.0%	3.0%	5.0%								
67.6	WACC +1.0 p.p.	2.1	2.3	2.6	2.9	4.1								
26.4	WACC +0.5 p.p.	2.4	2.6	2.9	3.3	4.9								
78.0	WACC	2.6	2.9	3.2	3.8	5.9								
0.0	WACC -0.5 p.p.	2.9	3.2	3.7	4.3	7.3								
13.5	WACC -1.0 p.p.	3.2	3.6	4.2	5.0	9.6								

Income Statement							
(PLN m)	2014	2015	2016P	2017P	2018P	2019P	2020P
Revenue	4,618.8	4,058.0	4,811.9	6,797.3	7,251.6	7,181.7	7,300.7
change	-13.8%	-12.1%	18.6%	41.3%	6.7%	-1.0%	1.7%
Synthetic Rubbers	2 309 2	1 870 0	2 266 1	2 922 9	3 1 1 8 2	3 131 0	3 200 8
Styrane Derivatives	1 905 1	1,697.0	2,200.1	3 455 6	3 700 9	3 604 1	3 638 6
Power Generation	196.2	191.0	166.8	175 1	183.9	193.1	202.7
Vinvl-Based Dispersions	169 5	184.0	160.0	163.2	166 5	169.8	173.2
Other	12 5	78.0	78.9	80.5	82.1	83.8	85.5
	12.0	, 0.0	, 0.15	0010	02.11	0010	0010
COGS	3,853.5	3,301.0	3,970.7	5,794.5	6,374.0	6,350.3	6,450.7
Selling expenses	135.6	126.0	141.6	165.4	171.6	174.1	175.9
Administrative expenses	165.5	164.0	172.2	180.8	189.9	199.3	209.3
Other operating gains/losses	15.3	-17.0	-8.0	0.0	0.0	0.0	0.0
EBIT	479.6	450.0	519.5	656.6	516.2	457.9	464.9
change	5.9%	-6.2%	15.4%	26.4%	-21.4%	-11.3%	1.5%
EBIT margin	10.4%	11.1%	10.8%	9.7%	7.1%	6.4%	6.4%
Financing gains / losses	-42.1	-25.0	-76.6	-85.1	-87.0	-88.2	-87.9
Other	-14 4	42.0	0.0	0.0	0.0	0.0	0.0
	1	1210	010	010	010	010	010
Pre-tax profit	427.1	467.0	442.9	571.5	429.2	369.8	377.0
Tax	69.6	41.0	66.5	91.0	63.9	52.6	54.0
Minority interests	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Net profit	356.9	426.0	376.4	480.5	365.2	317.1	323.0
change	-14.4%	19.4%	-11.6%	27.7%	-24.0%	-13.2%	1.9%
margin	7.7%	10.5%	7.8%	7.1%	5.0%	4.4%	4.4%
D&A	156.2	167.0	219.5	274.3	272.8	282.2	285.9
EBITDA	635.8	617.0	739.0	930.9	789.0	740.1	750.8
change	5.0%	-3.0%	19.8%	26.0%	-15.2%	-6.2%	1.4%
EBITDA margin	13.8%	15.2%	15.4%	13.7%	10.9%	10.3%	10.3%
Shares at year-end (millions)	1,323.3	1,323.3	1,323.3	1,323.3	1,323.3	1,323.3	1,323.3
EPS	0.3	0.3	0.3	0.4	0.3	0.2	0.2
CEPS	0.4	0.4	0.5	0.6	0.5	0.5	0.5
POAF	10 10/	10 604	10 10/		16 204	12.00/	10.00
	10.1%	10.0%	19.1%	21.0%	10.2%	13.8%	13.6%
KUAA	/./%	8.9%	0.9%	8.0%	5.9%	5.1%	5.1%



### **Balance Sheet**

(PLN m)	2014	2015	2016P	2017P	2018P	2019P	2020P
ASSETS	4,641.7	4,795.8	5,421.3	6,033.2	6,143.9	6,174.5	6,281.0
Fixed assets	2,365.5	2,549.3	2,833.8	2,930.6	3,008.4	3,104.4	3,094.0
Intangible assets	223.2	237.0	267.3	290.2	312.3	338.3	355.0
Property, plant and equipment	1,966.4	2,287.0	2,535.2	2,609.1	2,664.8	2,734.8	2,707.7
Goodwill	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Long-term receivables	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long-term investment	139.0	7.0	7.0	7.0	7.0	7.0	7.0
Long-term prepayments	32.7	14.0	20.0	20.0	20.0	20.0	20.0
Current assets	2,276.2	2,246.5	2,587.6	3,102.6	3,135.5	3,070.1	3,187.0
Inventory	495.8	467.0	577.1	815.2	869.7	861.3	875.6
Current receivables	949.4	666.0	856.3	1,243.9	1,327.1	1,314.3	1,336.0
Trade receivables	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash	783.5	1,050.5	1,079.4	938.0	826.1	783.0	862.1
Current prepayments	47.5	63.0	74.7	105.5	112.6	111.5	113.3

(PLN m)	2014	2015	2016P	2017P	2018P	2019P	2020P
EQUITY AND LIABILITIES	4,641.7	4,795.8	5,421.3	6,033.2	6,143.9	6,174.5	6,281.0
Equity	2,222.4	2,296.0	1,967.8	2,222.5	2,251.3	2,294.5	2,379.7
Share capital	39.7	39.7	39.7	39.7	39.7	39.7	39.7
Supplementary capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Undistributed earnings	2,117.8	2,213.0	1,888.1	2,142.8	2,171.6	2,214.8	2,300.0
Minority interests	13.5	13.5	13.5	13.5	13.5	13.5	13.5
Long-term liabilities	1,505.8	1,719.0	2,519.0	2,519.0	2,519.0	2,519.0	2,519.0
Debt	1,472.6	1,685.0	2,485.0	2,485.0	2,485.0	2,485.0	2,485.0
Current liabilities	672.6	450.0	551.2	769.9	819.9	812.2	825.4
Trade creditors	654.0	429.0	530.2	748.9	798.9	791.2	804.4
Debt	18.5	21.0	21.0	21.0	21.0	21.0	21.0
Provisions for accounts payable	34.4	34.4	34.4	34.4	34.4	34.4	34.4
Other	193.0	283.0	335.6	474.0	505.7	500.8	509.1
Debt	1,491.1	1,706.0	2,506.0	2,506.0	2,506.0	2,506.0	2,506.0
Net debt	707.5	655.5	1,478.0	1,568.0	1,679.9	1,723.0	1,643.9
(Net debt / Equity)	31.8%	28.5%	75.1%	70.6%	74.6%	75.1%	69.1%
(Net debt / EBITDA)	1.1	1.1	2.0	1.7	2.1	2.3	2.2
BVPS	1.7	1.7	1.5	1.7	1.7	1.7	1.8

**Cash Flow** 

(PLN m)	2014	2015	2016P	2017P	2018P	2019P	2020P
Cash flow from operating activities	611.9	734.0	500.5	537.1	657.3	690.8	672.9
Net profit	356.9	426.0	376.4	480.5	365.2	317.1	323.0
D&A	156.2	167.0	219.5	274.3	272.8	282.2	285.9
Working capital	-6.7	181.0	-164.4	-299.3	-62.9	9.7	-16.5
Other	105.5	-40.0	69.0	81.6	82.1	81.8	80.5
Cash flow from investing activities	-297.6	-284.0	-502.0	-367.7	-345.7	-371.9	-268.1
CAPEX	-373.8	-575.0	-502.0	-367.7	-345.7	-371.9	-268.1
Equity investment	76.2	291.0	0.0	0.0	0.0	0.0	0.0
Cash flow from financing activities	22.2	-183.0	30.4	-310.9	-423.4	-362.1	-325.7
Debt	439.3	214.9	800.0	0.0	0.0	0.0	0.0
Dividend/buyback	-411.1	-330.8	-701.3	-225.8	-336.4	-273.9	-237.8
Other	-5.9	-67.1	-68.3	-85.1	-87.0	-88.2	-87.9
Change in cash	336.5	267.0	28.9	-141.5	-111.8	-43.2	79.1
Cash at period-end	783.5	1,050.5	1,079.4	938.0	826.1	783.0	862.1
DPS (PLN)	0.31	0.25	0.53	0.17	0.25	0.21	0.18
FCF	180.3	187.0	4.8	173.0	316.4	325.3	412.3
(CAPEX/Sales)	-8.1%	-14.2%	-10.4%	-5.4%	-4.8%	-5.2%	-3.7%

## **Trading Multiples**

	2014	2015	2016P	2017P	2018P	2019P	2020P
P/E	19.7	16.5	18.6	14.6	19.2	22.1	21.7
P/CE	13.7	11.8	11.8	9.3	11.0	11.7	11.5
P/BV	3.2	3.1	3.6	3.2	3.1	3.1	2.9
P/S	1.5	1.7	1.5	1.0	1.0	1.0	1.0
FCF/EV	2.3%	2.4%	0.1%	2.0%	3.6%	3.7%	4.8%
EV/EBITDA	12.2	12.5	11.4	9.2	11.0	11.8	11.5
EV/EBIT	16.1	17.1	16.3	13.1	16.9	19.1	18.7
EV/S	1.7	1.9	1.8	1.3	1.2	1.2	1.2
CFO/EBITDA	96%	119%	68%	58%	83%	93%	90%
DYield	5.9%	4.7%	10.0%	3.2%	4.8%	3.9%	3.4%
Price (PLN)	5.30	5.30	5.30	5.30	5.30	5.30	5.30
Shares at year-end (millions)	1,323.3	1,323.3	1,323.3	1,323.3	1,323.3	1,323.3	1,323.3
MC (PLN m)	7,013.2	7,013.2	7,013.2	7,013.2	7,013.2	7,013.2	7,013.2
Minority interests (PLN m)	13.5	13.5	13.5	13.5	13.5	13.5	13.5
EV (PLN m)	7,734.2	7,682.2	8,504.7	8,594.8	8,706.6	8,749.8	8,670.7



#### List of abbreviations and ratios contained in the report: EV - net debt + market value

EBITDA – EBIT + Depreciation and Amortisation P/CE – price to earnings with amortisation MC/S – market capitalisation to sales EBIT/EV – operating profit to economic value P/E - (Price/Earnings) - price divided by annual net profit per share<math>ROE - (Return on Equity) - annual net profit divided by average equity<math>P/BV - (Price/Book Value) - price divided by book value per shareNet debt – credits + debt papers + interest bearing loans – cash and cash equivalents EBITDA margin – EBITDA/Sales

**OVERWEIGHT (OW)** – a rating which indicates that we expect a stock to outperform the broad market **NEUTRAL (N)** – a rating which indicates that we expect the stock to perform in line with the broad market **UNDERWEIGHT (UW)** – a rating which indicates that we expect the stock to underperform the broad market

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BUY – we expect that the rate of return from an investment will be at least 15%  $\ensuremath{\mathsf{ACCUMULATE}}$  – we expect that the rate of return from an investment will range from 5% to 15% **HOLD** – we expect that the rate of return from an investment will range from -5% to +5%**REDUCE** – we expect that the rate of return from an investment will range from -5% to -15%SELL - we expect that an investment will bear a loss greater than 15% Recommendations are updated at least once every nine months.

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significant susceptibility to a change of forecast assumptions in the model. **Relative** – based on a comparison of valuation multipliers of companies from a given sector; simple in construction, reflects the current state of the market better than DCF; weak points include substantial variability (fluctuations together with market indices) as well as difficulty in the selection of the group of companies.

Economic profits – discounting of future economic profits; the weak point is high sensitivity to changes in the assumptions made in the valuation model. Discounted Dividends (DDM) – discounting of future dividends; the weak point is high sensitivity to changes in the assumptions as to future dividends made in the valuation model

NAV - valuation based on equity value, one of the most frequently used method in case of developing companies; the weak point of the method is that it does not factor in future changes in revenue/profits of a company.

### mBank issued the following investment recommendations for Synthos in the 12 months prior to this publication

rating	sell	hold	reduce	hold	
rating day	2016-11-04	2016-07-05	2016-03-15	2016-02-02	
price on rating day	4.57	3.54	3.66	3.96	
WIG on rating day	47.899.61	44.294.15	47.299.51	44.294.89	

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