

COPPER PRODUCTION AND TRADE IN POLAND DURING THE COVID-19 EPIDEMIC

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The SARS-CoV-2 virus outbreak has created turmoil in domestic economies around the world. The changes are visible in all industrial branches of the economy, including the market of metallic raw materials. The article reviews and analyzes the size of changes in the production and sales of copper and copper products in Poland in 2020, comparing the data in the previous years. The aim of the article is to assess the possible impact of the epidemic and related economic changes on the copper market in Poland.

Key words: copper, industry, COVID-19, Poland

INTRODUCTION

2020 was exceptionally difficult for the societies and economies of many countries around the world [1]. Based on Eurostat data, it is known that the average economic growth rate was negative. In the European Union countries, GDP decreases reaching even 14 % (II term 2020) [2].

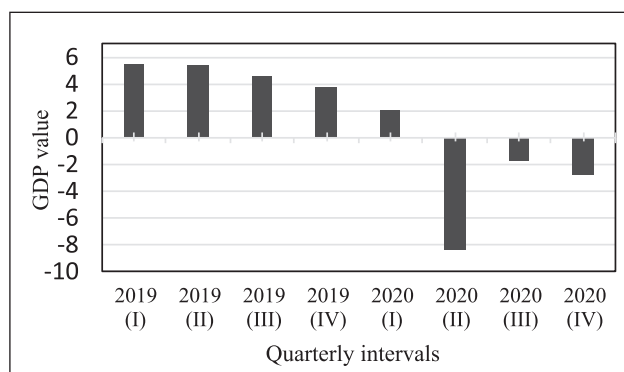


Figure 1 GDP in Poland (2019 – 2020)

In Poland, in the same period, the economy saw a decline in 8,3 % of GDP, as shown in Figure 1 [3]. Despite such unfavorable macroeconomic data, Poland was included among the countries whose economy did not suffer large financial and production losses, compared to other countries. This economic crisis resulted from the outbreak of the SARS-CoV-2 virus. The world health organization officially announced pandemics in March 2020, the first cases of the disease also appeared in Poland this month [4].

K. Łakomy: karolina.lakomy@polsl.pl – Silesian University of Technology, Faculty of Materials Science, Katowice, Poland
T. Lis: teresa.lis@polsl.pl – Silesian University of Technology, Faculty of Materials Science, Katowice, Poland

PRODUCTION OF INDUSTRIAL PRODUCTS - COPPER IN POLAND

There are over 14 000 deposits of various minerals in Poland, and the obtained raw materials are divided into energy, rock, chemical and metallic. One of the most important metals in the raw material markets is copper [5]. Copper resources in Poland and in the world are estimated to be large, and the exploitation of this raw material is at a stable level [6].

The quantity of copper and copper products produced in Poland in 2015-2020 was analyzed. Particular attention was paid to the year 2020, when the pandemic began in Poland. Table 1 presents the amount of produced converter copper from primary raw materials, blister copper from secondary raw materials and unwrought, unalloyed refined copper. Based on the data, there is a noticeable increase in copper production from secondary raw materials by 34 % compared to 2019. In turn, copper production from primary raw materials decreased in 2020 by 5,6 %, and refined copper by 3,5 %.

Table 1 Production of selected copper products in 2015-2020

	2015	2016	2017	2018	2019	2020
	tone					
Converter copper from primary raw materials	514 774	446 902	457 549	461 865	489 242	462 868
Converter copper from recyclable materials	67 624	60 369	53 024	50 001	51 904	69 696
Refined copper, unwrought, unalloyed	589 023	550 727	538 026	520 004	582 198	562 006

The production of ore and copper concentrates in Poland is shown in Figure 2. In 2020, production was the lowest in 9 years, but a downward trend since 2016 is clearly visible. Last year, a total of 32 928 tons of ore and concentrates were produced in Poland.

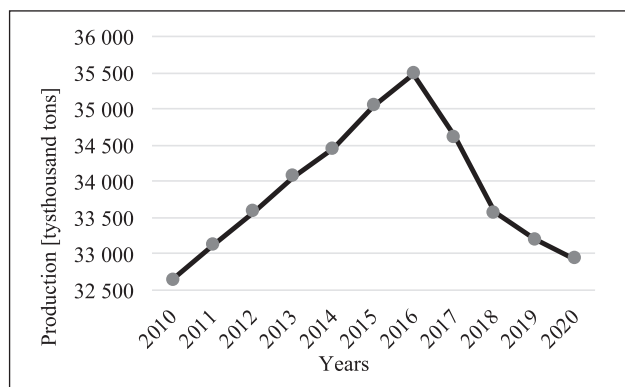


Figure 2 Production of copper ore and concentrate in Poland (2010 – 2020)

Table 2 summarizes the productions of other selected copper products. In 2020, production drops ranging from 0,92 % to 14,92 % were recorded. The most visible decline is the production of bare conductors: twisted pair, stranded wires, ropes, copper cables; not electrically insulated.

Table 2 Production of selected copper products in 2019-2020

	2019	2020
	tone	
Cathodes and cathode parts of refined copper	565 588	560 364
Wire of copper and its alloys	308 762	296 970
Bare conductors: Stranded wire, stranded wire, ropes, copper cables, electrically insulated	48 199	41 009
Flat bars, rods, sections and wire rod, of copper and its alloys	23 389	23 110

Materials management was also analyzed using the example of unwrought refined copper. The amount of produced raw material slightly decreased, by 3,4 % compared to the record year 2019 (Table 3). Due to the difficult production situation caused by the epidemic - shortages in production, 250 % more refined copper was imported last year. During the epidemic, raw material stocks decreased by 7 458 tons.

Table 3 Materials management based on the example of refined, unwrought, unalloyed copper, part 1

	2017	2018	2019	2020
	tone			
Income (generally)	546 543	523 601	588 840	586 215
Production	538 026	520 004	582 198	562 006
Imports	4 438	3 597	6 642	16 751
Decrease in stocks	4 079	—	—	7 458

COPPER TRADE

Overall, commodity prices fell by almost 10 % in 2020, but the prices of basic metals such as aluminum,

cobalt, copper, iron ore, lead, molybdenum and nickel increased by 5,6 % [7].

The fluctuations in the price of copper on the global stock exchange were analyzed. Figure 3 shows the prices at the opening and closing of the stock exchange on a monthly basis for 2020. The decline in price is clearly visible at the end of the first and the beginning of the second quarter - this was the time when the global pandemic began. The lowest price for which a ton of copper was sold was \$ 4 805, and this price increased by over 160 % at the end of the year.

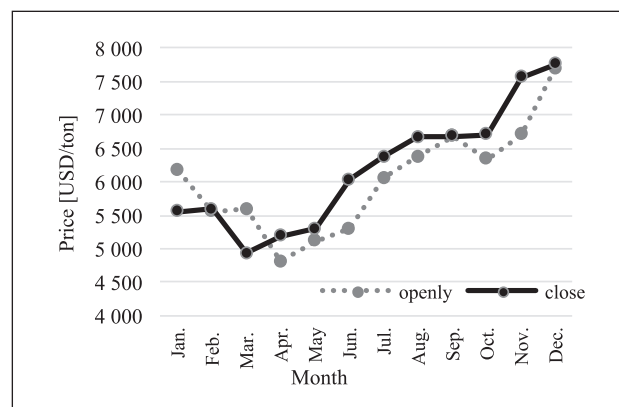


Figure 3 Copper prices on the stock exchange in 2020

In Poland, sales of metal products (in general) increased in 2020 by 4 % compared to 2019. Figure 4 shows an upward trend, lasting 10 years. On the other hand, the sale of metals has not been so stable over the years, and last year it fell by as much as 10,54 % compared to the previous year.

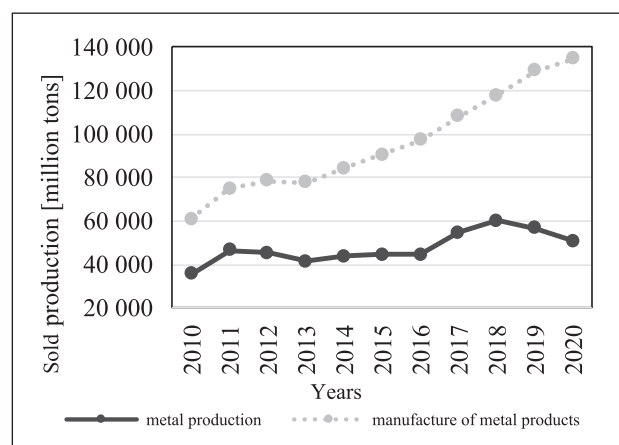


Figure 4 Sold production (2010 – 2020)

Material economy can also be characterized by expenditure. Table 4 shows the general use of the raw material, based on the example already mentioned in the article, unwrought refined copper. The domestic consumption of the raw material decreased slightly in 2020, but an increase in copper export by 1,54 % is noted. Stocks have not been increased.

Table 4 **Materials management based on the example of refined unwrought, unalloyed copper, part 2**

	2017	2018	2019	2020
	tone			
Use (generally)	546 543	523 601	588 840	586 215
Domestic consumption	294 797	312 465	296 094	294 451
Exports	251 746	209 703	287 337	291 764
Increase in stocks	—	1 433	5 409	—

The values of the production sold were compared for the more hot-melt copper products (Table 5). Despite the reduced production, the profit from the sale of faced copper is higher in 2020 by as much as 11,24 %. More was also made on pipe fittings (27,64 %), copper foil (8,17 %) and refined copper alloys. 2020 was unfavorable for the sale of copper sheets and its alloys (-7,65 %) and copper pipes (- 27,64 %).

Table 5 **Value of sold production of selected copper products in 2019 - 2020**

	2019	2020
	in PLN	
	in USD	
Refined, unwrought, unalloyed copper	6 862 794 600	7 634 341 100
	1 666 454 907	1 853 805 327
Refined copper alloys, unwrought	49 656 200	52 338 400
	12 057 743	12 709 047
Thick sheets, thin sheets and strips made of copper and copper alloys	91 405 900	84 416 200
	22 195 595	20 498 324
Copper foil	203 300	219 900
	49 366	53 397
Copper tubes and pipes	319 495 000	266 852 600
	77 581 224	64 798 358
Tube or pipe fittings of copper or copper alloys	294 168 200	375 474 300
	71 431 256	91 174 372

CONCLUSIONS

Based on the analysis, it was found that the economic crisis caused by the SARS-CoV-2 virus epidemic did not affect the production and trade of copper and copper products in Poland. There are no drastic changes on the market. Clearly declining trends in the production of copper and its ores have been recorded from previous years. The sales value (in total) of the most important copper products in 2020 is higher than in 2019, which is related to the increase in raw material prices on commercial markets.

Acknowledge

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Note: K. Łakomy is responsible for English language