

Analysis of Domestic Aluminum Product Export

Analiza eksportu krajowych wyrobów aluminium

NATALIA IWASZCZUK
AGATA WZOREK
BARTOSZ ŁAMASZ
KATARZYNA ŁYP – WROŃSKA
ŁUKASZ WZOREK*

DOI: <https://doi.org/10.17814/mechanik.2017.1.22>

The article analyzes the domestic market of aluminum products and directions of their exports. The focus was also on that, how to shape the exchange of semi-finished aluminum and aluminum products on the line Poland - the rest of the world (mainly EU countries) and identified the problems that currently faces this economic sector.

KEYWORDS: aluminum market, exports of aluminum, international exchange, domestic aluminum products.

Aluminum is the second most used metal after iron, which belongs to the so-called *non-ferrous metals*. It is also the third most frequently occurring element in the world [1]. Aluminum is included in metallic raw materials, besides of copper, silver, zinc, tin, cadmium and lead. Both in domestic and in the world economy, every year the increase in consumption is observed. At present, production in Poland is mainly based on secondary aluminum, because in 2008 Aluminum Konin Factory ceased its activity.

In 2014, the total domestic sales and exports of aluminum amounted to PLN 13.5 billion, accounting for about 0.8% of Polish GDP. The production of semi-finished products (sheets, rolls, foils, secondary aluminum, profiles) was valued at PLN 5.5 billion, and finished products - such as aluminum constructions, door and window frames, radiators, rims, prefabricated buildings – PLN 6.3 billion [2]. In the case of finished products, the volume of production far exceeded their consumption. As a result, Poland has become a significant exporter of aluminum products in recent years.

Value and direction of export of domestic aluminum products

Poland is the most important partner in the international exchange of semi-finished products and aluminum products for Germany. Value of aluminum exports to Germany in 2014 amounted to PLN 1.17 billion and increased by PLN 270 million as compared to 2011 (Fig. 1). The second biggest recipient of aluminum products from Poland was the Czech Republic – PLN 760 million. The remaining partners in 2014 were:

Slovakia – PLN 260 million, Hungary – PLN 250 million, Great Britain – PLN 180 million, Austria – PLN 150 million, France – PLN 137 million, Italy – PLN 133 million, Ukraine – PLN 98 million and Romania - PLN 67 million.

Over the years 2011-2014, exports to most of the major destinations can be seen, with only aluminum sales in Romania declining. Poland is also selling aluminum products to new European markets, for example in 2014, the value of exports to Belgium amounted to PLN 66 million, Slovenia - PLN 60 million, and Lithuania - PLN 51 million [3]. Data presented in fig. 1 indicate a slow but steady increase in exports of aluminum products, which proves the competitiveness of Polish products.

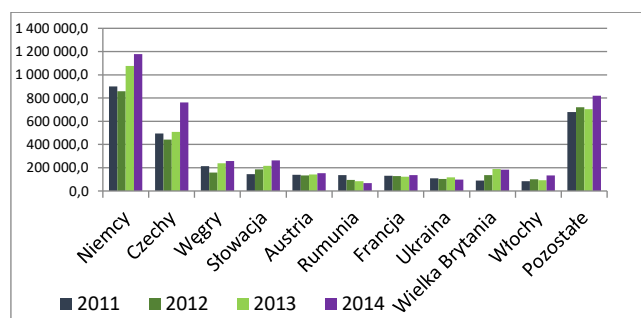


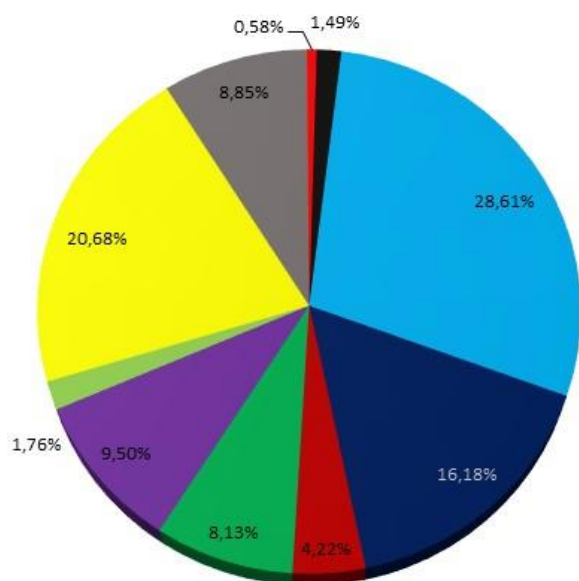
Fig. 1. Main directions and value of aluminum exports from Poland in 2011-2014 (own study based on [3])

Among all the products exported, aluminum constructions and parts accounted for more than 20% of total exports, reaching PLN 1 249 537 thousand (Figure 2). The next place was ranked by bars, rods and sections (16% of export value of PLN 977 956.9 thousand). Significant groups were also: thick and thin sheets, strips with a thickness of over 0.2 mm and aluminum foils with a thickness not exceeding 0.2 mm. Poland is the least competitive in exports of: twisted wires, cables and braided strips of aluminum, not electrically insulated.

Data analysis highlights the dynamically changing situation in the aluminum waste and scrap market. This segment is gaining more and more interest from investors from different parts of the world.

Recycling of aluminum waste and scrap is becoming increasingly popular in Poland as it is primarily a cheap source for the production of semi-finished products and aluminum products that can be used in the production process repeatedly.

*Dr hab. inż. Natalia Iwaszczuk, mgr Agata Wzorek, mgr Bartosz Łamasz, dr inż. Katarzyna Łyp-Wrońska (klyp@agh.edu.pl), dr inż. Łukasz Wzorek (lukasz.wzorek@agh.edu.pl) – AGH Akademia Górniczo-Hutnicza w Krakowie



bars, rods and sections (CN 7604)
 aluminum wires (CN 7605)
 thick and thin sheets and tapes of thickness > 0.2 mm (CN 7606)
 aluminum foil with a thickness of <= 0.2 mm; (CN 7607)
 tubes and pipes; (CN 7608)
 aluminum constructions and parts (without prefabricated buildings) (CN 7610)
 drums, cylinders, cans and aluminum boxes with a capacity of <= 300 liters (CN 7612)
 twisted wires, cables, braided strips of aluminum, not electrically insulated (CN 7614)
 household items, parts and sanitary articles of aluminium (CN 7615)
 other articles of aluminium (CN 7616)

Fig. 2. Value share of aluminum products exported from Poland in 2014 (own study based on [3])

Apart from aluminum products and semi-products in 2011-2014, Poland also exported waste and scrap metal. During this period, exports remained stable (fig. 3) and in 2014, it amounted to ca. PLN 850 million. The most important partner (as in the whole sale of aluminum products) was Germany (PLN 520 million in 2014). Significant contractors were also Austria - about PLN 70 million and Great Britain - about PLN 40 million.

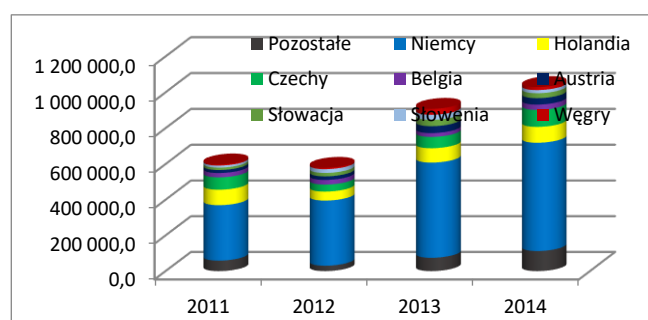


Fig. 3. Main export directions and value of aluminum scrap and scrap (CN 7602) exported to Poland in 2011-2014 (own elaboration on the basis of [3])

Barriers and prospects for development

Over the years 2011-2014, exports of domestic aluminum products increased. One can expect its further growth. This is reflected in the increasing sales of finished aluminum products to key partners, especially Germany and Czech Republic. It is also important to open Poland to new markets in countries such as Belgium, Lithuania and Slovenia. Recently, the phenomenon of copper displacement by aluminum in electrical applications, has also been observed.

Confirmation of the future development of the examined industry (including in Poland) are also numerous stock exchanges, reports and forecasts of investment banks. On the other hand, it is worth noting the recent trend in the supply of aluminum from China, which may lead to a fall in domestic sales and a worldwide decline in prices of metal products.

Secondary aluminum market research in Poland has also shown some problems in this industry. The most important of them include: excessive dispersion on the suppliers side of the raw material; high supply irregularities; noticeable difference in the quality of the recovered raw material, which results in limited possibilities of its use. Consequently, companies that have opted to manufacture secondary aluminum products face many challenges. One of them is undoubtedly the need to properly select the technology and types of products manufactured, which may be related to the safety of their use.

As far as the opportunities are concerned, they are likely to see an increasing share of recycling in metal production worldwide. In the case of aluminum, this indicator is already around 30%. Such a tendency gives an opportunity for independence from the eastern countries [4]. One of the arguments behind the recycling of aluminum is also the reduction of pollutant emissions into the atmosphere, which is very important from an environmental perspective [5]. It is important that in countries where economy is based on new technologies, these resources are essential.

For example, in Germany, aluminum is used primarily in the automotive industry, which has emerged from the crisis since 2014, with a steady increase in the number of cars registered [6]. The aluminum properties offer customers a lighter, yet solid, powerful and secure car with reduced fuel consumption. Nevertheless, the secondary aluminum industry is still in the development phase, resulting in an increase in its production.

Taking into account all these factors, as well as improving economic situation and the increasing importance of this metal in the world, it can be assumed that domestic aluminum exports will maintain a steady growth in the coming years [7-10].

Conclusions

The aluminum market in Poland is growing year by year. Exports of aluminum products are developing in many directions, although in recent years Germany has remained the most important customer. There is a steady increase in the sales of individual product groups, 1/5 of which are made of aluminum constructions and parts. Imports of aluminum waste and scrap are also growing significantly, despite some problems in this industry.

Taking into account the trend of recent years as well as the increase in the importance of raw materials in the world, further stable growth of exports of the discussed

products can be expected. This trend is evident in non-ferrous metals companies that are still developing and investing in research and development.

REFERENCES

1. Lee Bray E, Aluminium, 2013 Minerals Yearbook, USGS Science for a changing world, January 2015.
2. Rynek aluminium w Polsce 2013/2014. Raport. Nowa stal.
3. Roczniki Statystyczne GUS, 2007-2014
4. Economic Chamber of Non-Ferrous Metal and recycling. Znaczenie recyklingu złomów metali dla polskiej gospodarki, IGMiN.
5. Pikoń P., Pompa Ł., Uciążliwość ekologiczna recyklingu opakowań aluminiowych, Archiwum Gospodarki Odpadami i Ochrony Środowiska, vol 12, nr 1 (2010).
6. Alumetal – Raport biura maklerskiego, 2015
7. Bukowicz A., Galos K., Guzik K., Kamyk J., Kot-Niewiadomska A., Lewicka E., Smakowski T., Szlugaj J. „Bilans gospodarki surowcami mineralnymi Polski i Świata 2013”, Państwowy Instytut Geologiczny, Państwowy Instytut Badawczy, Warszawa 2015.
8. Aluminium, U.S. Geological Survey, Mineral Commodity Summaries, January 2015,
9. Brown T.J, Idoine N.E., Hobs S.F., Mills A.J, European Minerals Statistic 2008-12, British Geological Survey, Keyworth, Nottingham (2014).
10. Michalski B., Rynek Aluminium, Uniwersytet Wrocławski,