

THE RESEARCH OF PROBLEMATICS OF DRAWN AND ROD WIRES IN THE CZECH REPUBLIC

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Abstract

As we have realized there is a gap in the research of problematic of drawn and rod wires in the Czech Republic, we have decided to arrange a survey dedicated to this problematic. Our work has been focused on statistics of drawn and rod wire used in different areas. First area of our research was dedicated to import and export of drawn and rod wires in the Czech Republic in years 1999 - 2012. The second area of our research has been focusing on production statistics of drawn and rod wires. In the last part of our research we have tried to measure the ratio between the total production and the total volume of drawn and rod wires used in the Czech Republic. Some of the results achieved during our research can be considered rather unique and innovative and as per our information has not been published previously - for example the steady growth in the import of drawn and rod wires, as well as production ration between drawn and rod wires. Therefore we are presenting the interesting overview of this problematic that is moreover enhanced with many unique information and results looking at this problematic from the completely new angle.

Keywords: rod wire, drawn wire, import, export, production

1. INTRODUCTION

Wires in various forms can be found nearly everywhere, although we are usually not aware of this fact on a day to day basis. We are surrounded by wires, not only in our neighborhood, but wires are even part of our own body (medical use of wires). Wire can be seen, felt, heard, but in most cases, we are not even aware of the presence of wires in our surroundings.

The spectrum of utilization of wires is so wide that we have decided to conduct a research focused on this topic, from the primary research, which is what this article is about. That is why we started our research from scratch, i.e. from the production, use, export and import of wires in the Czech Republic.

Our research is unique in its focus, and we have not encountered any research of the same complexity and evaluation of the situation with regards to the statistics of drawn and rod wires in the Czech Republic within the last 10, respectively 7 years.

The information presented by us should be used by professional public, in terms of considering the development of the situation over the last couple of years, and by the general public, in order to provide an opportunity to study the evaluation of the situation in the field of wires.

2. MARKETING AND STATISTICAL ANALYSIS

Our study represents a marketing analysis and the research is based on common methods used for marketing and statistical analysis.

Marketing analysis provides basic knowledge of the market processes and the behavioral reason of the behavior of the traders. A marketing analysis also includes the tools necessary to uncover the market positions and to reveal the critical points, opportunities and trends. The outcomes of marketing analyses are usually

further used as a base for a specific market research, and may further help to define an adequate business strategy of a company and influence managerial decisions and the strategic decision-making processes, thus setting up the future of industrial companies.

Marketing activities of the individual industrial companies are usually based on a marketing analysis. It includes many important factors that contribute to the overall behavior of the participants of the market process. The key elements of a marketing analysis are: the object of marketing analysis, the objectives of marketing analysis, processes that influence the analysis and are influenced by the analysis, the selection of tools of marketing analysis, and the implementation of the outcomes of marketing analysis.

All data and information that have been collected as part of the marketing analysis need to be further analyzed and quantified in order to create a "communication bridge" - which represents a method of communication between the economic and financial system of data, information and indicators, tangible processes of technological, capacity and property relations, including the quality management system and the information system of the company that specify the storage of data and knowledge. A marketing plan includes a marketing analysis, which can be divided into 2 parts: external and internal analysis of the company. The major tools used for the purposes of marketing analysis can be practically divided into 2 categories:

- a) Tools based on exact methods (correlations and regression analyses, time series comparison, the method of least squares, inventory optimization...)
- b) Tools based on empiric methods (Porter's analysis, GE matrix, Boston matrix, market processes presentation methods such as B2B, C2C, C2B, stochastic methods, Factor analyses, strategic scenarios methods)

The choice of the tool and its implementation as part of the marketing mix depends on a wide range of factors and conditions set for the desired solutions. These factors include especially the research objective definition, the choice of methods that will be used to gather the information and how the acquired data will be further transformed into real data and findings, and the implementation method of the acquired and calculated results and their implemented into the phenomena and processes related to them [1].

We started the research by gathering all the information necessary for further processing. The data were provided to us by the company Hutnictví železa a.s. (thereinafter referred to as HŽ) and to the information acquired from HŽ also included additional information provided by the Czech Statistics Authority. These data were further processed and, using our knowledge and the statistical methods, they helped us to gain information with the required informative value - not researched before in the given context [5].

The research of this issue covers a long period of time. All parts of the research deal with monitoring and development during the period of thirteen years [1, 2, 3].

2.1 The production of drawn and rod wire in the Czech Republic

The research of this area was conducted between the years 1999 - 2012. The survey has shown that the production of rod wires in the CR is double that of drawn wires, throughout the entire monitored period of time. The production volume curves of drawn and rod wires show almost identical trend.

The production of rod wire was increasing up to 2004, however in 2005, we can witness a decrease in the volume of production below the level recorded in 1999. In 2006, the production figures of rod wires increased again, followed by a decrease continuing up to the year 2009, which was the minimum value achieved during the entire monitored period. This was caused by the impact of the global crisis on the production of rod wire in the Czech Republic, and the production of drawn wire was affected as well. In the case of drawn wire, the production was increasing up to 2007, except for the year 2004, and dropped afterwards. However, the production of drawn wire has not shown any significant recovery since the beginning of the crisis, and it below 550 thousand tons [5].

The actual figures of production of wire, both rod and drawn, are summarized in **Table 1** (The production of rod and drawn wires in the Czech Republic between the years of 1999 - 2012).

Table 1 The production of rod and drawn wires in the Czech Republic between the years of 1999 - 2012 [5]

year	Production of Rod Wire (thousand MT)	Production of Drawn Wire (thousand MT)
1999	1 127.10	510.20
2000	1 137.70	509.30
2001	1 212.40	549.20
2002	1 329.00	565.50
2003	1 380.90	612.70
2004	1 365.80	571.60
2005	1 096.50	611.40
2006	1 294.50	685.30
2007	1 206.60	742.20
2008	1 087.70	621.70
2009	994.80	473.60
2010	1 172.80	539.50
2011	1 231.60	526.50
2012	1 326.80	533.50

2.2 Export and import of rod wires

The figures relating to the export and import of rod wires showed an increase in the volume of exported material during the first five years of the monitored period. During the years 2004 up to 2008, the export was instable and a repeated increase of rod wire export has been recorded since 2009. In case of import of rod wire into the Czech Republic, there is an evident period of increase up to the year of 2007, followed by a decrease and stagnation of import, probably as the result of the global crisis.

Graphical picture of export and import of Rod wires in between the years 1999 – 2012

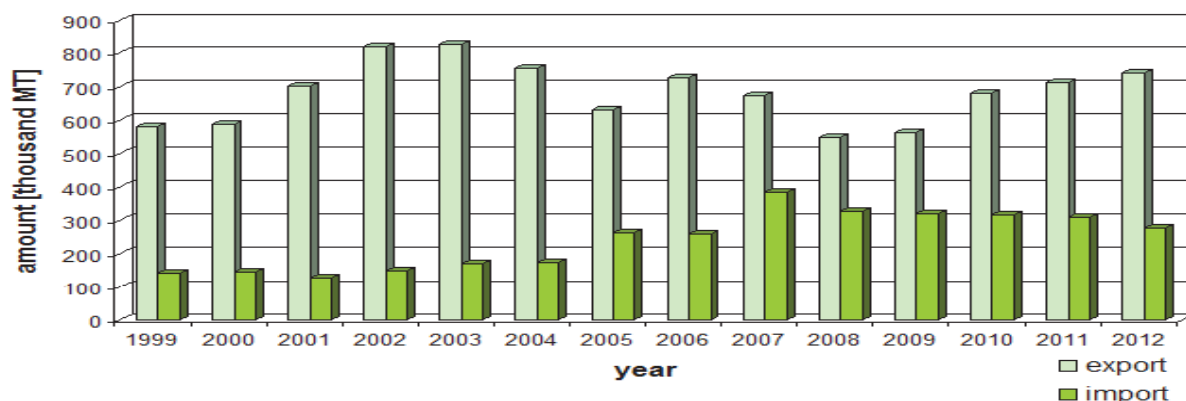


Fig. 1 Export and import of rod wires between the years 1999 - 2012 [5]

Since 2007, when the ratio of exported and imported material was the most pessimistic, the trend may receive a relatively positive rating, because we have been recording an increase in exports and stagnation in imports. The above presented facts clearly show that, up to 2007, the Czech Republic was increasing its dependence on imported rod wire each year. Since 2009, we can see an increase in the export of material and stagnation in the volume of imports. The actual values of exports and imports of rod wires are presented in **Fig. 1** (Graf of exports and imports of rod wire from 1999 to 2009). When comparing the volume of imports and the

production volume, we can see that there was a gradual increase in the volume of imports, from the share of 12.62% in 1999, to the share of 31.86% in 2007, respectively 32.05% in 2009 [5].

2.3 Export and import of drawn wire

The figures relating to the export of drawn wire do not show any significant volatility throughout the entire monitored period (differences within the scope of 275 thousand tons up to 358 thousand tons). During the same period of time, we have seen a clear trend of gradual increase in the import of drawn wires to more than triple of the original figures; from the initial quantity of imported drawn wire of 47.2 thousand tons in 1999, to the volume of 175.7 thousand tons in 2008. The results show an obvious increase in the dependence on import of drawn wire.

If we compare the volume of production and export during the monitored period, 47-74% of Czech production of drawn wire was exported.

When comparing the production volume and the volume of imports, we can see the above-described negative trend in the Czech Republic, i.e. an increase in the volume of imports compared to the total production of drawn wire in the Czech Republic, from 8.37% in 1999 to 30.99% in 2012.

All actual figures showing the evaluation during the entire period of time is presented in **Fig. 2** (Export and import of drawn wire in the period of 1999 - 2012) [5].

Graphical picture of export and import of Drawn wires between the years of 1999 – 2012

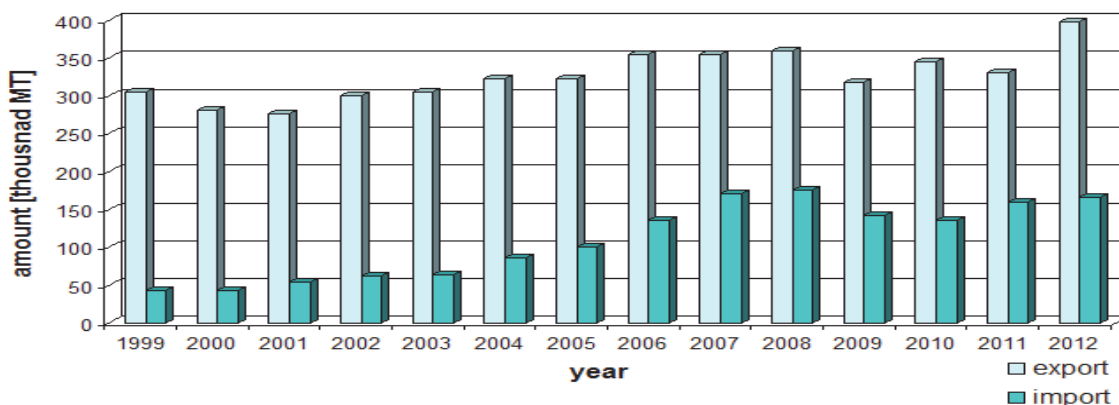


Fig. 2 Export and import of drawn wire in the period of 1999 - 2012 [5]

The following part of the research is one of the final parts of the primary research of statistical data in the area of rod and drawn wires. The research was specifically focused on the use of the individual kinds of wires manufactured in the Czech Republic in domestic market.

2.4 The ratio of the use of locally produced rod wire and the total production in the CR

The research results (presented in **Table 2**) show that between 38 to 49% of rod wires manufactured in the CR were subsequently processed in the domestic market during the monitored period, which is less than half of domestic production. It should also be noted that, during this period, the annual volume of imported material amounted to an average amount of 240.27 thousand tons, with an increasing trend towards import [5].

Table 2 The ratio of the use of locally produced rod wire and the total production of the Czech Republic [5]

year	Total Production (thousand MT)	Usage of locally produced (thousand MT)
1999	1 127.10	547.40
2000	1 137.70	550.40
2001	1 212.40	512.60
2002	1 329.00	509.50
2003	1 380.90	555.60
2004	1 365.80	612.77
2005	1 096.50	467.74
2006	1 294.50	570.05
2007	1 206.60	525.20
2008	1 087.70	540.90
2009	994.80	391.50
2010	1 172.80	485.50
2011	1 231.60	514.70
2012	1 326.80	596.90

2.5 The ratio of the use of locally produced drawn wires and the total production in the CR

The researches results (presented in **Table 3**) show us that an average of 42.8% of drawn wires produced in the CR were subsequently processed in the country during the monitored period. It should be pointed out that, compared to the fluctuations in the production of rod wire, the production of drawn wire showed an increasing trend until 2007, while the trend of the use of further processed drawn wire from domestic production virtually copies the production trend.

In this case, similarly to the previous one, we must not forget the fact relating to imported material. The average rate of import into CR has reached 109.4 thousand tons (with extreme increase in the volumes of imports from 42.7 thousand tons in 1999, up to 175.7 thousand tons in 2008, respectively 165.3 thousand tons in 2012). An interesting situation has been recorded since 2008, when the ratio of the use of locally produced drawn wire and the total production began to decline and the ratio in the last four years has been quite small [5].

Table 3 The ratio of the use of locally produced drawn wire and the total production of the Czech Republic [5]

year	Total Production (thousand MT)	Usage of locally produced (thousand MT)
1999	510.20	205.10
2000	509.30	228.80
2001	549.20	273.40
2002	565.50	266.40
2003	612.70	308.60
2004	571.60	250.20
2005	611.40	289.50
2006	685.30	331.60
2007	742.20	388.70
2008	621.70	262.80
2009	473.60	156.10
2010	539.50	194.90
2011	526.50	196.50
2012	533.50	136.90

CONCLUSION

The main goal of our research was to compile the primary statistical facts regarding the field of rod and drawn wires. The desired outcome has been achieved through this research. We have acquired new information and knowledge in the field of export, import, production and the actual use of rod and drawn wires.

The question that remains to be answered is whether the achieved results of the analyses - the individual trends, for example, showing an increase in the import of wires, represent an indicator of the negative state of affairs or not. Every person following our research will choose his/her own individual approach and view of the issue in question.

From the perspective of the Czech producers, users and the manufacturers of the final products, we should be aware of the fact that the operations related to the change of state are energetically very demanding and therefore most expensive, but bring low added value, while mechanical processing or final production is not so energetically or financially demanding, but it significantly changes the added value of the material [2, 3, 4, 5].

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