

## EXPORT, IMPORT, PRODUCTION AND USE OF WIRE IN THE CZECH REPUBLIC

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The article deals with the statistics of drawn and rod wires in various areas. The first one is focused on the statistics of export and import of drawn and rod wires within the frame of the Czech Republic during the period of 1999 – 2012. The second area of the statistical factual research will deal with the production of drawn and rod wire. The last research area compares the ratio of use and the total production of wires in the Czech Republic. The research revealed interesting information such as the increasing trend of import of rod and drawn wire, or the ratio of production of rod and drawn wire.

*Key words:* wire, statistics, import, export, production

### INTRODUCTION

Wires in various forms can be found nearly everywhere, although people are usually not aware of this fact on a day to day basis. People are surrounded by wires, not only in our neighbourhood, but wires are even part of our own body (medical use of wires)..

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

The research is unique in its focus, and authors 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 13 years. Authors used internal Czech Steel Federation statistics As the main input data source.

The information presented in the paper 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.

### METHODS AND RESOURCES

The 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 behavioural reason of the be-

haviour 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 [1].

Marketing activities of the individual industrial companies are usually based on a marketing analysis. It includes many important factors that contribute to the overall behaviour 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 [2].

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

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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. [3]

The OECD methodology expanded the concept of innovation into the area of organization and marketing and so collection and processing of statistics data in the wire industry counts as a form of innovation as well [4].

The research started by gathering all the information necessary for further processing. The data were provided by the company Hutnictví železa a.s. (hereinafter referred to as HŽ) and to the information acquired from HŽ also included additional information provided by the Czech Statistics Authority.

## EXPERIMENTAL PART

### 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, there is 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 *tonnes*.

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).

### 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 ma-

Table 1 **The production of rod and drawn wires in the Czech Republic between the years of 1999 – 2012**

Year	Thousand tonnes	
	Rod Wire	Drawn Wire
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

terial 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. Since 2007, when the ratio of exported and imported material was the most pessimistic, the trend may receive a relatively positive rating, because authors 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, there was 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 Table 2 (Exports and imports of rod wire from 1999 to 2012). When comparing the volume of imports and the production volume, there was a gradual increase in the volume of imports, from the

Table 2 **Export and import of rod wire between the years of 1999 – 2012 in thousand tonnes**

Material	Year	Thousand tonnes		
		Export (thousand tonnes)	Import (thousand tonnes)	Import (thousand tonnes)
Rod Wire	1999	579,70	142,30	142,30
	2000	587,30	145,10	145,10
	2001	699,80	129,20	129,20
	2002	819,50	147,70	147,70
	2003	825,30	171,30	171,30
	2004	753,03	174,94	174,94
	2005	628,76	262,13	262,13
	2006	724,45	258,57	258,57
	2007	671,83	384,39	384,39
	2008	549,24	325,98	325,98
	2009	560,67	318,80	318,80
	2010	680,7	317,8	317,8
	2011	710,5	309,7	309,7
2012	738,7	275,9	275,9	

share of 12,62 % in 1999, to the share of 31,86 % in 2007, respectively 32,05 % in 2009.

### 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 *tonnes* up to 358 thousand *tonnes*). During the same period of time, there was 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 *tonnes* in 1999, to the volume of 175,7 thousand *tonnes* in 2008. The results show an obvious increase in the dependence on import of drawn wire.

Based on the volume of production and export during the monitored period would be compared, 47 - 74 % of Czech production of drawn wire was exported.

When comparing the production volume and the volume of imports, it can be seen 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 Table 3 (Export and import of drawn wire in the period of 1999 – 2012).

Table 3 **Export and import of drawn wire in the period of 1999 – 2012**

Material	Year	Thousand tonnes	
		Export	Import
Drawn Wire	1999	305,10	42,70
	2000	280,50	42,00
	2001	275,80	54,30
	2002	299,10	62,20
	2003	304,10	63,50
	2004	321,40	85,90
	2005	321,90	99,80
	2006	353,70	134,56
	2007	353,50	170,73
	2008	358,89	175,70
	2009	317,51	141,13
	2010	344,6	134,6
	2011	330	158,6
2012	396,6	165,33	

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.

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

The research results (presented in Table 4) 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 *tonnes*, with an increasing trend towards import.

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

The research results (presented in Table 5) show that an average of 42,8 % of drawn wires produced in the CR were subsequently processed in the country during the monitored period.

Table 4 **The ratio of the use of locally produced rod wire and the total production of the Czech Republic**

	Year	Thousand tonnes	
		Total production	Usage of locally produced
Rod Wire	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	394,50
	2010	1 172,80	485,50
	2011	1 231,60	514,70
2012	1 326,70	596,90	

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, the imported material must be considered. The average rate of import into CR has reached 109,4 thousand *tonnes* (with extreme increase in the volumes of imports from 42,7 thousand *tonnes* in 1999, up to 175,7 thousand *tonnes* in 2008, respectively 165,3 thousand *tonnes* 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.

## 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. Authors have acquired new information and knowledge in the field of export, import, production and the actual use of rod and drawn wires.

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

	Year	Thousand tonnes	
		Total production	Usage of locally produced
<b>Drawn Wire</b>	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	742,2	388,7
	2008	621,7	262,8
	2009	473,6	156,1
	2010	539,5	194,9
	2011	526,5	196,5
2012	533,5	136,9	

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, it must be considered 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.

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**Note:** The responsible translator for English language is Petr Jaroš (English Language Tutor at the College of Tourism and Foreign Trade, Goodwill - VOŠ, the Czech Republic)