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 behaviour 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
on empiric methods (Porter’s analysis, GE matrix, Boston matrix, market processes presentation methods such as 2B2, 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 Hutníctví 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.

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Rod Wire</th>
<th>Drawn Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1,127,10</td>
<td>510,20</td>
</tr>
<tr>
<td>2000</td>
<td>1,137,70</td>
<td>509,30</td>
</tr>
<tr>
<td>2001</td>
<td>1,212,40</td>
<td>549,20</td>
</tr>
<tr>
<td>2002</td>
<td>1,329,00</td>
<td>565,50</td>
</tr>
<tr>
<td>2003</td>
<td>1,380,90</td>
<td>612,70</td>
</tr>
<tr>
<td>2004</td>
<td>1,365,80</td>
<td>571,60</td>
</tr>
<tr>
<td>2005</td>
<td>1,096,50</td>
<td>611,40</td>
</tr>
<tr>
<td>2006</td>
<td>1,294,50</td>
<td>685,30</td>
</tr>
<tr>
<td>2007</td>
<td>1,206,60</td>
<td>742,20</td>
</tr>
<tr>
<td>2008</td>
<td>1,087,70</td>
<td>621,70</td>
</tr>
<tr>
<td>2009</td>
<td>994,80</td>
<td>473,60</td>
</tr>
<tr>
<td>2010</td>
<td>1,172,80</td>
<td>539,50</td>
</tr>
<tr>
<td>2011</td>
<td>1,231,60</td>
<td>526,50</td>
</tr>
<tr>
<td>2012</td>
<td>1,326,80</td>
<td>533,50</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Material</th>
<th>Export (thousand tonnes)</th>
<th>Import (thousand tonnes)</th>
<th>Import (thousand tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod Wire</td>
<td>1999 579,70 142,30 142,30</td>
<td>2000 587,30 145,10 145,10</td>
<td>2001 699,80 129,20 129,20</td>
</tr>
<tr>
<td>2002 819,50 147,30 147,30</td>
<td>2003 825,30 171,30 171,30</td>
<td>2004 753,03 174,94 174,94</td>
<td></td>
</tr>
<tr>
<td>2005 628,76 262,13 262,13</td>
<td>2006 724,45 258,57 258,57</td>
<td>2007 671,83 384,39 384,39</td>
<td></td>
</tr>
<tr>
<td>2008 549,24 325,98 325,98</td>
<td>2009 560,67 318,80 318,80</td>
<td>2010 680,7 317,8 317,8</td>
<td></td>
</tr>
<tr>
<td>2011 710,5 309,7 309,7</td>
<td>2012 738,7 275,9 275,9</td>
<td>2013 759,1 262,1 262,13</td>
<td></td>
</tr>
</tbody>
</table>
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 result shows 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 4 The ratio of the use of locally produced rod wire and the total production of the Czech Republic**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total production</th>
<th>Usage of locally produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1 127.1</td>
<td>547.40</td>
</tr>
<tr>
<td>2000</td>
<td>1 137.7</td>
<td>550.4</td>
</tr>
<tr>
<td>2001</td>
<td>1 212.4</td>
<td>512.60</td>
</tr>
<tr>
<td>2002</td>
<td>1 239.0</td>
<td>509.50</td>
</tr>
<tr>
<td>2003</td>
<td>1 380.9</td>
<td>555.60</td>
</tr>
<tr>
<td>2004</td>
<td>1 365.8</td>
<td>612.77</td>
</tr>
<tr>
<td>2005</td>
<td>1 096.3</td>
<td>467.74</td>
</tr>
<tr>
<td>2006</td>
<td>1 294.5</td>
<td>570.05</td>
</tr>
<tr>
<td>2007</td>
<td>1 206.6</td>
<td>525.20</td>
</tr>
<tr>
<td>2008</td>
<td>1 108.7</td>
<td>540.90</td>
</tr>
<tr>
<td>2009</td>
<td>994.80</td>
<td>394.50</td>
</tr>
<tr>
<td>2010</td>
<td>1 172.8</td>
<td>485.50</td>
</tr>
<tr>
<td>2011</td>
<td>1 231.6</td>
<td>514.70</td>
</tr>
<tr>
<td>2012</td>
<td>1 326.7</td>
<td>596.90</td>
</tr>
</tbody>
</table>

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.
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.

Acknowledgement
The work was supported by the specific university researches of Ministry of Education, Youth and Sports of the Czech Republic No. SP2013/19 and No. SP2013/49.

REFERENCES

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)