

THE INVESTMENT LOCATION DECISIONS IN THE STEEL INDUSTRY

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The global dimension of the economy in general and of the steel industry in particular makes the decision regarding the location of new production facilities a challenge for managers. This paper tries to provide tools that make the decision taking process easier. It is assumed that certain tax levy rates are important to this process and they are compared and analyzed. Finally, based on this analysis this paper tries to prioritize some countries in terms of their economic attractiveness in order to identify the most suitable country for placing a steel factory.

Key words: steel industry, economic attractiveness, costs, tax levy, decisions

CURRENT CHALLENGES FOR COMPANIES IN THE STEEL INDUSTRY

Internationalization involves increasing the complexity of the activities that companies place and at the same time, the development and diversification of management tools used to manage the values of economic, political cultural elements which influence them.

Currently, the metal processing industry faces many challenges. In a survey conducted in 2008 by the prestigious magazine *Industry Week (Salary Survey)* [1], there were registered approximately 1 000 responses that seek to answer the following question: “What is the biggest challenge facing the manufacturing industry today?” These responses can be grouped into several categories; of these concerns, the most important depending on the frequency of occurrence are: issues of employees, global competition, volatility of commodity prices, taxes, environmental concerns and finally, financing issues. The challenge most frequently mentioned concerns the workforce, namely the aspects of aging, skills and quality of human resources (“finding good people”) labor costs, etc., while the second most frequently mentioned challenge can be expressed as one word - China: Chinese competition, the prices applied, the Chinese quality and last but not least - the economic downturn specific to China [2]. Taxes are another significant challenge for manufacturing industry. Work-related duties, income tax, and value added tax (VAT) are the issues that managers must consider in substantiating strategies and investment decisions. Environmental concerns relate to the environmental footprint caused by manufacturing industry. Optimizing energy consumption and pollution characteristic

of this industry are just two of the issues that managers should focus on. In terms of funding, another challenge for manufacturing managers is developing an optimal scheme to finance their projects.

This paper aims to analyze the attractiveness in relation to the production of steel in the European Union countries, in order to identify the most suitable country for placing a steel factory. To this end, will be identified the main tools for substantiating the decision to place a steel factory, after which there will be selected countries which will be the subject to a comparative analysis.

Finally, the conclusions of the analysis will be discussed with a focus on identifying the most suitable country for placing a steel factory.

POSSIBLE TOOLS TO GROUND THE INVESTMENTS PLACING DECISION

One of the methods used by the operational managers to base their decisions on the location of production facilities in a given country is the factor analysis. For example, the managers will position in Table 1 all the features that they consider important in a location for an investment, weighting these characteristics and ultimately achieving a score for each potential site.

Thus, for an optimal placement of the steel production facilities, the characteristics can be the following:

Table 1 **Factor analysis model [3]**

Factor	Rating	Weight	Factor-rating
Energy availability	60	0,3	18
Labor availability	80	0,2	16
Transportation	40	0,2	8
Supplies	90	0,1	9
Taxes and regulations	70	0,1	7
Infrastructure	70	0,1	7
Overall Factor-Rating	—	—	65

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When completing this table in the second column are written the scores from the decider who grants them on each feature separately, and in the fourth column, weighting the scores from the second column the decider shall obtain in the lower left side, the total score of the evaluated location. In the same way all the alleged sites shall be assessed, and finally it shall be decided which of these is the best.

This paper will not focus on all these characteristics, considering them all to be met, but it will focus on the components related to the taxes. The impact it may have on the other categories will not be denied, but it will be considered an investment on decision making based on tax considerations. In this sense will be isolated from the multitude of tax items attached to economic activities only those already mentioned: taxing labor income tax and value added tax. All these attributes are the comparative advantages that a company may undergo in relation to other operating on the market.

IDENTIFICATION OF THE COUNTRIES TO BE ANALYSED

Tax competition is a concept that concerns the economic world for some time. Reducing the approach to one of the simplest economic concepts - market price – it is relatively easily observed that this is “tainted” by certain synthetic or artificial components. These are the tax elements of the price: taxes and contributions. Authorities in a dichotomous situation, being concerned to protect the indigenous traders in relation to foreign competitors, on the one hand, and to stimulate exports, on the other hand. In the first case, there is the attempt eliminate or reduce the comparative advantages that foreign businesses might have on the indigenous people, and in the second case it is the induction of such advantages among economic operators engaged in export

Looking at things from the perspective of managers who must base decisions on location or relocation of an investment, they are not in a position to influence trade policy of a state, but in a position to analyze market opportunities. In this respect, tax competition is a great help. This paper provides data and analyzes differences in tax policies, and social, referring here to the establishment of minimum wages. Once raised the minimum wage should be noted that the European Union, there are four classes each containing a number of European Union countries, depending on the size of the minimum wage [4]. The first class includes countries that have a minimum wage below 500 Euros in the second class the minimum wage level between 500 and 1 000 Euros and the third class consists of those, few indeed, guaranteed minimum wage income of 1 000 Euros. There is also a fourth class includes countries where this is not covered. In the latter category are considered economically developed countries: Denmark, Germany, Italy, Cyprus, Austria, Finland and Sweden.

This paper being oriented towards highlighting countries that have the lowest operating costs of busi-

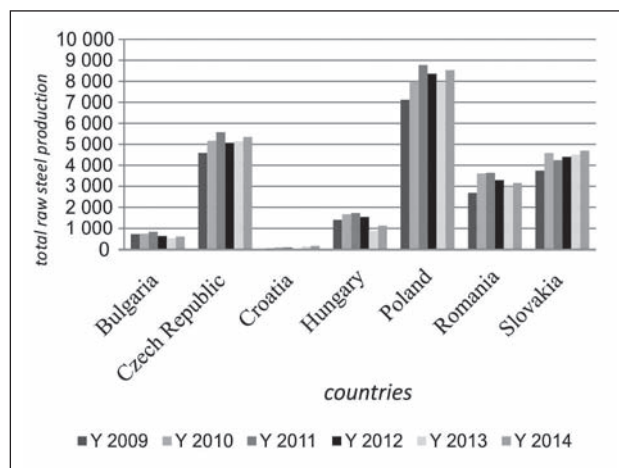


Figure 1 Total raw steel production ('000 metric tonnes) 2009 – 2014 [6]

ness will not take into account only countries in the first class. These are the following: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

To further narrow the analyzed spectrum will explore the experience that these countries have in the steel production. The data provided by EUROFER [5] on the production volume of raw steel, reveals that only seven of these ten countries have experience in this area, of which only four have a level of production that can be considered significant narrowing thus, the research area in the following countries: Czech Republic, Poland, Romania and Slovakia. Figure 1 provides the necessary arguments to support this assertion.

COMPARATIVE ANALYSIS OF THE FOUR COUNTRIES FROM THE PERSPECTIVE OF TAX ISSUES CONSIDERED

The 2014 European Report Attractiveness Survey of the Ernst & Young Company [7], shows that in Central and Eastern Europe, the most attractive three countries in terms of foreign investment are: Poland, Czech Republic and Romania. These three countries, along with Slovakia, are included in the comparative analysis presented in this paper. As a first step of a comparative analysis, there will be analyzed the levels of tax issues set out above. These tax issues can turn into comparative advantages that the managers may consider in the decision making related to the investing process.

In this regard, there will be studied the tax elements, characterized by a significant degree of use: VAT, income tax and tax items (work-related social security contributions for health insurance, for unemployment benefits, etc.). These latter aspects will be treated as a global tax burden related to the work process, but will be considered only those that are borne by the employer, because those that are incurred by the employees are not subject to a substantiation investment decision.

For the beginning, there will be presented the abbreviations to be used during the analytical approach, as it

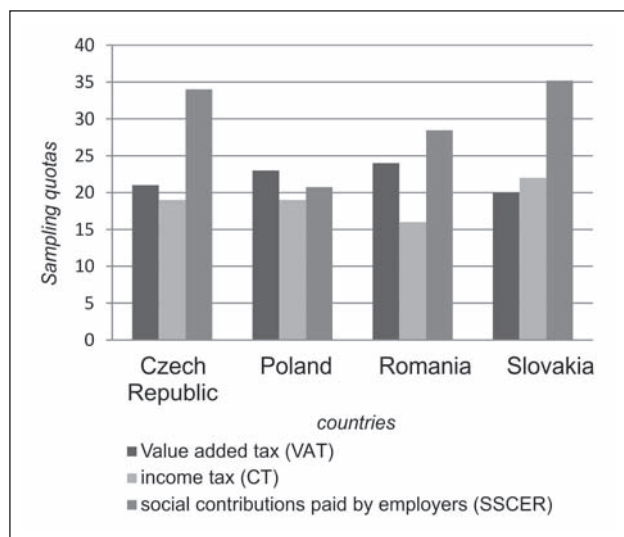


Figure 2 Sampling quotas for VAT, CT and SSCER, for the year 2014/ %

follows: value added tax - VAT; income tax - CT; and work-related social contributions which are paid by employers - SSCER [8]. For a clearer picture, the data on these compulsory levies will be presented in Table 2.

Table 2 Sampling quotas for VAT, CT and SSCER, for the year 2014 in the 4 analysed countries / % [9]

COUNTRY	Value added tax (VAT)	Income tax (CT)	Social contributions paid by employers (SSCER)
Czech Republic	21	19	34
Poland	23	19	20,74
Romania	24	16	28,45
Slovakia	20	22	35,2

Based on the data contained in Table 2, it Figure 2 will be made in order to provide a clear view of the hierarchy of the countries studied, in terms of the three tax levy considered.

Looking at Figure 2, and assuming that the most suitable country for placement of steel production facilities is one that has the lowest rate of call of the three taxes, it can be said that Poland would be most appropriate.

This affirmation may be true only at first glance. Indeed, referring to the data in Table 2, it can be seen that the only sampling rate to be charged less in Poland, compared to other countries surveyed, is SSCER, more precisely the work-related tax levies. Since studying them together, the three tax elements may lead to distorted interpretations, but also appreciating CT and VAT as having a relatively low amplitude variation sampling rates, the approach may continue focusing especially on work-related social contributions and paid by the employers.

In this respect, the recourse must be to a set of data on which to start the selection of countries to be analyzed, more precisely the minimum wage set by their governments. If to the values of these salaries the rates of social security contributions are applied, the data in Table 3 is obtained.

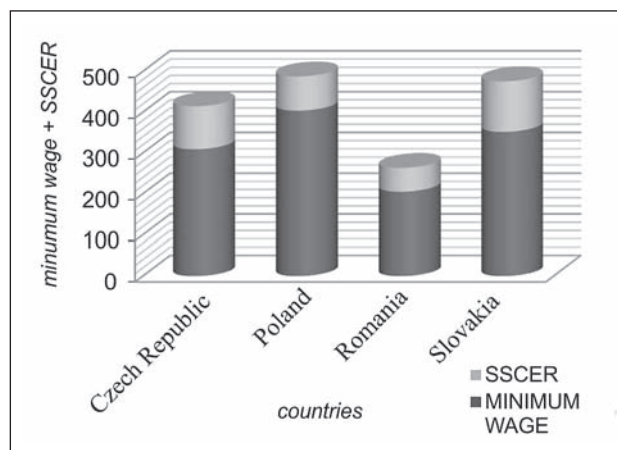


Figure 3 Minimum wage plus related SSCER/ EUR

Table 3 Minimum wage established in the countries analysed and related SSCER/ EUR [10]

COUNTRY	Minimum wage	Social contributions paid by employers (SSCER)
Czech Republic	310	105,27
Poland	404	83,82
Romania	205	58,42
Slovakia	352	123,90

Based on the data in Table 3, it was developed Figure 3, which illustrates the minimum cost of the employer on labor force, in each of the four countries considered. Based on the minimum cost of labor, the hierarchy can be as follows: Romania, Czech Republic, Slovakia and Poland.

The data illustrated in Figure 3 can be correlated with the sampling quotas of income tax (CT) and value added tax (VAT), presented in Table 2. Because the value added tax (VAT) has an indirect influence on costs, it can be considered that the income tax (CT) is more important. Based on this association, a ranking of the four countries in descending order of costs is: Romania, Czech Republic, Poland and Slovakia. Conclusions are discussed below.

CONCLUSIONS

On the basis of the data presented, the idea that all four countries included in the analysis present certain qualities to be eligible as potential sites for steel factories, can be advanced. Although the Czech Republic and Slovakia have no access to the sea, a benefit which Poland and Romania enjoys, which relatively is a disadvantage in terms of supply, because they are situated on a higher level of market share and the volume of the steel production in these countries being above that of Romania; this is visible in Figure 1.

However, according to the report elaborated by Ernst & Young, on the economic attractiveness, it is found that the values of attractiveness for the first two teams, Poland and the Czech Republic, is on a downward trend over the previous year, while the figures for Romania are on an upward trend.

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