

THE DEVELOPMENT OF SELECTED INDUSTRIAL INDICATORS IN SLOVAKIA IN 2006-2016

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doi:10.22306/al.v4i4.70

Received: 08 Dec. 2017

Accepted: 22 Dec. 2017

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Keywords: mining industry, Slovakia, underground mining, surface mining, development**Abstract:** The export industry belongs in Slovakia among industries that are at the start of the industrial chain. Its primary task is to provide raw materials for other industries [1]. In the 1990s there was a decline in mining. The decline was mainly due to the drop in coal, ore and salt mining. As a result of the liquidation of the mines, the unemployment rate was rising rapidly. However, surface mining did not show a sharp decline. The aim of the article is to point out the development of the mining industry in Slovakia at present. The development of the mining sector in the years 2006-2016 was monitored by industry indicators such as the evolution of mining, sales, inflation rates, the number of employees, average nominal wages, and so on.**1 Introduction**

The mining sector differs from other sectors in Slovakia by being fully privatized. According to Mining Act No 44/1998 Coll. on the protection and exploitation of mineral resources, minerals are divided into reserved and non-reserved. From a strategic point of view, raw materials are considered as the primary source of input for production processes, in this respect, they have an important position for the further development of the economy of the Slovak Republic. According to the article 4 of the Constitution of the Slovak Republic, the internal wealth of government-owned raw materials. The state owns exclusive deposits of mineral resources. Non-reserved minerals (eg building stone, gravel, and brick raw materials) are part of the land pursuant to § 7 of the Mining Act. The state, being the owner of exclusive deposits, creates, in accordance with valid legislation, the premises and conditions for business entities in their use [2].

The mineral resources of the Slovak Republic is non-renewable, so its constant protection and efficiency in exploitation are taken care of. This is due to a thorough analysis of domestic raw materials, which we have also focused on this article.

2 Analyses of the development of mineral resources in the Slovak Republic

In the Slovak Republic, mining companies use deposits of commercial minerals on the surface, in the underground, or the mining activity is carried out in a combined manner

using the most suitable mining methods [3], [8]. Among the factors that influence the choice of the mining method are the mining and geological conditions deposits of minerals and their impact on the environment, the surrounding countryside and the nature surrounding the bearing [4]. In Slovakia, the most used deposits of energy raw materials are ores, building materials, gravel and sand, limestone, brick raw materials and other raw materials (perlite, bentonite, talc, etc.)

In the year 2016 942 mineral deposits were recorded, of which 564 were exclusive deposits and 378 deposits of non-reserved minerals.

Mining in Slovakia in the monitored period 2006 - 2016 has increased since the extraction of minerals on the surface since 2006, with the opposite trend being recorded in the mining of minerals in the underground. Figure 1. Mining has reached almost 40 million tonnes in 2016 (39 098, 9 kt), an increase of 2.33 mil. tons, such as the average for the last 4 years.

The extracted minerals from the underground were 2 761.35 kt in solid form in 2016. Thus, compared with 2015, there was a decrease in the mining of minerals from the underground by 187,111 kt. The decrease in underground mining is recorded in Figure 2 for the period 2006-2016 [3].

In 2016 a decrease was recorded also in surface mining, when a total of 36 337,55 kt of raw material was extracted, a drop of 3571,03 kt see Figure 3. Mining and processing

THE DEVELOPMENT OF SELECTED INDUSTRIAL INDICATORS IN SLOVAKIA IN 2006-2016

Martina Vasilková Kmecová; Lucia Domaracká; Marcela Taušová

of most non-metallic and building materials (magnesite, limestone, dolomite, gypsum, building stone and the like) cover a substantial amount of domestic consumption,

which is of positive economic importance. Conversely, the extraction of fuel-energy and ore rawmaterials, which is permanently covered by imports in Slovakia [3].

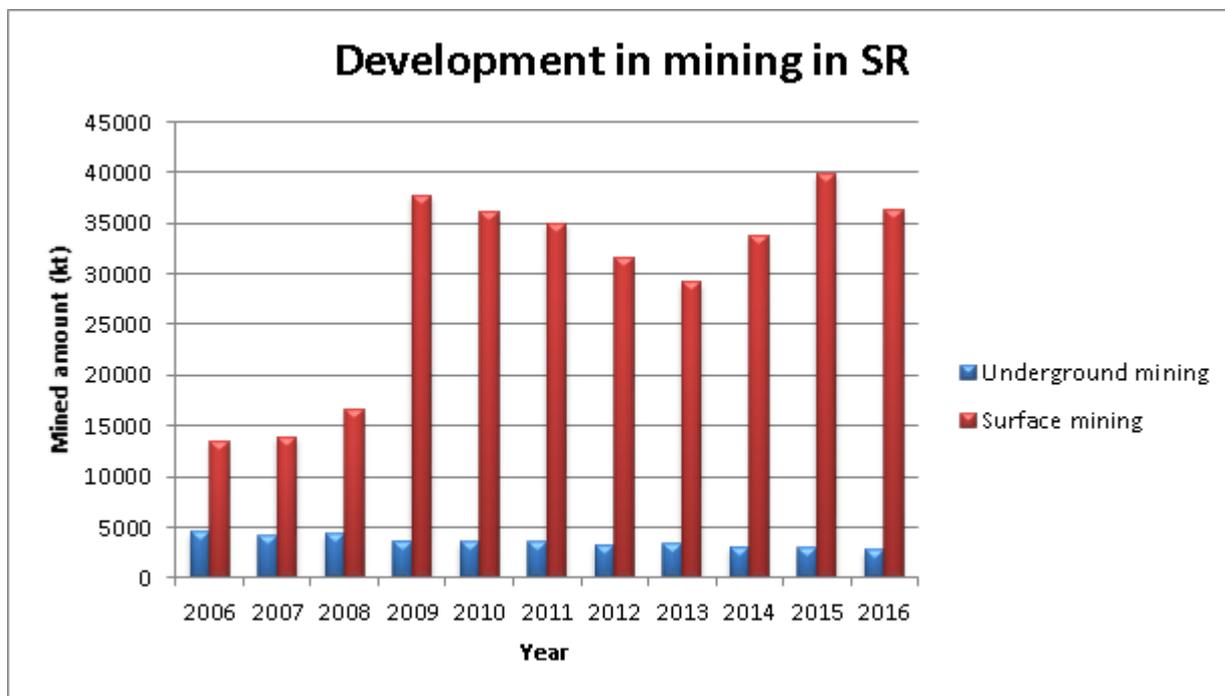


Figure 1 Development in mining in SR in reported period 2006-2016 Štatistický úrad SR, [Online], Available: <http://www.statistics.sk/>, [10 Dec. 2017]

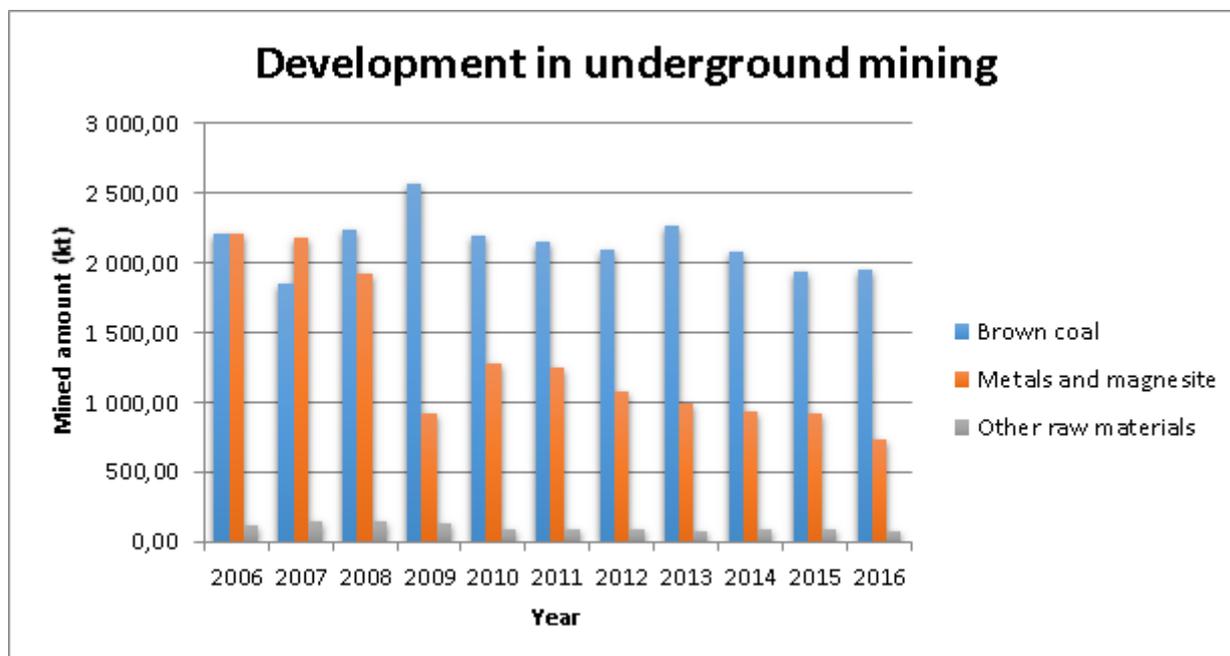


Figure 2 Development in underground mining in SR in reported period 2006-2016 Štatistický úrad SR, [Online], Available: <http://www.statistics.sk/>, [10 Dec. 2017]

THE DEVELOPMENT OF SELECTED INDUSTRIAL INDICATORS IN SLOVAKIA IN 2006-2016

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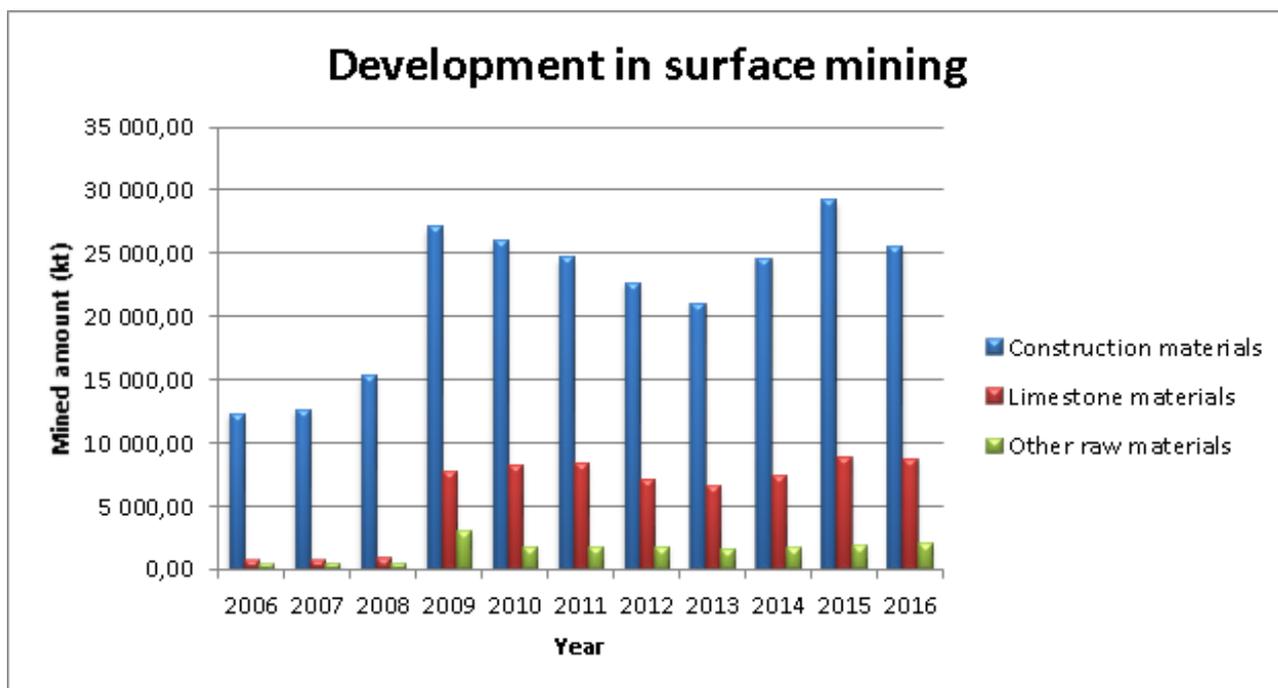


Figure 3 Development of surface mining in SR in reported period 2006-2016 Štatistický úrad SR, [Online], Available: <http://www.statistics.sk/>, [10 Dec. 2017]

In non-ore and construction raw materials, the increase in Figure 4 was recorded. In 2016, the share of ore mining in inventories amounted to 0.01%, for energy raw materials 0.17%, for construction materials 0.58% for non-manganese raw materials 0.08% [5].

In 2016, the geological reserves on exclusive deposits reached 18,790 mil. tonne with the main predominance of

non-manufactures (14 795 million tonnes) (Figure 5). In the course of 2015, there was a slight increase in the extraction of non-metallic and construction raw materials. In the long run, there has been a clear decline in the extraction of ore and a decrease in the extraction of energy raw materials.

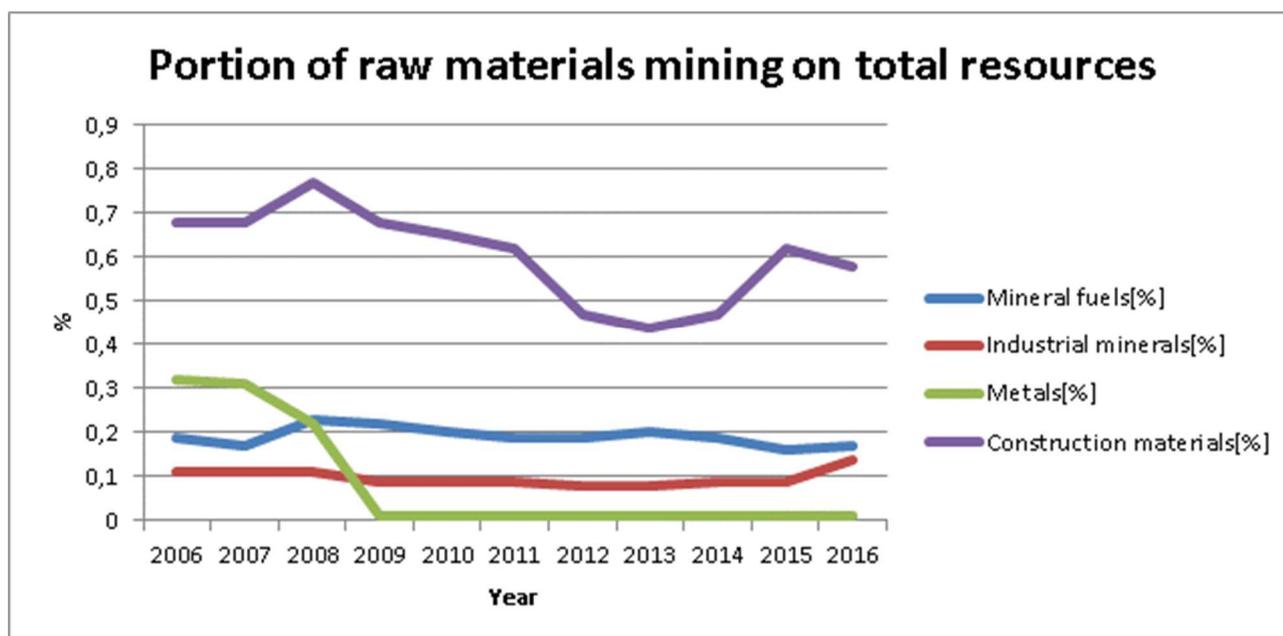


Figure 4 Portion of raw materials mining on total resources in SR in reported period 2006-2016 Celkové geologické zásoby nerastných surovín na výhradných ložiskách [Online], Available: <https://www.enviroportal.sk/indicator/detail?id=181>, [10 Dec. 2017]

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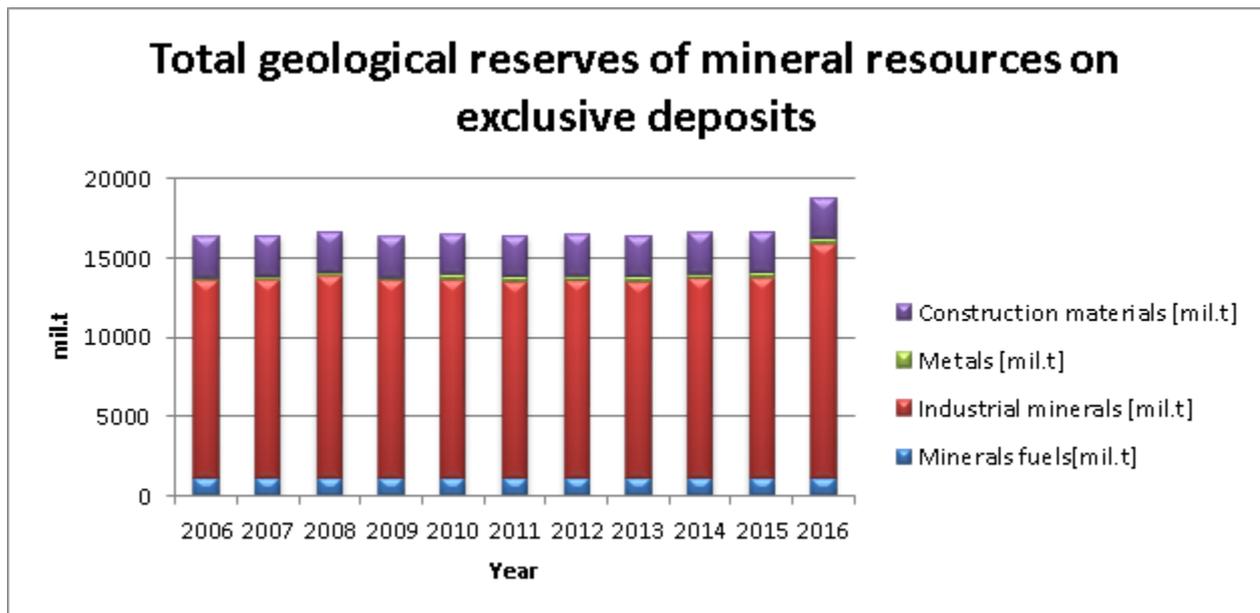


Figure 5 Total geological reserves of mineral resources on exclusive deposits in SR in reported area 2006-2016 Celkové geologické zásoby nerastných surovín na výhradných ložiskách [Online], Available: <https://www.enviroportal.sk/indicator/detail?id=181>, [10 Dec. 2017]

GDP in the mining industry

The export industry contributes very little to the GDP creation of the Slovak Republic, about 0.4% [6] (Table 1). It can be said that business in this sector is not particularly attractive due to the financial difficulty needed to start a business and the amount of necessary administrative equipment without which it is not possible to start not only the mining itself but also the geological survey of the mining area.

This trend can often be caused by a lack of investment needed to realize the exploitation. Therefore, also on the basis of that index and individual sales, it can be concluded that the large impact on the production of the mining company has an inflow of foreign direct investment that can help companies overcome the risk period. Lower revenues may be signs of increased competition between mining companies not only at home but also abroad (Figure 6). The world market is still entering businesses with similar products, which are lower, but often of lower quality.

Production and sales in the mining industry

Table 1 Development of production in the mining sector in SR in reported period 2006-2016 [7]

| Mining | | | | | | | | | | | | |
|--------------------------------------|--------------|------|------|------|-------|------|------|------|------|-------|-------|------|
| Industrial Production Index Secure | | | | | | | | | | | | |
| | Code SK NACE | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| romr = 100 | 5.9 | - | - | - | 101 | 99,8 | 98,7 | 96,9 | 99 | 102,9 | 100,4 | 96,9 |
| average month of the year 2010 = 100 | 5.9 | - | - | 99,1 | 100,2 | 100 | 98,7 | 95,6 | 94,6 | 97,4 | 97,8 | 94,8 |

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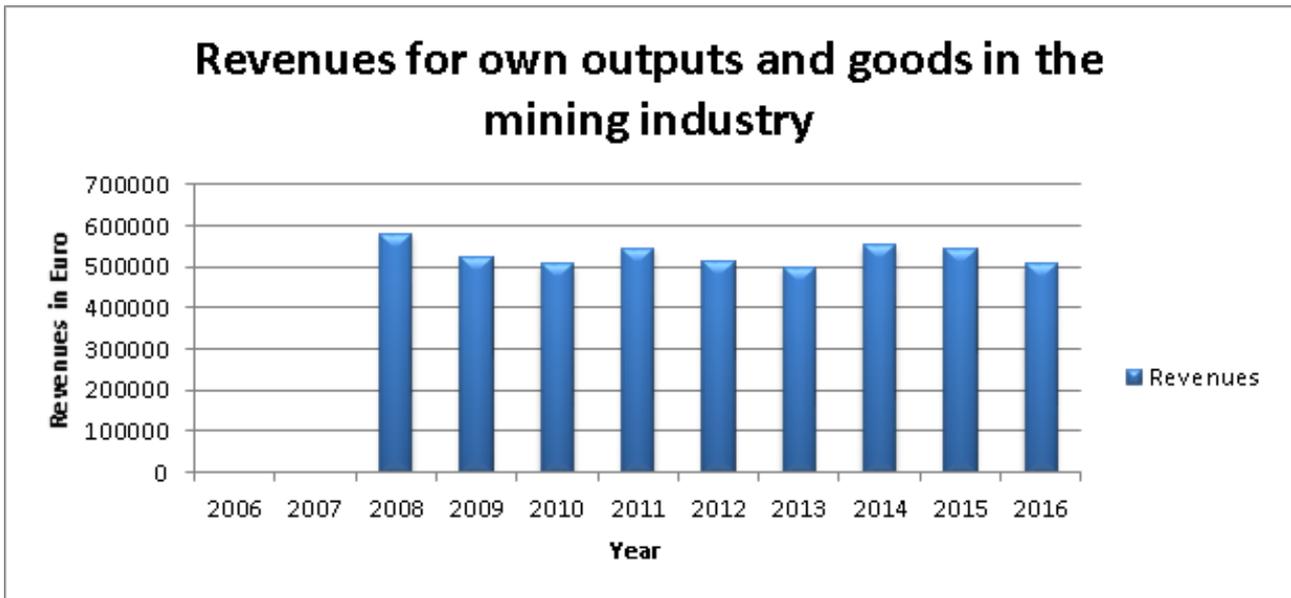


Figure 6 Development in revenues in mining sector in reported period 2006-2016 [7]

Inflation rate and annual growth of prices

The annual rate of inflation measured by the harmonized index of consumer prices reached a negative value of 0.5% in 2016. The price index of industrial products in the mining and quarrying sector is declining since 2014. Inflation in the last 5 years has been considerably rising but also declining. Figure 7 [7].

The rising cost of individual products may negatively affect the company's product sales. This, however, can be reduced by the increasing quality of the products. Therefore, there may not be any decline in sales as buyers make purchases not only for the price but also for the quality and specific features of the product.

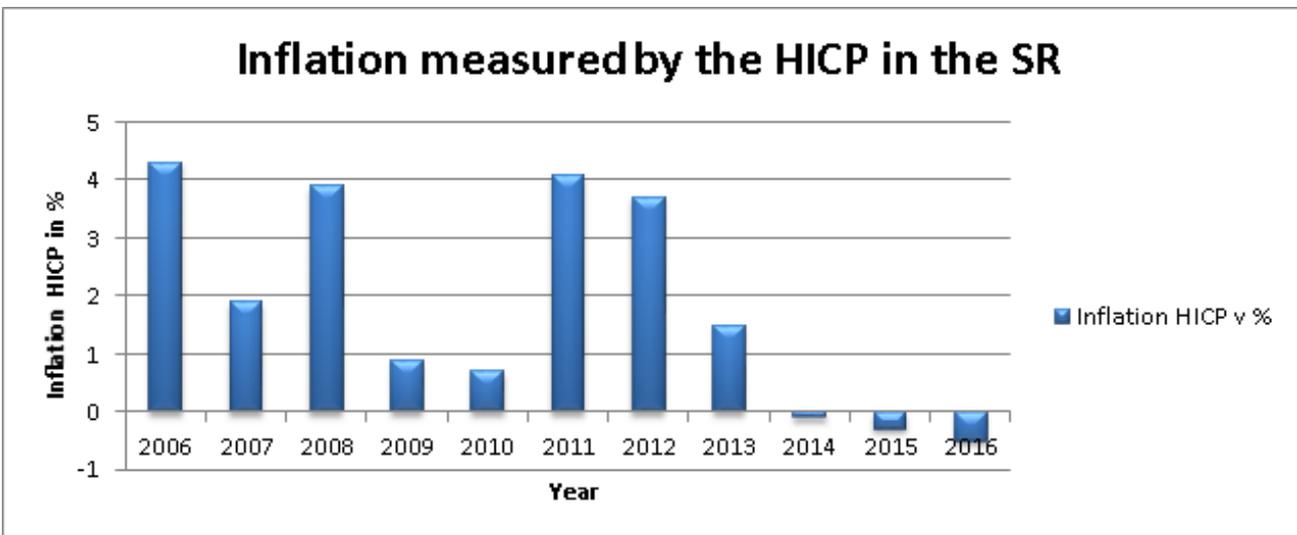


Figure 7 Development of inflation in SR in reported period 2006-2016 [7]

Number of employees and average monthly wage

According to the employee and average monthly wage figures (Figure 8, Figure 9), between 2006 and 2016, it can be concluded that the average monthly wage increased with a lower number of employees [7]. Again, this perception may be misleading because the average monthly wage was not affected by the decreasing number of employees, but rather by the increasing average wage in the Slovak

Republic. The gradual reduction in the number of employees may be due to a potential downturn in mining or, rather, the replacement of the labor force with newer technologies.

Based on the amount of average monthly salary in the mining industry, it can be obvious that for workers, the work in the mining industry is an attractive offer. An advantage for mining companies is to earn higher wages,

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but the disadvantage is the inability to employ a larger number of employees.

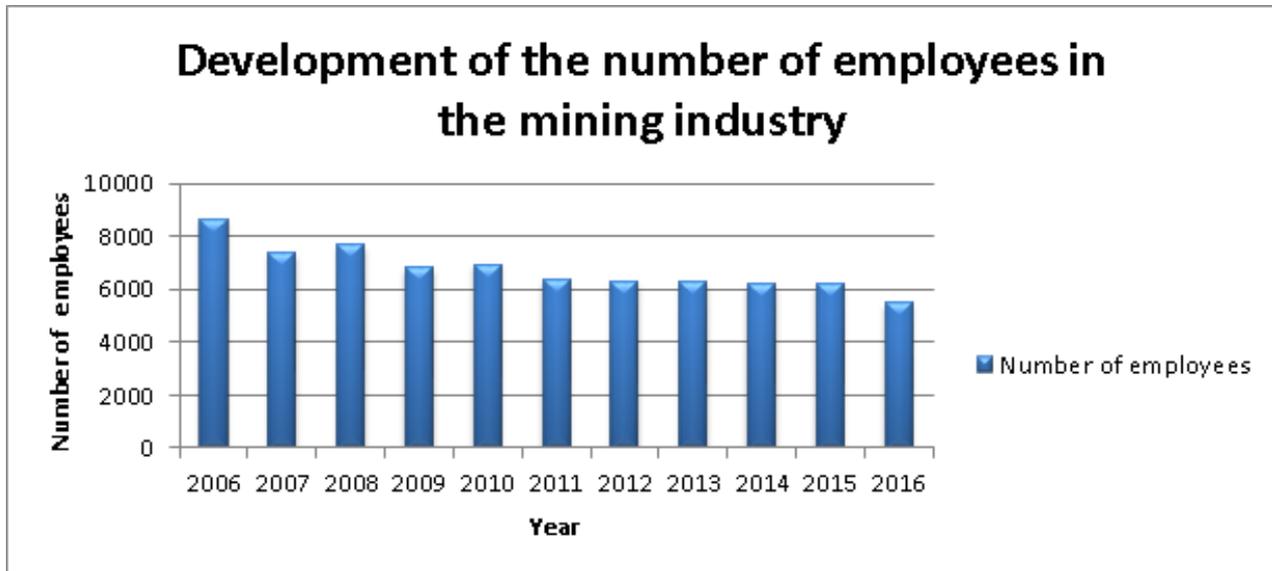


Figure 8 Development of the number of employees in the mining industry in reported period 2006-2016



Figure 9 Development of The average nominal monthly wage in the mining industry in reported period 2006-2016 [7]

Conclusions

An analysis of the development of mining in the monitored period 2006-2016 shows that there is still a decline in mining activity. The attenuation of the mining activity is influenced by several factors. These include the effects of the economic crisis in Slovakia and the world, as well as a gradual increase in input prices in the mining and mining activities. The consequence of this negative economic and economic situation is the gradual liquidation of mining operations. This negative impact negatively affects not only the very low share of the extractive industry itself on GDP but also the social situation of employees in mining organizations. Indicators that show a

favorable development include improving the quality of the environment, especially in the vicinity of former mining organizations. One way to achieve good environmental protection is to tighten up the criteria for assessing environmental impacts already when permitting mining or mining activities.

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THE DEVELOPMENT OF SELECTED INDUSTRIAL INDICATORS IN SLOVAKIA IN 2006-2016

Martina Vasilková Kmecová; Lucia Domaracká; Marcela Taušová

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Review process

Single-blind peer review process.