

# COMPARISON OF CHANGES IN SECTORAL STRUCTURE OF FIRMS IN THE CZECH REPUBLIC AND IN THE SLOVAK REPUBLIC

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## Abstract

*The aim of the paper is to analyse and compare changes in the sectoral structure of firms in the Czech Republic and the Slovak Republic in the period 2010-2016. The sectoral structure of firms is one of the important determinants of employment not only at the level of the country but also at the regional level. In the past, it was typical for both countries „regional specialization“. In practice, this meant that the regions were often associated with a dominant firm that influenced the life of the whole region (for example Košice - VŠŽ, Šála - Duslo, Kopřivnice - Tatra, Hlinsko - ETA etc.). Such a mono-structural economic basis for the regions has brought higher labor productivity and associated less costs, but on the other hand, the region has been economically unstable. Economic changes in both countries over the past 25 years have brought major changes for the economy. From the centrally planned economy, both countries moved to the market economy, which to bringing them also major changes within the sectoral structure of firms. The transition was characterized, in particular, by the downturn in agricultural production and the transition from the heavy and armament industry to the processing industry. Further changes in the sectoral structure have taken place at the time of the enlargement of the European Union of the new member countries and the associated globalization of the economy. Based on the economic classification of CZ - NACE and SK - NACE, we evaluated the number of firms in selected sectors in both countries. The orientation of the Slovak economy in the last period especially on the automotive industry and the related activities caused to the fastest increase of the number of firms and the number of employees in this industry. Increase of employment in industry has also brought*

*increase of employment in services, particularly in accommodation and catering. Similarly, in the Czech Republic, we are seeing an increase of firms in industry and services, but it is interesting that despite the decreasing number of employees in agriculture, the number of firms in this sector has increased.*

**Keywords:** *agriculture, industry, sectoral structure of firms, services*

**JEL classification:** *O11, A11, J21*

## 1 Introduction

Korec (2009) notes that in the period of social transformation, has occurred in the countries of Central and Eastern Europe changes in the sectoral structure of the economy. Changes in the structure of the economy by three of its basis sectors are well visible not only at the state level but also at the level of its individual regions. It also confirms Zygmunt (2018) who say that the effects of the transition of the economy depends on business activity in the country. The entrepreneurial activity is considered as one of determinants of economic development in market economies. One of the important factors that determine business activity in the space is their competitiveness. Hamplová (2012) notes that competitiveness is strongly influenced by the conditions in which businesses of varying sizes at national and international level are operating. In particular, they are affected by the laws that determine their activities, limiting their activities or encourage the founding of new businesses and also create space for international trade. Rusnák and Lehocký (2016) are considered the basis for the condition of localization of the firms in the space is the factor of transport costs between inputs and outputs. These assumptions have evolved into a theory of agglomeration advantages in neoclassical economics where the concentration of economic activities is explained by a combination of three elementary factors: sufficient skilled labour network of specialized companies and a common infrastructure and knowledge. Piecuch and Niewiadomski (2016) think that an important development factor of localization is the financial support from the EU funds, because they say that the economic crisis, which in recent decades affected the Western world revealed the fact that the countries with low level of economic development, structural problems, bad situation of public finances and the labour market, without the help of EU would face on big problems. The next few years should answer the question whether the structural changes will bring those countries a dynamic economic growth.

## 2 Data and methodology

The aim of the paper is to analyse and compare changes in the sectoral structure of firms in the Czech Republic and the Slovak Republic from the point of view of regional employment in the period 2010-2016. We analyse the development of the number of firms in selected sectors at the level of the country, but also in individual regions. The basis for the analysis was the inclusion of firms according to classified CZ - NACE and SK - NACE into the category of agriculture, industry, accommodation and catering services. These firms represent the representation of all sectors of the national economy in the economy of both countries. The data for the analysis were obtained from publicly available databases Czech statistical office and Statistical office of the Slovak Republic. We used a method of mutual comparison and the results were processed in MS Excel in the form of graphical outputs.

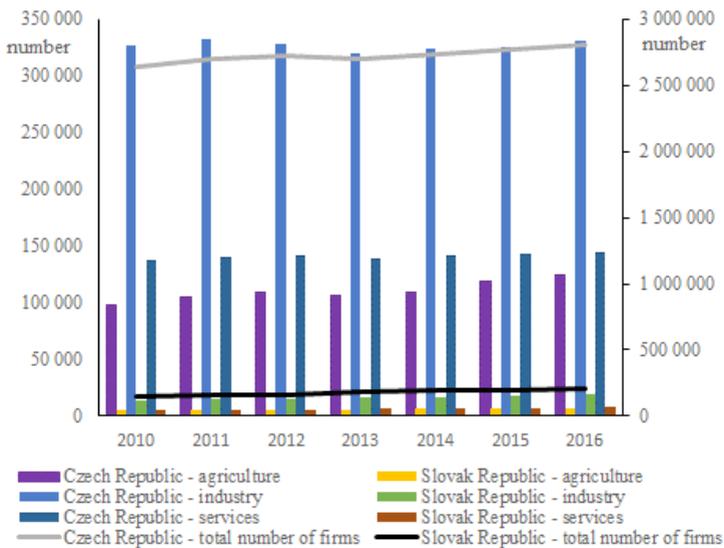
## 3 Results and discussion

Within the analysed period, the total number of firms in both countries did not change significantly. In the Czech Republic, with the exception of the year 2013, we recorded an increasing trend of firms every year. A similar trend is also observed in the Slovak Republic, but there was a slight decrease of the number of firms recorded in 2015. Konyova and Bartova (2015) note that generally, the Western part of the Slovak Republic, including Bratislava (capital) region has always been more economically developed. They found, that the Slovak economy was more specialized before the Slovak Republic accession to the EU. After the accession, there has been a diversification of the economic base and the most diversified was Bratislava region. The most specialized was the Western Slovakia economy. Industry concentration had been declining significantly in the Western Slovakia, while growing in the Middle and stagnating in the Eastern, less developed part of the country and in Bratislava region.

In terms of sectoral structure in both countries, industrial firms represent the biggest share of the national economy (Czech Republic - 11.76%, Slovak Republic - 9.11%). The biggest transformation has passed the agriculture firms in both countries. Nevertheless, their number, with the exception of 2013 in the Czech Republic and except in 2018 in the Slovak Republic, has increased annually (picture 1). But Kalusová and Badura (2016) they found out that there were significant differences in the structure of funding sources of Czech and Slovak agricultural enterprises. Slovak agricultural enterprises are struggling with a high indebtedness and an inappropriate structure of external funding sources (a decisive share

of liabilities consists of short term funds, while the share of long-term external funds is minimal). Such high level of indebtedness, in conjunction with the low share of long-term financial sources, requires more attention to ensuring the solvency of those Slovak firms. Another situation is in the service sector. While in the Czech Republic we are seeing a slight decrease of the number of these firms in 2013, the number of such firms in the Slovak Republic has increased annually. Agriculture has a significant share on creation of the rural economy, which is being created outside the huge cities and keeps forming the primary economy which produces the material goods consistently connected with industry and business (Rovný, Nagyová, 2007).

**Picture 1 Development of the total number of firms and number of firms in selected sectors in the Czech Republic and Slovak Republic in the period 2010-2016**



*Source:* Czech statistical office and Statistical office of the Slovak Republic, own processing.

In the context of the Czech economy in the year 2013 present a continuing recession. In 2012 the final expenditure of consumption and also investment activities caused the decline of GDP, in the 2013 there was a slight increase of final consumption expenditure, but the investment activities dropped. The fall in GDP also affected foreign trade in both years. It had a positive effect on GDP in 2012

but in 2013, contributed to its decline by a year-on-year deterioration of the import and export balance.

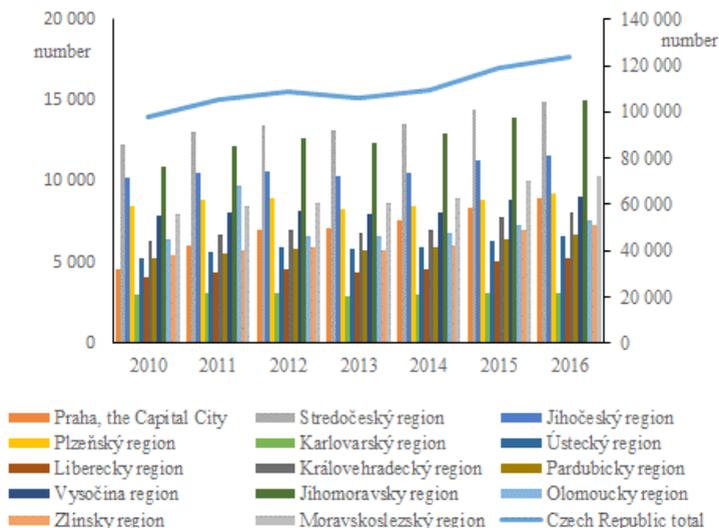
Picture 2 **Development of the total number of firms in the Czech Republic and individual regions in the period 2010-2016**



Source: Czech statistical office, own processing.

Within the regional localization of firms in the Czech Republic their biggest representation are in the region of Prague, the Capital City. On the contrary, the smallest number of firms are established in the Karlovarský region. This low number of firms is mainly determined by the relatively small size of the region (the size of region is represent 4.6% of total size of the Czech Republic). Compared to 2010 and 2016, we record the growth of the total number of firms, with the exception of Plzeňský, Karlovarský, Ústecký and Liberecký regions (picture 2).

Picture 3 **Development of the total number of firms of agriculture in the Czech Republic and individual regions in the period 2010-2016**



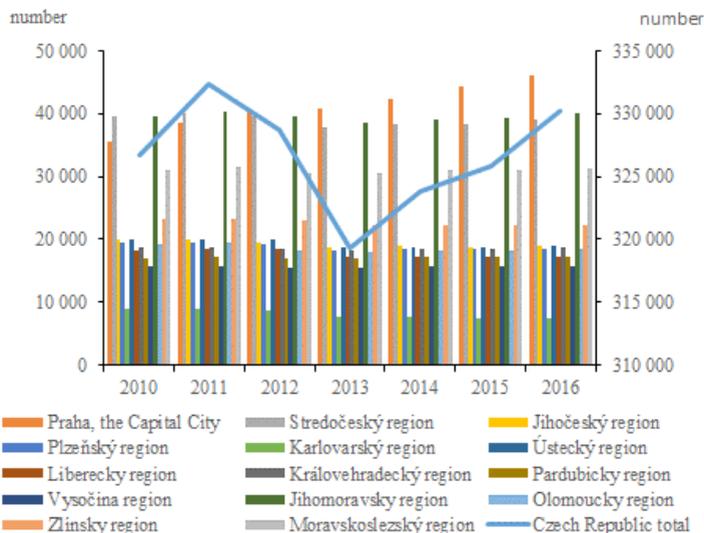
Source: Czech statistical office, own processing.

As for agricultural primary production, we record, with the exception of 2013, an annually increase in the number of these firms in the Czech Republic. The highest number of agriculture firms are established in Stredočeský, Jihočeský and Jihomoravský region (picture 3). These status of these regions are historically based on more favourable soil-climatic conditions. Blas (2008) note that after the Czech and Slovak Republic have joined the European Union on 1st May 2004, both countries have adopted the Common Agricultural Policy, as well. Despite the operation of the Common Agricultural Policy and the impression of creating a uniform economy, there are some researches proving that there is a considerable variance among the productivity, the technological level as well as the market integration of agricultural enterprises in different EU countries.

Within industrial production in 2012 and 2013 there was a decrease of the number of these firms in the Czech Republic (the decrease in 2012 compared to 2011 was -1.11% and the decrease in 2012 compared to 2013 was -2.87%). In the next years, we are seeing an increase of the number of these firms. The biggest number of these firms outside Prague, the Capital City, was in Stredočeský, Jihomoravský and Moravskoslezský region (picture 4). These regions belong to regions with significant economic potential (the biggest employer in the Stredočeský

region was ŠKODA AUTO a.s. in Mladá Boleslav). Compared to 2010 and 2016, the number of industrial firms increased in Czech Republic by 1.07%.

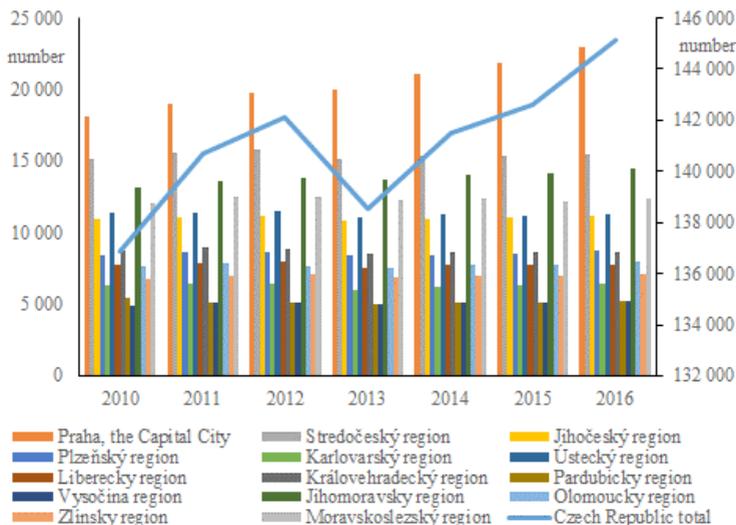
Picture 4 **Development of the total number of firms of industry in the Czech Republic and individual regions in the period 2010-2016**



Source: Czech statistical office, own processing.

The development of services is closely determined not only by the economic development of the country but also by the population density of the area. In the Czech Republic, the number of services, with the exception of 2013, grew annually during the analysed period and in comparison with 2010 and 2016 this increase was 6.06% (picture 5).

Picture 5 **Development of the total number of firms of services in the Czech Republic and individual regions in the period 2010-2016**

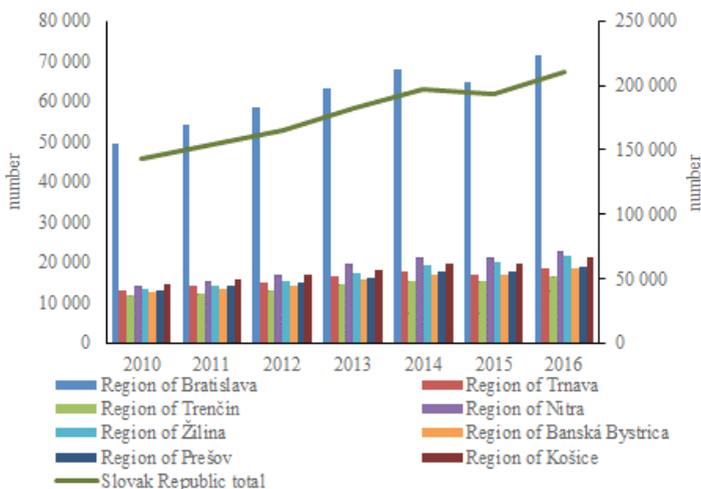


Source: Czech statistical office, own processing.

This trend is also confirmed by the Czech Statistical Office, according to which the number of nights spent in the collective accommodation establishments grew year-on-year by 8,5% in the 4th quarter of 2016, growth represented 8,7% of the domestic visitors and 8,3% of the foreign visitors. In the regional aspect, growth was reported by accommodation establishments in all regions. The highest proportion was attributed to operators from the Vysočina Region, where the number of nights increased by 19.6%. Further growth was achieved in accommodation establishments in Karlovarský, Olomoucký, Jihočeský and Pardubický region.

The competitiveness of Slovak enterprises are primarily determined by the environment in which they develop own activities. Changes in the business environment are also reflected in the number and structure of firms.

Picture 6 **Development of the total number of firms in the Slovak Republic and individual regions in the period 2010-2016**



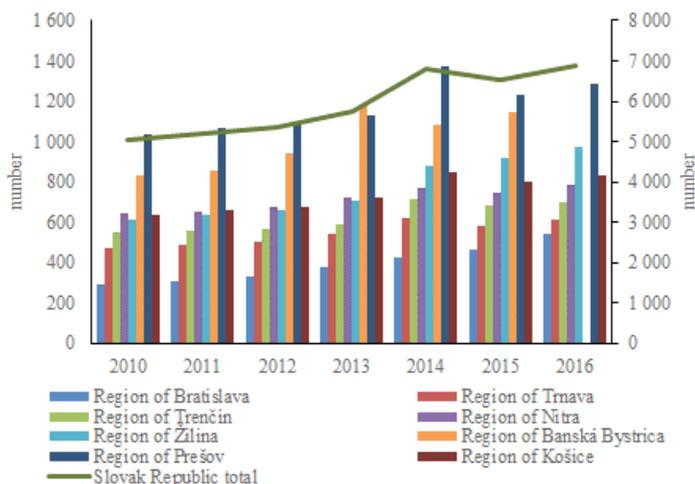
Source: Statistical office of the Slovak Republic, own processing.

Within the analysed period, the total number of firms in the Slovak Republic showed an increasing trend except for 2015. Compared to 2010 and 2014, the increase of the number of firms was 37.31%. In 2015, compared with 2014, the number of firms decreased by 1.57% (picture 6). The reason for a slight decrease of the number of firms in Slovak Republic this year could be, in spite of the rising GDP, mainly legislative changes related to the increase of the minimum wage, which increased to 380 € in 2015 (an increase of the minimum wage compared to the previous year was 7.95%). The raising of the minimum wage and with the associated increased employer's costs can lead to many firms trying to reduce their wage's costs, or firms that employ a minimum number of employees to lay off them and they to end own activities. In the end, however, the total number of firms in 2016 compared to 2010 recorded an increase of 47.39%. Within individual regions, most firms are localized in the Bratislava Region. This is confirmed by Korec (2009), who notes that in the region of Bratislava, practically all the factors influencing the development of the economy and general regional development accumulate in the extremely positive position (factor of the settlement structure highlighted by the status of the capital city, attractiveness supported by the big transport infrastructure, human potential and others). In the other regions of Slovakia we do not notice big differences of the number of firms. In almost all

regions, except of the regions (Region of Trenčín, Region of Žilina and Region of Košice), there are a slight decline of the number of firms in 2015. In the Region of Trenčín, Region of Žilina and Region of Košice, the number of firms increased annually.

According to the OECD, Slovakia includes rural areas, which means that most people live in the countryside. For rural areas, the typical activity is agricultural primary production. Since 1990, agricultural primary production has undergone significant changes in the conditions of Slovak Republic, which had big significant impact on the number of firms. Nevertheless, during the analysed period in Slovak Republic, the total number of firms in agriculture with the exception of 2015 increased annually. Compared to 2010 and 2016, we are seeing an increase of the number of firms in agriculture by 36.42%. The agricultural production depends mainly on the soil fund and the climatic conditions. But other authors (Ciaian, Qineti, Sojková, Kabát and Hanová, 2001) say that the important tool for agriculture farms is also agricultural policy. Despite the fact that the most fertile land in Slovak Republic is located on the Danube Lowland and on the East Slovak Lowland, the biggest number of agricultural firms has been localized in the Region of Banská Bystrica and in the Region of Prešov. In the framework of the number of agriculture firms in almost all regions except Region of Bratislava and Region of Žilina, we recorded a slight decline of the number of these firms in 2015 (picture 7).

Picture 7 **Development of the total number of firms of agriculture in the Slovak Republic and individual regions in the period 2010-2016**



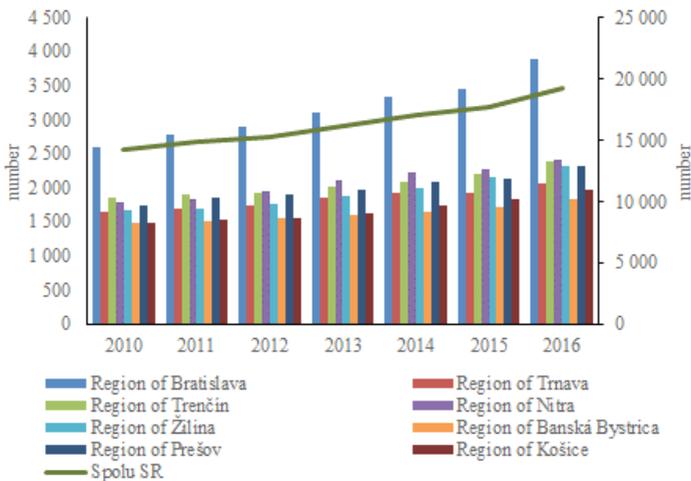
Source: Statistical office of the Slovak Republic, own processing.

Within the framework of industrial production, in recent years the Slovak Republic has become the leader of the automotive industry. At the moment, the Jaguar Land Rover, which will start its production in Nitra, will join to the automotive firms (Volkswagen, PSA Peugeot Citröen and Kia Motors) in 2019. This is also confirmed by the Ministry of Finance of the Slovak Republic (2016), which states that from sectoral point of view the value added in industry contributed to real GDP growth in 2015 (contribution to GDP growth was 1.7%) and the greatest position had the automotive industry. Establishment of these big automotive firms also required enlargement, respectively the creation of other business entities that have become subcontractors for these firms. In 2016, compared to 2010, we saw increasing by 34.45% of firms of industry. Despite the fact that the automotive firms are localized in Region of Trnava, Region of Bratislava and Region of Žilina, all regions except of Region of Trnava registered an annual increase of the number of firms of industry (picture 8).

Accommodation and catering services are among the basic services available to population in the regions. The development of these services are closely linked to the settlement structure and population abundance. When the higher number of the population living in the region, the offer of these services are wider. Gabriellová, (2002) notes that Slovak Republic achieves relatively high level of labour

productivity in the sector of services both in international comparison and also in the inter-branch comparison in Slovak Republic. Labour productivity in this sector increases alongside with the growth of employment. International comparison of more detailed structure of services' sector shows that in Slovak Republic are less developed just these services that are developing in modern economy very dynamically

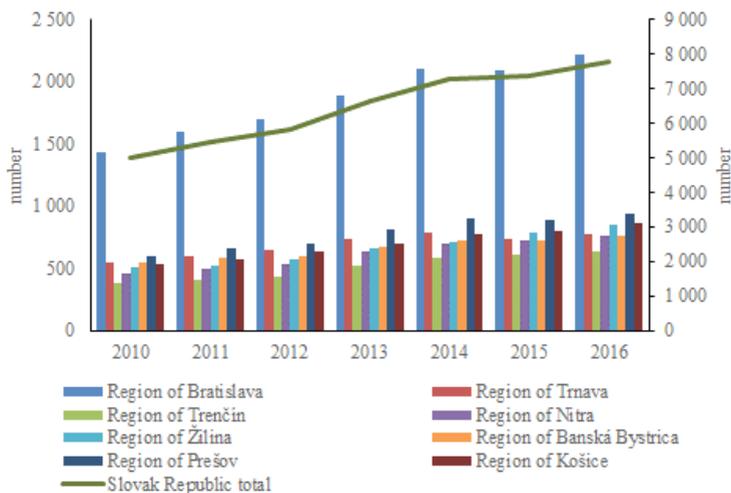
**Picture 8 Development of the total number of firms of industry in the Slovak Republic and individual regions in the period 2010-2016**



Source: Statistical office of the Slovak Republic, own processing.

The positive growth of the Slovak economy and the associated increase of wages, as well as tourism, contribute to the development of these services. In 2016 compared to 2010, the total number of firms of services grew by 54.97%. Within individual regions, it is possible to monitor the annual growth of the number of these firms with the exception of the Region of Prešov and Region of Trnava, where there was a slight decrease of the number of these firms in 2015.

Picture 9 **Development of the total number of firms of services in the Slovak Republic and individual regions in the period 2010-2016**



Source: Statistical office of the Slovak Republic, own processing.

## 4 Conclusion

The analysis of the sectoral structure of the Slovak Republic and the Czech Republic did not reveal significant differences in the representation of individual sectors in both countries. Despite the fact that the Czech Republic was in the past rather oriented to the processing industry, respectively for the finalization of products and the Slovak Republic mainly to the heavy industry, the arms industry and agriculture. Despite this, the Slovak Republic has become a leader in the automotive industry in recent years, and this industry has become the driving force of the Slovak economy. Dominant position of the industry is also in the Czech Republic, but compared to Slovak Republic, the Czech industry is more diversified. The orientation of the Slovak Republic to the automotive industry on the one hand brings the effects of specialization and the possibilities of innovation in this area, on the other hand, this narrow orientation may contribute to the economic instability of the region in the event of sharp changes in production. The possibility can be the development of key industrial development factors such as education, eco-efficiency and technological change in industry in Slovak Republic. The development of the number of agriculture farms is very positively. Despite

of the transformation process, their number increased in the period under review in both countries (with the exception of the recession period). The growth of the economy bring not only growth of GDP, but also an increase of the number of jobs and, consequently, an increase of wages that positively determines the development of services. In both countries there was an increase of the number of firms of services over the analysed period.

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