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*Elena Drabikova*

# ANALYSIS OF THE INDUSTRIAL PRODUCER PRICES IN THE EURO AREA

*Єлена Драбікова*

# АНАЛІЗ ЦІН ПРОМИСЛОВИХ ВИРОБНИКІВ У ЄВРОПРОСТОРІ

*Елена Драбикова*

# АНАЛИЗ ЦЕН ПРОМЫШЛЕННЫХ ПРОИЗВОДИТЕЛЕЙ В ЕВРОПРОСТРАНСТВЕ

*The paper deals with the producer prices issue. The analysis of the industrial producer prices are realized in the context of the euro area. Research is accomplished at three complementary levels. The recent development is examined as well as the current situation in this field. In addition, the European Union is included in the review.*

***Key words:*** *industrial producer prices, euro area, European Union, total industry, energy sector.*

*Fig.: 3. Tabl.: 1. Bibl.: 13.*

*Розглянуто питання цін виробника. Здійснено аналіз цін промислових виробників у контексті європейського простору. Проведено дослідження на трьох взаємодоповнюючих рівнях. Розглянуто останні розробки, а також сучасну ситуацію в секторі. В огляд включений Європейський Союз.*

***Ключові слова****: ціни промислових виробників, європростір, сукупна промисловість, енергетичний сектор.*

*Рис.: 3. Табл.: 1. Бібл.: 13.*

*Рассмотрен вопрос цен производителя. Осуществлён анализ цен промышленных производителей в контексте евро пространства. Проведено исследование на трёх взаимодополняющих уровнях. Рассмотрено последние разработки, а также современную ситуацию в секторе. В обзор включён Европейский Союз.*

***Ключевые слова****: цены промышленных производителей, европространство, совокупная промышленность, энергетический сектор.*

*Рис.: 3. Табл.: 1. Библ.: 13.*

**JEL Classification:** L 60, F00

**Problem statement. Industrial producer prices background.** Realization of the industrial producer prices analysis requires the clarifying formulations according to the fundamental issue platform. Such a necessary basis can be found in the System of National Accounts.

The System of National Accounts constitutes the standards accepted on the international grade. They include the references for preparation of the economic activity measures. Processing of figures reflecting the economic situation is facilitated in the view of their appropriate final form. This is desired for the intentions leading to, besides other objectives, economic analysis.

Characteristics valid for industrial producer prices should be specified in behalf of the analysis purpose. According to the System of National Accounts (2009), the different nature of prices is described below. The substance is in the distinguishing between basic price and producer's price.

The basic price reflects financial amount acceptable by the side of producer from the side of buyer. The sum is related to one unit of some good / service produced under calculation: output minus any kind of tax payable, whereas plus any kind of financial subsidy receivable. Introduced price is practically an effect of the production / provision or sale of the given products / services. It should be noted that transport charges invoiced by a separate way are not counted.

To the producer's price is dedicated the paper published by Organisation for Economic Co-operation and Development (2011). It is addressed to the comparative methodological analysis. The producer's price is characterized as the amount admissible by the producer from the merchant. This claim fits to the unit of a good / service. Following calculation needs to be respected in connection with production process: output minus any value-added tax or else deductible tax. Such a sum is invoiced to the buyer. It does not count any transport charges invoiced separately from the producer side. Apparently, the last stated feature is the similar as applies for the basic price.

**Studies review.** Producer prices question resides in the euro indicators series. The analysis dedicated to the further selected euro indicator can be found in the paper by Drabiková (2015).

Industrial producer prices were the subject of examination under several studies. These are characteristic by both national and transnational dimension. In regard of the producer's price, the production process was analyzed through cost function calculations in the study by Šebo et al. (2013).

Nevertheless, analysis is usually realized by organizations, agencies and institutions. In certain cases the team of experts, covered by one of the organizations, which leads research is also publishing author. However, findings are published most often under the heading of one from the worldwide institutions. The same scenario is typical for the individual specialists working in the specific organization or for it. This applies at the national level, as well.

Open statistics and publications are available over the Organisation for Economic Co-operation and Development (2016), European Commission (2016), United Nations (2016), Eurostat (2016), World Bank (2016), International Monetary Fund (2016), International Energy Agency (2016), European Central Bank (2016).

Standardly, collecting and subsequent researching numerical data in large quantities is executed. The processing of the enormous data amounts results in extensive analytical outputs. Consequential studies thus become quite complicated in many instances. Especially when trying to focus only on a specific area or a particular problem. The complex nature of such reports is relatively unhelpful in a given case. In addition, the provided information is slightly general.

This paper is an attempt to fill outlined gap. The regard focuses on a special issue. Only the producer prices are reviewed. Even the sphere of interest concerns exactly industrial producer prices.

**The main aim of the paper.** The principal objective is to analyze the recent development of the industrial producer prices in the context of the euro area as well as the current situation in this field.

**Research. Analysis of the industrial producer prices.** Analysis is based on the monthly data. Specifically, last six month's period is examined in view of the actual available data set. Mentioned period lasts from September 2015 to February 2016. Its source is Eurostat, the statistical office of the European Union that is the leading provider of high quality statistics on Europe.

Conducted research is related to the domestic market. It takes into account primarily the euro area countries although for the purpose of the next comparative analysis the European Union Member States are contemplated. All findings resulting from the analysis are expressed in percentages. They state in every case the percent variation likened to the same month of the previous year.

The analysis is realized at three complementary levels. The first one is the euro area review as a unified entity. Naturally, relative to the additional comparison, the European Union figures as intended unified unit.

Next grade represents total industry division to the major industrial categories. More accurately, there are following groups:

- durable consumer goods,
- non-durable consumer goods,
- intermediate goods,
- capital goods,
- energy.

The third level of the industrial producer prices analysis consists of the individual states which are members of the euro area or the European Union.

Research is realized by implementing the comparative analysis as analytical method at every level of the exploration.

**Findings. Situation in the euro area.** The industrial producer prices overview in the euro area is shown in Figure 1. Development of the overall industry as well as development of the overall industry excluding energy is depicted there. Energy consideration under total industry on the one hand and its omission on the other hand enables a more transparent data presentation.

The latest available data correspond to February 2016. Findings include the annual comparison. Individual figures then determine alteration associated with equal term of past year.

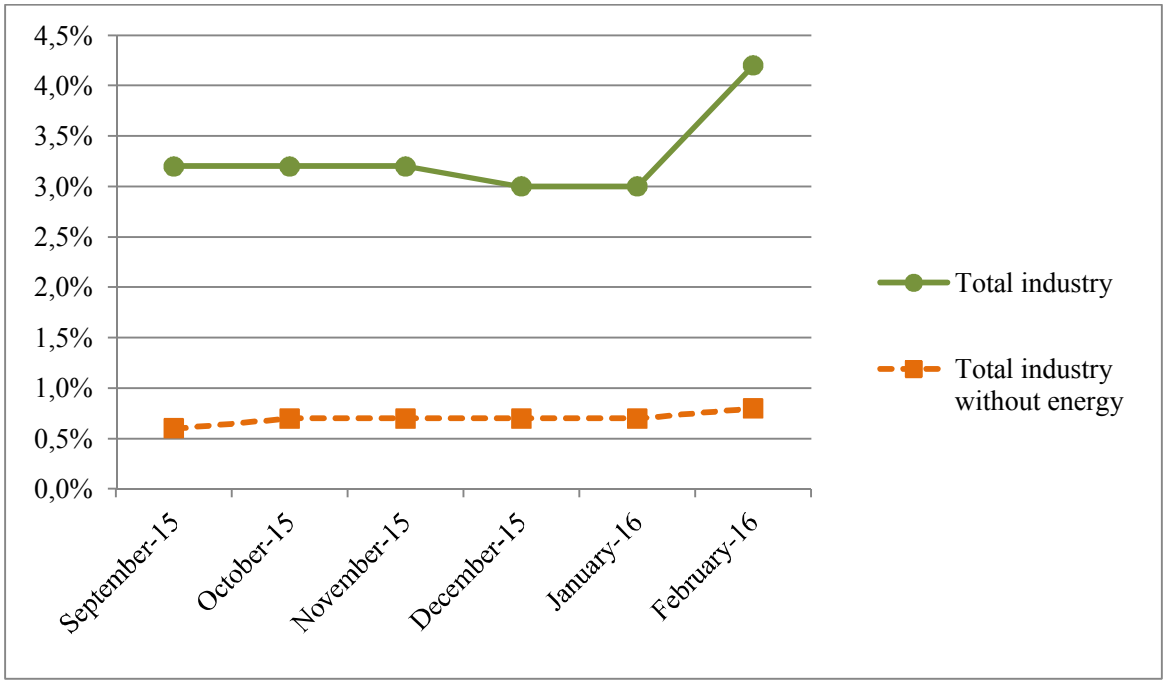


*Fig.1. Overview of the industrial producer prices in the euro area*

Source: Author's own adaptation, Eurostat (2016)

The industrial producer prices noted decrease within the euro area. This applies to the entire followed period. The statement is declared through total industry curve. Each point on the curve represents the percentage value drop in the industrial producer prices. Thus Figure 1 contains data view that fits to decline. Curve for total industry without energy can be explained the same way.

Graphical representation clearly indicates the energy item has the greatest impact on the industrial producer prices development. The claim is substantiated by difference between prompted curves. Decreasing prices trend is, however, continued. In general it can be argued that abovementioned trend has a rising nature. In other words, a positive tendency of falling prices is detected for the industrial producers on the domestic market.

The most significant decline is denoted in prices concerning industrial producers in February 2016. Given fact is observable on both curves. In compare with February 2015, the prices fell by 4.2% in total industry in the euro area. The cause lies in the energy sector.

The examination of the particular industrial segments with regards to the industrial producer prices revealed that the energy area indicates superlative fall in the last month of reference period. Price slumped of 12.8 %. Delineation of the total industry development adjusted from energy industry is therefore in place and widely useful.

By analyzing the main industrial groups on annual comparison bases, the decrease in industrial producer prices in total industry in the euro area in February 2016 is also due to the another elements. Specifically, drop was noticed for intermediate goods and non-durable consumer goods. On the contrary, prices rose for durable consumer goods as well as for capital goods.

More information on the individual segments can be found in Table 1 appearing in section dealing with situation in the euro area in compare with the European Union. There are exact figures for each sphere of the industry including distribution to the separate months. Admittedly, the expression specifying increase or decline corresponding with several sectors and studied time slots is stated.

The third level of the industrial producer prices analysis considers Member States. In the context of the annual comparison, all countries achieved prices fall on the domestic market. Ranking is declared below. States are sorted pursuant to the highest modification reached in February 2016. The first five positions are listed with respective data completing. The order is as follows in the euro area:

1. Netherlands (10,5 %),
2. Greece (9,9 %),
3. Cyprus (6,4 %),
4. Lithuania, Belgium (6,0 %),
5. Spain (5,7 %).

**Situation in the euro area regarding the European Union.** Development of the industrial producer prices in the euro area and in the European Union was subjected to an analysis based on the comparison. The findings are presented in Figure 2 and Figure 3. The comprehensive industry condition was investigated separately from the condition of the total industry with energy deletion.

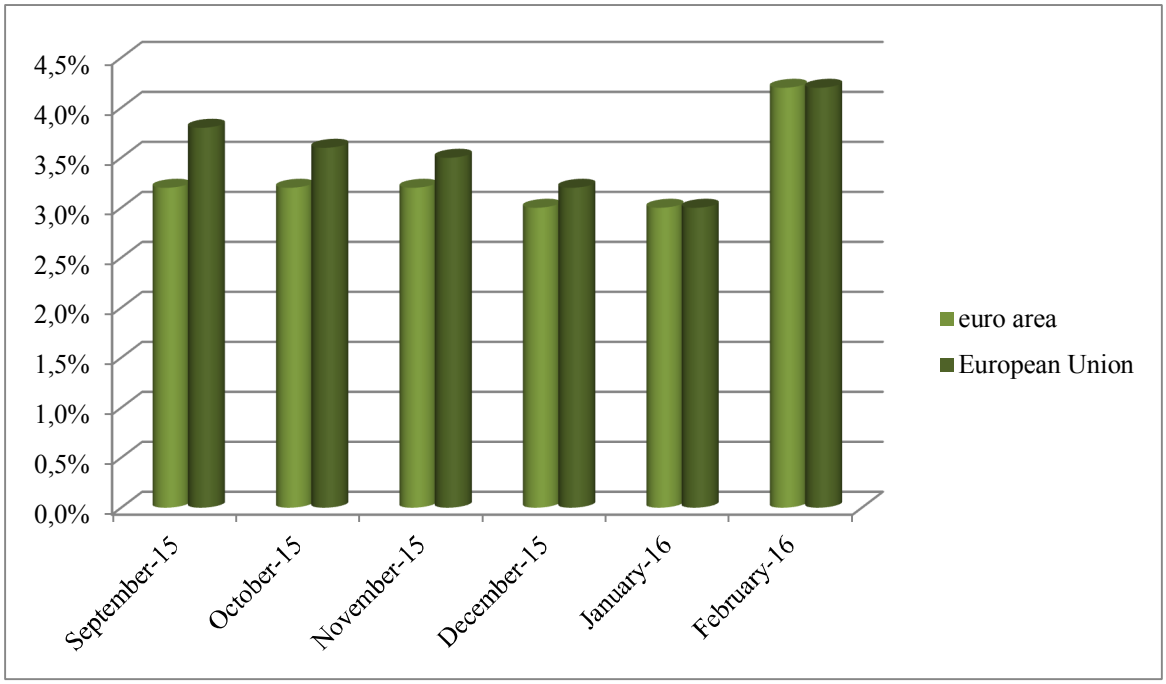


*Fig. 2. The industrial producer prices in the euro area in compare with the European Union for total industry*
Source: Author's own adaptation, Eurostat (2016)

Findings depicted in Figure 2 allow a synoptic data comparison in percentage terms reflecting trends in prices for total industry for analyzed period. As indicated previously, the object of comparison was the euro area and the European Union.

By observing separate graphical parts from September 2015 to February 2016, a similar development is noticeable. The industrial producer prices fell each month on the domestic market in the European Union just like in the euro area. Consequently, Figure 2 registers price drops.

Second assertion is connected with exact numbers. In general, tendency of the higher respectively lower decline is homogeneous. Also the figure levels are quite compliant.

Nevertheless, in the view of the overall summary the European Union shows higher figures under comparative analysis.

In the European Union, industrial producer prices fell by 4,2 % in total industry in February 2016 according to the condition in February 2015. The scenario is the same as in the euro area. Annual change was affected, likewise in the euro area, by development in the energy sector. Downturn reached grade of 14,0 %.

The figures calculated for other industrial groups refer price decreases as well as growth in the European Union in February 2016. Domains with accrual are capital goods and durable consumer goods. For the intermediate goods and non-durable consumer goods is assigned decrement. More precise data are listed in Table 1 further down.

Taking into consideration individual members of the European Union, analysis of the industrial producer prices signalized equal assertions like are valid for the euro area. Positions established for the first five ranking stands are occupied by identical states. The resulting Member States are consequently participants of the European Union as well as the euro area. The percentage variations represent again the decline according to the each country. The values of these decreases are logically the even in the annual comparison.

Outcome of the third step suited to the analysis partitioning can be extended for Denmark in the view of the European Union compared to the euro area. Industrial producer prices came down by 6.4% in the mentioned country. This corresponds to the score reached by Cyprus. Denmark should be thus joined to Cyprus and be placed likewise at the third position. Pointing out Denmark means the enlargement of the platform consisting of the countries using the euro currency to include the European Union's countries without euro which meet the most significant decrease observed in industrial producer prices.

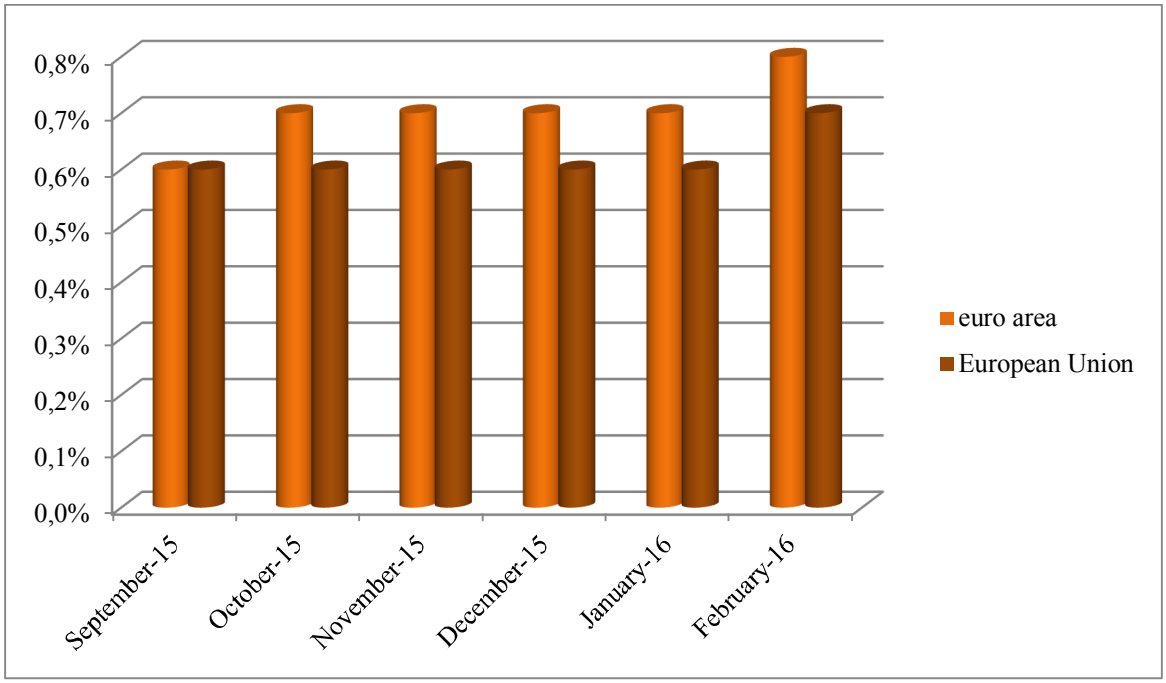


*Fig. 3. The industrial producer prices in the euro area in compare with the European Union for total industry without energy*

Source: Author's own adaptation, Eurostat (2016)

Comparative analysis implemented to the total industry out of energy section is presented in Figure 3. The examination showed negligible differences between the euro area and the European Union. Larger disparities are noticeable in Figure 2 where the energy sector is regarded.

In September 2015, in the first observed month of the analyzed period, the industrial producer prices achieved -0.6% change in relation with September 2014. Mentioned prices alteration applies to the euro area and the European Union, too. The last investigated month pointed figures variance in the annual comparison. However, detected difference was only minimal. Industrial producer prices remarked on the domestic market -0.8% modification in the euro area and -0.7% in the European Union. From October 2015 to January 2016 the prices development varies for 0.1% in terms of drop in the euro area matched with the European Union.

Data for individual sectors are stated in Table 1. In exact terms, studied industrial fields are intermediate goods, capital goods, durable consumer goods, non-durable consumer goods and energy. The attention is paid to the each month dated to the past half year considering the latest available data on this subject. The numbers correspond to the euro area prices situation and the European Union situation, as well.

Table 1

*Comparison by particular industrial segment's transformations according to the identical term of the previous year*

| | | **euro area** | **European Union** |
|---|---|---|---|
| **durable consumer goods** | September 2015 | 0.8% | 0.9% |
| | October 2015 | 0.7% | 0.9% |
| | November 2015 | 0.7% | 0.9% |
| | December 2015 | 0.7% | 0.9% |
| | January 2016 | 0.7% | 0.9% |
| | February 2016 | 0.7% | 0.8% |
| **non-durable consumer goods** | September 2015 | -0.6% | -0.6% |
| | October 2015 | -0.3% | -0.3% |
| | November 2015 | -0.3% | -0.3% |
| | December 2015 | -0.3% | -0.3% |
| | January 2016 | -0.3% | -0.3% |
| | February 2016 | -0.5% | -0.5% |
| **intermediate goods** | September 2015 | -1.6% | -1.5% |
| | October 2015 | -1.9% | -1.8% |
| | November 2015 | -2.1% | -2.0% |
| | December 2015 | -1.9% | -1.8% |
| | January 2016 | -1.8% | -1.7% |
| | February 2016 | -2.1% | -2.0% |
| **capital goods** | September 2015 | 0.6% | 0.7% |
| | October 2015 | 0.6% | 0.7% |
| | November 2015 | 0.6% | 0.7% |
| | December 2015 | 0.5% | 0.7% |
| | January 2016 | 0.4% | 0.6% |
| | February 2016 | 0.4% | 0.6% |
| **energy** | September 2015 | -10.0% | -13.5% |
| | October 2015 | -9.8% | -12.5% |
| | November 2015 | -9.3% | -11.9% |
| | December 2015 | -8.9% | -10.8% |
| | January 2016 | -9.1% | -10.1% |
| | February 2016 | -12.8% | -14.0% |

Source: Author's own adaptation, Euro indicators (2016)

Analysis based on the comparative approach signals precise percentage differences linked to the industrial producer prices for the same term of previous year. Selected analysis also enables to identify the nature of change. This means determining whether change has increasing or decreasing character. Another advantage is possibility to define contrasts between the euro area and the European Union, respectively among the separate industrial groups.

Figures from Table 1 indicate the uniform change substance. The growth or, to the contrary, the fall stands for the compliant industrial sectors in the euro area and in the European Union. The increment is reported by durable consumer goods and capital goods. The decrement is announced by energy, intermediate goods and non-durable consumer goods. Besides that the listed transformations are typical for all investigated months.

**Conclusion.** The goal of the paper was to analyze one of the euro indicators. Indicator selection was realized according to the frequency of its use in the various studies, papers, reports and statements. This concerns the national level as well as international level. Chosen euro indicator was producer prices, more precisely the industrial producer prices. The main aim was thus to examine the recent development of the industrial producer prices in the context of the euro area. In addition, the effort was led to explore the current situation in this field.

The industrial producer prices background was stated. The needed rudiments were notified for follow-up analysis implementation. Crucial point was in comprehension of distinction between basic and producer prices. Issue clarification and analyzing of the bearing studies on this topic continued by research.

The research subject was divided to the three corresponding grades. Although investigation was executed on each degree separately the final assertions under partial sections mostly took into account combination of the solved matters. The first level meant the euro area review as a unified entity. The second one represented total industry splitting to the major industrial categories. Namely, there were non-durable consumer goods, durable consumer goods, energy, intermediate goods and capital goods. The last group consisted of the individual states which are members of the euro area.

Detailed examination of the industrial producer prices as a basis for intended interpretation was constructed on the comparative analysis. This method was used in researching the situation in the euro area and also in inquiring the situation in the euro area regarding the European Union. In section where the European Union was considered the previously mentioned three levels were processed. Therefore, the European Union was analyzed from single entity point of view as well as an additional information source for purposes of comparison with the euro area.

The source of selected data was the Eurostat. This statistical database was admitted as the best choice. Judgment had grounds in the intention to investigate the euro area and the Eurostat is known as the contributor of the most extensive data on Europe. The last available figures were reported for February 2016 in connection with producer prices.

The annual comparison showed that the industrial producer prices decreased by 4,2 % in the euro area in February 2016 considering February 2015. The domestic market was reflected in total industry field. According to the main industrial sectors, the decline was caused by falls of 12,8 % in the energy segment, 2,1 % fitted for intermediate goods and 0,5 % for non-durable consumer goods. On the contrary, prices noticed increase by 0,4 % for capital goods and also for durable consumer goods, specifically by 0,7 %.

Comparative analysis declared that the same industrial producer prices decrease was observed in the European Union regarding the similar analyzed month. Noted finding represents situation in total industry. Focusing on the second defined level of the examination the individual industrial categories signalized following figures: 0,8 % for durable consumer goods, -0,5 % for non-durable consumer goods, -2,0 % for intermediate goods, 0,6 % for capital goods and -14,0 % in energy.

Percentage change of the industrial producer prices signified just decline for all Member States in February 2016 compared with same month of previous year. The most significant decrease reached the Netherlands, Greece, Denmark, Cyprus, Belgium, Lithuania and Spain. The states order constitutes sorting by their variation height from the highest to the lowest.

However, ranked countries represent members with the highest decline from Member States group.

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**Elena Drabikova** – PhD in Finance, Technical University of Kosice (9 Letná 9042 00, Kosice, Slovak Republic).
**Єлена Драбікова –** кандидат наук з фінансів, Кошицький технічний університет (вул. Літня, 9, м. Кошице, 9042 00, Словацька Республіка).
**Елена Драбикова** – кандидат наук по финансам, Кошицкий технический университет (ул. Летняя, 9, г. Кошице, 9042 00, Словацкая Республика).