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## EVOLUTION OF THE PROFITABILITY ON SALES REVENUE OF THE COMPANIES IN THE FIELD OF PUBLIC WATER SUPPLY AND SEWERAGE SERVICES IN THE URBAN AREA OF THE REPUBLIC OF MOLDOVA

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Profitability on sales revenue obtained by companies in the field of water supply and sewerage services is a significant indicator for assessing the economic and financial performance of a company for the internal diagnosis, as well as for the analysis required by the external partners. The purpose of this article is to analyze the evolution of profitability on sales revenue calculated on the basis of profit (loss) from operating activity and profitability on sales revenue calculated on the basis of net profit (loss) in the last 10 years. The most important influencing factors were analyzed, namely: change in the structure and assortment of the products sold, change in unit cost of the products sold and change in sale price. The profitability of sales revenue is largely negative, mainly due to the fact that the costs were not covered by the tariff.

**Keywords:** *profitability, sales revenue, influencing factors, company, water supply services, efficiency, evolution.*

### EVOLUȚIA RENTABILITĂȚII VENITURILOR DIN VÂNZĂRI ALE COMPANIILOR DIN DOMENIUL SERVICIILOR PUBLICE DE ALIMENTARE CU APĂ ȘI DE CANALIZARE DIN MEDIUL URBAN AL REPUBLICII MOLDOVA

Rentabilitatea veniturilor din vânzări obținute de companiile din domeniul serviciilor de alimentare cu apă și de canalizare reprezintă indicatorul principal de apreciere a performanței activității operaționale a unei întreprinderi. Prezentul articol are drept scop analiza evoluției rentabilității veniturilor din vânzări calculate în baza profitului (pierderii) din activitatea operațională și a rentabilității veniturilor din vânzări calculate în baza profitului (pierderii) net/e în ultimii 10 ani. Au fost analizați cei mai importanți factori de influență, și anume: modificarea structurii și sortimentului produselor vândute, modificarea costului unitar al produselor vândute și modificarea prețului de vânzare. Rentabilitatea veniturilor din vânzări este în mare parte negativă, în principal din cauza că costurile nu au fost acoperite de tarif.

**Cuvinte-cheie:** *rentabilitate, venituri din vânzări, factori de influență, companie, servicii de alimentare cu apă, eficiență, evoluție.*

#### Introduction

The profitability of companies in the field of public water supply and sewerage services is an indispensable aspect, because the analyzed companies manage high value assets and, in recent years, the value of investment projects implemented in this field is essential. These companies operate under natural monopoly conditions and have a significant impact on economic activity and living conditions for the entire population in the management area.

The aim of this paper is to analyze the evolution of the profitability of sales revenues for urban water supply and sewerage companies for the last 10 years.

The profitability indicators analyzed refer to:

**1. Profitability on sales revenue calculated on the basis of profit (loss) from operational activity,** calculated according to the formula:

$$P_{srpoa} = \frac{Poa}{SR} * 100\%$$

where:

$P_{srpoa}$  – Profitability from sales revenue, calculated based on profit (loss) from operating activity, %

$Poa$  – profit (loss) from operational activity, thousand lei

$SR$  – sales revenue, thousand lei

**2. Profitability on sales revenue calculated on the basis of net profit (loss)<sup>1</sup>,** calculated according to the formula:

$$P_{srnp} = \frac{Pn}{SR} * 100\%$$

<sup>1</sup> Net Profit Margin

where:

Psnp – Profitability from sales revenue, calculated based on net profit (loss), %

Pn – net profit (loss), thousand lei

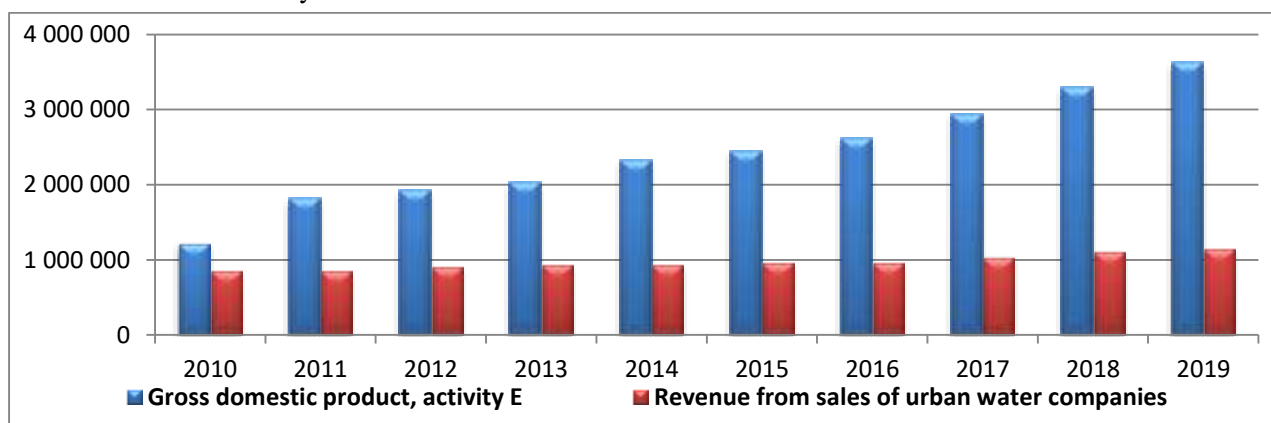
SR – sales revenue, thousand lei

The analysis of profitability from sales revenues is important both for financial managers and for the management of water companies, because analyzing the level of this indicator, it can be determined:

- How efficiently the decisions of the financial management were implemented in obtaining the profit?
- What is the level of evolution of the profitability of sales revenue during several periods of activity of the companies?
- What factors contributed to the deviation of the profitability of sales revenues compared to the level of previous years and/or provided in the Business Plan, budget, etc.?
- What steps need to be taken to increase the level of profitability of sales revenue? [1, p.91-93]

### Analyses and results

The evolution of the economic-financial results, of the water companies must be seen in the context of the tendencies of the field of economic activity at national level. Thus, the evolution in the Republic of Moldova of the Gross Domestic Product for economic activity *E Water distribution, sanitation, waste management*, recorded an increase from 1225527 thousand lei in 2010 to 3624914 thousand lei in 2019, or an increase of 2.9 times in 9 years (Fig.1). The most remarkable growth was registered in 2011, compared to 2010 with 48.4%, followed by a period of slow growth 2012-2016 and in 2017, and 2018 the growth becomes more pronounced with 12.4-12.2% annually.



**Fig.1.** Gross Domestic Product for economic activity: *E Water distribution; sanitation, waste management*, thousand MDL and Revenue from sales of urban water companies, thousands MDL.

Source: developed by the author based on [2; 3, p.10-12; 4, p.10-12]

The contribution of this economic activity to the formation of the Gross Domestic Product at national level varied from 0.8% in 2010 to 1.08% in 2019.

The 40 water supply companies in urban areas in the Republic of Moldova play an important role in the field of public water supply services, because they have a turnover that constituted in 2019 – 0.34% of the National Gross Domestic Product and 31.7% of Gross Domestic Product for economic activity (*water distribution, sanitation, waste management*). The service area with water supply services of these companies covers 49.8% of the country's population. [2; 3, p.10-12; 4, p.10-12]

The evolution of the turnover of the companies in the analyzed field in the urban area has a tendency to increase in the last 10 years, except 2016, compared to 2015, in which there was a non-essential decrease of 0.3%. The most accentuated increase of the turnover was registered in 2010, compared to 2009, with 21.4%. The average increase of the annual turnover for the analyzed period constituted 5.17%. The upward trend is below the level of Gross Domestic Product for economic activity.

The analysis of the evolution of sales revenues for urban water supply companies, compared to the evolution of inflation, identified that the increase in sales revenues exceeded the inflation rate only in 2010 by 14 percentage points, in 2012 by 1.3 percentage points, in 2017 by 1.49 percentage points and in 2018 by 4.41 percentage points (Table 1).

Table 1

## Evolution of Sales Revenues Compared to Consumer Price Index,%

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sales revenue growth rate for water companies	121,40	100,96	105,90	102,42	100,34	102,58	99,70	108,09	107,46	102,93
Consumer Price Index CPI	107,40	107,60	104,60	104,60	105,10	109,70	106,40	106,60	103,05	104,84
The difference between sales revenue and CPI	14,00	-6,64	1,30	-2,18	-4,76	-7,12	-6,70	1,49	4,41	-1,91

Source: developed by the author based on [2; 3, p.10-12; 4, p.10-12]

One of the methods of evaluating the efficiency of companies is the analysis by using the *Rate of profitability on the sales revenue*<sup>2</sup>. Increasing profitability demonstrates the efficient use of factors of production as well as the possibility of increasing the quality of services.

The profitability of companies in the field of public water supply and sewerage services is their ability to generate revenue to cover expenses, which will lead to profit. Profitability is a financial aspect of economic activity and is an important criterion, which is taken into account in making economic decisions on the micro and macroeconomic level.

The aim of this paper is to analyze the evolution of the profitability of sales revenues for urban water supply and sewerage companies for the last 10 years.

The first indicator of profitability refers to:

**1. Profitability on sales revenue calculated on the basis of profit (loss) from operational activity.**

The general evolution of the dynamics of this indicator in the last 10 years is presented in Figure 2.

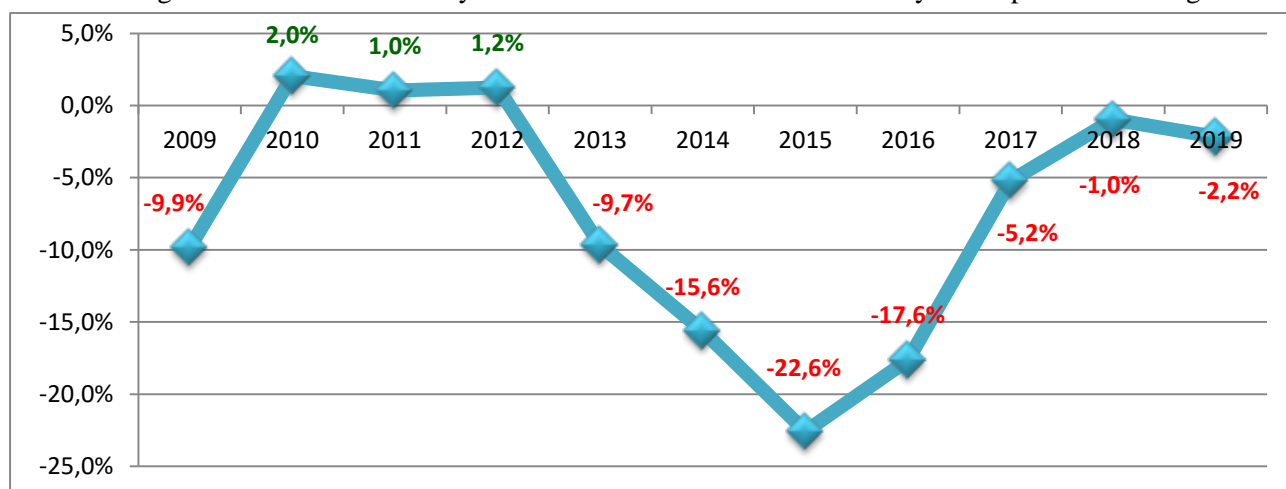


Fig.2. Evolution of the Profitability on sales revenue calculated on the basis of profit (loss) from operational activity, %.

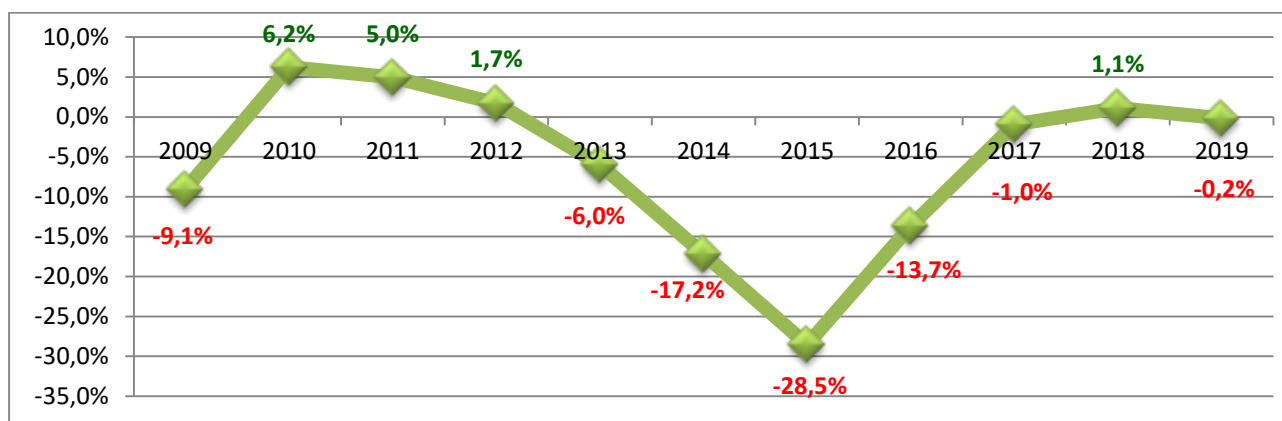
Source: developed by the author based on [3, p.10-12; 4, p.10-12]

The value of the indicator in the period 2009-2019 is generally negative, except for the years 2010, 2011 and 2012, when it rose slightly above 0. The minimum value -22.6% was recorded in 2015 and the maximum value 2.0% in 2010. The minimum value in 2015 is due to the higher expenses compared to 2014 and 2016. High level of expenditures are due to the increase in *expenses for services provided by third parties* registered by JSC "Apa-Canal Chisinau".

The second indicator analyzed is

**2. Profitability on sales revenue calculated on the basis of net profit (loss).** The general evolution of the dynamics of this indicator in the last 10 years is presented in Figure 3.

<sup>2</sup> Return on Sales Ratio



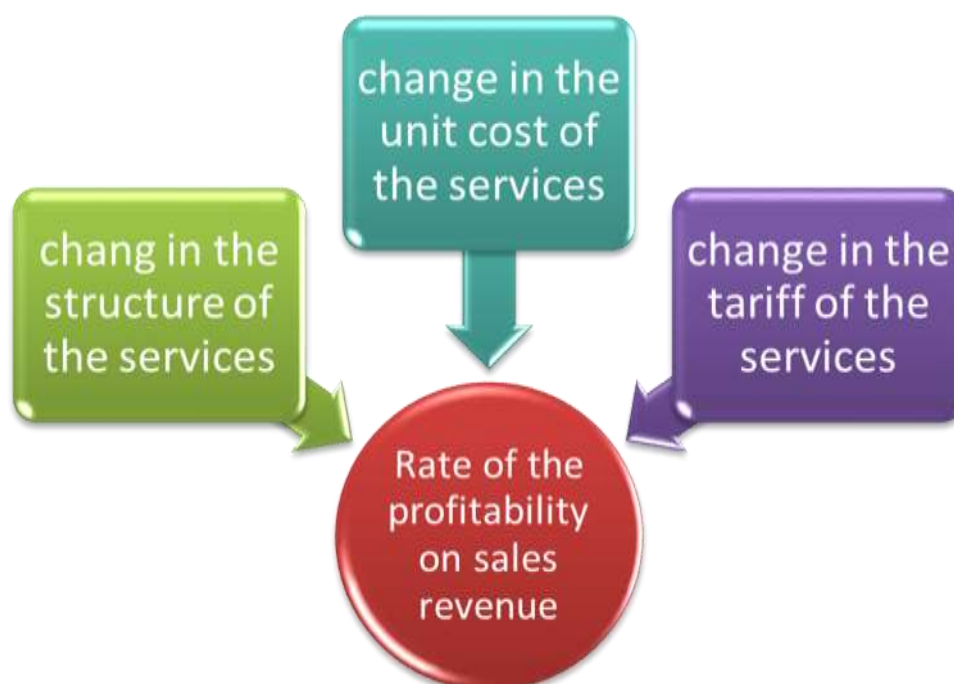
**Fig.3.** Evolution of the Profitability on sales revenue calculated on the basis of net profit (loss), %.

Source: developed by the author based on [3, p.10-12; 4, p.10-12]

The value of the indicator in the period 2009-2019 is generally negative, except the years 2010, 2011, 2012 and 2018, when it rose slightly above 0. The minimum value was recorded in 2015 and it was -28.5% and the maximum value in 2010 and it was 6.2%. One factor that influenced the difference between the profitability of sales revenue based on profit (loss) from operating activity and the profitability of sales revenue based on net profit (loss) was the exchange rate fluctuation. The largest water companies have foreign currency loans contracted from international financing institutions, that influences the result from the financial activity.

One of the factorial models for analyzing changes in sales profitability refers to the analysis of the following factors:

- Change in the structure and assortment of the products sold. This chapter will analyze the variation of the volume of water supply and sewerage services invoiced and the structure of sales revenue for: water supply services, sewerage services and others services;
- Change in unit cost of the products sold;
- Change in sale price [1, p.94].

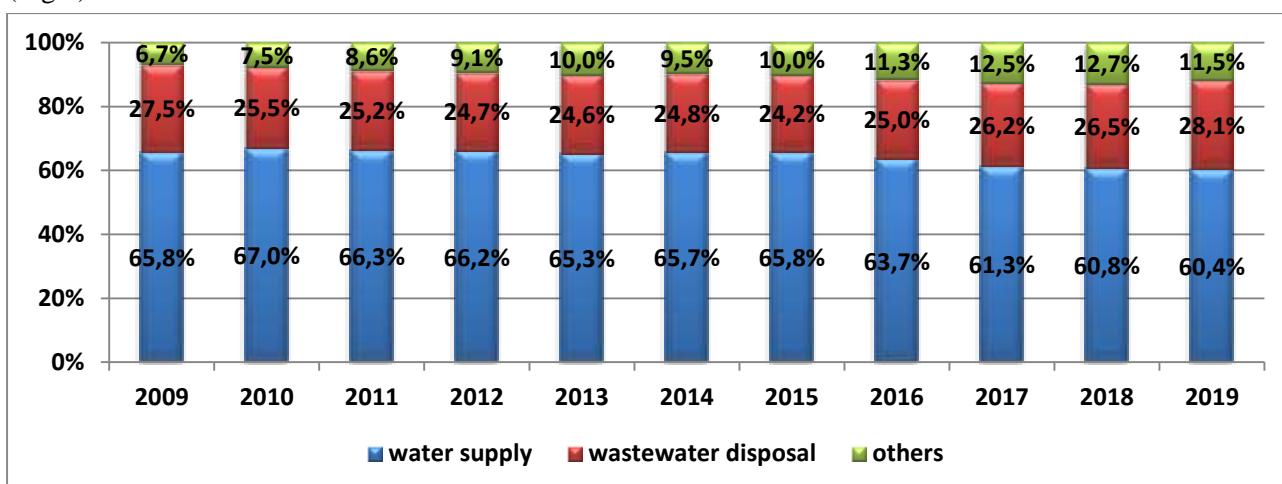


**Fig.4.** Factorial model for analyzing the rate of profitability on sales revenue for water companies.

Source: developed by the author based on [1, p.94]

### a) Change in the structure and assortment of the services

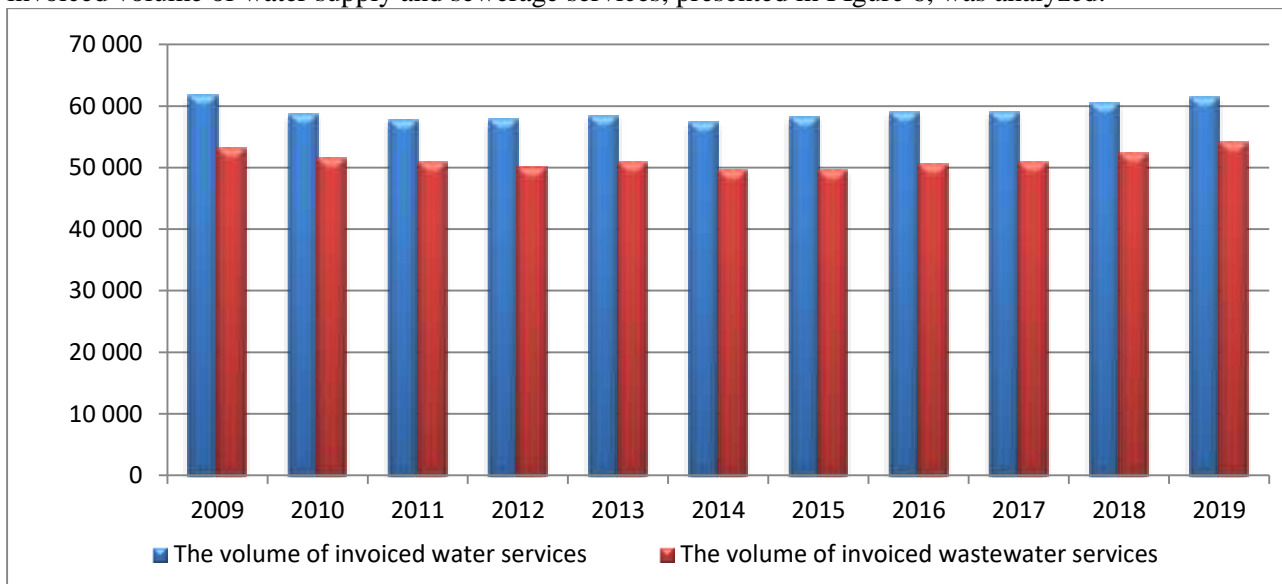
An important factor that influences the evolution of sales revenues is the structure of revenues according to the assortment of services provided. For companies in the field, the providing of water supply services brings an important share, ranging from a minimum of 60.4% in 2019 to a maximum of 67% in 2010. The share of wastewater services in sales revenues varies from a minimum value of 24.6% in 2013 to a maximum value of 28.1% in 2019. Revenues from other services have a share ranging from 6.7% in 2009 to 12.7% in 2018. Basic characteristic of the trend of the share of services in sales revenue in these 10 years analyzed is that the share of water supply services is decreasing by 5.4 percentage points, this being offset by increases for wastewater services by 0.6 percentage points and other services with an increase of 4.8 percentage points. (Fig.5).



**Fig.5.** The evolution of the share of the types of services provided in the sales revenue, %.

Source: developed by the author based on [3, p.10-12; 4, p.10-12]

The key factor that influences the sales revenue is sales volume. For this purpose, the evolution of the invoiced volume of water supply and sewerage services, presented in Figure 6, was analyzed.



**Fig.6.** Evolution of the volume of invoiced services, thousands m<sup>3</sup>/year.

Source: developed by the author based on [3, p.10-12; 4, p.10-12]

The invoiced volume of water supply services did not have essential evolutions in the 10 years analyzed. There were increases of 1-3% per year, in 2013, 2015, 2016, 2018 and 2019, and decreases of 2-5% per year in 2010, 2011 and 2014.

The volume of sewage services had variations that ranged between increases and decreases by 2-3% compared to the previous year. During the analyzed period, there were 4 cases of decreases, 4 cases of increases and 2 cases of values equal to the previous period.

This analysis shows that the volume of services provided did not have a large impact on the profitability of the analyzed companies.

#### b) Change in unit cost of the services

The evolution of the cost of water supply and sewage services is shown in Figure 7.

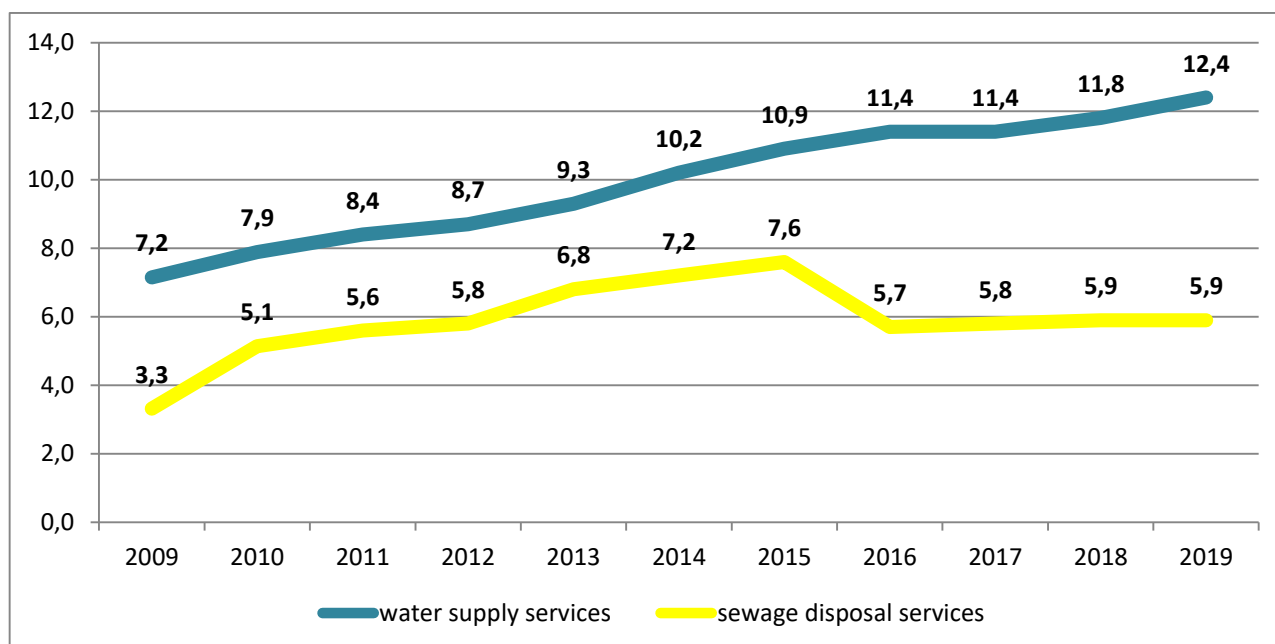


Fig.7. Evolution of unit cost for services, lei/ m<sup>3</sup>.

Source: developed by the author based on [3, p.10-12; 4, p.10-12]

During the 10 years analyzed, the cost of water supply services is constantly increasing from 7.2 lei/m<sup>3</sup> in 2009 to 12.4 lei/m<sup>3</sup> in 2019. The annual increase was on average 5.7%. The cost of sewage disposal services has fluctuated with increases and decreases. Thus, in the period 2009-2015, the cost increased, in 2016 it decreased, and in the period 2017-2019 it registered slow increases. The variation in the cost of sewage disposal services is influenced by the quality of the wastewater entering the wastewater treatment plant and can vary greatly from year to year, compared to the cost of water supply services, which it does not very much.

Table 2

#### The evolution of sales revenues versus the evolution of expenses, millions MDL

Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sales revenues	704,9	855,8	864,0	914,9	937,1	940,3	964,6	961,7	1 039,4	1 116,9	1 149,6
Expenses	785,1	858,3	897,5	951,3	1 049,6	1 118,4	1 219,6	1 178,7	1 129,1	1 169,3	1 213,5

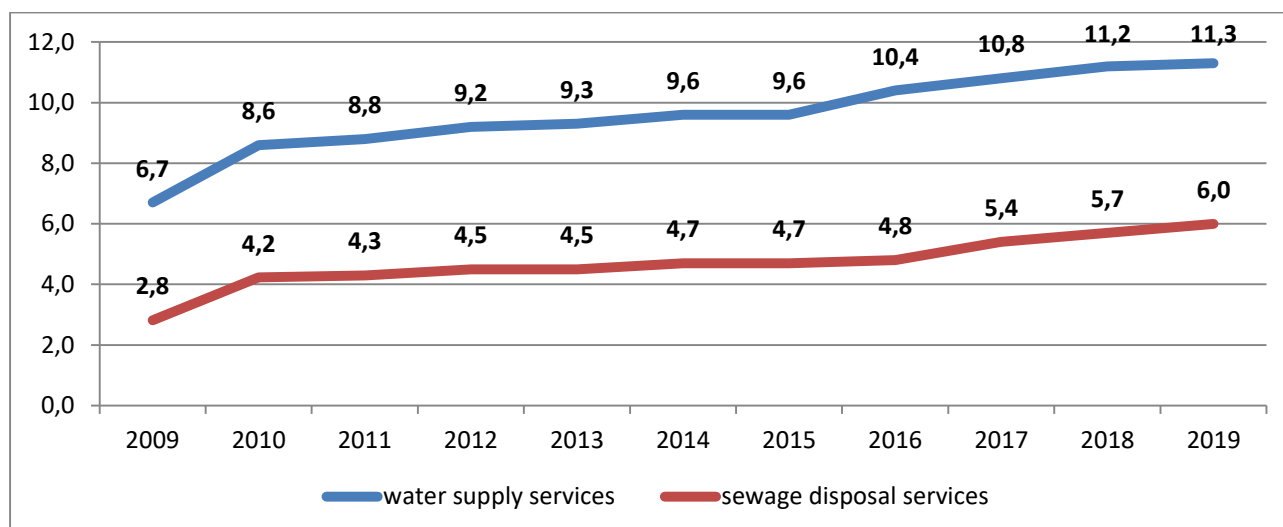
Source: developed by the author based on [3, p.10-12; 4, p.10-12].

Total expenses, during the analyzed period, had a higher increase compared to the increase in sales revenues, except for the values recorded in 2010 and 2017. In 2016 and 2017, total expenses were lower compared to previous years. High level of expenditures in 2015 compared with 2014 and 2016 are due to the increase in expenses for services provided by third parties registered by JSC "Apa-Canal Chisinau".

#### c) Change in the tariffs for the services

Another indicator that influences sales revenue is the tariff for water supply and sewerage services. Their evolution is shown in Figure 8.





**Fig.8.** Evolution of the average tariff for services, lei/ m<sup>3</sup>.

Source: developed by the author based on [3, p.10-12; 4, p.10-12]

Tariffs for water supply and sewerage services have been on the rise. A more pronounced increase occurred in 2010 compared to 2009. From 2016 to 2019, the growth is slow and uniform. The positive value of profitability in the period 2010-2012 is largely due to tariff increases in 2010 compared to 2009.

In 2010, there was a remarkable increase in the average tariff for services. The increases were registered for large companies, with an important share in the field such as: JSC "Apa-Canal Chisinau", M.I. "Regia Apa-Canal" Bălți and also in other localities such as: Cahul, Edineț, Briceni, Hîncești, Orhei, Soroca, etc.

The indicator *Coefficient of coverage the costs by the tariff* is presented in Table 3, has a remarkable influence on the profitability of companies in the field of public water supply and sewerage services.

**Table 3**

**Coverage the costs by the tariff for services**

Indicator	unit of measure	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Water supply services</b>												
Average tariff	lei/m <sup>3</sup>	6,7	8,6	8,8	9,2	9,3	9,6	9,6	10,4	10,8	11,2	11,3
Average cost	lei/m <sup>3</sup>	7,15	7,89	8,4	8,7	9,3	10,2	10,9	11,4	11,4	11,8	12,4
Coverage the cost by the tariff	coef.	<b>0,94</b>	<b>1,09</b>	<b>1,05</b>	<b>1,06</b>	<b>1,00</b>	<b>0,94</b>	<b>0,88</b>	<b>0,91</b>	<b>0,95</b>	<b>0,95</b>	<b>0,91</b>
<b>Sewage disposal services</b>												
Average tariff	lei/m <sup>3</sup>	2,82	4,23	4,3	4,5	4,5	4,7	4,7	4,8	5,4	5,7	6
Average cost	lei/m <sup>3</sup>	3,32	5,14	5,6	5,8	6,8	7,2	7,6	5,7	5,8	5,9	5,9
Coverage the cost by the tariff	coef.	<b>0,85</b>	<b>0,82</b>	<b>0,77</b>	<b>0,78</b>	<b>0,66</b>	<b>0,65</b>	<b>0,62</b>	<b>0,84</b>	<b>0,93</b>	<b>0,97</b>	<b>1,02</b>

Source: developed by the author based on [3, p.10-12; 4, p.10-12].

The value of the analyzed indicator must be slightly higher than 1, so that the companies have development opportunities. For the analyzed period of 10 years, the coverage of the cost by the tariff for the water supply service was higher than 1 in the years 2010, 2011 and 2012. For the sewage service, the value of the indicator exceeded the required level only in 2019.

Since the share of water supply services constitutes 60-67% of the total turnover, it is obvious the influence of the coefficient of coverage the cost by the tariff for the water supply service on the profitability on sales revenues. The period 2010-2012 demonstrates that the coverage the cost by the tariff of the water supply service has led to a positive profitability of sales.

## Conclusions

Based on the research that was made, the following conclusions can be drawn:

- The profitability on sales revenues, calculated based on the profit (loss) from the operational activity, registered positive values in the years: 2010, 2011 and 2012. In 2010 the factors that influenced the positive value of the indicator were: tariff increase (by 10% for water supply services and 55% for sewerage services). The increases were registered for large companies, with an important share in the field, such as: JSC "Apa-Canal Chisinau", "Regia Apa-Canal" Bălți, also in other companies from the localities such as: Cahul, Edineț, Briceni, Hîncești, Orhei, Soroca etc. In these years, there was no increase in the physical volume of invoiced services. This may also be a result of the tariff increase. Expenditure did not deviate significantly. In 2010, 2011 and 2012 the coverage the cost by the tariff was higher than 1, this is another factor that contributed to a positive profitability on sales revenues.

- The profitability on sales revenues, calculated based on net profit (loss), recorded positive values in 2018. The factors that influenced are: the exchange rate difference, there was a small increase in the physical volume of invoiced services by 3%, there was an increase in the share of other services billed, as well as a non-essential increase in tariffs.

- The evolution of profitability indicators largely follows the trend of Gross Domestic Product for economic activity E: *Water distribution, sanitation and waste management*, with the largest increases in 2011, 2017 and 2018.

- The evolution of the turnover of the companies in the analyzed field in the urban area has a tendency to increase in the last 10 years, except 2016 compared to 2015, in which there was a non-essential decrease of 0.3%. The most accentuated increase of the turnover was registered in 2010, compared to 2009 with 21.4%. The average increase of the annual turnover for the analyzed period constituted 5.17%. The upward trend is below the level of Gross Domestic Product for economic activity E.

The negative profitability on sales revenue for urban water companies is influenced by a number of factors, such as:

- Failure to cover the costs by the tariff;
- Lack of the necessary financial resources of the infrastructure owners - the local public administration – for the maintenance and development of the systems;
- Companies manage an oversized water supply and sewerage infrastructure, because it was designed and built on average 40-60 years ago;
- Advanced degree of asset wear, which leads to increased operating and maintenance costs. Although a number of investment projects were implemented during the analyzed period, they do not cover the needs;
- Low degree of collection of the value of invoices for services leads to lack of cash needed in the production process;
- Lack of qualified staff due to the fact that salaries are not competitive with other fields of activity;

Considering the major importance for the national economy of the water supply and sewerage sector, the following recommendations are proposed:

- Preparation and control of revenue and expenditure budgets of service operators;
- Increasing the sales volume by metrological verification of meters and increasing their accuracy class;
- Development, monitoring and motivation of staff based on key performance indicators;
- Prioritization of investments based on positive economic effects.

## References:

1. ȚIRIULINICOVA, N., PALADI, V., GAVRILIUC, L., CHIRILOVA, N., FURTUNĂ, D. *Analiza rapoartelor financiare*. Ediția a II-a, revăzută. Chișinău: Asociația Obștească „ACAP RM” 2011, p.91-99.
2. National Bureau of Statistics of the Republic of Moldova, <https://statistica.gov.md/> [Accessed: december 2021]
3. Asociația „Moldova Apă-Canal”, *Indicii financiari și de producție ai activității întreprinderilor de alimentare cu apă și de canalizare – membre ale Asociației „Moldova Apă-Canal” pentru anul 2019*. Chișinău, 2020. 108 p, [www.amac.md](http://www.amac.md) [Accessed: december 2021]



4. Asociația „Moldova Apă-Canal”, Indicii financiari și de producție ai activității întreprinderilor de alimentare cu apă și de canalizare – membre ale Asociației „Moldova Apă-Canal” pentru anul 2012, Chișinău, 2013, [www.amac.md](http://www.amac.md). [Accessed: december 2021]

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