Tinatin Doliashvili, Doctor of Economics, Professor
Davit Aghmashenebeli University of Georgia;
New Higher Education Institute – NEWUNI
Tbilisi, Georgia
Natia Gogolauri, Doctor of Economics, Professor
New Higher Education Institute – NEWUNI
Tbilisi, Georgia

DOI: https://doi.org/10.30525/978-9934-26-356-9-37

CORRELATION ANALYSIS OF TOTAL LIQUIDITY OF «UNITED AIRPORTS OF GEORGIA» LLC

«United Airports of Georgia» LLC («UAG» / »Company») is owned by the state with a 100% share. It was established on November 1, 2010, and its purpose was to bring civil airports operating in different forms in the country under a single "umbrella", which would ensure their harmonious and systematic development in the future. The union includes three international (Tbilisi, Batumi, Kutaisi) and two domestic (Mestia, Ambrolauri) civil airports. In addition, there are the plots of land and infrastructure of the non-functioning former Zugdidi and Poti airports in its disposal [1].

The financial stability of a business entity indicates its solid financial condition, one of the characteristics of which is solvency. In its turn it indicates the degree of liquidity of the firm. The most generalized among liquidity indicators is the overall (current) liquidity ratio, which is determined by the division of current (short-term) assets and current (short-term) liabilities. According to international practice, the value of this coefficient should vary between 2 and 3. A high level of the ratio is not desirable, since a high rate of increase in current assets indicates a delay in the production-sales process (in our case, shipments), leads to a decrease in the turnover of the advanced value and, respectively, the financial results (profit / loss) of the business entity and, finally, causes the financial condition deterioration. General information about this is summarized in the first table.

Table 1

Analytical characteristics of «United Airports of Georgia» LLC (million GEL)

Indicators	Year				
	2017	**2018**	**2019**	**2020**	**2021**
Current Assets	**71,020**	**64,613**	**70,265**	**39,175**	**49,870**
Cash and cash equivalents	59,006	54,607	59,596	28,138	40,062
Share of cash and cash equivalents in short-term assets, %	83,08	84,51	84,82	71,83	80,33
Current Liabilities	**6,074**	**7,051**	**12,159**	**35,534**	**46,399**
Total (current) liquidity ratio	**11,692**	**9,164**	**5,779**	**1,102**	**1,075**
coefficient dynamics, %	100	-21,62	-36,94	-80,93	-2,45
Profit / Loss	**(1,050)**	**19,0**	**2,072**	**(36,716)**	**19,025**

Source: 2017–2021 audited financial statements and management reports

Since cash resources of the union and their equivalents in 2017–2021 were characterized by the highest share in the composition of current assets, we considered it appropriate to conduct a correlative analysis of the overall liquidity in relation to this indicator.

It should be noted that despite the COVID-19 pandemic, the share of this article was quite high in 2020, although its value compared to 2019 dropped to 71.83%, i.e., by 12.99 points. This led to a net cash flow deficit in the amount of 31,458 million GEL. This circumstance was caused by the sharp increase of current liabilities in the same period by 23,375 million in the amount of GEL, i.e., by 92.24%. As for the value of the coefficient itself, its dynamics in the five-year period was characterized by a fluctuating decreasing trend.

Therefore, in the correlation functional series, monetary assets and their equivalents are the independent variable (x), i.e., the factor, and the overall liquidity ratio is the dependent variable (y), i.e., the result. Let's summarize the available data in Table 2.

Table 2

Algorithm for determining the total (current) liquidity ratio

Year	**X**	**Y**	**xy**	**x^2**	**y^2**
2017	5,901	11,692	68,99	34,82	136,70
2018	5,461	9,164	50,04	29,82	83,98
2019	5,960	5,779	34,44	35,52	33,40
2020	2,814	1,102	3,10	7,92	1,21
2021	4,006	1,075	4,31	16,05	1,16
n = 5	**$\sum x$ = 24,142**	**$\sum y$ = 28,812**	**$\sum xy$ = 160,88**	**$\sum x^2$ = 124,13**	**$\sum y^2$ = 256,45**

As we know, the correlation coefficient is calculated according to the following formula

$$r = \frac{n\sum xy - \sum x \sum y}{\left[\left[n\sum x^2 - \left(\sum x\right)^2\right]\left[n\sum y^2 - \left(\sum y\right)^2\right]\right]^{1/2}} = 0{,}83.$$

The calculation shows that there is a perfect positive correlation. i.e., The relationship between the factor and the result is directly proportional and quite high.

After the correlation coefficient, the coefficient of determination must be defined:

$$D = r^2 = 0{,}69.$$

The obtained value of this ratio reveals that 69% of the fluctuation of the total (current) liquidity ratio in 2017-2021 was caused by the influence of changes in cash and cash equivalents. The remaining 31% came in total from other items of current assets (short-term investments, current AR, tangible assets) and current liabilities.

References:

1. T. Doliashvili, V. Nadiradze. Analysis of the Characteristics of the Financial Stability of the "United Airports of Georgia" in 2017–2021. International online Conference Materials. 2022, 7–8 October.
2. https://www.airports.ge/images/stories/PDF/ENGUAG2021.pdf
3. https://www.airports.ge/images/stories/PDF/2020.pdf
4. https://www.airports.ge/images/stories/PDF/2019.PDF
5. https://www.airports.ge/images/stories/PDF/2018.pdf