
RESILIENCE OF THE UNITED STATES ECONOMY TO EXTERNAL SHOCKS

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Abstract. A multidimensional analysis of one of main macroeconomic indicators, specifically, unemployment, in the United States was conducted and presented in the article. The research covered several groups of dependent variables, such as: the number of unemployed people in total in the United States monthly, along with unemployment rates, CPI indices, and unemployment in respective US states. The evaluation of the conducted research is that from January 2020 to October 2023 there had been a visible decrease in unemployment rates, and their level is similar to the values recorded from January 2018 to January 2020, which clearly proves that the crisis caused by the COVID-19 pandemic has been averted. The analysis method was used in the study, i.e. distribution of variables into prime factors and comparison dynamically in order to detect the regularities occurring in them

Keywords: unemployment; unemployment rate; economic security; resilience; multidimensional comparative analysis; planning

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1. Introduction

The study outlines the following research problem: Has the economic crisis caused by the COVID-19 pandemic, in terms of the visible increase in unemployment in April 2020 in the United States, been averted in 2023? A research goal was outlined for the research problem. The aim of the article is to conduct a multidimensional comparative analysis of unemployment rates, the number of unemployed people, CPI indices (Zhang, Yang, 2023; Zhang, 2023) in the United States from January 2018 to September 2023. The research hypothesis adopted in the study is as follows: it is assumed that the US economy showed resilience to such external shock as COVID pandemic, and in due to this resilience, increase in unemployment in April 2020 in the United States was averted in 2023. The research methods used in the study are, among others, an analysis of literature on unemployment, unemployment rates and economic security. The research period covered the period from January 2018 to September 2023.

2. Analysis of the literature on the subject of research

In the 21st century, economic security has become one of the most important terms related to the functioning of the economies of respective countries around the world, identified with the certainty of survival and development of the economic system of the state and international economic organizations, along with instruments

guaranteeing their appropriate international position in social relations and the expected standard of living of citizens, especially when facing crises (Nurzyńska, 2016, p. 22; Okunola & Fakunle, 2021; Kozicki, 2022, p. 23; Agbaje, 2022; Kovács, 2022; Vyas-Doorgapersad, Shava, Olowu, 2023; Tsheola, Sebola, Mamabolo, 2023; Szigeti, Pásztóová, Mezösi, 2023; Korauš et al., 2023).

One of the dependent variables influencing economic security is broadly defined unemployment. The analysis of the literature indicates that the term „unemployment” is related to the inability to find a job for gainful purposes by people of working age and looking for it. This concept refers to professional activity, population and the size of employment (Piwowarczyk, Stanek, Górecka, 2023). There are many causes of unemployment, and from the point of view of the subject of the publication, the most significant one is the crisis situation caused by the COVID-19 infectious disease pandemic (Mizura, Mitkow, Kozicki, 2023, p. 39-40; Jurgilewicz et al.; 2022; Piwowarski et al., 2012). Its first symptom was the weakening of the passenger air transport sector, which in turn led to the collapse of domestic air service providers (Periokaite & Dobrovolskiene, 2021; Kozicki, 2022, p. 12). Then, such an economic power as the United States, there was restructuring and, consequently, the shutdown of various economic activities. About 20,5 million people lost their jobs in April 2020, including about 10 million in two weeks (Bujak, 2020), and the unemployment rate rose to 14,7% (Szymański, 2020; Słomski, 2020; Walczyński, 2020; Oko.press, 2023; 300Gospodarka, 2020). Since May 2020, the unemployment rate in the United States has been decreasing. During that time, 9,2 million job vacancies were recorded in enterprises (Kieszek, 2021). Unemployment in respective countries of the world is measured using an index called the unemployment rate. In the literature, the unemployment rate is considered to be the percentage of the labor force that does not have a job but is registered as looking for one (Begg, Fisher, Vernasca, Dornbusch, 2014, p. 304). Reducing the unemployment rate in the United States (Kozicki, Kalwasiński, 2021) has become the main goal of the authorities of the state (Markiewicz, 2021). Legal issues related to the limitations and assumptions regarding the dismissal of employees in enterprises began to be considered (Morawski, 2023).

In October 2023, the unemployment rate in the United States reached 3,9%, causing total nonfarm employment for the month to increase by 150,000 people, with the number of unemployed people standing at 6,5 million people. Unemployment rates in October 2023 in the United States in respective registered social groups were as follows: adult men (3,7%) and adult women (3,3%), teenagers (13,2%), whites (3,5%), blacks (5,8%), Asians (3,1%), and Latinos (4,8%). It should be emphasized that among the unemployed, the number of people who lost their jobs permanently increased by 164,000 within a month, and those on temporary leave increased by 873,000. The number of people in the United States working part-time for economic reasons is 4,3 million people in October 2023. During the period under consideration, the number of unemployed people who want to work was 5,4 million. Those people are not counted as unemployed because they have not been actively looking for a job in the last four weeks. It is worth emphasizing that in October 2023, the number of jobs in health care, government and social assistance increased. However, in industry there were decreases caused by strikes by 35,000 jobs, as well as in transport and warehousing - by approximately 15,000 jobs. In October, compared to September, the hourly pay increased by 7 cents, and over the last 12 months, the arithmetic mean of hourly rates increased by 4,1 percent. In 2023, there have been high levels of unemployment in respective US states. An example is Illinois, where in October 2020 approximately 290,000 inhabitants were unemployed (Wyderka, 2022).

According to the author of the study, the above-mentioned observations and the current state of the US economy allow us to accept the thesis that the largest economy in the world, which is the United States, has showed resilience in terms that it has overcome the crisis caused by the COVID-19 infectious disease pandemic, because the average interest rate of unemployment indicators has reached the level oscillating around the level recorded in 2019 (Patyk, 2023). What is particularly important in terms of the proper functioning of respective economies is their multidimensional dynamic observation with respect to detecting crises, fluctuations of various market variables caused by them and methods of overcoming them in order to counteract other similar random phenomena in the future. A multidimensional comparative analysis (Nermend, 2017, p.151) of unemployment in the United States from January 2018 to September 2023 was conducted in the study. Additionally, unemployment rates in respective US states were analyzed and CPI indices were examined.

3. A multidimensional comparative analysis

The research began by outlining data on unemployment rates in the United States from January 2018 to October 2023 in Figure 1 across eight groups of dependent variables: total unemployed; men aged 20 and over; women aged 20 and over; unemployed aged 16 to 19; whites; blacks and African Americans; Asians; Spaniards and Latinos.

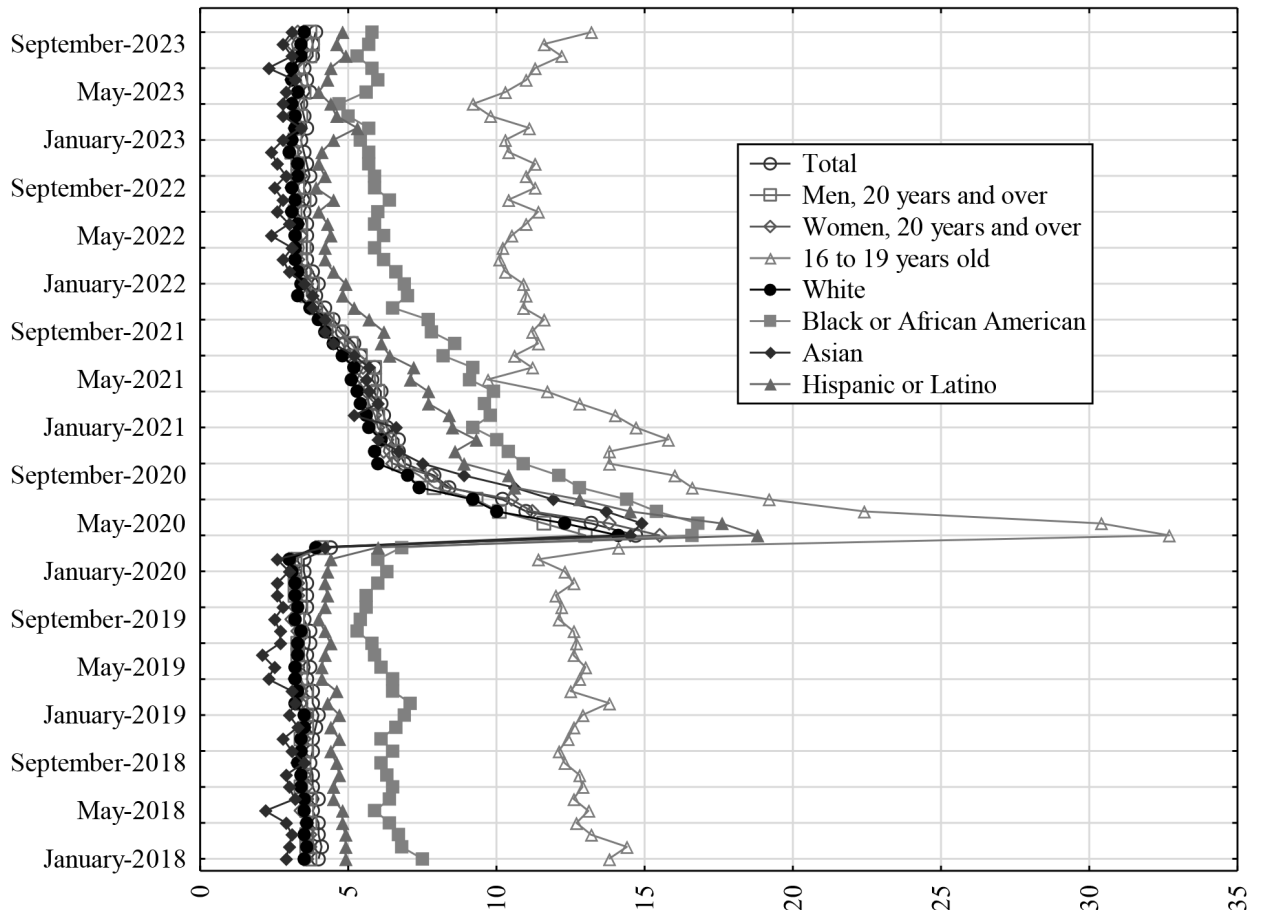


Figure 1. Categorized line chart of unemployment rates in the United States from January 2018 to October 2023 in eight groups of dependent variables: total unemployed; men aged 20 and over; women aged 20 and over; unemployed aged 16 to 19; whites; blacks and African Americans; Asians; Spaniards and Latinos

Source: own study based on data obtained from the website:
<https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm> (as of 15.11.2023)

The data in Figure 1 shows that the highest median of unemployment rates in the eight groups of dependent variables analyzed is in the group of unemployed people aged 16 to 19 and amounts to 16,25%. The second place is the group of Black and African American people with a median of 6,4%. The third place in the ranking is taken by the group of Spaniards and Latinos (median 4,6%). In the remaining four groups, the median of unemployment rates range from 3,05 to 3,6%. These are variables that are similar to each other dynamically. The arithmetic mean of the medians of the considered variable groups was 3,8%. In the time series considered within the time period from January 2018 to October 2023, a noticeable increase in unemployment rates in April 2020 is present. The highest one in the group of unemployed people aged 16 to 19 with a median of 32,7%, and the lowest one in the group of white men over 20 with a median of 13%. From April 2020 to January 2022, there are visible declines in the unemployment rates in the respective dependent variables under consideration. From January to October 2023, their level is similar to the values recorded from January 2018 to January 2020, which proves that the crisis caused by the COVID-19 pandemic has been averted.

Then, for research purposes, Figure 2 presents data on unemployment rates along with the number of unemployed people and the twelve-month percentage change in the number of unemployed people in respective states of the United States in September 2023.

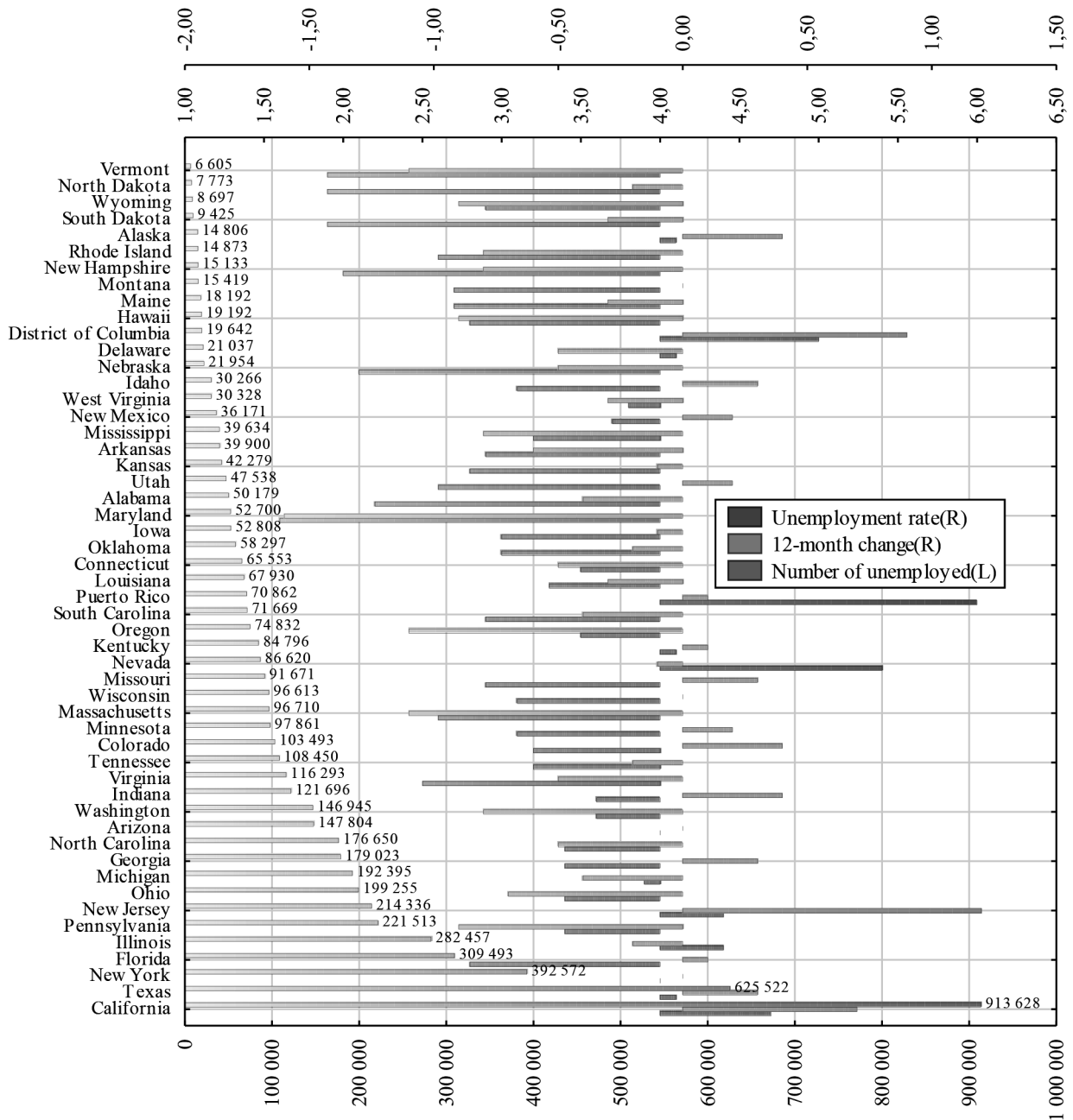


Figure 2. Categorized bar chart of unemployment rates with the number of unemployed people and the twelve-month percentage change in the number of unemployed people in respective US states in September 2023 (data ranking was conducted on the basis of the number of unemployed people in respective US states in September 2023): number of unemployed people - left Y-axis; unemployment rate – first right Y axis; 12-month change in unemployment rate – second right Y-axis

Source: own study based on data obtained from the website:
<https://www.bls.gov/charts/state-employment-and-unemployment/unemployment-rate-12-month-change-in-the-unemployment-rate-and-number-of-unemployed-by-state.htm> (as of 15.11.2023)

The conducted analyzes show that the highest unemployment rate in September 2023 in the 52 states in the U.S. was in California: 913 628. The second place in the ranking is occupied by the state of Texas with unemployment of 625 522. The third place is the state of New York with unemployment of 392 572. Florida ranks fourth (number of unemployed: 309 493). The lowest unemployment in September 2023 in the USA was recorded

in the state of Vermont: 6605 unemployed. The median of the unemployed in the U.S. in September 2023 was 69 396 unemployed. The arithmetic mean was 115 951 unemployed, with a standard deviation of 158 845,26.

The highest unemployment rate in the 52 analyzed US states was observed in Puerto Rico: 6%. This was followed by Nevada (5,4%) and the District of Columbia (5%). The lowest was in Maryland and amounted to 1,6%. Looking at 12-month percentage increases in unemployment rates, the highest one was recorded in New Jersey, where the increase was 1,2 percentage points. The District of Columbia was in the second place with an increase of 0,9 percentage points, and California was in the third place (an increase of 0,7 percentage points). The highest declines in unemployment rates over the period considered were in Maryland: at 1,6 percentage points.

Then, data on the monthly arithmetic mean of prices of eleven groups of CPI dependent variables in the United States from January 2018 to September 2023, in dollars, was analyzed in terms of the impact of the COVID-19 pandemic.

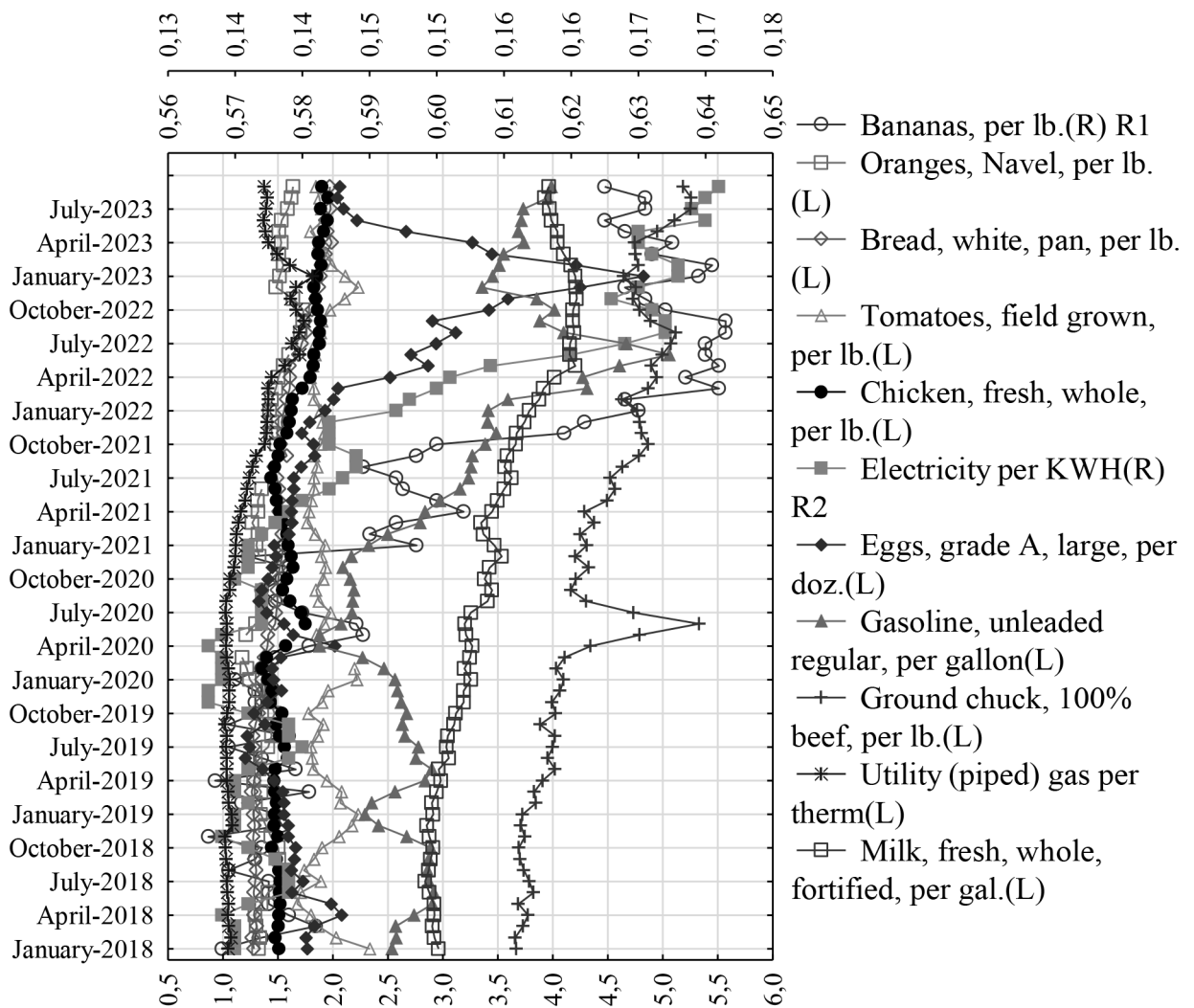


Figure 3. Categorized line chart of the monthly arithmetic mean of prices of 11 groups of CPI dependent variables in the United States from January 2018 to September 2023, in dollars (bananas - first right scale of the Y axis; electricity - second right scale of the Y axis; other dependent variables– left scale of the Y axis)

Source: own study based on data obtained from the website:

<https://www.bls.gov/charts/consumer-price-index/consumer-price-index-average-price-data.htm> (as of 15.11.2023)

The data presented in Figure 3 shows that the price increase in the eleven groups of dependent variables under consideration was most noticeable in terms of the impact of the COVID-19 pandemic in the case of meat

prices - minced meat, beef. The price from March to June 2020 increased from \$4,11 to \$5,33. It should also be emphasized that this was the group of variables with the highest prices, and their arithmetic mean in the period in question was USD 4,38. Considering the price increases of the analyzed groups of time series from January 2018 to September 2023, the largest ones were in the case of fuels and gas: from \$2,539 to \$3,988, i.e. an increase of 57,07 percentage points. In the period under consideration, out of eleven groups of dependent variables, price declines were observed only in food products (tomato). The decline from January 2018 to September 2023 was from \$2,336 to \$1,844, so 21,06 percentage points.

The last stage of the research was to forecast unemployment in the United States for three future periods from November 2023 to January 2024.

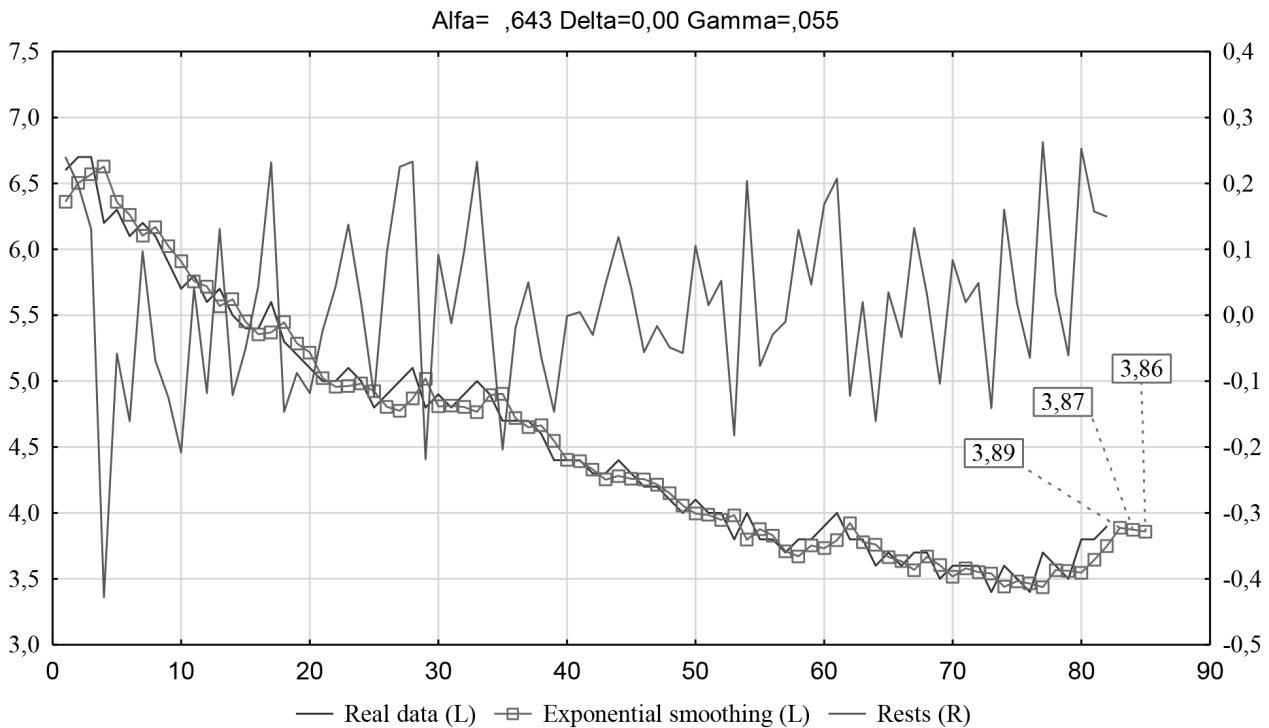


Figure 4. Forecasting unemployment rates in the United States from November 2023 to January 2024

Source: own study based on data obtained from the website:
<https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm> (as of 15.11.2023)

Forecasted unemployment for November 2023 is 3.89 (Fig. 4). In the following months, it is expected to drop to 3.87 and to 3.86 in January 2024. The MAPE error was 2.89.

4. Summary and conclusions

In the 21st century, people can increasingly witness a „cascade crisis situation”. Events occur that trigger subsequent events that pose a challenge to security. It is worth mentioning the following the financial crisis between 2007-2009, the annexation of Crimea by Russia, and, above all, the COVID-19 pandemic (Kozicki, 2022, p. 30). The long-term slowdown of the air transport sector has caused side effects in other sectors and changes never seen before, such as exceptionally large increases in unemployment.

The conducted research indicates that the COVID-19 pandemic in April 2020 caused an exceptionally substantial increase in the general unemployment rate - up to 14,7% in United States. The highest increase in unemployment was observed in the group of unemployed people aged 16 to 19, with a median of 32,7%, and the lowest one in the group of white men over 20 - with a median of 13%. From January 2020 to October 2023, there is a visible decline in unemployment rates, and their level is similar to the values recorded from January

2018 to January 2020, which clearly proves that the crisis caused by the COVID-19 pandemic has been averted. The highest unemployment in September 2023 in the 52 US states was in California and amounted to 913 628 people. Second in the ranking was the state of Texas with unemployment of 625 522. Third was the state of New York with unemployment of 392 572. The arithmetic mean was 115 951 unemployed, the standard deviation was 158 845,26.

The increase in prices in the eleven groups of considered dependent variables in terms of CPI index was most noticeable in terms of the impact of the COVID-19 pandemic in the case of meat prices. From March to June 2020, they increased from \$4,11 to \$5,33.

Forecasted unemployment for November 2023 is 3.89 (Fig. 4). In the following months, it is expected to drop to 3.87 and to 3.86 in January 2024. The MAPE error was 2.89.

This allows the authors to state that the purpose of the article was achieved, and the research hypothesis was verified. Continuous examination of economic indices in terms of cause-and-effect analysis in respect of noticing strong deviations in dependent variables strengthens economic security. This, in turn, enables planning (Mitkow, Tomaszewski, Kozicki, 2021, p. 63-162) and execution activities in terms of decision-making, challenges and risk reduction. To sum up, economic security is one of the determinants of the development of states and nations, which requires systematic research, as well as planning and incurring related financial resources.

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