

Miscellaneous

**Moldova's Race Against time to
Adhering to the European Union**

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Abstract: The paper deals to the idea of supporting Moldova's adhering to the EU as soon as possible. In order to have a scientific approach of this process, the analysis is focused on four representative economic indicators (GDP growth rate, unemployment and inflation rates and public debt). The comparative analysis between EU average, Bulgaria, Romania and Moldova covers 2009-2015. It is coupled with the regression analysis, in order to quantify the disparities between the above four economic entities. The intermediate results of the analysis in the paper support the cluster approach for the four economies. A distinct part of the analysis is the use of forecasting procedures for all four economic indicators, in order to highlight the possibility of decreasing the economic disparities between Moldova and the other three economies at the end of 2020. The main conclusion of the paper is that Moldova is not able to achieve the EU average economic development even in 2020. This is why a political decision can be change this unoptimistic conclusion. The analysis in the paper is supported by the latest official statistic data, pertinent tables and diagrams.

Keywords: economic disparities; GDP growth rate; unemployment rate; inflation rate; public debt; economic forecasting.

JEL Classification: E60; F43; F63; O52; R11

1. General Approach

The political, military and socio-economic context at the EU's Easter borders became very dynamic. In order to stop the Russian expansion in the region, USA, Canada and U28 use economic sanctions. Moreover, EU28 supports Moldova and Ukraine in their future adhering process.

Moldova faces to the risk of being target for the Russian expansion. This is why the political elections' new context allows Moldova to choose for the European way.

The paper deals with the idea of quantifying Moldova's economic potential in order to forecast its adhering to the EU horizon. In order to realise this, the analysis

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is focused on the main macroeconomic indicators in Moldova, Romania, Bulgaria and EU average. Romania and Bulgaria were chosen as the lowest developed Member States and EU average is interesting in order to establish the economic disparities between Moldavian and European economies. On the other hand, the adhering decision becomes more a political than economic decision. This is why Moldova should have the opportunity to burn some steps on the adhering road.

2. Literature: Critical Overview

The post global crisis' economic recovery created new disparities across the Member States. This is why EU launched Europe 2020 Strategy, an ambitious project which should be support better the socio-economic cohesion at the end of 2020 (European Commission, 2010).

The economic environment's instability forced the European Commission to realize two forecasts every year. According to the latest official statistic data, EU28 will achieve better economic growth rate in 2015, but the employment and the inflation rates will stay high (European Commission, 2014, p. 1).

Bulgaria will achieve higher economic growth rate in 2015, but it will face to labour market's weakness and inflation during the same year (European Commission, 2014, p. 51).

On the other hand, Romania will succeed in labour market stabilisation and unemployment rate maintaining in 2015, but it will face with higher inflation (European Commission, 2014, p. 93). The GDP growth rate was 3.9% in the first semester of 2014 in Moldova (National Statistical Bureau of Moldova, 2014).

An interesting comparative analysis between Romania and Moldova was focused on the economic performances of both countries. The first conclusion of this analysis was that Romania and Moldova have the same situation as Eastern and Western Germany in 1990 and the GDP/capita rate is almost 4:1 (Anghel, I. & Cîrchelan, A., 2013).

On the other hand, Moldova started a powerful economic recovery process, in order to decrease the disparities to EU average. As a result, the GDP growth rate will increase constantly during 2014-2017, but they will not be able to achieve almost 9.0% as in 2013 (World Bank, 2014).

The latest economic forecast in Moldova talks about the need of making structural reforms in order to improve competitiveness and economic growth (Piontkivsky, R. & Chistruga, M., 2014).

3. Research Methodology

It is very difficult to quantify the macroeconomic evolution under a very volatile global economic environment.

The analysis in the paper used the most possible long statistic data related to the main macroeconomic indicators for EU28, Bulgaria, Romania and Moldova. As a result, GDP growth rate, unemployment rate, inflation rate and public debt are used in the analysis.

The comparative analysis is followed by regression, in order to highlight the disparities between the above four economic entities. The regression is applied using ANOVA conditions.

The analysis' results support the cluster approach in studying the macroeconomic performances of these countries. The two-step cluster analysis is realized under Euclidean distance measuring. Last but not the least, forecasting procedures are used in order to quantify the economic results at the end of 2020. The dependent variables are the annual values of the economic indicators, while the independent value is time. The forecasting method is ARIMA. All intermediate and final conclusions are supported by pertinent statistic tables and diagrams.

4. Economic Trends and Dynamics

The global crisis' impact was important not only across the less developed Member States, but on EU28 average and other European countries. The economic recovery started in 2010 is not yet finished in all Member States. As a result, the GDP growth rate presents high disparities (see Table 1).

Table 1. GDP growth rate (%)

	2009	2010	2011	2012	2013	2014	2015
EU28	0.9	2.0	1.7	-0.4	0.1	1.5	2.0
Bulgaria	2.9	0.4	1.8	0.8	0.6	1.7	2.0
Romania	3.2	-1.1	2.2	0.7	3.5	2.3	2.5
Moldova	-6.0	7.1	6.8	-0.8	8.9	2.0	3.0

According to Figure 2, Moldova will achieve highest GDP growth rates in 2014 and 2015, comparing to the other analyzed three economic entities.

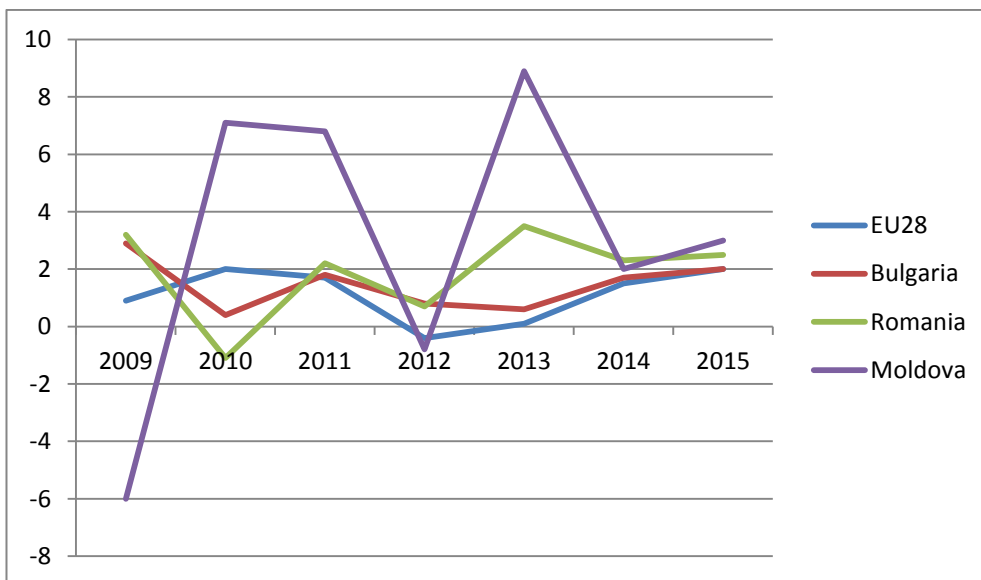


Figure 1. GDP growth rate (%)

The GDP growth rate in 2014 supports the idea of cluster approach for the analysed economic entities (see Figure 2).

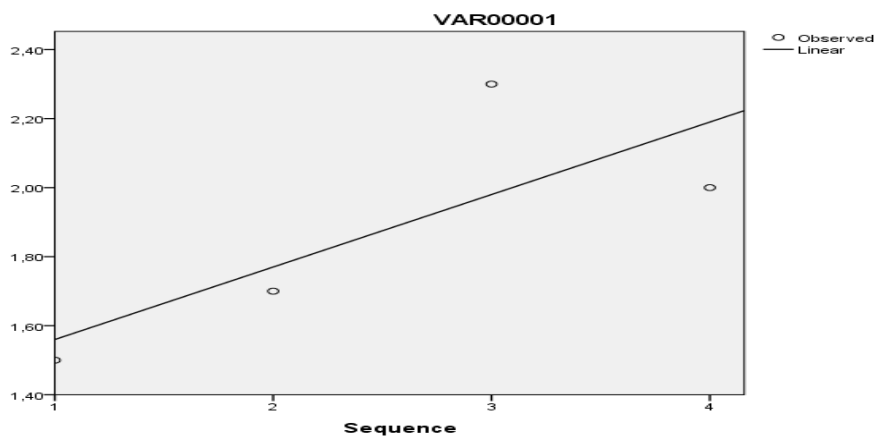


Figure 2. GDP growth rate's disparities

Source: personal contribution using IBM-SPSS software

Figure 2 allows introducing the cluster approach in the analysis. The paper uses two clusters: EU average and Bulgaria as the first cluster, and Romania and Moldova as the second one. The viability of this approach is presented in Figure 3.

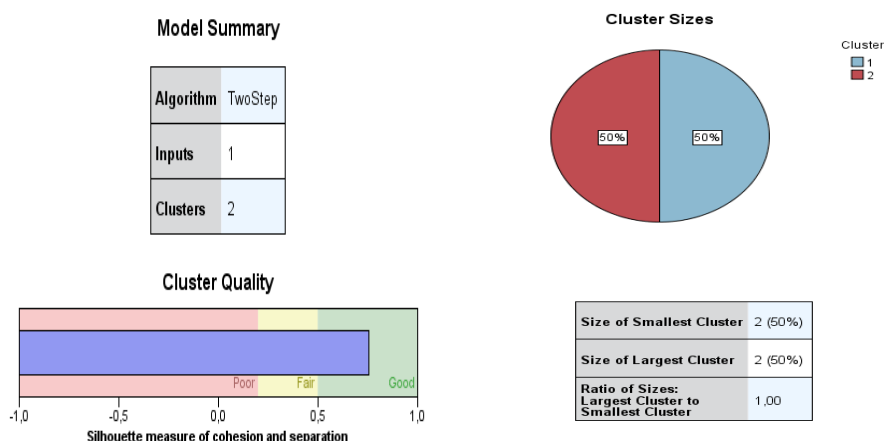


Figure 3: GDP growth rate under cluster analysis

Source: personal contribution using IBM-SPSS software

The cluster's quality is good enough (0.75) and the ratio of the cluster sizes is 1.0. These results confirm the viability of the cluster approach in the paper. The unemployment rate achieved high rates during the crisis' impact. The economic recovery started in 2010 led to a decrease of the unemployment (see Table 2).

Table 2. Unemployment rate (%)

	2009	2010	2011	2012	2013	2014	2015
EU28	8.1	9.7	9.7	10.5	10.9	10.7	10.4
Bulgaria	10.3	10.3	11.3	12.3	12.9	12.7	12.1
Romania	6.4	7.3	7.4	7.0	7.2	7.2	7.1
Moldova	6.0	8.3	5.9	5.7	5.1	4.8	4.7

On the other hand, Moldova will achieve the lowest unemployment rates of the analyzed group in 2014 and 2015.

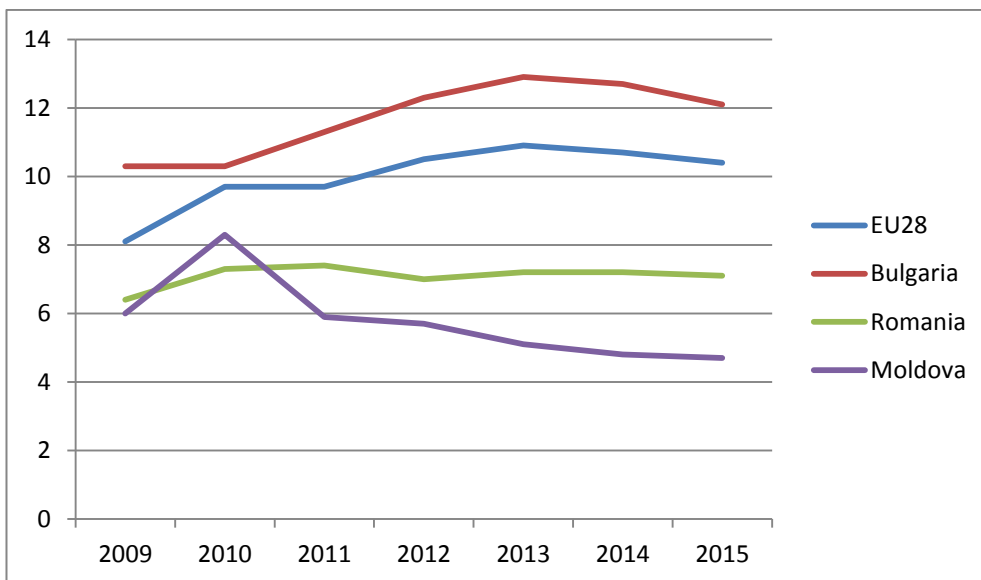


Figure 4. Unemployment rate (%)

The unemployment rate in 2014 achieved high rates in Bulgaria and EU28 and lower rates in Romania and Moldova (see Figure 5).

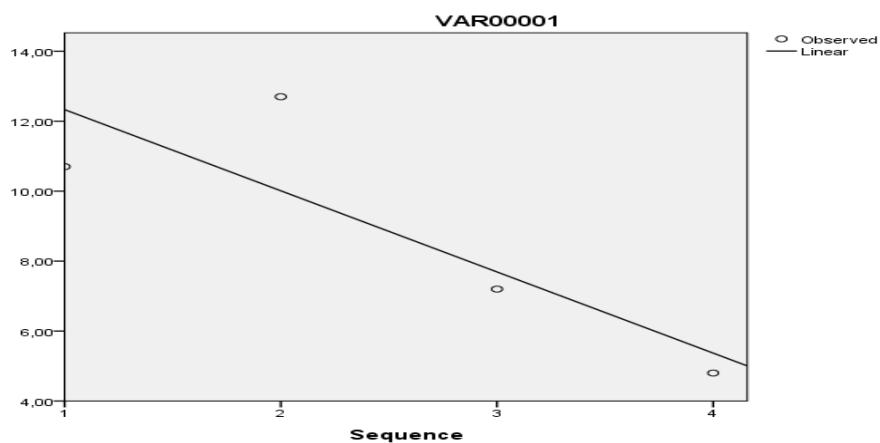


Figure 5. Unemployment rate's disparities

Source: personal contribution using IBM-SPSS software

According to the above analysis' steps, the cluster structure is presented in Figure 6.

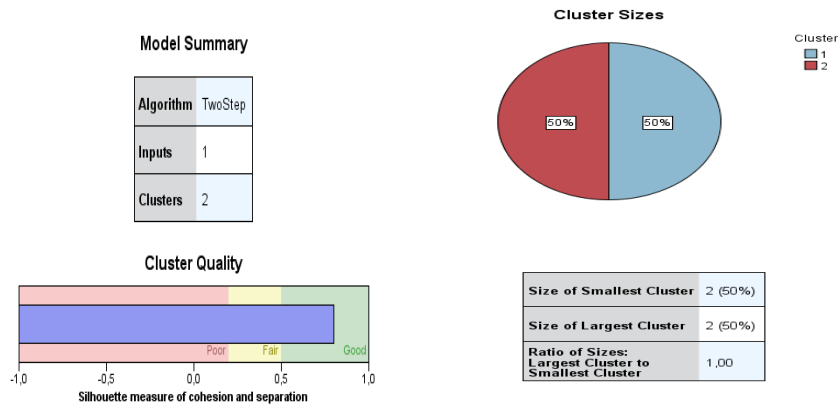


Figure 6: Unemployment rate under cluster analysis

Source: personal contribution using IBM-SPSS software

The cluster quality (0.8) is followed by a good ration of cluster sizes (1.0).

The third indicator used in the analysis is the inflation rate. All three analyzed economies faced to higher inflation rates than the EU average (see Table 3).

Table 3. Inflation rate (%)

	2009	2010	2011	2012	2013	2014	2015
EU28	1.3	1.1	2.1	1.6	0.5	0.2	0.5
Bulgaria	2.0	2.0	2.4	1.4	-0.6	-0.5	0.8
Romania	5.1	5.1	4.8	2.4	2.2	1.4	2.4
Moldova	1.2	10.3	6.2	6.6	3.5	4.5	3.9

Moldova will face to highest inflation rates during 2014-2015 (see Figure 7).

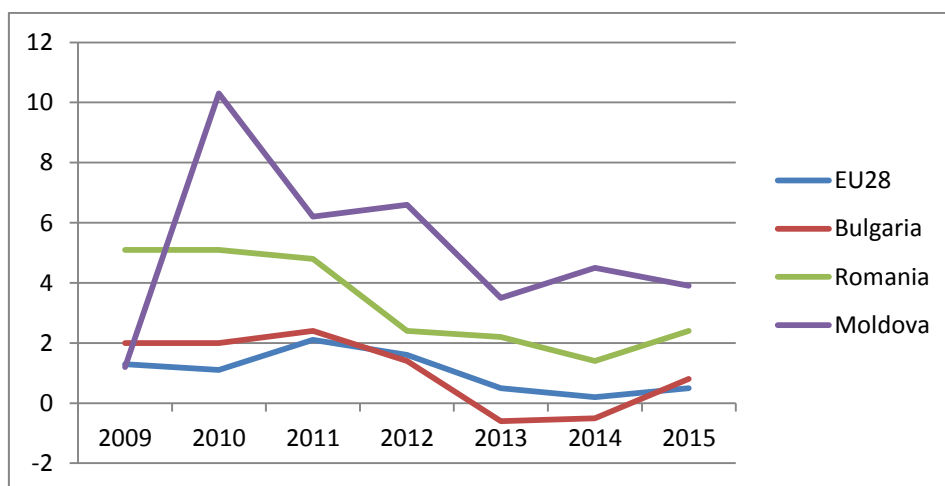


Figure 7. Inflation rate (%)

Moreover, the inflation disparities between the four economies are very high in 2014 (see Figure 8).

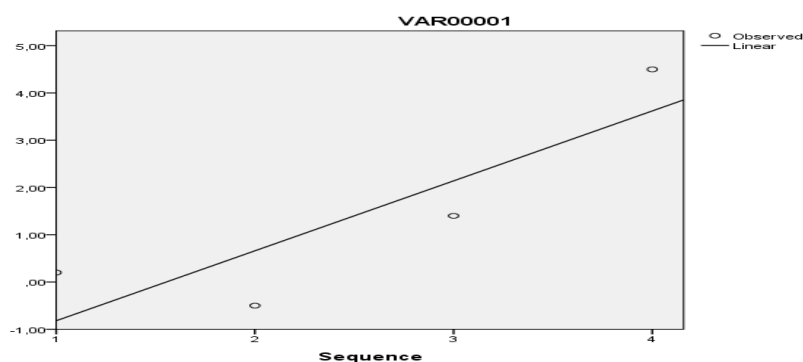


Figure 8. Inflation rate's disparities

Source: personal contribution using IBM-SPSS software

According to Figure 8, two clusters can be built under the inflation rate. The viability of this assumption is demonstrated in Figure 9. Unfortunately, a good cluster quality (0.83) is followed by a high ratio of cluster sizes (3.0).

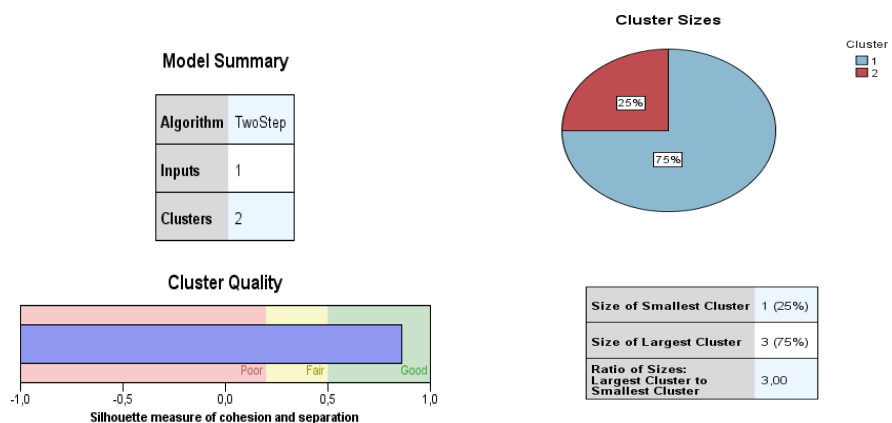


Figure 9. Inflation rate under cluster analysis

Source: personal contribution using IBM-SPSS software

The last analyzed economic indicator is public debt. This debt will be basically constant high during 2013-2015 in the EU28.

Table 4. Public debt (% of GDP)

	2009	2010	2011	2012	2013	2014	2015
EU28	80.0	80.0	82.8	86.6	89.4	89.7	89.5
Bulgaria	16.2	16.2	16.3	18.5	19.4	22.7	24.1
Romania	30.5	30.5	34.7	38.0	38.3	39.3	39.2
Moldova	29.0	31.9	30.3	33.2	32.5	33.2	33.9

Moldova has not the worst situation connected to the public debt (see Figure 10).

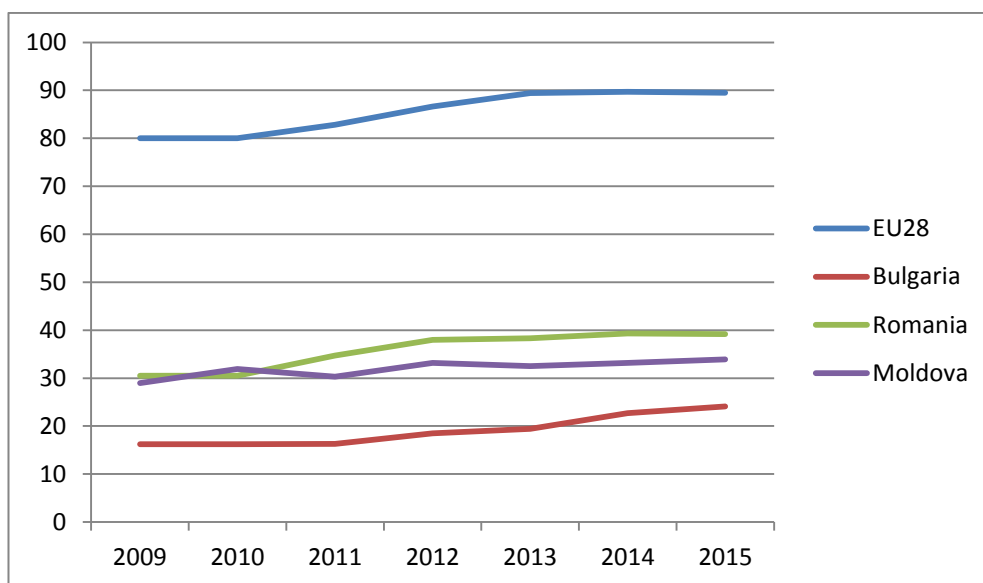


Figure 10. Public debt (% of GDP)

On the other hand, Bulgaria, Romania and Bulgaria will achieve lower public debt rates that the EU average. This situation leads to Figure 11.

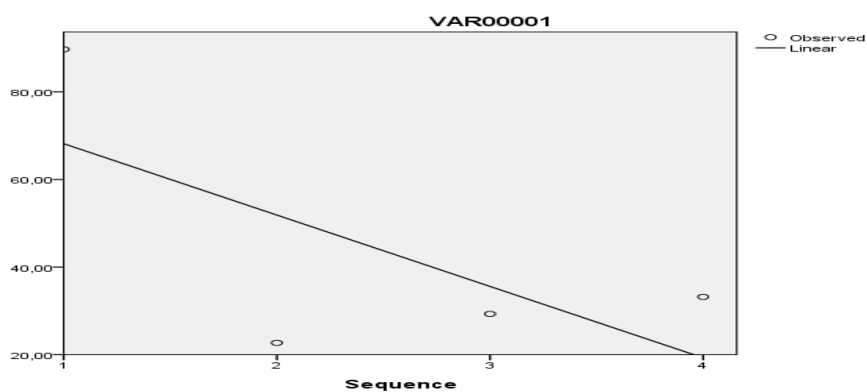


Figure 11. Public debt rate's disparities

Source: personal contribution using IBM-SPSS software

The two-step cluster approach is supported by the best cluster quality in the paper (0.9) but high ratio of cluster sizes (3.0).



Figure 12. Public debt under cluster analysis

Source: personal contribution using IBM-SPSS software

The first intermediate conclusion in this chapter is that Moldova will achieve better performances for three indicators on short time (2014-2015). The problem is the inflation rate, which is still too high.

The second conclusion supports the cluster approach in economic analysis, which is verified by the cluster quality's values and the ration of the cluster sizes.

5. Forecasting the Moldavian Economy during the New Financial Perspective

The positive dynamics of the above three economic indicators in Moldova have to be analyzed carefully. These dynamics are not able to cover the great disparities between Moldova, Bulgaria, Romania and the EU28 average.

The GDP/capita, for example, is a good example. The latest official statistic data talk about great disparities between the four above economic entities (see Figure 13).

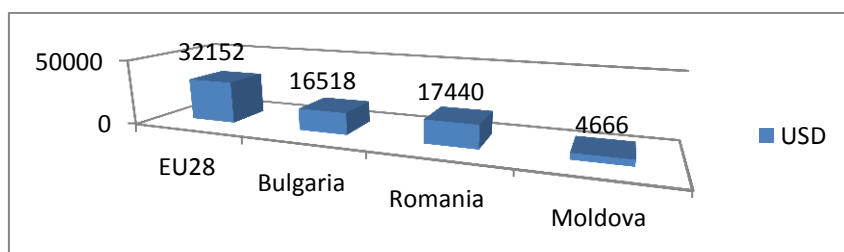


Figure 13. GDP/capita in 2013 (USD)

According to Figure 12, GDP/capita in Moldova represents only 14.51% of the average GDP/capita in EU28 (International Monetary Fund, 2014). As a result, forecasting procedures are necessary in order to see the performance of the Moldavian economy at the end of 2020. In order to obtain more available results, the period used for forecasting was extended to 2000-2014. The GDP/capita forecasting leads to the following results (see Figure 14).

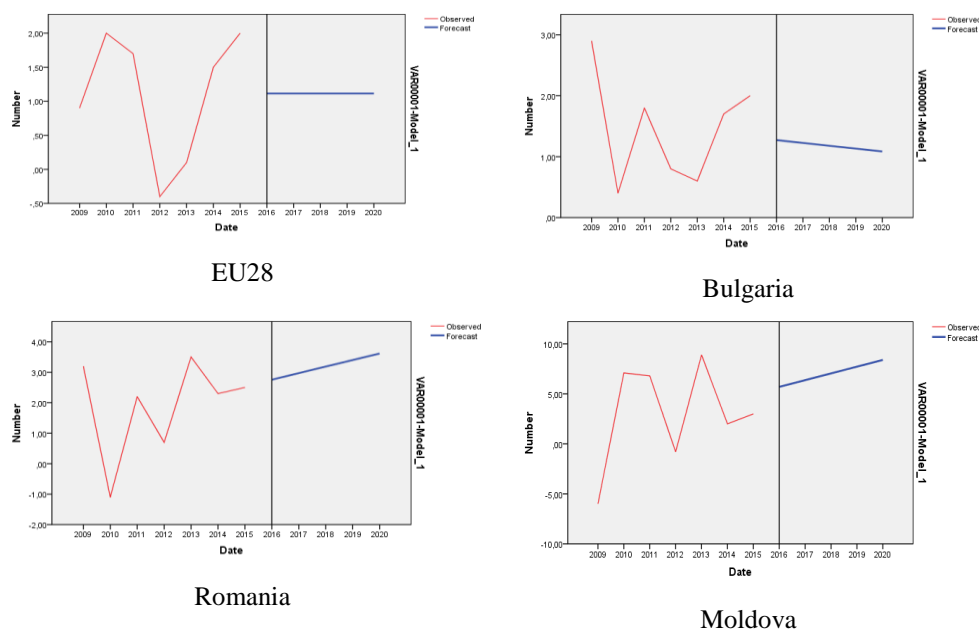


Figure 14: GDP forecasting (%)

Source: personal contribution using IBM-SPSS software

According to Figure 14, Moldova will achieve high GDP growth rates, especially during 2016-2020. Unfortunately, these high growth rates will not be able to eliminate the difference between the Moldavian economy and EU28 average at the end of forecasting period.

The unemployment represents a great challenge for Moldova. The unemployment rate forecasting leads to positive results (see Figure 15).

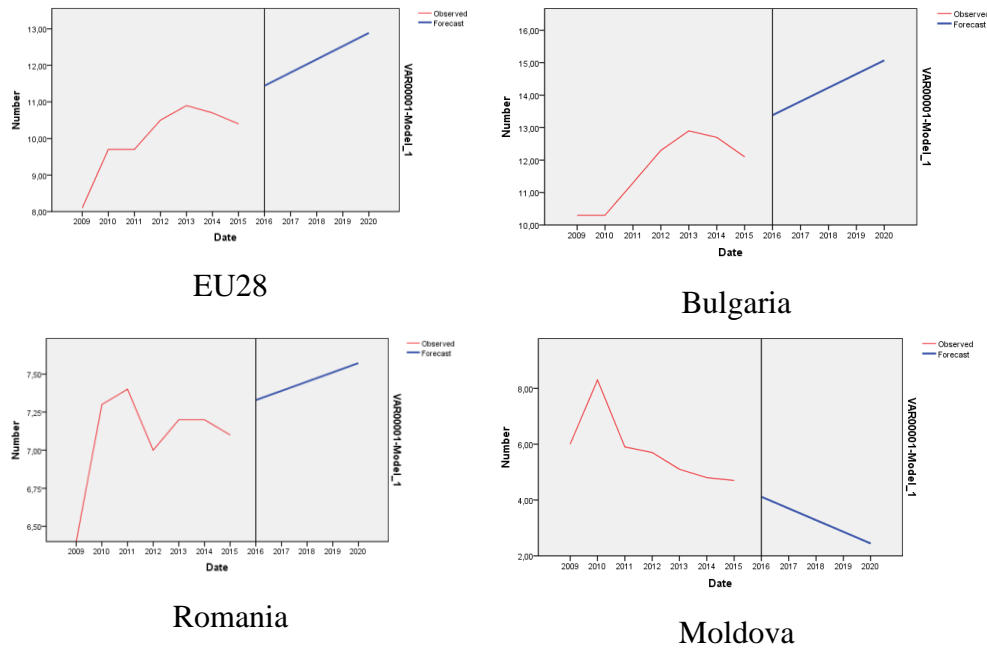
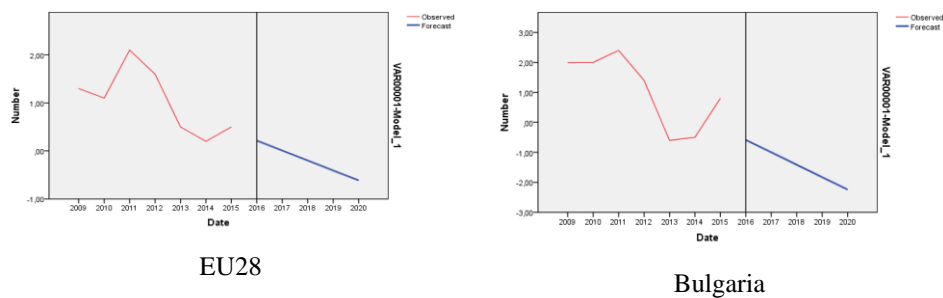


Figure 15. Unemployment rate forecasting (%)

Source: personal contribution using IBM-SPSS software

Basically, Moldova will achieve the best results related to the unemployment rate in 2020. This is a positive point, able to support its future adhering to the EU.

The inflation rate is important in having a competitive economy. Moldova faced to high inflation rates. Nowadays, it succeeded in decreasing the inflation rate but not enough. The trend of this indicator is inadequate (see Figure 16).



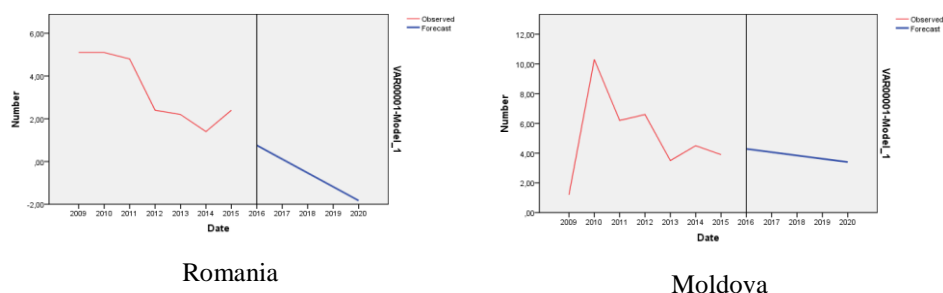


Figure 16. Inflation rate forecasting (%)

Source: personal contribution using IBM-SPSS software

Moldova will face to high inflation rates, even in 2020, while the other three economic entities will pass through disinflation. As a mechanic model, the fourth economic indicator seems to have better values, at least in 2014.

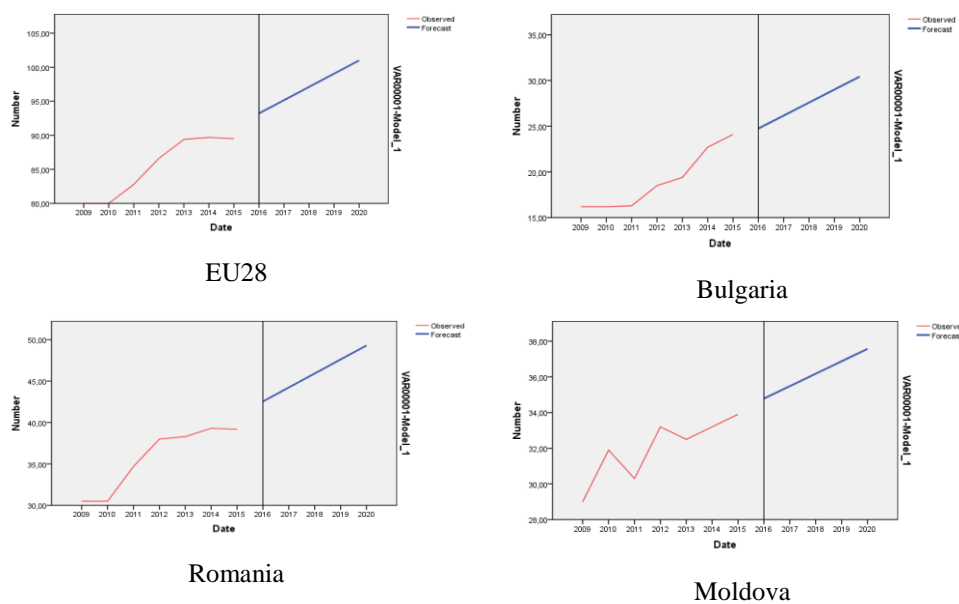


Figure 17. Public debt forecasting (% of GDP)

Source: personal contribution using IBM-SPSS software

With a forecasted public debt of 37% of GDP, Moldova will have a better position than the EU average in 2020.

6. Conclusions

The military and political crisis in Ukraine, the new elections' results, the permanent support of Romania and Moldova's history ask for the European way. The analysis of the Moldavian economy leads to less positive conclusions. Despite the high efforts to decrease the socio-economic disparities between Moldova and the Member States, the forecasts are not optimistic. Even in 2020, Moldova will be not able to achieve the EU average economic performances. A realistic adhering process has to take into account at least a medium term. Until then, EU, including Romania, has to improve the financial and technical support for Moldova. Finally, a political decision can be used in order to accelerate Moldova's adhering to the EU.

7. References

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