

THE NEW ECONOMIC GOVERNANCE IN THE EU MEMBER STATES. MACROECONOMIC RESULTS AND STATISTICAL CORRELATIONS FOR ROMANIA

Assoc. Prof. Mirela Cristea Ph. D
University of Craiova
Faculty of Economics and Business Administration
Craiova, Romania
Ionuț Drăgulin, Ph. D Student
University of Craiova
Faculty of Economics and Business Administration
Craiova, Romania

Abstract: In the current economic context of economic and financial crisis, many European countries are facing with fundamental issues and trends that are unsustainable on the long term. In these circumstances, we have developed the present study which analyzes the EU strategies for establishing a new economic governance for all Member States. We present the perspective of Romania's macroeconomic stability in the European context, in its process for accession to the EMU, through the nominal and real convergence criteria. On this background, we make a statistical study on the direction of causality relation between GDP and the main factors of the influence at the macroeconomic level. Reviving growth, as predicted by Romanian institutions, would produce major benefits to act extensively through coherent policies to balance the money market, the labor market and the fiscal framework.

JEL classification: C15, O11, O52

Key words: new economic governance, EMU, nominal and real convergence criteria, economic growth, statistical correlations

1. INTRODUCTION

In the current economic context of economic and financial crisis, many European countries are facing with fundamental issues and trends that are unsustainable on the long term. In these circumstances, to which is added the heterogeneity, and interdependencies between EU economies, establishing of a new economic governance is more necessary than ever, but also the most difficult to achieve. EU experts, in the Europe 2020 Strategy, suggest an economic governance based on three pillars (http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/priorities/economic-governance/index_ro.htm):

-strengthen the supervision of the EU's economic and fiscal policies, as part of the Stability and Growth Pact, but also through new tools to stop the macroeconomic imbalances (creating a monitoring mechanism), adopting new working methods (so called the European Semester), which allows discussion of economic and budgetary priorities, at the same time of each year;

-ensuring the stability of the Eurozone, in response to the sovereign debt crisis, by creating pf temporary and permanent support mechanisms for Member States (European Stability Mechanism - ESM), conditioned by the implementation of some reform programs and fiscal consolidation;

-the recovery of the financial sector, through the actions outlined above.

For this, it is required macroeconomic analysis, and appropriate measures to correct any imbalances.

In the last years, EU Member States have made divergent economic choices that have led to significant differences in competitiveness and the emergence of macroeconomic imbalances in the EU. Through the monitoring mechanism proposed by EU, the Member States' economies will be monitored in order to detect any macroeconomic imbalances (eg. Real estate bubbles, rising of the current account deficit or the surplus, lower competitiveness). If Member States exceed the "alert levels", the Commission will make in-depth analysis to determine whether imbalances are detrimental and, if appropriate, proposes recommendations.

The Eurozone Member States agreed on a supplementary program of reforms, known as "Euro Plus Pact" (approved in March 2011), joined more six other countries that are not part of the Euro area, namely: Bulgaria Denmark, Latvia, Lithuania, Poland and Romania. Pact aims four areas: competitiveness, the employment, the sustainable public finances and strengthening financial stability. The commitments under the Pact are integrated in the new economic governance framework and they are included in the national reform programs of the Member States.

For Romania, at present, there is no deadline for adopting the single European currency, under the terms of its 2007 entry into the European Union, as an obligation assumed by all EU member countries, except Britain and Denmark. According to the objectives outlined by the Convergence Program of Romania for the period 2014-2017, 1st January 2019 would be a realistic date (The Romanian Government, The Convergence Program for the period 2014-2017, pp. 5), previously been targeting the year 2014 and then 2015 (the countries from the Euro-zone present stability programs, and those outside the Euro area show the convergence programs).

2. THE MACROECONOMIC RESULTS IN ROMANIA IN FRONT OF EURO ADOPTION

To adopt the single currency, according to the Maastricht Treaty (which entered into force on November 1, 1993), Romania must meet all ***the five nominal convergence criteria*** set out therein: *long-term interest rates* (percent, annual average); *exchange rate leu-euro*; *the consolidated budget deficit* (percent of GDP); *public debt* (percent of GDP); and the *inflation rate* (HICP) (percent, annual average).

The near term prospects for the nominal convergence criteria fulfilment in Romania can be found in Table no. 1.

Table no. 1. Near-term prospects for cumulative fulfilment of nominal convergence criteria

No.	Nominal Convergence Indicators	Maastricht Criteria	Indicators for Romania	Difference from the criteria
1.	Inflation rate (HICP) (percent, annual average)	<1.5 pp above -0.3% ¹⁾ (average of the three best performing Member States)	2.3 (March 2014)	+1.1 pp
2.	Long-term interest rates (percent per annum)	<2 pp above 3.4% ²⁾ (average of the three best performing Member States in terms of price stability)	5.3 (March 2014)	Fulfilled
3.	Exchange rate (vs. euro) (percentage change)	+ or – 15%	+1.6/-5.9	Fulfilled
4.	General government deficit (percent of GDP)	Below 3%	2.3	Fulfilled
5.	Government debt (percent of GDP)	Below 60%	38.4	Fulfilled

¹⁾reference level, March 2014, (Cyprus, Latvia, Bulgaria)

²⁾reference level, March 2014, (Bulgaria, Latvia)

Source: Mugur Isarescu, "Romania: Recent macroeconomic & Banking System Developments", National Bank of Romania (NBR), 30 April 2014

The only indicator which was not achieved at the moment of March 2014, was the inflation rate (HICP). According to NBR's current projections, the required level of the inflation criterion will be reached in 2014.

The average annual inflation is estimated at around 2%, consistent with the ECB's objective of price stability. At the end of 2014, the annual inflation reached the historical minimum level, 1.4% since 1990, with 1.5 percentage points lower than at the end of 2013, the lowest value in the last 24 years. The average annual inflation for 2013 was 3.98%, with 0.65 percentage points under the average level of the previous year.

The fiscal deficit will stay below the EU's reference value of 3% of GDP. On the average, the annual fiscal deficit of Romania was reduced with 1.4 percentage points. Due to these results, Romania, along with Denmark, were the single countries from the non-euro zone which entered under the monitoring mechanism of Medium Term Objectives (MTO).

According to the Convergence Program of Romania for the period 2014-2017, the target of the fiscal deficit for 2014 was set at 2.2% of GDP, and for the period 2015-2017, the fiscal deficit target is estimated under the value of 2% of GDP.

Despite growing rapidly during the economic and financial crisis, the public debt-to-GDP is still one of the lowest in the EU and is estimated to stabilize below 40% of GDP over the medium term. The 2013 level of 38.4% of GDP is significantly lower than the maximum limit of 60% established by The Maastricht

¹European Central Bank

Treaty. From the total public debt-to-GDP at the end of 2013, the internal public debt represented 17.5% of GDP, and the external public debt, 20.9% of GDP.

A scenario made by the Public Finance Ministry using the sensitivity analysis of public debt-to-GDP, reveals the following tendencies²:

- a decrease of the projected economic growth by 1% of GDP would negatively impact the indebtedness level, which will go up by 1.7% of GDP in 2017;

- the depreciation of the domestic currency by 10% compared to euro (which is the main foreign currency in which is denominated the foreign government debt portfolio) would lead to an increase of government debt share to GDP of up to 2.0% of GDP in 2017;

- a fiscal deviation translated in a cash deficit of around 2% of GDP during 2015-2017 would result in an increase of the indebtedness level of up to 2.0% of GDP in 2017, while the joint impact of these factors on the government debt share to GDP would push this indicator up by 5.9% of GDP in 2017.

Regarding the factors which influence the interest payments, the scenario made by the Romanian Ministry of Public Finance shows that:

- the depreciation of the national currency against the euro by 10% would have a low negative impact on the interest payments, which will go up by up to 0.06% of GDP in 2017, while the interest rates raising by 1% would result in a higher increase of interest payments share by up to 0.15% in 2017;

- the joint impact of these factors on the payments would trigger a raise of interest payments by 0.21% of GDP in 2017.

In terms of *real convergence*, though the Treaty of Maastricht is not referred to them, and there are not binding of any kind of rules, the real convergence criteria should pay at least as much attention as the nominal convergence criteria, to keep up the economy in the moment of passing to the common currency, with the pace of European economies.

The main criteria of real convergence are: *the degree of economy openness* (expressed as the share/proportion of the sum of exports and imports in the GDP of a country); *the share of bilateral trade with the EU countries in total foreign trade*; *the structure of the economy* (expressed as the share of big industry sectors, agriculture, services have in creating GDP) and the most synthetic criterion, *the GDP/capita* (expressed either at nominal exchange rate or by purchasing power parity standard).

The real convergence criteria are supported by an economic growth that appears set to continue, the current forecasts averaging around 2.8-3% annually³. Regarding the real convergence, assessed through the gaps of GDP per capita expressed in Standard Purchasing Power (SPP), Romania has progressed

²The Romanian Government, The Convergence Program for the period 2014-2017, April 2014, pp. 45-46, http://discutii.mfinante.ro/static/10/Mfp/pdc/ConvergenceProgramme2014_2017ro_5mai.pdf

³ It should be mentioned that during the global recession, Romania had been transformed from the EU's fastest growing economy and an attractive destination for foreign investors to a problem zone in dire need of aid.

significantly in the last two years, in 2014 GDP per capita arriving at 54% of the EU28 average, and respectively, 52.9% in 2012 and 51.2% in 2011.

In line with the economic developments outlined by The Convergence Program of Romania (2014-2017), the above indicator of real convergence will reach nearly 65% of the EU average in 2018, with an estimation of 69.5 % for 2020 (see Table no. 2).

Table no. 2. Perspectives of GDP per capita in Romania expressed in Standard Purchasing Power (SPP)

Indicator	2012	2018	2020
GDP per capita in Romania (SPP), % of average of EU- 28	52.9	64.2	69.5

Source: The Eurostat, and The Romanian Government, The Convergence Program for the period 2014-2017, April 2014, p. 5, http://discutii.mfinante.ro/static/10/Mfp/pdc/ConvergenceProgramme2014_2017ro_5mai.pdf

The new euro-zone states' experience reveals that the GDP per capita, as an objective of the real convergence criteria, is realistic as far as the ratio related to the EU average of GDP per capita is up to 60%.

At EU level, one of the priorities is the annual growth analysis. Adoption of the Annual Growth Survey (AGS) marks the start of the European Semester of economic policy and budget coordination. European Semester ensure that the Member States are developing their economic and budgetary policies respecting the commitments that they have made to the EU (debt and deficit obligations settled by Stability and Growth Pact, the economic reform plans included in recommendations of 2014, specific to each country, and long-term objectives for growth and employment of the Europe 2020 Strategy).

3. ECONOMIC GROWTH ANALYSIS IN ROMANIA IN CORRELATION WITH THE MAIN MACROECONOMIC VARIABLES

3.1. Data sources and methodology

For our research, we used quarterly data offered by National Institute of Statistics from Romania and National Bank of Romania for the period 2006-2014. The method applied for the analysis of the linear regression model is the enter method, which involves the testing, as a whole, the independent variables, as well as the cumulative impact on the dependent variable.

In the linear regression model, we tested the following variables (Annex no. 1):

- economic growth rate (real quarterly growth rate of GDP), for what was verified the correlation as dependent variable;
- the interest rate margin, the average exchange rate (ron/euro), and the inflation rate, as independent variables.

Regarding economic growth, beginning with the year 2000, a new economic growth period starts reaching an end with the installation of the financial crisis at the beginning of 2008. The growth was determined, significantly, by rising the activity from service, construction and industry fields. The effective final consumption and, especially, individual final consumption of households had registered a high growth determined by, distinctively, the rising of goods sales through retail trade, and the population services activity. Also, the gross fixed capital formation and, especially, the investment level had registered substantial growths.

The economic growth after the year 2004, considered as the highest for Romania after 1989, was realised principally due to a good agricultural year and to constructions, with an increasing of 22% for agriculture and 9% for constructions. Generally, on the period 2000-2008, in Romania the most important contribution to the forming and dynamics of the GDP has the final consumption.

After year 2009, together with significant contraction of economic growth and rising of unemployment, the national currency (“leul”) has entered under the pressure, the credit debts rised unexpected, and the credit level reduced considerably.

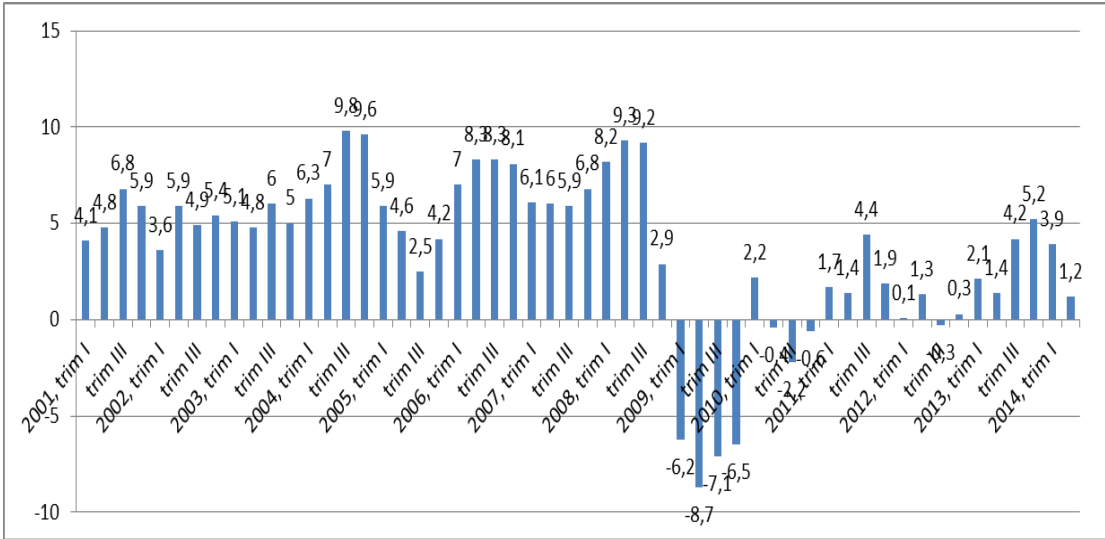


Figure no. 1. Economic Growth Rate in Romania, Quarterly Evolution 2001-2014

Dominated by foreign banks, banking activity grew quickly. From 2003 until the crisis, private sector credit grew at an average annual rate of 50 percent, the number of debts registered to payment of credits was to a constantly increase (21.9%, at the end of 2013, from the total non-governmental credits).

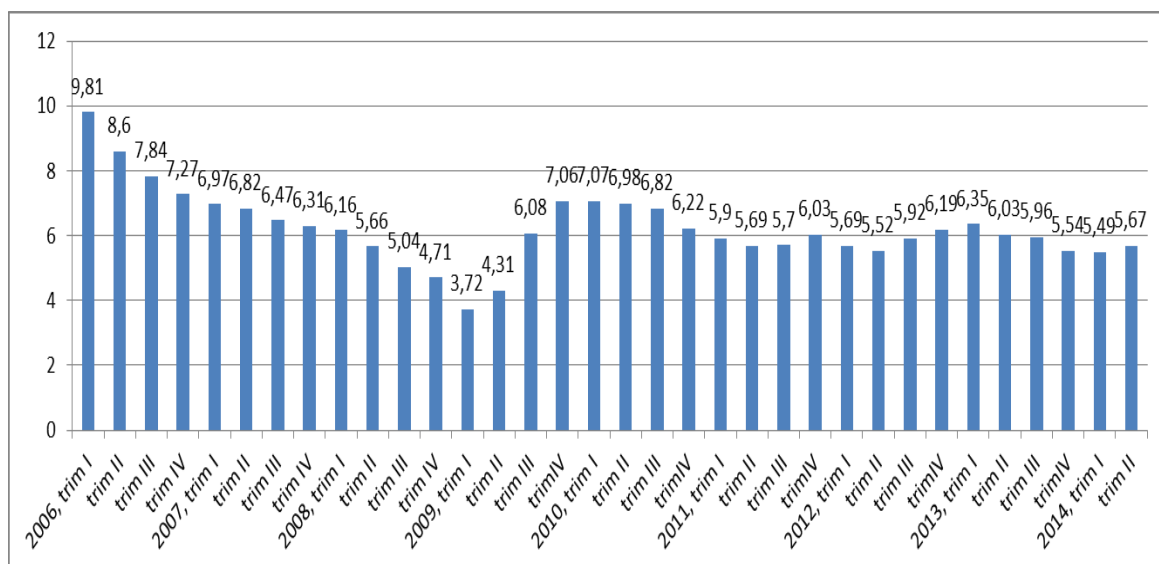


Figure no. 2. Interest rate margin evolution in Romania, Quarterly data, 2006-2014

Banks in Romania have charged high levels of interest rate margin compared with other countries, due to the lower level of financial intermediation recorded in Romania (the share of non-governmental credit in GDP was 10.1% in early 2001, gradually increasing to 35% in 2014). “The interest rate margin is among the most important factors that gauge the efficiency of financial institutions, and wide interest margins are seen to have negative implications for financial intermediation and financial development” (Hamadi&Awdeh, 2012).

Using these data, by applying the multiple linear regression method, it involves the statistical analysis of the correlation between the variables, which reveals whether there is or not a causal relationship between the two variables (dependent and independent) and what is the direction of this causality;

The Pearson’s correlation coefficient for the group of variables will indicate either a direct correlation, or a negative correlation (one variable increases when the other decreases).

We tested 34 observations (54 quarters in the analyzed period, 2001-2nd quarter of 2014) and the method chosen for the linear regression model analysis is the enter method.

3.2. Results and discussions

Applying linear regression function, using the enter method, in the Table no. 3, we can see the model of correlation between the considered variables:

- the economic growth (dependent variable);
- the interest rate margin (spread), the average exchange rate (ron/euro), and the inflation rate, as independent variables.

Table no. 3. The Model of the Correlation (Model Summary^b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.626 ^a	0.392	0.331	3.90809	0.392	6.441	3	30	0.002	0.877

a. Predictors: (Constant), Inflation rate, Interest rate margin, Average exchange rate

b. Dependent Variable: Economic growth rate

As can be seen in Table no. 3, by analyzing the correlation between variables through the value of R (Pearson correlation coefficient), the data shows a moderate (acceptable) correlation ($R = 0.626$) and a direct one (positive value of R). According to the R square result, 39.2% of the variability of the dependent variable, economic growth, is determined by the simultaneous action of the independent variables: interest rate margin (spread), the average exchange rate (ron/euro) and the inflation rate.

Verifying the statistical instruments, we also notes that none of the variables was not "removed" after statistical processing, as it is shown in Table no. 4.

Table no. 4. Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Inflation rate, Interest rate margin, Average_rate_exchange ^a	-	Enter

a. All requested variables entered

b. Dependent Variable: Economic growth rate

The second step is verifying the F test, whose role is to demonstrate the existence of a single variable for which the regression is not zero. In rejecting the invalidity of the regression, it should be noted that the free variable, where one exists, should not be taken into account. In the ANOVA test, we note that the value for the variable F is not 0; this indicates that the assumption of invalidity of regression model shall be rejected. The significance of the independent variables should be lower than 0.05 so that the statistical analysis to be validated: Sig. from Model Anova value is only 0.002). The model is valid (correctly specified).

Table no. 5. The ANOVA Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	295.121	3	98.374	6.441	0.002
	Residual	458.194	30	15.273		
	Total	753.315	33			

a. Predictors: (Constant), Inflation_rate, Interest_rate, Average_rate_exchange

b. Dependent Variable: Economic_growth_rate

For determining the regression coefficients (column B of the Table no. 6), we used the Ordinary Least Square method (OLS). The results are shown in Table no. 6.

Table no. 6. The multilinear regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	21.482	9.679		2.219	0.034	1.714	41.250
	Interest rate margin	0.957	0.637	0.227	1.502	0.144	-0.344	2.258
	Average exchange rate	-5.776	1.710	-0.551	-3.378	0.002	-9.268	-2.284
	Inflation rate	-0.271	0,339	-0.124	-0.799	0.430	-0.963	0.421

Dependent Variable: economic growth rate

We note that, from the statistical point of view, only the variable the *average exchange rate* has a significant influence to the dependent variable, the economic growth rate (Sig.=0.002). The effect of other two independent variables, the interest rate margin and the inflation rate, is not significant (Sig.=0.144, respectively, Sig.=0.430).

The interpretation of the regression model reveals that, based on the data analysis for the period 2006-2014, on a short time horizon, it manifests the following influence: when the average exchange rate increases by 1%, the economic growth rate falls by 5.757%; the interest rate margin and the inflation rate, for this period, have not any sustainable statistical correlation with the economic growth rate.

Normal P-P Plot of Regression Standardized Residual

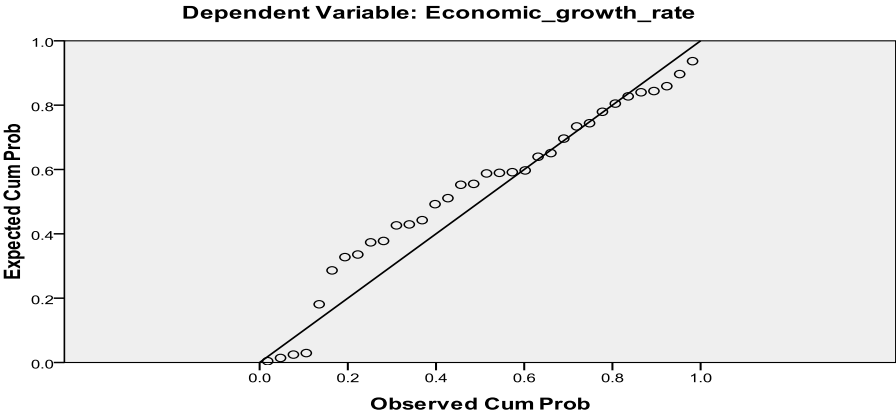


Figure no. 3. P-P Regression Standard Residual graph

In Figure no. 3, there are represented the residuals by comparing them with the normal distribution law (the dots near to the line), thus the linear regression model can be applied for the data analysed. Correlation graphics shows a correlation which is stabilizing around upper the values of probability (above 0.6).

4. CONCLUSION

The causality relation between GDP and the main factors of influence at macroeconomic level have been extensively and continuously analyzed. From these predictions, can be drawn possible macroeconomic imbalances that may occur in a country on a short time, being undertaken measures to avoid them.

From the analysis undertaken in the present study, we underline that, on a short period of time, the increasing of the exchange rate unfavorably influences the economic growth, while the inflation rate and the interest rate margin do not cause any statistical influence on economic growth.

The explanation of these results in Romania on the period analyzed is based on macroeconomic fluctuations, of economic boost until 2008, followed by a sharp decline after 2009, then a slight revival, which does not support establishing a sustainable causal link between variables.

We can argue that, the accession of Romania to EMU, like the other new EU Member States, considering that an approach based solely on the Maastricht criteria achievement is not enough. Despite recent positive evolutions, the overall preparedness still needs improving in terms of structural reforms, domestic slippages, progress towards real convergence and political consensus. For Romania, unless the competitiveness of the economy is improved, joining the euro-zone would end as a failure. The NBR governor Mugur Isarescu (2014) states that only in this way will euro adoption by new EU member states entail benefits for themselves and for the monetary union as a whole. This is explained by that, the deficit is in figures, the perspective problems are related with low income at the budget, on the background of an inadequate expenses management, credit orientation towards consumption and less to productive investments, in the deep crisis manifested in Romania, too.

On 6 May 2014, Romania presented the National Reform Programme for 2014, and on 5 May 2014, the Convergence Program for 2014. In the context of the European Semester, the Commission conducted a comprehensive review of Romania's economic policy and assessed the convergence Programme and national Reform Programme submitted. The Commission took into account not only their relevance for a sustainable fiscal and socioeconomic policy in Romania, but also their conformity with EU rules and guidance, given the need to strengthen the overall economic governance of the European Union by providing a contribution to EU to the future national decisions.

Future growth in Romania depends not only upon reestablishing macroeconomic stability, but also on improving capital investment, and increasing labor productivity. To boost investment, steps should be taken to improve the

business climate, improve infrastructure and EU funds absorption, and strengthen competition.

But, like any medium or long-term forecast, just in the coming years we will see if the forecasts constructed by 2020 will follow the course outlined, or a new wave of crisis will review these models.

On the other side, the introduction of the single currency in our country will possibly be followed by a period of instability, where the responsiveness and adaptation capacity of the national economy will be much diminished by the absence of its own monetary policy.

REFERENCES

1. Cristea, M., Dracea, R., Marcu, N. How can the economic growth be affected? Statistical analysis for Romania, *Proceedings of the Romanian Academy, seria B: Chemistry, Life Sciences, and Geosciences*, no. 3/2010, 241–248
2. Cristea, M., Bandoi, A., Ciobanu, A. Specific financial markets and their play into financial integration in Romania, European Research Study Group (E.R.S.G.) on the Political Economy of the E.M.U, Research on Jean Monnet Project, Retrieved from https://sites.google.com/a/jeanmonnet-emu.eu/emu_political_economy_apps/resources/publications-per-pillar, 2014
3. Cristea, M., Dracea, R., Meghisan, M. EMU's impact on the relation between economic growth and financial system in Romania, *Proceedings "International Conference on Applied Business & Economics", ICABE 2014*, 23 – 25 October 2014, University of Piraeus, Greece, Retrieved from http://www.icabe.gr/downloads/ICABE_2014_final_program.pdf
4. Isarescu, M. Romania: Recent macroeconomic&Banking System Developments, National Bank of Romania (NBR), 2014, 30 April
5. Hamadi H., Awdeh, A. The Determinants of Bank Net Interest Margin: Evidence from the Lebanese Banking Sector, *Journal of Money, Investment and Banking*, Issue 23, 2012
6. Tache, I., Cristea, M. Romania and the Euro Adoption: Increasing Economic Convergence in order to Join the EMU, European Research Study Group (E.R.S.G.) on the Political Economy of the E.M.U, Research on Jean Monnet Project, Retrieved from https://sites.google.com/a/jeanmonnet-emu.eu/emu_political_economy_apps/resources/publications-per-pillar
7. European Commission Annual Growth Survey 2014, Brussels, COM(2013), Retrieved from http://ec.europa.eu/europe2020/pdf/2014/ags2014_en.pdf
8. European Commission Recommendation for a Council recommendation on Romania's 2014 national reform programme and delivering a Council opinion on Romania's 2014 convergence programme, Bruselles, COM(2014) 424 final, Retrieved from http://ec.europa.eu/europe2020/pdf/csr2014/csr2014_romania_en.pdf
9. European Commission The Eurostat, and The Romanian Government (April 2014). The Convergence Program for the period 2014-2017, p. 5, Retrieved from http://discutii.mfinante.ro/static/10/Mfp/pdc/ConvergenceProgramme2014_2017ro_5mai.pdf

ANNEX NO. 1

The evolution of the Economic Growth rate, the interest rate margin, the average exchange rate, the inflation rate in Romania

Year	Trim	Economic Growth Rate (% same period of prev. year)	Interest rate margin (%)	Average rate exchange RON/EUR	Inflation rate
2006	trim I	7	9.81	3.5641	8.6
	trim II	8.3	8.6	3.5155	7.1
	trim III	8.3	7.84	3.5385	5.9
	trim IV	8.1	7.27	3.4762	4.78
2007	trim I	6.1	6.97	3.3818	3.83
	trim II	6	6.82	3.2821	3.79
	trim III	5.9	6.47	3.2347	4.99
	trim IV	6.8	6.31	3.4507	6.69
2008	trim I	8.2	6.16	3.6892	7.95
	trim II	9.3	5.66	3.6526	8.56
	trim III	9.2	5.04	3.5771	8.12
	trim IV	2.9	4.71	3.812	6.81
2009	trim I	-6.2	3.72	4.2662	6.77
	trim II	-8.7	4.31	4.1923	6.09
	trim III	-7.1	6.08	4.2247	4.99
	trim IV	-6.5	7.06	4.2659	4.56
2010	trim I	2.2	7.07	5.1156	4.63
	trim II	-0.4	6.98	4.1808	4.36
	trim III	-2.2	6.82	4.2547	7.5
	trim IV	-0.6	6.22	4.2885	7.86
2011	trim I	1.7	5.9	4.2247	7.53
	trim II	1.4	5.69	4.1347	8.23
	trim III	4.4	5.7	4.2575	4.18
	trim IV	1.9	6.03	4.3347	3.38
2012	trim I	0.1	5.69	4.3529	2.57
	trim II	1.3	5.52	4.4248	1.88
	trim III	-0.3	5.92	4.5218	4.07
	trim IV	0.3	6.19	4.5244	4.82
2013	trim I	2.1	6.35	4.3852	5.62
	trim II	1.4	6.03	4.3981	5.33
	trim III	4.2	5.96	4.4412	3.32
	trim IV	5.2	5.54	4.4514	1.75
2014	trim I	3.9	5.49	4.5019	1.05
	trim II	1.2	5.67	4.4272	0.94

