

# 3. ASSESSMENT OF ECONOMIC GROWTH OF THE REPUBLIC OF MOLDOVA IN THE CONTEXT OF GLOBAL ECONOMIC CRISIS

---

---

Alexandru Stratan<sup>1</sup>

## Abstract

*The world economic crisis has had a negative impact on the economic development of Moldova, but recent trends show that in 2010 we were able to forecast a small economic growth. The author examines the problems faced by the Moldavian economy which shackle its strong recovery. The current evolutions of the Moldavian economy are analyzed in the paper as well.*

**Keyword:** remittances, foreign trade, competitiveness, structural reforms, macroeconomic environment

**JEL Classification:** E02, E21, F24

The factors and models of economic growth have been a constant concern for scientists, and today, considering the fact that Moldova has not passed the transition period, problems and solutions for economic growth are very actual. Realities of the Republic of Moldova's economy represent an aspect that directs to the growth analysis. The economic growth has its specific character in the Republic of Moldova. In these circumstances, to reveal the economic growth process, based only on a unilateral approach, even theoretically founded, may not give good results.

The approach to economic growth over the time considered a number of trends and events. Among these, there can be mentioned two approaches: the neoclassical theory (exogenous economic growth) and the new growth theory (endogenous growth). Neoclassical economic theory, originally developed in the Solow-Swan model (1956), is based on the exogenous economic growth, supporting the development of a process of economic convergence between countries, due to the following assumptions:

---

<sup>1</sup> Institute of Economy, Finances and Statistics, E-mail: alex\_stratan@yahoo.com

- the capital is a subject of the decreasing returns - a prerequisite for economic convergence (growth slows in the rich countries and regions, which have accumulated some capital);
- returns to scale are constant;
- technical progress is exogenous;
- dissemination of technologies is instantaneous, contributing to the technological recovery of the countries that are technologically lagging behind.

More recently, Romer (1986) and Lucas (1988) have developed the new growth theory, which treats technological change as an endogenous variable that responds to the market signals. The technology dissemination is also endogenous. Investments in human capital, education, R&D activities, offer positive externalities. Thus, the successive increase of investments could have increasing returns, adding growing quantities to the total production.

Nowadays, the econometric methods are widely applied for the analysis of the economic growth process. In the Republic of Moldova there are some issues that make quite difficult to apply **econometric methods**:

- a relatively small number of observations. Moldova's economy is experiencing a relative rise since 2000, and due to this fact, regressions are based on samples that include the period of 2000-2009;
- no data on the evolution of economic variables. This can be explained by the fact that statistics, like the economy, is being in a transition process.

For this reason, examination of the economic growth is mainly done by using qualitative methods.

We still feel the influence of the crisis on the global economy still. After a sudden and synchronized global recession, the global economy is recovering very slowly. The economies in transition, which in 2009 had a significant downfall of 6.5% (UN, 2009), were particularly affected. The same is true for the economy of the Republic of Moldovan. In 2009, Moldova registered an economic downfall of 6.5%. The general decrease of economic activity generated a large budget deficit, amounting to 5346.3 million MDL, representing 9% of GDP. The economic downturn in 2009 resulted in a drastic decrease of population income (see Table 1).

**Table 1**

**Evolution of population income during 2005-2009**

	2005	2006	2007	2008	2009
Nominal GDP per capita (MDL)	10488	12497	14955	17649	16260
Real GDP per capita (MDL, prices for year 2000)	6294	6613	6828	7379	6542
GDP per capita (USD)	832	952	1232	1699	1463

*Source: Developed by the author based on data from [www.statistica.md](http://www.statistica.md).*

For Moldova, the worst impact of the crisis was the reduction of remittances. The remittances have a significant role in financing household consumption, which has had a share of over 90% of GDP since 2005 and determines national economy trends. Econometric approaches show the high explanatory capacity of the variable, which reflects the consumption in growth regressions. An example is the work examining

the relationship between inflation and economic growth in Moldova, and uses as an independent variable in the regression of growth and consumption (T-Student test for consumption takes on values greater than 1.96, fact that expresses the relevance of the factor) (Fala and Septelici, 2011). A regression of the following form was achieved:

$$\Delta \log Y = \alpha_1 \cdot (1 - dum)(\pi - \pi^*) + \alpha_2 \cdot dum \cdot (\pi - \pi^*) + \alpha_3 \cdot \Delta \log CM \quad (1)$$

where:  $Y_{it}$  - real GDP;

$\pi$  - inflation based on CPI;

$\pi^*$  - threshold level of inflation;

$dum$  – dummy variable, which is equal to 1 for the inflation values greater than the threshold level, and zero for the inflation values that are less than the threshold level;

$CM$  – households consumption;

$\Delta \log$  - logarithmic difference.

In the pre-crisis period, Moldova was among the world leaders in receiving remittances, so in 2008 the share of remittances represented 36.2% of GDP, Moldova being surpassed only by Tajikistan (Marandici, 2008). In population income, the remittances come second after wages and in rural areas they are even higher (see Table 2).

**Table 2**

**The share of wages and remittances in available income per capita (%)**

Total per country								
	2008				2009			
	Tr. I	Tr. II	Tr. III	Tr. IV	Tr. I	Tr. II	Tr. III	Tr. IV
Wages	43.2	40.7	43.7	43.9	43.5	43.8	45.2	42.8
Remittances	17.7	21.3	18.5	19.0	19.5	16.9	13.9	15.9
Rural area								
Wages	27.7	26.2	29.4	28.8	25.9	30.4	29.9	29.8
Remittances	23.8	29.0	24.5	26.1	24.2	20.2	19.0	20.8

Source: Developed by the author according to "Available incomes per capita (2006-2009)", Available at <<http://www.statistica.md/pageview.php?l=ro&idc=338&id=2354>>.

In 2009, the money transfers of individuals through the banking system (transfers through formal channels had a share of over 50% of the total remittances), decreased by 28%.

The expectations regarding the volume of remittances for 2010 are low. These are confirmed by the transfers received through the banking system during the period from January to July 2010, which make up 655.18 million USD - an amount slightly exceeding the entries of the same period of 2009, when they amounted to 628.12 million USD.

For 2010, an economic growth of 4.1% in Europe and Central Asia is expected. This level of growth is the lowest among developing regions, except for the Middle East and North Africa (IBRD/WB, 2010).

Data on GDP evolution for the first semester of 2010 show that the national economy is constantly recovering from the crisis – economic growth was recorded in the last two quarters.

This trend allows predicting that in 2010 a growth of more than 3% may be achieved, thus, Moldova would be among regional leaders in economic recovery (see Table 3).

**Table 3**

**Economic growth forecasted in 2010 for Europe and Central Asia countries**

Country	Forecasted economic growth rate (%)	Country	Forecasted economic growth rate (%)	Country	Forecasted economic growth rate (%)
Albania	3	Kazakhstan	2.1	Romania	-0.5
Armenia	1.2	Kyrgyzstan	2.2	Russia	4.5
Azerbaijan	2.3	Lithuania	0.5	Serbia	1.5
Belarus	2.4	Latvia	-3.5	Tajikistan	4
Bosnia and Herzegovina	0.5	Moldova	> 3	Turkey	6.3
Bulgaria	0.2	FYR of Macedonia	1.9	Ukraine	3
Georgia	4.5	Poland	3	Uzbekistan	8.3

Source: Developed by the author based on data of the World Bank and the National Bank of Moldova.

Compared to previous forecasts, e.g.: growth rate of only 1.5% provided in the “State Budget Law for 2010”, current forecasts inspire optimism. Despite the expectation of a relatively modest increase, the forecasts confirm the beginning of an ascension stage. It should be mentioned that the difficulties related to wine exports to Russia, as well as unfavorable climate conditions, which affected Moldova, will moderate the ascent, but the deviations will not decrease the growth rate below 3%. According to this scenario, the GDP will be able to reach its potential level in three years<sup>2</sup>. Moldova will slowly return to good growth rates.

So far, in the Republic of Moldova the *potential GDP* is determined only by using the *Hodrick-Prescott filter*. Hodrick-Prescott filter is an univariate method for measuring the potential GDP, and the most used in applied economic studies. The filter determines the trend of time series (the potential level for the real GDP), so as it has to minimize the square deviation of the series from the trend, and at the same time, to minimize the variation of the trend growth rate.

<sup>2</sup> The potential GDP was calculated using a Hodrick-Prescott filter.

Today, the *production function* is not used in order to determine the potential GDP, because of the irrelevant data character that is related to the capital stock. The production function is a reference point for the theory of economic growth. In its original sense, the production function has the following form:

$$Y = f(K, L, T) \quad (2)$$

where: Y- output level;

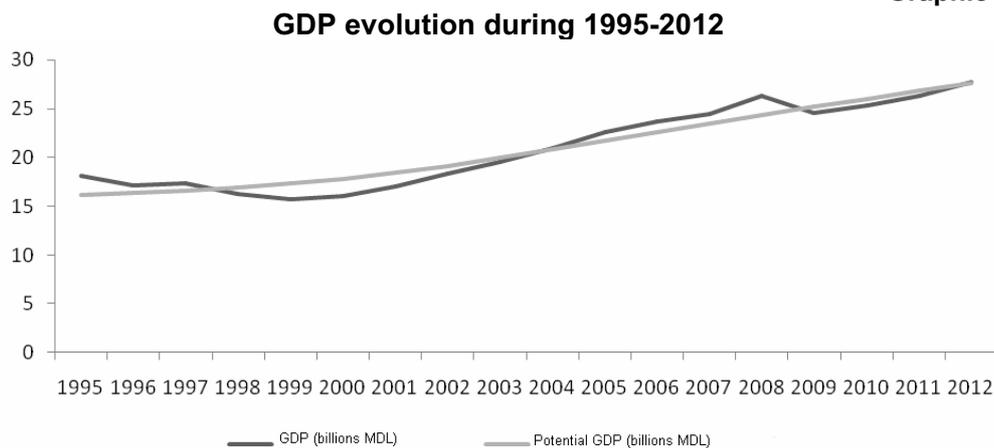
K – capital stock;

L – labor force;

T – knowledge or technology.

The analysis of the economic growth using production function is at an embryonic stage in the Republic of Moldova. The main problem of using the production function for Moldova refers to the absence of relevant data on the capital stock. Chistruga, in his study, determined the capital stock in an indirect way: for the initial capital stock, considered to be the 1995 one, a savings rate of 27% and a depreciation rate of 5% were applied (Chistruga, 2009).

Graphic 1



Source: Developed by the author.

The evolutions in the first quarter bring into question the character of the economic growth, because the main factor that contributed to GDP formation was net taxes on products, with a contribution of 2.8% and the gross value added played a second role. The data for the second quarter reflect a different situation, the main contribution to GDP formation amounted to 3% and is made already by gross value added.

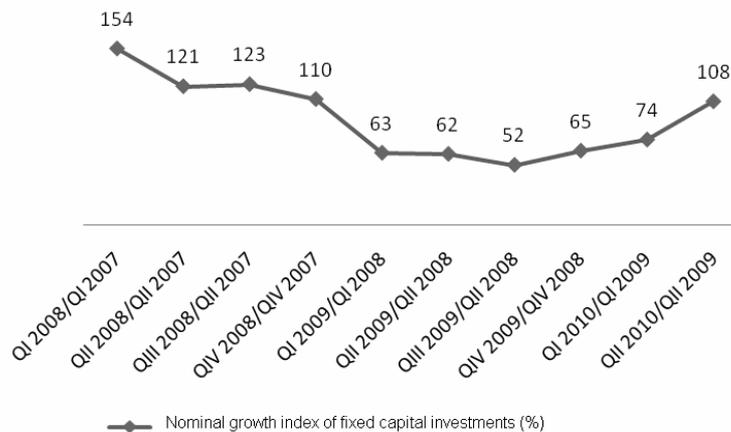
This evolution shows that the growth is due to the increase in produced goods and services amount. The economic recovery idea is supported by the evolution of other economic indicators as well. The variables reflecting the economic activity increase: according to statistics from January-July 2010, manufactured industrial production value increased by 6.6% compared to the same period of the previous year, while retail trade volume increased by 4.3% and the volume of services provided to the population increased by 6.3%.

The investment activity has overcome the recession as well (see Chart 1). In the second quarter of 2010, the investments in fixed capital represented over 2.4 billion MDL, a value that exceeds the volume of investments in fixed capital from the second quarter of 2009, when it amounted to about 2.2 billion MDL, making up 108% expressed as index of nominal growth.

However, we believe that for 2010 the investments in fixed capital will record only a slight nominal increase and in real terms a decrease will be recorded (Fala, 2010).

Chart 2

**Evolution of investments in fixed capital (as compared to the same period of the previous year)**



Source: Developed by the author based on data of the National Bureau of Statistics.

The foreign trade records a growth as well. The import during the first seven months of the year increased by 12.9%, compared to the same period of 2009, the export growth was lower, only 6.9%. These trends can be seen from two angles:

- on one hand, the faster growth of imports than exports will lead to trade deficit increase;
- on the other hand, the import growth leads to domestic demand recovery.

Using a simple linear regression including yearly observations from 1999 until 2009 one could demonstrate the presence of some good links between investment and exports, on one hand, and economic growth, on the other hand (Chistruga, Clipa and Fala, 2010). The equation is as follows:

$$\frac{Y_t - Y_{t-1}}{Y_{t-1}} = 0,035 + 0,13 \frac{INV_t - INV_{t-1}}{INV_{t-1}} + 0,2 \frac{M_t - M_{t-1}}{M_{t-1}} \quad (3)$$

(0,007) (0,049) (0,112)  
 [4,423] [2,561] [1,910]

where: Y – GDP;

INV – gross capital formation;

M – export.

The situation of exports is different. Although in the first seven months the exports increased by 6.9%, the volume of goods directed towards EU is decreasing. During the first seven months, the exports to the EU market decreased and the exports to the CIS market increased by 13.9%, while to other countries - by 36.7%. Thus, these evolutions led to the decrease in the EU share in Moldavian exports structure from 54.5% in January – July, 2009 to 49.3% in 2010 and an increase in the share of the CIS countries by 2.3%, and of “other countries” by 2.8%, representing 37.9% and 12.8%, respectively.

The greatest contributions to exports evolution was made by: Russian Federation (5.2%), Turkey (4.3%), the United Kingdom and Ireland (1.9%), Greece (1%), USA (0.7 %), Ukraine (0.6%), Romania (-2.6%), Switzerland (-1.5%), Germany (-1%), Belarus (-0.6%), France (-0.4%). Italy, which in recent years has been a major outlet, was less responsive during this period, registering an increase of only 1%. The decrease of exports to European markets is due to the fact that these countries recorded low growth rates or even decrease of economic growth (see Table 4).

**Table 4**

**The real GDP growth rate to main export markets of EU**

	Growth rate compared to the previous trimester				Growth rate compared to the same period of the previous year			
	2009		2010		2009		2010	
	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2
EU 27	0.4	0.1	0.2	1	-4.1	-2.1	0.6	1.7
Romania	0.1	-1.5	-0.3	0.3	-7.6	-6.9	-3.2	-0.5
Italy	0.4	-0.1	0.4	0.4	-4.7	-2.8	0.5	1.1
Germany	0.7	0.3	0.5	2.2	-4.4	-2	2	3.7
France	0.3	0.6	0.2	0.6	-2.7	-0.5	1.2	1.7
Poland	0.6	1.1	0.5	-	1.4	2.8	2.8	-

Source: Available at <[http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/2-13082010-BP/EN/2-13082010-BP-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-13082010-BP/EN/2-13082010-BP-EN.PDF)>.

As a result of the problems caused by the crisis, the EU countries are moving towards price-competitive markets and the fact that in the first semester of 2010 imports from India (+24%) and China (+22%) accounted for the most significant increase in the EU are a proof of that.

Good results are recorded in public finance as well. In the first seven months of the year budget revenues amounted to about 14.6 billion MDL, which is a 100% fulfillment of the input budget. At the same time, a reduction of budget expenses was achieved. Thus, in the same period 16.12 billion MDL were spent, making up 86.2% of the planned amount. The fiscal-budgetary policy cannot be considered only from one point of view, as its effects are contradictory. A consequence of tax increases and currency depreciation, meant to increase budgetary revenue, was the prices increase, while budget expenses reduction moderates the aggregate demand. However, these measures made it possible to ensure the financial sustainability of the state, thus by the end of the year, the budget deficit may fall below 4 billion MDL. At the same time,

due to fiscal and budgetary adjustment the timely disbursement of salaries and other social payments was achieved, which allowed, in general, maintaining the purchasing power of households (real wage in January-July 2010 decreased by only 0.2% compared to the same period of the previous year) (Fala, 2010).

However, in this positive context, the issue of social and economic development quality remains valid for Moldova. The positive social effects are delayed. Moreover, the economic growth from the first trimester was not accompanied by the increase in the number of jobs. On the contrary, in the first half of the year, the population employment rate decreased and the unemployment rate increased.

The development is affected by the lack of sustainability of economic growth. One cause of this problem lies in the fact that Moldova has modest success in creating a solid institutional framework, which would make the economic growth efficient. Being an economy based on production factors<sup>3</sup>, the central role in ensuring national economic competitiveness belongs to such factors as: institutions, macroeconomic environment, infrastructure, health and primary education. According to “The Global Competitiveness Report 2010-2011”<sup>4</sup>, the situation regarding the institutions in Moldova is the worst (see Table 5)

**Table 5**

**Moldova’s position for main pillars ensuring the competitiveness of the country in global ranking**

Pillar	Rank (the place occupied by Moldova regarding this pillar among the states included in the ranking)	Number of countries included in ranking
Institutions	102	139
Infrastructure	97	
Macroeconomic environment	90	
Health and Education	84	

Source: Developed by the author according to data available on World Economic Forum, *The Global Competitiveness Report 2010-2011*, 2010. Available at: [http://www.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2010-11.pdf](http://www.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf).

<sup>3</sup> According to the classification underlying the “Global Competitiveness Reports”, the economies fall into three categories: factor-based economies, economies based on factors use efficiency, economies based on innovations. In the development process, the economies evolve from production factors-based economies towards efficiency-based economies, subsequently reaching the level of innovation-based economies.

<sup>4</sup> The report is annually drawn up by the World Economic Forum and assesses the competitiveness of economies depending on 12 pillars: institutions, infrastructure, macroeconomic environment, health and primary education, tertiary education, commodity market efficiency, labor market efficiency, financial market development, technology level, market size, business environment sophistication level, innovations.

According to the same report, the significant obstacles to entrepreneurship are: corruption and inefficiency of public institutions. In this context, a primary concern for the Government should be to achieve structural changes in the following areas:

- public institutions reform;
- state enterprises management improvement;
- regulatory reform follow-up;
- legal system reform;
- real fight against corruption.

## Conclusions

The pace of changes is very slow for structural reforms. The profound unbalances accumulated in the national economy throughout its existence, delay the progress of reforms. Bureaucracy, corruption and low efficiency of government agencies reduce the speed of reforms implementation as well. In order to create potential, which would ensure sustainable development, the Government should make serious efforts to promote deep structural reforms.

We want to mention that, despite the slight recovery, the Moldavian economy is exposed to major risks:

- the perpetuation of political instability will stop investors from initiating new projects. In this context, we might see a very slow recovery of investment activity;
- a possible rise in energy prices in the second half of the year will result in inflation increase;
- the uncertainty of the relations with Russian Federation involves the possibility of introducing restrictions on the export of products to this country.

## References

- Barro, R.J. Xavier, S., 2004. *Economic Growth*. Second Edition, New Delhi: Prentice Hall of India.
- Chistruga, M., 2009. *Evoluția dezvoltării economice a țărilor Europei Centrale și de Est în perioada post-integrare*. Ph.D. Universitatea Liberă Internațională, Chișinău. Available at: <[http://www.cnaa.md/files/theses/2009/13433/marcel\\_chistruga\\_thesis.pdf](http://www.cnaa.md/files/theses/2009/13433/marcel_chistruga_thesis.pdf)>.
- Chistruga, M. Clipa, V. and Fala, A., 2010. *Analiza performanțelor comerțului exterior al Moldovei prin prisma regimurilor preferențiale de comerț*. Chișinău: Institutul de Economie Financiară și Statistică.
- Fala, A., 2010. *Evoluții economice recente – Moldova reintra într-o fază de relansare economică*. [online] Available at: <[www.iefs.md](http://www.iefs.md)>.
- Fala, A. Septelici, V., 2011. *Aspecte cantitative în trioul: variabile monetare, inflație, creștere economică (Cazul Republicii Moldova)*, [online] Chișinău: Institutul De Economie Financiară și Statistică. Available at:

- <http://iefs.md/ro/activitatea-iefs/publicatii/74-aspecte-cantitative-n-trioul-variabile-monetare-inflaie-cretere-economic-cazul-republicii-moldova.html>.
- Galatescu, A. Radulescu, B. and Copaciu, M., 2007. Estimarea PIB potential in România, *Caiet de studii*, nr.20, Banca Nationala a Romaniei. Available at: <http://www.bnr.ro/PublicationDocuments.aspx?icid=6786>.
- Marandici, I., 2008. *Remittances and Development in Moldova*. [online] Available at: [http://www.viitorul.org/public/1258/en/Marandici\\_eng\\_3.pdf](http://www.viitorul.org/public/1258/en/Marandici_eng_3.pdf).
- Migration Policy Institute, 2007. *Remittances Profile: Moldova*. [online] Available at: <http://www.migrationinformation.org/DataHub/remittances/Moldova.pdf>.
- The International Bank for Reconstruction and Development / The World Bank 2010. *Global Economic Prospects: Fiscal Headwinds and Recovery. Regional appendix: Europe and Central Asia*. [online] Available at: [http://siteresources.worldbank.org/INTGEP2010/Resources/GEP2010\\_Summer2010-ECAAnnex.pdf](http://siteresources.worldbank.org/INTGEP2010/Resources/GEP2010_Summer2010-ECAAnnex.pdf).
- United Nations, 2009. *World Economic Situation and Prospects 2010. Global Outlook*. New-York, [online] Available at: <http://www.un.org/esa/policy/wess/wesp2010files/wesp2010pr.pdf>.