Influence factors of economic growth in the romanian agrofood sector

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INFLUENCE FACTORS OF ECONOMIC GROWTH IN THE ROMANIAN AGROFOOD SECTOR

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Abstract: *The determinants of economic growth in a national economy or in an activity field were the subject of many disscusions between specialists, starting from identifying the indicators considered to be the engine of economic growth, but also to the correlations between them, and to the interpretation of the results. The aim of the present approach is to identify some factors with direct influence on economic growth in the Romanian agrofood sector. Our research used common statistical methods, on the basis of public information, from the National Institute of Statistics and National Commission for Prognosis. Regarding to the agricultural sector, were identified as indicators/factors with influence on the economic growth the following: final consumption, the value of exports, the value of production for market, variation of stocks, the value of taxes on products. Analysis of the data series of the indicators mentioned above and correlations between them reveal their involutions in terms of efficiency and productivity levels, being still far from ensuring sustainable economic growth in the agrofood sector.*

Key words: *influence factors, economic growth, agrofood sector.*

INTRODUCTION

As an important part of the national economy, the agrofood sector has a number of specific characteristics with various oscillation of activity, with direct impact on the sector's contribution to gross domestic product and the degree of satisfaction of the requirements of domestic consumption of the population. High seasonality of production, correlated with significant degree of fragmentation of agricultural land, to which may be added such conditions, more or less subjective determinants influence the way down 'intensive or extensive effect on sectoral growth sustainable.

MATERIAL AND METHODS

From the methodological point of view, we mention that the present analysis referes to the period 2001-2011 from two point of views: firstly, related to the provision of complete data sets and second, in terms of possibility to ensure comparability. From this perspective, the analysis performed so far revealed the following issues.

It also should be noted that the present approach took into account the calculation of derived indicators whose analysis reveals significant changes occurred in the structure, generated by the evolution of the primary indicators that underpin their determination.

RESULTS AND DISCUSSIONS

As an economic indicator, economic growth in the agrofood sector can be assessed in terms of the rate of increase of gross value added produced in the sector or the value of agricultural production in whose development we consider that the most important role have the following factors (determinants), respectively:
- the level of production achieved for the market;
- the intermediate consumption;
- the product taxes;
- the total final consumption;
- the level of exports.

As an aggregate index that characterizes the degree of economic growth, the *value of production for the market* performed agrofood sector recorded within 12 years a significant increase in all components of the agrofood economy levels. The greatest growth is marked by fisheries and

aquaculture production market which increased from 30.8 million (2000) to 288.7 million (2011). Second place is occupied by forestry and logging, as the last place to be found tobacco products (**Table No.1**).

Table no.1. Evolution of the production for market from the agrofood sector on main activities in the period 2000-2011 (mil.lei prices 2011)

	Agriculture, hunting and support services	Silviculture and forestry	Fishing and aquaculture	Food industry	Beverage production	Tobacco production
2000	14683.5	1008.8	30.8	9117.8	3031.9	687.3
2001	25638.7	1293.0	43.3	13631.7	5728.7	1002.8
2002	26858.9	1613.9	51.3	17741.7	6475.9	1213.9
2003	32747.5	2219.3	76.4	20879.6	8790.3	1142.1
2004	45303.1	2217.0	70.8	24128.3	8607.2	1081.6
2005	34455.5	2230.8	77.8	27381.1	9452.0	678.2
2006	37428,5	2329.9	85.7	29762.8	10289.8	1004.7
2007	35567.9	2499.9	97.4	35446.8	11191.6	1157.0
2008	46564.1	2632.6	155.5	39633.0	12166.1	1210.1
2009	44987.3	2810.4	370.9	36800.6	12925.0	1341.1
2010	60287.4	3344.5	181.0	35538.0	12892.2	1302.7
2011	56975.0	4892.4	288.7	33056.3	9142.3	920.5
2011/2000 (%)	**288.0**	**385.0**	**836.3**	**262.5**	**201.5**	**33.9**

Source: Calculations on the Tempo-Online databases, INS, 2013.

On the component activities, the share of agriculture in total value of production for the market made from agrofood sector increased 4 percent during 2000-2011, from 55.1% (2000) to 59.0% (2011). At the same time, food, beverage and tobacco industry marked a 4 percent decline in total agrofood sector (from 44.9% in 2000 to 41% in 2011). In the analysis of economic growth in the food sector, a very important indicator that cannot be ignored is the tax value of the product. From this perspective, the period 2000-2011 is characterized by a strong trend of increasing tax rates, mainly in activities within the scope of agriculture. We refer here mainly to fisheries and aquaculture activities, closely followed by agriculture, hunting and related services. A relatively paradoxical situation is found in the manufacture of beverages where the product taxes increased over 12 years with only 25.6% (**Table no. 2**).

Table no.2. Evolution of the taxes on products in the agrofood sector on activities in the period 2000-2011 (mil.lei prices2011)

	Agriculture, hunting and support services	Silviculture and forestry	Fishing and aquaculture	Food industry	Beverage production	Tobacco production
2000	245.9	34.8	3.1	1240.1	1765.1	971.7
2001	227.6	42.1	4.4	1552.5	1001.0	1508.7
2002	1560.0	60.9	5.7	1783.7	1423.4	1631.8
2003	2007.9	72.2	7.0	2227.3	1544.1	2617.0
2004	2176.5	75.0	7.4	2682.4	1668.5	3082.2
2005	2907.4	101.8	10.0	3091.8	2128.8	3510.8
2006	3132.9	102.7	8.8	3423.9	2210.6	3255.2
2007	3572.0	118.9	10.2	3747.2	2449.8	3667.0
2008	4019.1	134.1	11.5	4157.3	2598.7	4840.5
2009	3523.2	117.6	10.1	3621.0	2367.2	6881.8
2010	3142.3	178.1	36.8	3353.1	2185.6	6539.1
2011	3688.4	221.6	61.9	3999.5	2217.2	8070.7

Source: Calculations on the Tempo-Online databases, INS, 2013.

Unlike the market value of production, taxes on products are made in the food sector mainly by food, beverages and tobacco. However, during 2000-2011, the share of taxes on products decreased by 15.1% in the food, beverage and tobacco, ranging from 93.3% (2000) to 78.2% (2011), the same percentage increasing in instead the share of taxes in agriculture. Expression utilization of available resources in the training of gross value added, the intermediate consumption in the period 2000-2011 showed a significant growth in both agriculture and the food industry, the highest percentage in the food sector returning agriculture percentages that varied from 52.5% (2000) to 64.4% (2011) (**Table no.3**).

Table no.3. Evolution of the intermediate consumption in the agrofood sector on activites in the period 2000-2011 (mil.lei prices 2011)

	Agriculture, hunting and support services	Silviculture and forestry	Fishing and aquaculture	Food industry	Beverage production	Tobacco production
2000	13810.0	815.1	31.8	8118.9	3535.6	1629.2
2001	19688.4	1028.0	52.7	10019.8	4084.0	2537.6
2002	21207.5	1490.9	72.3	13998.4	4327.4	2655.8
2003	28598.2	2005.4	145.8	18064.9	6184.1	3701.6
2004	37259.5	2046.9	174.1	21510.4	6401.6	4037.0
2005	31282.3	2117.3	195.1	23447.3	5800.4	4036.2
2006	31494.3	2206.6	187.0	23774.8	6959.1	3975.1
2007	28173.7	2411.4	249.6	28447.6	7499.2	4057,7
2008	39733.5	2669.8	364.0	30694.3	10143.7	5206.6
2009	39011.2	2796.1	470.0	28810.6	10149.8	5509.7
2010	46175.9	1772.6	236.0	16524.6	9684.7	5625.8
2011	52257.4	3187.3	377.5	15930.0	8251.2	6679.3

Source: Calculations on the Tempo-Online databases, INS, 2013.

The *exports of goods and services* of the agrofood sector has registered an upward trend in the period 2000-2011, primarily in the food industry, beverages and tobacco. With no exception, including here the agricultural sector, the exports of goods and services from this area marking significant increases (**Table no.4**).

Table no.4. Evolution of the exports of goods and services of the agrofood sector on activities in the period 2000-2011 (mil.lei prices 2011)

	Agriculture, hunting and support services	Silviculture and forestry	Food industry	Beverage production	Tobacco production
2000	746.2	173.5	409.0	69.5	7.8
2001	1195.1	80.0	654.0	101.0	42.0
2002	1349.9	60.4	632.9	131.7	65.9
2003	1597.2	106.7	853.6	140.6	40.4
2004	1717.9	114.5	1022.2	139.0	15.5
2005	1688.9	88.9	1086.0	116.9	17.0
2006	1754.9	88.6	1195.4	120.5	27.6
2007	2077.3	97.5	1233.2	135.6	64.4
2008	3883.0	79.6	1875.3	181.7	71.8
2009	5262.9	147.1	2309.6	244.7	161.3
2010	7972.9	289.3	3639.4	281.3	1644.1
2011	9904.6	632.4	5082.3	340.0	1944.5
2011/2000 (%)	**1227.4**	**264.5**	**1142.7**	**389.3**	**24753.7**

Source: Calculations on the Tempo-Online databases, INS, 2013.

Finally, the *food inventories* registered a fluctuating trend and diverging from one year to another, but also from one activity to another. Thus, except for the manufacture of tobacco products where changes in inventories is part of a downward trend for other activities this indicator is characterized by dynamic increasing (**Table No.5**).

Table no.5. Evolution of the inventories of the agrofood sector on activities in the period 2000-2011 (mil.lei prices 2011)

	Agriculture, hunting and support services	Silviculture and forestry	Fishing and aquaculture	Food industry	Beverage production	Tobacco production
2000	193.6	35.1	3.2	138.5	11.4	6.7
2001	591.7	190.0	11.8	486.6	51.4	37.9
2002	68.4	55.3	3.6	280.7	45.5	63.0
2003	194.9	-3.7	11.7	130.4	38.3	23.6
2004	2811.8	74.7	15.2	424.2	76.7	31.6
2005	106.8	85.5	15.8	51.0	13.0	-0.2
2006	677.0	98.1	50.5	297.3	33.9	1.5
2007	496.7	97.4	62.2	339.4	40.7	12.3
2008	58.9	7.6	7.7	-294.4	-15.0	-18.8
2009	952.0	38.0	48.9	3552.9	1166.7	1983.0
2010	1181.9	90.3	40.4	381.1	155.7	-219.0
2011	1706.0	35.5	37.6	787.4	89.8	-530.2
2011/2000 (%)	**781.2**	**1.1**	**1067.1**	**468.4**	**691.0**	**-7954.9**

Source: Calculations on the Tempo-Online databases, INS, 2013.

As a result indicator, the *value of agricultural production*, expressed in prices of 2011 increased compared to 2000 by three times, reaching in 2011 to 76,508.7 million. Reported to the intermediate consumption, the agricultural output registered a slight decline in 12 years and from 0.9 lei production / 1 leu intermediate consumption (2000) to 0.88 lei production / 1 leu intermediate consumption (2011), a phenomenon explained by the accelerated rhythm of the intermediate consumption growth in contrast with the production value obtained.

A similar analysis can be performed given the gross value added in the food, based on statistical information available from the national accounts. It should be noted that currently the national accounts provide information to the level of 2010, however, to ensure comparability of data were used for agriculture and estimates made by the National Commission for Prognosis for 2011. The gross value added of food sector for 2011 was estimated taking into account the average annual growth in the period 2000-2010.

Due to methodological explanations above, gross value added was deflated using the same GDP deflator, analysis of data obtained leads to the following conclusions. The period 2000-2011 is characterized by a visible trend GVA growth in the agrofood sector, both in terms of agriculture and especially in the manufacturing sector (**Table No.6**).

Table no.6. Evolution of the agrofood gross value added in the period (mil.lei prices 2011)

	Agriculture	Food, beverage and tobacco industry
2000	13459.0	7956.2
2001	22705.9	12497.1
2002	23885.1	13668.3
2003	29993.1	15874.1
2004	37577.1	18354.8
2005	28221.3	20295.2
2006	28929.0	21448.6
2007	24303.2	23407.6
2008	32216.9	25870.9

	Agriculture	Food, beverage and tobacco industry
2009	32645.3	26950.2
2010	30531.4	29574.2
2011	36400.0	34365.5

Source: Calculations on the Tempo-Online databases, INS, 2013.

Reported to the intermediate consumption, gross value added registered a slow recoil, generated by accelerated growth rate of intermediate consumption to that of GVA. The level of agriculture GVA / 1 leu intermediate consumption decreased by 17.2% in 2011 compared to 2000, while food, beverages and tobacco industry, witnessing a growth of 0.5 lei GVA / 1 leu intermediate consumption (2000) to 0.7 GVA / 1 leu intermediate consumption in 2011.

CONCLUSIONS

As a continuing topic of debate, generated by the need to identify new influencing factors and their impact on the formation of added value in the economy, the issue of economic growth in the food and determinants of intensive or extensive nature still arouses heated discussion taking account the specific characteristics of the industry and its importance in ensuring the domestic demand of food for the population. Starting from general economic theory, this approach attempted to identify a number of determinants (factors) that influence the intensive and extensive growth of the Romanian agrofood sector. In this regard, given the peculiarities food economy, including both agriculture and food, beverage and tobacco industry present approach revealed the existence of significant correlations between gross value added and a number of factors whose evolution puts full mark on sectoral growth. From this perspective, it should be noted that among the determinants of the extensive nature may be included intermediate consumption, final consumption and taxes on product level, while determinants category cannot miss the intensive agricultural production, value of production for the market, changes in inventories and export value. Although in the literature there is a significantly higher number of determinants of economic growth, their analysis and customization in the food sector revealed a weak influence on the level of gross value added sector.

The analysis of data revealed that the total agricultural production and the gross value added relative to 1 leu intermediate consumption registered during 2000-2011 a downward trend, particularly in the agriculture, which reflects the in further extensive value Romanian agrofood sector.

BIBLIOGRAPHY

1. Barro R. J. (1997). Determinants of Economic Growth: A Cross-Country Empirical Study, Cambridge MA, MIT Press.
2. Cătăneţ, D.et.all.(2007). Determinanţii creşterii economice şi competitivitatea României. o analiză empirică, în volumul: "România în Uniunea Europeană. Calitatea integrării. Creştere. Competenţă. Ocupare".
3. * * (1990-2013). Baza de date Tempo-Online, INS.
4. * * (2013). Prognoză pe termen mediu 2013-3016, Comisia Naţională de Prognoză.