CONSEQUENCES AND INFLUENCES OF THE ECONOMIC CRISIS ON THE EFFICIENCY OF ROMANIAN ENTERPRISES

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Abstract
This paper aims at investigating the effects of the economic and financial crisis (whose effects have been felt in Romania since the end of 2008) on the efficiency of companies in our country. Romanian companies are analyzed by means of efficiency indicators such as labor productivity, average number of employees, turnover structure and added value etc.
Additionally, this research paper aims at assessing the impact of the crisis on the behavior of managers in our country in uncertain crisis environment by monitoring turnover correlations - value added, value added - profit tax - investment.
The study is exclusively focused on the secondary and tertiary sector of the Romanian economy: industry, constructions, trade and services, both from a cumulative (overall), and a section perspective. The analysis also aims at correlating development in the economic sectors mentioned above, the evolution of the Romanian economy in terms of economic and financial crisis.
Key words: crisis, effects, enterprises, efficiency, behavior
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1. Introduction

The economic crisis began to manifest in the Romanian economy in the second half of 2008 (Table no. 1.) when in the last two quarters negative growth rates were reported. The crisis continued throughout 2009, in all four quarters the rates of growth being negative. The next year, 2010, marked a contradictory evolution, the quarters of negative growth alternating with those that had reversals of GDP growth, the first and third marking decreases whereas the second and the fourth had positive values. Since the year 2011, the first quarter brought a new GDP growth, and statistically one can consider that our country went back in the growth area, because there were two consecutive quarters of positive changes in GDP. However, this recovery was not a long-lasting one, as in the following quarters of 2011 the alternation remained, after a quarter of growth a decline one followed.

Unfortunately, in the end of 2011, Romania went back into recession due to the fact that in the fourth quarter of 2011 and first quarter of 2012, the GDP variation was negative. This second recession, however, was short (only two quarters), the Romanian economy resuming growth in late 2012. But this time the re-launch seemed to be lasting, as six consecutive quarters of growth followed, although modest in size. The conclusion is that in Romania, as in many states, the recession that began in 2007 (and in our country in 2008) had the shape of a W.

The economic crisis has not been or is not only a macroeconomic phenomenon, but

one that has deeply affected businesses and consumers changing their behavior and decisions. Therefore, this paper aims at investigating the effects of the economic and financial crisis (whose effects have been felt in Romania since the end of 2008) on the efficiency of companies in our country. Romanian companies are analyzed through indicators such as the number of enterprises, the number of employees, the correlations between them.

Table no. 1. Dynamics of Romanian GDP (%)

Date	Annual change (unadjusted series)	Quarterly change (seasonally adjusted series)
2008T1	8.2	3.5
2008T2	9.3	1.7
2008T3	9.2	-0.1
2008T4	2.9	-2.8
2009T1	-6.1	-3.3
2009T2	-8.7	-1.9
2009T3	-7.1	-0.5
2009T4	-6.5	-1.0
2010T1	-2.6	-0.7
2010T2	-1.1	0.4
2010T3	-2.2	-0.8
2010T4	-1.0	0.9
2011T1	1.5	0.7
2011T2	1.2	-0.3
2011T3	4.1	2.3
2011T4	1.6	-0.9
2012T1	0.4	-0.9
2012T2	1.9	1.5
2012T3	-0.5	-0.8
2012T4	1.1	1.1
2013T1	2.2	0.5
2013T2	1.5	0.8
2013T3	4.1	1.6
2013T4	5.2	1.7

Source: National Bank of Romania (2014, 2013, 2012, 2011). Statistical Section. Monthly Bulletin. National Bank of Romania (2014, 2013, 2012, 2011). Statistical data used in graphs. Inflation Report. Taken from http://www.bnr.ro/Publicatii-periodice-204.aspx. Accessed 01/05/2014.

Additionally, this research paper aims at assessing the impact of the crisis on the behavior of managers in our country in uncertain crisis environment by monitoring correlations among turnover - added value, added value – profit, profit-investments. The present investigation is regarded as important, whereas for Romania it is the first global crisis that affects businesses, after the country's shift to market economy and the 2008-2012 effects of the crisis on the economy can be a

guide for the future behavior of economic agents. This is because, surely, the economy will undergo other crises in the future.

Note that the study is exclusively on the secondary and tertiary sector of the Romanian economy: industry, constructions, trade and services, both from a cumulative (overall), and also a sectorial perspective. However, the analysis aims at correlating developments in the economic sectors mentioned above, with the evolution of Romanian economy during the economic and financial crisis.

2. Review of expert literature

The concept of economic recession defines the state of the economy characterized by decreases in gross domestic product (GDP), decline in investment processes, reduction or stagnation of investment etc. It is also believed that the recession is a stage of reducing the economic activity of a country, inferior in amplitude to depression or economic crisis (Ciucur and others, 2010).

From the point of view of economic calculation, recession occurs when gross domestic product (GDP) has negative values (negative growth) in two consecutive quarters. Conversely, economic recovery or the resumption of economic growth is considered to occur when GDP growth returns (CBA World Services LLC, 2008).

The National Bureau of Economic Research (NBER) in the U.S. believes that the recession is "a significant decline in activity at the national level that lasts longer than a few months and is visible by decreases of GDP, real income of the population, the number of employees in the economy, industrial production and retail sales and wholesale'' (Greenspan, 2008).

Other conceptualizations of the term recession consider that it would be a contraction of the business cycle that occurs after a peak and may continue through a crisis (Greenspan, 2008). Usually, the concept of recession is used when the crisis has modest consequences, while the concept of depression is used for deep and long-lasting crises (Lybeck, 2011).

Ana Lamo (2013) considers that European firms have adapted to the initial phase of the crisis, mainly through the reduction of workforce costs. Firms were reticent to reduce wages, but instead they cut jobs. There is a great heterogeneity in the behavior of firms in different European countries, according to the institutions and the constraint on the labor market. Thus, the collective bargaining institutions, the employment of labor, and labor protection laws or the market competition are important factors of labor market rigidities, which model the response of wages and employment to economic development. Druant M. and S. Fabiani have the same opinion (Druant and others, 2012). Another study (Kim, 2013) which deals with the relationship (financial) crisis - labor productivity, examines how companies can improve their productivity by restructuring their business portfolio in response to the opportunities offered by a financial crisis. Generally organization-wide productivity (economic group) can be improved through four distinct portfolio restructuring activities: improving productivity of group subsidiaries (or divisions of an organization) or the acquisition of businesses with high productivity or remove (close) the unproductive ones or reallocate the

resources among subsidiaries / divisions to support the development of their performance. I also mention the opinion of the stability specialists in the NBR (National Bank of Romania, 2013) who consider that the reform of inefficient state enterprises, stimulation of investment and efficiency in energy and transport sectors and the implementation of reform within the health sector are the main pillars of structural reforms in the economy, steps the authorities have taken for the next period.

3. Research methodology
Research methods used are: classification, synthesis, static and dynamic comparative analysis, methods of induction and deduction, spreadsheet representation of events and phenomena investigated. In part, a number of mathematical and statistical tools have been used together with a deductive analytical analysis. However, the work has a qualitative nature, it is intended by the instrumentation and the results used to investigate the changes that took place in Romanian firms during the crisis. The statistics used have an official nature, being taken from documents or databases of the National Bank of Romania and the National Institute of Statistics.

4. Developments related to the enterprises and employees in Romania during the crisis
The number of enterprises (Table no. 2) dropped during the crisis by more than a hundred thousand. Most businesses that were closed during the crisis were in trade (approximately a quarter of those working in this sector), following the provision of services (almost 20%), constructions (a third) and industry (almost 20%). So also at the level of this indicator, the number of enterprises, the most resistant sectors are industry and services and the most affected are constructions. Regarding the evolution of the crisis at the level of enterprises, statistics capture only the first recession in late 2008 and early 2009 (reflected in the previous comparison). The second recession at the end of 2011 and early 2012 is not present in the statistics. The crisis was manifested with a delay in constructions and services (from 2009 to 2010 the number of firms in these sectors still grew). Also, the re-launching in 2011 is not evidenced by statistical observations, there were reductions in the number of businesses by continuing the closure of companies (it is true, the number of firms that closed in 2011 was reduced to about half versus 2010). The year 2012 brought an increase in the number of businesses in all sectors, most of which were in the service sector, which proved a sector through which the Romanian economy re-launched. Unfortunately, the industry and constructions sectors, creating high added value, although having increases in the number of business, were modest in size.
The analysis of the evolution in the number of employees (Table no. 2) shows the whole pattern of the economic crisis. Thus, the recession of 2008-2009 was well noticed (to be mentioned that in terms of industrial workers, their number had been reduced since 2008), there was the continued recession in 2010, the resumption of

growth in 2011 and a relapse into recession as of 2012 (of much smaller scale and absent in the service sector). During the first part of the crisis, 700 hundred thousand jobs were lost, from which they recovered in 2011 approx. 130 thousand. Sectors losing most employees were, in order, industry (losing 300 thousand persons, or 17 %), trade (176,000, or 18 %), constructions (160,000 jobs or 32 %) and less in services (60,000, or only 5% of total employment). A special mention for the service sector; during the 2011 re-launch, it almost integrally recovered the jobs lost in the previous two years, and the second recession in late 2011 - early 2012 was not present. In 2012 this branch was the only one that created jobs, being thus a cushion for the Romanian economy.

Table no. 2. Dynamics of the number of enterprises and employees in Romania during the crisis

Indicator	2007	2008	2009	2010	2011	2012
Total enterprises from tertiary and secondary sector						
Number of enterprises	499,857	534,525	519,441	470,080	430,608	447,938
Average no. of employees	4,336,363	4,418,713	3,964,185	3,725,645	3,858,595	3,852,570
Employees per enterprise	8.68	8.27	7.63	7.93	8.96	8.6
Industry						
Number of enterprises	61,463	61,260	58,853	53,448	49,715	50,896
Average no. of employees	1,715,621	1,643,676	1,423,107	1,346,280	1,387,110	1,379,989
Employees per enterprise	27.91	26.83	24.18	25.19	27.9	27.11
Constructions						
Number of enterprises	46,925	59,389	60,135	49,348	43,503	44,447
Average no. of employees	505,773	554,399	469,182	393,339	418,202	399,413
Employees per enterprise	10.78	9.34	7.8	7.97	9.61	8.99
Trade						
Number of enterprises	211,537	214,138	197,611	181,903	165,100	169,133
Average no. of employees	984,327	1,019,791	901,376	843,752	857,445	854,401
Employees per enterprise	4.65	4.76	4.56	4.64	5.19	5.05
Services						
Number of enterprises	179,932	199,738	202,842	185,381	172,290	183,462
Average no. of employees	1,130,642	1,200,847	1,170,520	1,142,274	1,195,838	1,218,767
Employees per enterprise	6.28	6.01	5.77	6.16	6.94	6.64

Source: National Institute of Statistics (INS) (2008, 2009, 2010, 2011, 2012, 2013). Activity of enterprises in industry, constructions, trade and market services. Press Releases. Taken from http://www.insse.ro. Accessed 01/05/2014 and author's calculations

Linking the two indicators, the number of enterprises and the number of employees, indicates a decrease in the overall level of the average number of employees per enterprise, from 8.6 before the crisis, to 7.6 employees in 2009, due

to much larger contraction of the workforce in relation to the decrease in the number of enterprises. After 2010, there was a larger decline in the number of companies related to labor resources, which either slowly decreased or increased slightly, resulting in an increase in the number of employees per company, up to a value of approximately 9 employees, a higher value than those recorded before the crisis. This aspect is thought to be interpreted as an increase in efficiency. After the second decrease of economic activity in the end of 2011 - early 2012, the reduction in the number of employees which joined the economic decrease, together with an increase in the number of companies again made the average number of employees per firm reduce to 8.6 people, a value that also characterized the period before the crisis. At the sectors' level, in general, the situation was repeated, with minor deviations. Thus, in industry – the branch which concentrated most employees per firm (24 to 28) in 2012 brought lower values of an employee than in the beginning of the crisis. During the crisis, constructions had the biggest decrease of employees that are on average in a company (an average decrease of about 3 employees at the rate of one-third recovered by the end of 2012). Trade and services, with about 4 to 6 employees, the average in a company, passed through the crisis with the smallest reductions of staff (below one employee) and ended up having at the end of the crisis, in 2012, average values of about 0.5 people over the ones before the crisis.

5. Developments in labor efficiency in Romania during the crisis
Work efficiency, measured with the labor productivity indicator (Table no. 3) shows similar phenomena, regardless of the calculation method. Thus, labor productivity calculated according to deflated turnover, shows increases over the entire period of the crisis, except for a slight decrease of about 0.5 % in 2009. Overall, the crisis period we has an increase of about 10 % of the labor productivity of industry at the level of overall enterprises and of services.
Globally, analyzed branches, at the end of the crisis, had increases in the efficiency of staff, but taken separately there are a range of particularities. Industry is the sector that performs best, it reported a continuous growth, so that at the end of 2012 it registered an increase by about 25 % compared to the year before the crisis. Trade is the second branch in terms of performance with a rather significant decrease in 2009, but recovered almost completely in 2010 with an increase of approx. 15 % in 2012 compared to 2007.
Services and constructions seem to be the sectors with the most disappointing performance records. Specifically, the services sector ends the period of crisis with a level of efficiency that has values equal to those before the crisis, and constructions, although at the end of the period under review (2012) end with a performance superior to that of 2007 but lower than the peak year (2005) and seem to be on a downward slope of labor efficiency.
Still trends are mostly about the same if we analyze the evolution of labor productivity using deflated gross added value. However, a larger increase of efficiency in industry stands out (about 30%) and there is a deterioration in the efficiency of trade (in fact, similar to the services sector).

Table no.3. Dynamics of work efficiency in Romania during the crisis

Sector	Year	Turnover (mill. lei)	Gross added value (mill. lei)	Gross profit (mill. lei)	Price indicators (2007=1), %	Labor productivity (thousand lei) calculated in relation to:				Profit per employee (Thousand lei)	
						Turnover		Added value			
						Nominal values	Real values	Nominal values	Real values	Nominal values	Real values
Total	2007	772,315	161,184	43,539	1.00	178.1	178.1	37.2	37.2	10.0	10.0
	2008	957,965	222,914	32,534	1.15	216.8	188.0	50.4	43.8	7.4	6.4
	2009	855,807	194,976	13,088	1.20	215.9	179.7	49.2	40.9	3.3	2.7
	2010	904,080	202,273	5,732	1.27	242.7	191.1	54.3	42.8	1.5	1.2
	2011	1,006,165	213,299	15,649	1.32	260.8	197.4	55.3	41.9	4.1	3.1
	2012	1,061,302	223,170	19,753	1.38	275.5	199.2	57.9	41.9	5.1	3.7
Industry	2007	262,470	64,783	18,735	1.00	153.0	153.0	37.8	37.8	10.9	10.9
	2008	320,665	85,690	9,171	1.15	195.1	169.2	52.1	45.2	5.6	4.8
	2009	284,313	75,052	2,484	1.18	199.8	169.0	52.7	44.6	1.7	1.5
	2010	322,283	83,907	6,042	1.23	239.4	194.0	62.3	50.5	4.5	3.6
	2011	366,288	89,725	9,255	1.32	264.1	199.8	64.7	49.0	6.7	5.0
	2012	384,882	95379	8,638	1.39	278.9	200.2	69.1	49.6	6.3	4.5
Constructions	2007	66,185	17.531	5,068	1.00	130.9	130.9	34.7	34.7	10.0	10.0
	2008	93,210	26,671	5,156	1.15	168.1	145.8	48.1	41.7	9.3	8.1
	2009	79,736	21,868	3,017	1.18	169.9	143.8	46.6	39.4	6.4	5.4
	2010	72,874	19,782	1,005	1.23	185.3	150.2	50.3	40.8	2.6	2.1
	2011	77,878	19,490	763	1.32	186.2	140.9	46.6	35.3	1.8	1.4
	2012	77,547	18,487	-623	1.39	194.2	139.4	46.3	33.2	-1.6	-1.1
Trade	2007	321,059	32,241	12,106	1.00	326.2	326.2	32.8	32.8	12.3	12.3
	2008	387,645	44,942	9,400	1.08	380.1	352.3	44.1	40.8	9.2	8.5
	2009	343,648	37,763	3,495	1.14	381.2	334.6	41.9	36.8	3.9	3.4
	2010	356,828	36,792	248	1.21	422.9	349.8	43.6	36.1	0.3	0.2
	2011	399,109	37,806	4,861	1.28	465.5	363.9	44.1	34.5	5.7	4.4
	2012	423,299	39,843	5,864	1.32	495.4	374.6	46.6	35.3	6.9	5.2
Services	2007	122,601	46,629	7,630	1.00	108.4	108.4	41.2	41.2	6.7	6.7
	2008	156,445	65,611	8,807	1.08	130.3	120.7	54.6	50.6	7.3	6.8
	2009	148,110	60,293	4,092	1.14	126.5	111.1	51.5	45.2	3.5	3.1
	2010	152,095	61,792	-1,563	1.21	133.2	110.1	54.1	44.7	-1.4	-1.1
	2011	162,890	66,279	769	1.28	136.2	106.5	55.4	43,3	0.6	0.5
	2012	175,574	69,461	5,874	1.32	144.1	108.9	57.0	43.1	4.8	3.6

Source: National Institute of Statistics (INS) (2008, 2009, 2010, 2011, 2012, 2013). Activity of enterprises in industry, construction, trade and market services. Press Releases. Taken from http://www.insse.ro. Accessed 01/05/2014 and author's calculations

The analysis of work efficiency using profit per employee reveals poor performance, both overall and in individual sectors. The reason lies in lowering profitability. Businesses fail to recover to pre-crisis values, they have been around 30 % smaller since 2007, globally and about 40-50 % in industry, trade and services. The services market seems to have recovered best after the decrease

during the crisis, stating clearly that its profits are the lowest. We also notice a continuous decline in constructions, this sector having losses in 2012 and negatively affecting the average.

6. Developments of efficiency indicators in Romania during the crisis
The first indicator of efficiency is considered gross added value share in turnover (Table no. 4).

Table no. 4. Dynamics of some indicators of efficiency in Romania during the crisis

Sector	Year	Share of added value in turnover (%)	Commercial profit calculated in relation to profit (%)	Share of profit in gross added value (%)	Share of gross investments in turnover (%)	Share of gross investments in gross added value (%)
Total enterprises from secondary and tertiary sectors	2007	20.87	5.64	27.01	19.00	91.02
	2008	23.27	3.40	14.59	15.04	64.61
	2009	22.78	1.53	6.71	11.66	51.17
	2010	22.37	0.63	2.83	10.20	45.58
	2011	21.20	1.56	7.34	14.25	67.21
	2012	21.03	1.86	8.85	11.39	54.16
Industry	2007	24.68	7.14	28.92	17.90	72.54
	2008	26.72	2.86	10.70	16.58	62.06
	2009	26.40	0.87	3.31	14.28	54.10
	2010	26.04	1.87	7.20	12.84	49.32
	2011	24.50	2.53	10.31	22.87	93.37
	2012	24.78	2.24	9.06	14.13	57.01
Constructions	2007	26.49	7.66	28.91	36.85	139.11
	2008	28.61	5.53	19.33	25.95	90.70
	2009	27.43	3.78	13.80	21.25	77.48
	2010	27.15	1.38	5.08	17.65	65.03
	2011	25.03	0.98	3.91	22.15	88.51
	2012	23.84	-0.80	-3.37	33.22	139.34
Trade	2007	10.04	3.77	37.55	7.57	75.35
	2008	11.59	2.42	20.92	6.01	51.84
	2009	10.99	1.02	9.26	4.16	37.86
	2010	10.31	0.07	0.67	3.60	34.95
	2011	9.47	1.22	12.86	3.40	35.94
	2012	9.41	1.39	14..72	3.06	32.53
Services	2007	38.03	6.22	16.36	41.63	109.46
	2008	41.94	5.63	13.42	27.72	66.08
	2009	40.71	2.76	6.79	18.85	46.31
	2010	40.63	-1.03	-2.53	16.50	40.61
	2011	40.69	0.47	1.16	17.65	43.38
	2012	39.56	3.35	8.46	15.82	40.00

Source: National Institute of Statistics (INS) (2008, 2009, 2010, 2011, 2012, 2013). Activity of enterprises in industry, construction, trade and market services. Press Releases. Taken from http://www.insse.ro. Accessed 01/05/2014 and author's calculations

At the level of this indicator and at the aggregate level, for all the four sectors and to each of them, the indicator was situated in the last year analyzed, 2012, under the best performance, right in the starting year of the crisis (2008). The reason for the decrease of the indictor is that the decline in the added value was much larger than that of the turnover of businesses failing to adjust their internal costs, especially the material ones.

The commercial return rate shows a strong drop in the four sectors analyzed. Let's notice that the decrease of the indicator has started (and quite abruptly) since 2008. In 2012, enterprises in industry and commerce were situated at about one third of the best value recorded in 2007. A better situation seems to be reported in services, these being at about 50 % of the performance in 2007, but as we notice, in this branch return is lowest, hence the explanation of faster recovery. Constructions seem to be the sector with the poorest results, being in its sixth consecutive year of decline, the year 2012 unfortunately also bringing negative returns.

The ratio between the profit and added value indicates a sinusoid, with the minimum in 2009 or 2010, after which growth resumes, but unfortunately, the recovery was at a level of 40-50 % compared to 2007, when statistics showed the best value of the indicator. The constructions sector also deviates in the case of this indicator, which continues to decline, still not reaching the minimum.

Finally the last indicator analyzed targets the investment process. This phenomenon has been appreciated through the ratio between gross investment - turnover but also gross investment - added value, because even in commerce and services, the investment value is small relative to the size of sales. The decline caused by the crisis cuts about half of the amounts that were invested in 2007, the year before the crisis. Note that for services and commerce the decrease in the investment process seems to be the coordinate of the six years analyzed. So as in industry (although in 2011, we are witnessing an anomaly, a strong increase in the investment process, far superior to the values even before the crisis). Also the constructions sector deviates in behavior to other sectors analyzed, meaning that the decrease in the investment process here has been stopped ever since 2010, and in 2012 almost reached values that were invested in 2007 (as rate, because they still continue to be under absolute values invested in 2007). A second observation about the investment process in constructions, as returns were minimal and even negative, it is probably that the source of investments is amortization (depreciation) of equipment, machines and existing installations or other sources of financing (bank loans, supplier-credits, leasing).

7. Conclusions

The crisis faced by the Romanian economy after 2008 was actually made up of two recessions. The former started in late 2008 - early 2009 and continued throughout 2009 and 2010, followed in late 2010 - early 2011 by a brief and modest comeback of economic growth. A second recession began in late 2011 - early 2012, continued throughout 2012, with the revival taking place in late 2012 - early 2013.

The crisis was manifested in all economic areas, industry, constructions, trade,

services, but during the crisis Romanian industry seemed more resistant and the services sector seemed to be the sector that absorbed the impact of the crisis, being the branch which created the most new businesses, providing jobs to those made redundant by other sectors or partially offsetting losses in constructions and trade. The pattern on which the Romanian crisis has developed and evolved is largely observable in terms of the number of companies, employees, the evolution of turnover, profit, investments, and added value. The crisis was accompanied by an increase in the work efficiency, but also by serious damage to fundamental indicators of efficiency as profitability in the relations between added value - turnover, profit - added value or the amounts allocated for investment by businesses.

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