ACTA UNIVERSITATIS AGRICULTURAE ET SILVICULTURAE MENDELIANAE BRUNENSIS

Volume LXI 111 Number 4, 2013
http://dx.doi.org/10.11118/actaun201361041005

THE IMPACT OF FINANCIAL AND ECONOMIC CRISIS ON SME'S IN GREECE AND IRELAND

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Received: April 25, 2013

Abstract

LACINA LUBOR, VAVŘINA JAN: *The impact of financial and economic crisis on SME's in Greece and Ireland.* Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 2013, LXI, No. 4, pp. 1005–1016

The impact of financial and economic crisis influencing economic development in EU countries is analysed predominately on macroeconomic level. Major part of economic studies analyse the effect of crisis on both real and potential economic growth, unemployment, inflation and debt dynamic. However the effects of the crisis are visible also at microeconomic level. The economic results of businesses are significantly influenced by the negative macroeconomic development at both national and international level. Both decrease in potential growth and purchasing power due to economic recession and more restrictive fiscal policy have a direct impact on aggregate demand and thus the microeconomic sector as whole. Additional source of problems is connected with banking sector crisis and the access to financing mainly for small and medium-sized enterprises (SME's). The aim of the paper is to fill the gap in economic research and to analyse the impact of the ongoing crisis on business entities in selected eurozone member countries. Authors selected two eurozone member countries from EU periphery (Greece and Ireland). Both countries are severely hit by economic crisis and authors suppose that also their business sector will be significantly influenced. However author believes that the structural differences will lead over the time in faster recovery of Irish businesses in contrast to the Greek one.
We create dataset using Amadeus database which contains the harmonized data about statistically significant set of business in selected countries. Authors then sorting the data according selected variables such as size of the company, NACE categorization and comparative indicators of individual business economic performance, namely representatives of indicators groups profitability, solvency, liquidity and indebtedness/financial structure of business entities. For the purpose of analysis authors analyse the data series three years before the crisis (2005, 2006 and 2007) and the three years of crisis (2008, 2009 and 2010). The dataset consists of 3,567 business entities in both observed countries. In the study we use the cluster analysis to detect some basic patterns and trends in business sector in terms of homogeneity within dataset. Based on the results of microeconomic environment analysis (impact of crisis and national economic policies) authors assess the optimal reaction of economic policy (both national and EU) to improve the condition of businesses which authors believe are the source of future economic recovery.

economic crisis, financial analysis, eurozone, quantitative research, SME's, economic policy

The impact of financial and economic crisis influencing economic development in EU countries is analysed mainly at macroeconomic level. Macro oriented economic studies analyse the effect of crisis on both real and potential economic growth, unemployment, inflation and debt dynamic. However the effects of the crisis are visible also at microeconomic level. The economic results of businesses are significantly influenced by the negative macroeconomic development at both national and international level. Both decreases in potential growth and in living standards due to economic recession, more restrictive fiscal policy have a direct impact on aggregate demand and thus the microeconomic sector as whole. Additional source of problems is connected with banking sector

crisis and the access to financing mainly for small and medium-sized enterprises (SME's). The aim of the paper is to fill the gap in economic research and to analyse the impact of the ongoing crisis on business entities in selected eurozone member countries. Two countries are included to the analysis – Greece and Ireland. Both countries are severely hit by economic recession however the roots of the problems and pre-crisis developments are different. Ireland since its entrance to European Communities back in 1973 went through a significant and successful structural change. Irish economy which was based on agricultural sector was transformed to the modern, dynamic growing economy based on modern technologies and innovations. Before the crisis started, Ireland was provided as an example of dynamic small open economy with sustainable and long term perspective. Greece on opposite was always felt like a problematic member of EU with lack of structural reforms and sluggish economic growth. Given this entry conditions we would expect that both Irish economy and businesses entities have higher potential to recover from the crisis. However, given the importance of SME's in Greece for employment and also for added value we would expect the significant role of those types of businesses in future economic recovery.

The aim of the paper is to identify patterns in economic development in both analysed economies and evaluate the impact of the crisis on SME's. Authors use the cluster analysis to detect some basic patterns and trends in business sector in terms of homogeneity within dataset. Based on the results of microeconomic environment analysis (impact of crisis and national economic policies) authors asses the optimal reaction of economic policy (both national and EU) to improve the condition of businesses which authors believe are the source of future economic recovery.

The paper is structured as follows. The first part provides overview of the empirical literature providing the arguments for importance of SME's sector in Greece and Irelands. The main characteristics including the evolution of number of business units, number of employees, share on added value, are described over the observed horizon. The second part then describes the filtering strategy which was applied in order to obtain dataset from Amadeus database. Also the description and the rationality behind selection of observed variables are provided in part two. Following section provides empirical results of cluster analyses and stylized facts of main variables included in the dataset. Final part concludes and provides recommendation for policy makers concerning the support of SME's in Greece and Ireland based on experience from other EU countries and regions.

Literature survey

According OECD (2012) SMEs and entrepreneurs play a significant role in all economies and are the key generators of employment and income, and drivers of innovation and growth. In the OECD area, SMEs employ more than half of the labour force in the private sector. In the European Union, they account for over 99% of all enterprises. Furthermore, 91% of these enterprises are micro-firms with less than 10 workers. Given their importance in all economies, they are essential for the economic recovery. It is important to stress that SMEs are generally more vulnerable in times of crisis for many reasons among which are: it is more difficult for them to downsize as they are already small; they are individually less diversified in their economic activities in comparison with large companies; they have a weaker financial structure (i.e. lower capitalisation); they have a lower or no credit rating; they are heavily dependent on credit and they have fewer financing options.

Recent economic crisis did significantly influenced businesses both from demand and supply side. Combination of the economic downturn and fiscal austerity are negatively influencing aggregate demand. On the other hand the banking crisis led to tougher credit conditions. Economic surveys (EC, 2012; OECD, 2012; ECB, 2012) indicating, that SME's are more vulnerable to both shocks tan the large companies. On one side we can expect higher sensitivity of SME's to the demand shocks due to lower sales and liquidity/insolvency problems. On other side the SME's are significantly more dependent on credits then large or very large companies. SMEs tend to face higher costs for bank finance and higher rejection rates than larger firms. While finding customers – potentially due to weak aggregate demand – is usually cited as a bigger problem for SMEs than access to finance, it is still the case that they are particularly vulnerable to adverse real-financial feedback loops or supply disruption in the provision of bank credit (Coeuré, 2012).

According to enterprises survey, the main effects of the economic crisis during 2009 and 2010 were the overall negative impact on total demand (mentioned by 62% of all enterprises) and the increase in customer payment terms (mentioned by 50% of all enterprises). Problems with obtaining finance (credit constraint[1]) were mentioned by approximately 40% of enterprises. There is also a clear size class effect: smaller enterprises more often mention negative effects of the crisis than larger enterprises. This is consistent with the fact that between 2008 and 2010 SMEs' employment decreased more than large enterprises' employment (EIM, 2011).

1 A credit-constrained firm is a firm which a) is rejected when applying for a loan, b) receives less than 75% of the desired loan amount, or c) is discouraged from applying because it believes its loan application will be rejected.

I: *SMEs in Ireland – basic figures*

	Number of enterprises			Employment			Value added		
	Ireland		EU27	Ireland		EU27	Ireland		EU27
	Number	Share (in %)	Share (in %)	Number	Share (in %)	Share (in %)	Billion €	Share (in %)	Share (in %)
Micro	137 669	88.9	92.2	248 646	23.5	29.6	14	16.3	21.2
Small	14 168	9.1	6.5	255 953	24.2	20.6	12	14.8	18.5
Medium - sized	2 652	1.7	1.1	225 386	21.3	17.2	17	20.4	18.4
SMEs	**154 489**	**99.7**	**99.8**	**729 985**	**69.0**	**67.4**	**43**	**51.5**	**58.1**
Large	450	0.3	0.2	327 975	31.0	32.6	41	48.5	41.9
Total	154 939	100	100	1 057 960	100	100	84	100	100

Source: SBA Fact Sheet 2012 – Ireland

Note: Estimates for 2011, based on 2005–2009 figures from the Structural Business Statistics Database (Eurostat). The estimates have been produced by Cambridge Econometrics.The data cover the 'business economy' which includes industry, construction, trade, and services (NACE Rev. 2 Sections B to J, L, M and N). The data does not cover the enterprises in agriculture, forestry, fishing or the largely nonmarket services such as education and health.

II: *SMEs in Greece – basic figures*

	Number of enterprises			Employment			Value added		
	Greece		EU27	Greece		EU27	Greece		EU27
	Number	Share (in %)	Share (in %)	Number	Share (in %)	Share (in %)	Billion €	Share (in %)	Share (in %)
Micro	703 648	96.6	92.2	1 338 671	57.1	29.6	23	34.2	21.2
Small	21 586	3.0	6.5	404 290	17.2	20.6	14	21.2	18.5
Medium - sized	2 649	0.4	1.1	255 492	10.9	17.2	10	14.8	18.4
SMEs	**727 883**	**99.9**	**99.8**	**1 998 453**	**85.2**	**67.4**	**47**	**70.2**	**58.1**
Large	399	0.1	0.2	346 200	14.8	32.6	20	29.8	41.9
Total	728 282	100	100	2 344 653	100	100	66	100	100

Source: SBA Fact Sheet 2012 – Ireland

Note: Estimates for 2011, based on 2005–2009 figures from the Structural Business Statistics Database (Eurostat). The estimates have been produced by Cambridge Econometrics. The data cover the 'business economy' which includes industry, construction, trade, and services (NACE Rev. 2 Sections B to J, L, M and N). The data does not cover the enterprises in agriculture, forestry, fishing or the largely nonmarket services such as education and health.

According the SBA study (EC, 2012) small and medium-sized enterprises are comparatively more prevalent in Ireland than in the EU as a whole. Also the SME sector is more important in Greece than in the average EU country (see Tab. I and II).

If we compare Irish and Greek SMEs sector we can conclude that in both countries SMEs are predominant in all observed comparators (number of units, employment and share on added value). However in Greece the dominance of SMEs over the large companies is more significant.

The SMEs sector in Ireland is still struggling with the effects of the crisis. The SBA figures show that the number of enterprises and employment in those enterprises stabilised in 2010–2011, although well below the 2008 peak. Also in Greece the crisis has caused a dramatic decrease in the number of Greek SMEs, estimated to be 90 000 thousand units between 2008 and 2011. This trend also negatively influenced employment in SMEs sector which then contributed to the significant increase in total unemployment. The negative trend in unemployment will make the process of economic recovery lengthier. According the study of Kolesnikova and Liu (2011) during the recession small firms are losing proportionally more jobs than large firms. Moreover, small firms also take longer than large firms to rehire. Small firms are also more likely to shut a business during economic contraction, some of their job losses might be considered permanent. Re-creating these jobs take longer time than rehiring.

To sum up, in both countries SMEs are playing important role in economy, both in added value creation and also in employment. At the same time SMEs are more sensitive to the impact of economic crisis than large companies not only on demand side, but also at the supply side of the economy. The most frequently discussed effect of crisis on small and medium business is the access to finance.

According Coeuré (2012), before the crisis, evidence indicated that the main source of SME finance was retained earnings (around two-thirds), 10% was in the form of trade credit from suppliers or

customers, and around 10% from external non-bank sources. About 15% of SMEs' capital investment and operating expenses were financed with bank loans and credit lines. This average dependence on bank financing was as low as 8% in Portugal and as high as 22% in Ireland, indicating that small businesses relied substantially on the smooth functioning of the euro area's banking sector. One of the adverse consequences of credit expansion before the crisis was that the euro area corporate sector had accumulated, on the eve of the global financial crisis, considerably higher leverage than during the early 2000s. This effect was largely driven by micro and small firms, for which financial leverage increased from 0.14 in 2004 to 0.19 in 2007[2]. According IMF (2012) leverage for the median firm (which is a small firm) has fallen to 46 percent of equity at the end of 2011, with the usage of bank debt showing a similar decline. The data also indicate that trade credit and other non-debt liabilities play an important role in the financing of SMEs, together with internal financing from retained earnings.

According EC (2013) green paper with title "Long term financing of European economy", the small and medium-sized companies (SMEs) of today have the potential to underpin the long-term growth of the future. They have historically faced significant difficulties in accessing funding to grow. Given their reliance on bank financing, these difficulties are reinforced given bank deleveraging. In addition, they are now faced with fragmented financial markets in the EU, as access to finance conditions vary considerably from country to country.

IMF (2012) in its country report on Ireland also stressed importance of SMEs for Irish economy and the role of access to finance concluding that "the emphasis of the analysis is on small-and medium-sized enterprises (SME) which play an important role in the Irish economy and tend to be financially constrained."

The Irish authorities have done also much analysis in this area, with several recent working papers by the Central Bank of Ireland suggesting that there is a credit crunch in Ireland, with supply factors playing an important role in holding back bank lending to SMEs. See, for example Lawless and McCann (2011).

Holton *at al.* (2012) find that the Irish SME rejection rate is double the euro area average and second only to Greece. Their analysis considers bank loans and overdrafts as well as a wider range of credit constrained firms as rejected. Similarly, Mazars (2012) surveys a much larger sample of Irish firms and finds a rejection rate of 28 percent when considering bank loan and overdraft applications.

METHODS AND RESOURCES

Authors using data about general performance of SMEs from SBA factsheets surveys (The Small Business Act for Europe – SBA). The aim of the annually updated Fact Sheets is to improve understanding of recent trends and national policies affecting SMEs. The data are completed then with empirical studies of OECD and IMF.

The main source of information used in empirical part of the paper has been the Amadeus Database. To obtain a sample of business entities the following searching strategy was employed. The focus of searching strategy was the time period of years 2005–2007 and 2008–2010, respectively. The time period of years 2005–2007 we consider being the period of EU economies' boom and on the other hand the time period of years 2008–2010 as the economic crisis, which stroke immediately after the economic booms' period.

The selected variables within the searching strategy for identifying similarities or dissimilarities among observations employing the cluster analysis were as follows:

- *Return on Capital Employed* (ROCE) as the core searching criterion for classification of companies, whether there is an increase or decrease in economic performance related to respective business entity. For instance Synek (2007) states that the indicator ROCE measures profitability of the whole invested capital regardless if it is shareholder fund or external resource of capital. So, this indicator measures profitability without considering the financial structure of business entity. We consider the fact of 3 period's year-on year continuous increase of this indicator as the positive influence on economic performance, on the other hand 3 period's year on year decrease as the evidence of negative development in enitie's economic performance.

$$ROCE \text{ in}(\%) = \frac{(Net\ income + Interest\ paid)}{(Shareholder\ funds + Non\ current\ liabilities)} \times 100$$

- Indicator *ROCE* can be decomposed to the partial indicators to reveal the maximum positive or maximum negative year on year influence on change of its value. It can be managed via employing the index decomposition approach, which is based on following assumptions:
  - Indicator ROCE can be decomposed to the following multiplicative relation:
    - *Return on assets* (ROA) × *Common Earnings Leverage* (CEL) × *Capital Structure Leverage* (CSL), where

      ROA = Earnings before interest taxes (EBIT)/ Total Assets and it represents the operational productive power of the corporation

2 Financial leverage is defined as the ratio of the sum of debt securities and bank loans to total assets.

CEL = (P/L for period + Interest paid) / EBIT and it represents the level of corporation's ability for creating net income and covering the interest expenses from the core business activities

CSL = Total Assets / (Shareholder funds + Non-current liabilities) that represents the level of long term capital compared to its total value.

- *P/L for period* in its absolute value to identify, if the company is able to create profit after paying interest expenses and taxes;
- *Operating profit/loss* (EBIT) in its absolute value to identify, if the company is able to create profit related to its major business activities;
- Indicator of *Undercapitalization* which can reveal, if the companies' Fixed Assets are financed by long term capital resources;
- *Golden rule shareholder funds to fixed assets ratio* tests if the business entity over exploits shareholder funds for financing the investments;
- *The golden rule of balancing the risk* helps to identify the proper ratio between shareholder funds amount and amount of external resources of capital regardless the time conditions of liabilities;
- Indicator *Current Ratio* reveals the situation about ability to cover Short-Term Liabilities with Current Assets of a business entity. Indicator's values which are lower than 1.5 are considered to be the evidence for solvency problems (e.g. Synek, 2007);
- *Times Interest Earned* indicator identifies the ability of corporation to cover its interest expenses by operational profit. Value lower than 3 is considered to be the secure frontier related to the interest burden of the corporate (e.g. Kislingerová, 2010).
- *Date of incorporation* of observed company;
- *NACE Rev. 2, primary code* for core business activity classification;
- *Category of company*, which defines the size of the observed business unit according to the following classification of database Amadeus:
  - Very large companies:
    - Operating Revenue > = 100 million EUR
    - Total assets > = 200 million EUR (280 million USD)
    - Employees > = 1,000
    - Listed
  - Large companies:
    - Operating Revenue > = 10 million EUR (14 million USD)
    - Total assets > = 20 million EUR (28 million USD)
    - Employees > = 150
  - Medium sized companies:
    - Operating Revenue > = 1 million EUR (1.4 million USD)
    - Total assets > = 2 million EUR (2.8 million USD)
    - Employees > = 15
  - Small companies:
    - rest of companies.

The result of this selection process was 618 entities in Ireland and 2,949 entities in Greece.

Authors used cluster analysis to identify main patterns in business sector in Ireland and Greece. First dataset was adjusted by transforming variables to numeric form. Then redundant variables were removed. Adjusted data was imported to Statistica software and the cluster analysis toolbox was applied. In the first step the correlation matrix was created and variables were tested for cointegration. Finally the cluster analysis was applied on dataset using the Ward method and Euclidian distances. Then the K means were calculated using the clusters from previous step.

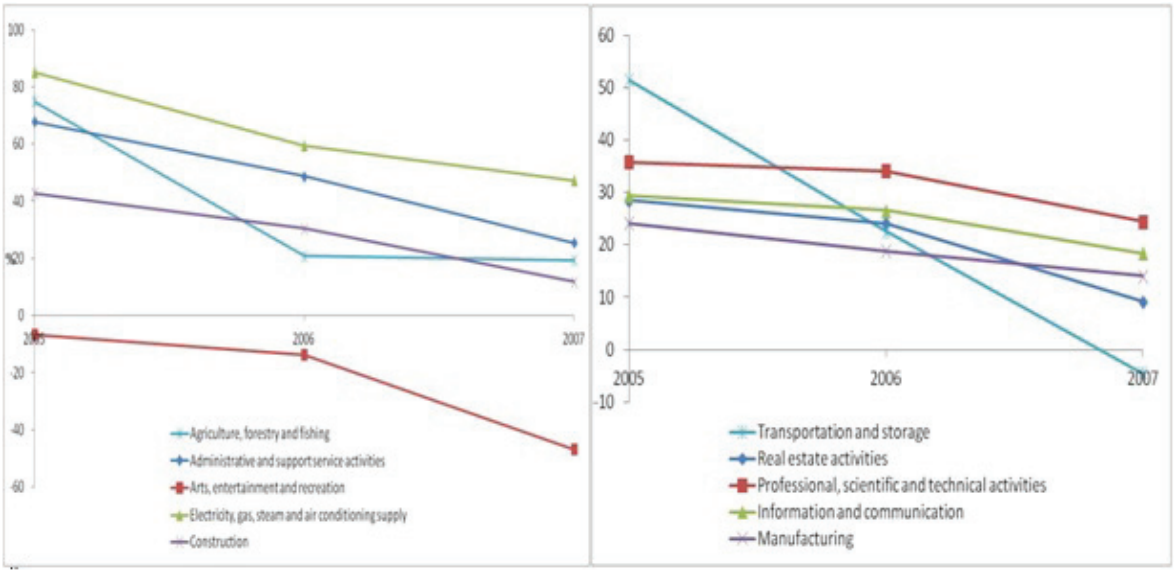
RESULTS

The cluster analysis provided mixed results. As the most significant variable from those included to the analysis did come out the size of the company. There are 4 clusters which are more or less mitigating the structure of the companies according the SBA surveys. However the distances between clusters are more significant in years after the crisis. This fully support the authors hypothesis and conclusions from the literature survey that SMEs are more vulnerable to the impact of economic crisis then large and multinational companies.

In the further step authors looked closer on the evolution of the composite indicator ROCE. The evolutions of pre and crisis period for different sectors of economy are described in following figures.

The development among the corporation's sample in Greece and Ireland within the period of world's economic boom from the industrial branch point of view is summarized in Figs. 1, 2 and Tabs. III, V.

The development among the corporation's sample in Greece within the period of world's economic boom from the industrial branch point of view is summarized in Tab. III and V. Greek corporations with decreasing tendency of profitability measured by highest bust of indicator's ROCE were Agricultural business from Marine aquaculture industry branch. Nevertheless, the count of enterprises against the accessible dataset of Agricultural Enterprises was the lowest, compared to other industries' data sample of entities. In this case, as the most affected industries with negative development of profitability can be marked "Wholesale and retail trade; repair of motor vehicles and motorcycles "or "Arts, entertainment and recreation". The analysis of indicator ROCE within the "Wholesale and retail trade; repair of motor vehicles and motorcycles" revealed its decrease among observed enterprises for 13.7% among year period 2005–2007. Nevertheless, this industry was still able to be profitable compared to the employed capital measured by indicator ROCE and its value 15.9% in the year 2007. On the other representatives



1: *Development of mean value of indicator Return of Capital Employed in % within top 5 decreasing industries' representatives in years 2005–2007 (Greece left graph, Ireland right graph)*
Source: own work based on data of Database Amadeus

III: *Greece: decreasing development of indicator ROCE according to NACE primary code rev. 2 within years 2005–2007*

Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2005	2006	2007
Agriculture, forestry and fishing	0321	74.8	20.8	19.4
Administrative and support activities	8220, 8299, 8121, 7911, 7740	67.8	48.7	25.5
Arts, entertainment and recreation	9311, 9200	–6.6	–13.8	–46.9
Electricity	3511	85.2	59.5	47.3
Constructions	7112, 4669, 4643, 4321, 4211, 4120	42.7	30.4	11.8

Source: own work based on data of Database Amadeus

IV: *Ireland: decreasing development of indicator ROCE according to NACE primary code rev. 2 within years 2005–2007*

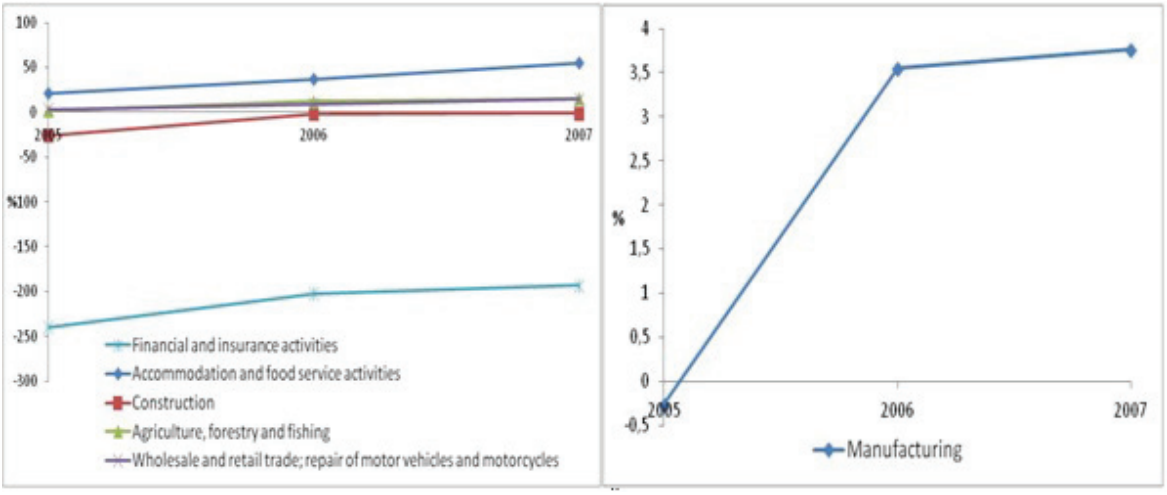
Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2005	2006	2007
Transportation and storage	5121	51.5	22.5	–4.5
Real estate activities	6810	28.4	24.0	9.2
Professional, scientific and technical activities	7311, 7111, 6920,	35.8	34.1	24.4
Information and communication	6202, 5829	29.4	26.5	18.4
Manufacturing	3109, 3102, 2920, 2630, 2620, 2444, 2361, 2320, 2110, 1623	24.2	18.8	14.0

Source: own work based on data of Database Amadeus

of industry "Arts, entertainment and recreation" achieved negative values of indicator ROCE within the whole period of years 2005–2007.

Highest growth of indicator ROCE among Greek corporation's sample in years 2005–2007 was revealed in the industry "Accommodation and food service activities", where its mean value was 55 % in the year 2007. Concurrently, "Electricity, gas, steam and air conditioning supply" was the industry with highest count of enterprises against the accessible dataset of peer group enterprises, being active in the mentioned industry branch. Nevertheless, the mean value of profitability measured by indicator ROCE was only 4% in year 2007.

The development among the corporation's sample in Ireland within the period of world's economy boom from the industrial branch point of view can be described as follows. The most



2: *Development of mean value of indicator Return of Capital Employed in % within top 5 increasing industries' representatives in years 2005–2007 (Greece left graph, Ireland right graph)*
Source: own work based on data of Database Amadeus

V: *Greece: increasing development of indicator ROCE according to NACE primary code rev. 2 within years 2005–2007*

Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2005	2006	2007
Financial and insurance activities	6622	–240.0	–202.0	–193.3
Accomodation and food service activities	5630, 5510,	20.8	36.5	55.2
Construction	4120	–26.0	–1.8	–1.2
Agriculture, forestry and fishing	1041	2.1	12.1	15.0
Wholesale and retail trade, repair of motor vehicles and motorcycles	4711, 4649, 4646, 4644, 4642	3.4	9.0	14.3

Source: own work based on data of Database Amadeus

VI: *Ireland: increasing development of indicator ROCE according to NACE primary code rev. 2 within years 2005–2007*

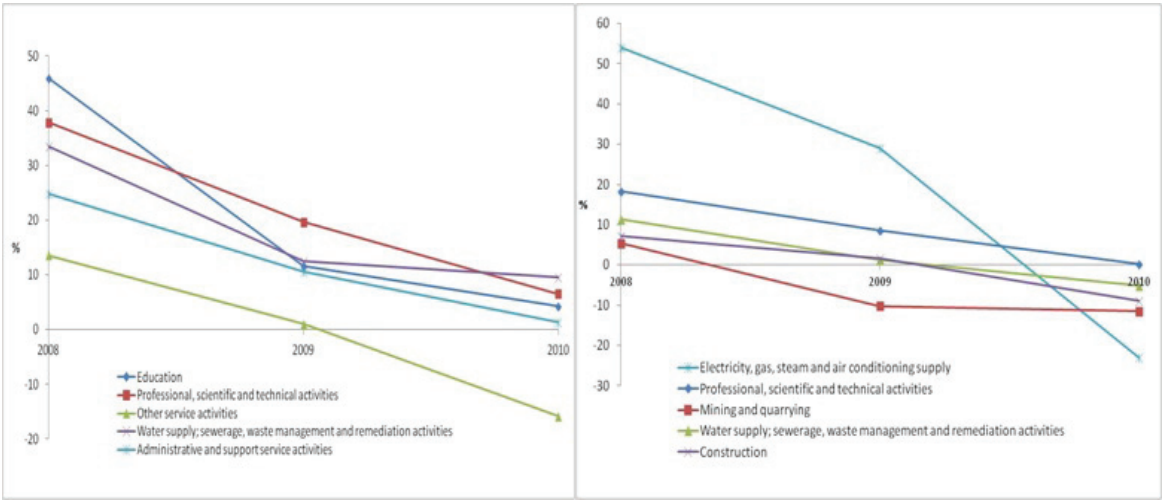
Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2005	2006	2007
Manufacturing	3311	–0.3	3.6	3.8

Source: own work based on data of Database Amadeus

negative development of profitability was revealed within the "Transportation and storage" industry, namely according to primary code classification "Freight air transport", where its mean value has busted for nearly 56%. Nevertheless, the count of enterprises against the accessible dataset of enterprises of "Transportation and storage" was the lowest, compared to other industries' data sample of entities. In this case, as the most affected industries with negative development in years 2005–2007 can be marked the industry branch "Construction".

The Ireland's industry of "Constructions" was, however, still able to be profitable compared to employed capital measured with indicator ROCE value nearly at 9% in the year 2007. On the other hand, we were able to identify only one industry, which had been increasing profitability of employed capital in this period in Ireland. It was the industry "Manufacturing", which was classified by the NACE primary code as "Repair of fabricated metal products". This industry was able to achieve profitability of whole employed capital at value of 3.8% in the year 2007.

The period of world financial crisis, i. e. years 2008–2010 from the observed business entities' point of view can be described as follows. The biggest bust among Greek enterprises with continuous 3-year decrease of indicator ROCE was identified in branches such as "Education" or "Professional, scientific and technical activities" with more than 30% decrease of it profitability in this time period. More precisely, industry of "Professional, scientific and technical activities" is represented by instance by businesses classified via NACE primary code rev.



3: *Development of mean value of indicator Return of Capital Employed in % within top 5 decreasing industries' representatives in years 2008–2010 (Greece left graph, Ireland right graph)*
Source: own work based on data of Database Amadeus

VII: *Greece: decreasing development of indicator ROCE according to NACE primary code rev. 2 within years 2008–2010*

Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2008	2009	2010
Education	8552, 8532, 8520	45.9	11.7	4.2
Professional, scientific and technical activities	7490, 7420, 7320, 7311, 7120, 7112, 7111, 7022, 7021, 6920	37.9	19.6	6.5
Other service activities	9604, 9602, 9601, 9522	13.6	1.1	–15.8
Water supply; sewerage management and remediation activities	3832, 3811	33.5	12.5	9.5
Administrative and support service activities	8299, 8230, 8220, 8211, 8129, 8121, 8110, 8010, 7912, 7911, 7820, 7732, 7721, 7711	24.8	10.6	1.4

Source: own work based on data of Database Amadeus

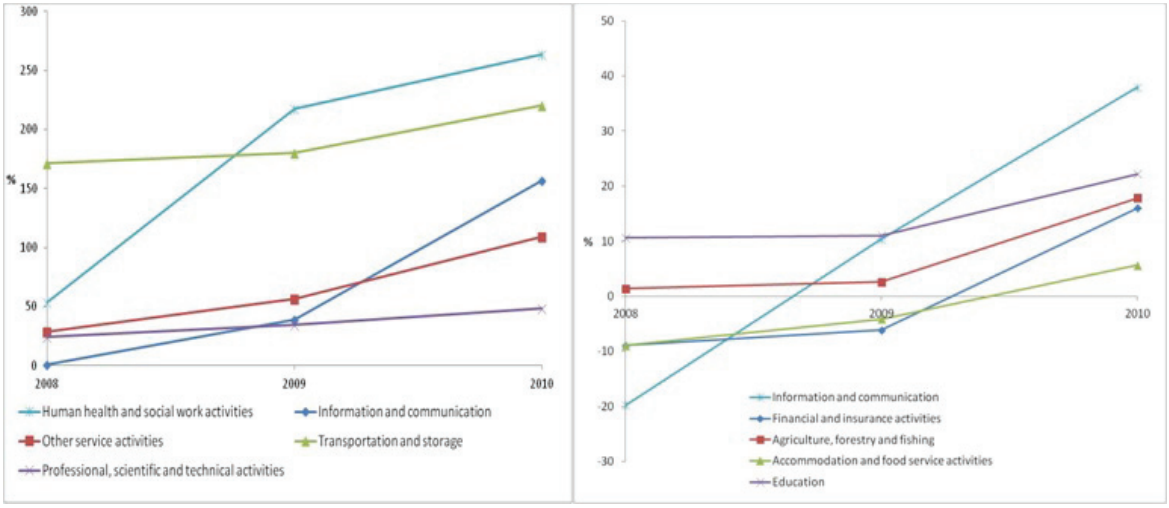
VIII: *Ireland: decreasing development of indicator ROCE according to NACE primary code rev. 2 within years 2008–2010*

Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2008	2009	2010
Electricity, gas, steam and air conditioning supply	3514, 3511	54.1	29.0	–23.0
Professional, scientific and technical activities	7311, 7111, 7022, 7010	18.4	8.5	0.2
Mining and quarrying	0899, 0812	5.5	–10.2	–11.4
Water supply; sewerage management and remediation activities	3832, 3811, 3700	11.3	1.2	–5.2
Construction	4399, 4391, 4334, 4322, 4321, 4120	7.2	1.7	–8.9

Source: own work based on data of Database Amadeus

2 as "Market research and public opinion polling", "Advertising agencies" or "Engineering activities and related technical consultancy". Subsequently, the biggest count of enterprises with decreasing value of profitability compared to the accessible dataset of database Amadeus was indentified within the industry "Wholesale and retail trade; repair of motor vehicles and motorcycles ". So, it can be stated, that it is the same result as in the period of years 2005–2007.

The negative development of observed businesses' profitability in Ireland within the period of world financial crisis was identified as follows (see Fig. 3 and Tab. VIII). The biggest decrease



4: *Development of mean value of indicator Return of Capital Employed in % within top 5 increasing industries' representatives in years 2008–2010 (Greece left graph, Ireland right graph)*
Source: own work based on data of Database Amadeus

IX: *Greece: increasing development of indicator ROCE according to NACE primary code rev. 2 within years 2008–2010*

Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2008	2009	2010
Human health and social work activities	8730, 8690	53.7	217.5	264.0
Information and communication	6190, 5811	1.0	38.8	156.6
Other service activities	9604, 9521	28.5	56.2	109.5
Transportation and storage	5229, 5224	171.7	180.3	220.6
Professional, scientific and technical activities	7311, 7112, 7022, 7010	24.3	34.6	48.4

Source: own work based on data of Database Amadeus

X: *Ireland: increasing development of indicator ROCE according to NACE primary code rev. 2 within years 2008–2010*

Nace Rev. 2, main section	NACE primary code rev. 2	Mean value of indicator ROCE within the observed years (in %)		
		2008	2009	2010
Information and communication	6209, 6202, 6190	–19.755	10.36	37.915
Financial and insurance activities	6619, 6499	–8.905	–6.13	16.005
Agriculture, forestry and fishing	0147, 0220, 0312, 0321	1.43	2.655	17.845
Accommodation and food service activities	5610, 5590, 5510	–8.93	–4.115	5.66
Education	8520	10.63	11.04	22.19

Source: own work based on data of Database Amadeus

of profitability was identified in the industry "Electricity, gas, steam and air conditioning supply" with the decrease of mean value of indicator ROCE for 77% in the period of years 2008–2010. Nevertheless, there was identified industry with higher ratio of affected enterprises compared to the accessible dataset. These industries are for instance "Manufacturing " and "Wholesale and retail trade; repair of motor vehicles and motorcycles". The corporations being active in the "Manufacturing" and "Wholesale and retail trade; repair of motor vehicles and motorcycles" industry has busted measured by mean value of profitability for 17% and 12%, respectively.

Positive development of profitability indicator ROCE in Greece and Ireland within the period of world financial crisis is described in Fig. 4 and Tabs. IX and X. Greek companies with the highest continuous increase of profitability in period of years 2008–2010 were active in the industries "Human health and social work activities" or

"Information and communication" with growth of indicators ROCE higher than 100%.

The count of Greek enterprises being active in the industries "Human health and social work activities" or "Information and communication" against the accessible dataset of enterprises was among the lowest, compared to other industries' data sample of entities. In this case, as the generally more positively growing industries within the crisis period measured by profitability can be marked "Other service activities" or "Electricity, gas, steam and air conditioning supply". These mentioned industries' representatives had growth of profitability for 81% and 5% within the period of years 2008–2010, respectively.

Irish companies with the highest continuous increase of profitability in period of years 2008–2010 (see Tab. X) were active in the industries "Information and communication" and "Financial and insurance activities" with growth of indicator ROCE for about 58% and 25% respectively. However, neither these industries can be marked as industries with highest count of companies with positive development of their profitability. Such an industry with higher count of companies against the accessible corporate data was industry branch "Public administration and defence; compulsory social security", where it was identified the continuous growth of profitability at nearly 5% concerning the involved enterprises.

The result of empirical analysis of ROCE indicator provides mixed evidence. On one site we would expect good results of manufacturing and construction sector. In Ireland given their high export competitiveness and boom in mainly private construction sector. In Greece due to boom in construction sector through public investment to Olympic game infrastructure and inflow of funds from EU budget. On other site we would expect more significant impact on those industries in the period aftermath the crisis. However from the analysis is clear that the public sector is playing important role in recent crisis compared with the great depression. Those sectors with positive results even during the crisis are the sectors providing public services (health care, education).

DISCUSSION AND CONCLUSIONS

Even in 'normal' economic conditions governments have recognised that, to survive and grow, SMEs need specific policies and programmes. However, at the present time, when SMEs have been specially hard hit by the global crisis, the governments had to strengthen their desire to support recovery in this sector. According OECD (2009), the measures put in place by countries can be classified in three different groups: (a) measures supporting sales and preventing depletion of SMEs' working capital such as export credit and insurance, factoring for receivables, tax reductions and deferrals, and better payment discipline by governments, (b) measures to enhance SME's access to finance, mainly to credit through bank recapitalisation and expansion of existing loan and credit guarantee schemes; (c) measures aimed at helping SMEs to maintain their investment level and more generally their capacity to respond in the near future to a possible surge in demand through investment grants and credits, accelerated depreciation, and R&D financing.

Many governments have implemented measures to maintain or increase cash flows. For instance, they have allowed accelerated depreciation for investments already undertaken. Some countries are also giving tax credits, cuts, deferrals and refunds. The idea was introduced during the Turin Round Table that governments concentrate first on reducing those taxes that are "profit-insensitive", that is, taxes that are paid regardless of whether the SME is making a profit. This would increase the ability of SMEs to finance working capital internally (OECD, 2009).

Among EU member countries there are two different types of programmes and policies. The first set of policies is oriented on employment, the second on access to financing.

Employment support schemes

According EIM (2011) study, publicly supported employment protection schemes were available in almost all countries. On average, one out of every ten enterprises (in the 37 countries considered) made use of such programmes. This varied between (almost) 0% in Montenegro and 2% in the UK to 25% or more in Belgium, Denmark and Lithuania. It is not clear to what extent these country differences are due to differences in the protection schemes (for example, available budget and eligibility criteria) or differences in the willingness of enterprises to apply for these programmes.

Options for dealing with reduced access to finance for SME

Credit guarantees or subsidies on SME loans can in principle stimulate SME financing. Credit guarantees can help alleviate collateral constraints demanded by banks and loan subsidies can reduce the cost of borrowing. However, the international experience with SME lending schemes is mixed. In reviewing a broad sample of credit guarantee schemes, Levitsky (1997) concludes that there is no consensus that credit guarantee schemes are an effective or economical way of widening access to formal bank credits for SMEs. Moreover, the historical experience shows that credit guarantee schemes can only be effective when there are competent, financially sound banks, with adequate staff to effectively screen and monitor SME loans (see Bannock and Partners, 1997).

Another source of support of SMEs did come through the ECB. According Coeuré (2012), the ECB has embarked on a number of non-standard measures: long-term liquidity provision up to

three years, enlargement of the collateral set to be used in refinancing operations, direct intervention in the secondary market for government bonds with the SMP programme, and more recently the announcement of the OMTs. The objective of all these measures has been to help restore the transmission of monetary policy and address emerging heterogeneity by relaxing the balance sheet constraints of lenders (banks) and borrowers (firms and households). In this context, the Eurosystem has supported euro area SMEs both directly and indirectly, by allowing banks to pledge corporate loans as collateral with the Eurosystem. The goal is to ensure that firms, and especially SMEs, will receive credit as effectively as possible under the current circumstances. At present, the ECB holds on its balance sheet approximately €35 billion worth of ABSs with underlying SME assets, and approximately €60 billion worth of NFC credit claims. It also confirmed that, by providing ample liquidity through the FRFA and the LTROs, the ECB has been able, throughout the financial crisis, to reduce the costs arising to banks from restricted access to private liquidity funding and induce a softening of lending conditions, including to SMEs. This effect has been particularly strong in countries with weaker banking sectors.

According EC (2013) green paper with title "Long term financing of European economy", the reduced availability of bank finance has already spurred policy action to promote the development of alternative, non-bank channels for SME lending. In 2011, the Commission adopted an action plan to address the financing problems faced by SMEs. Certain initiatives have already been agreed, including new EU frameworks for investment in venture capital and in social entrepreneurship funds. Some policy initiatives are also underway to facilitate SMEs' access to equity markets. However, other legislative proposals linked to the action plan have yet to be adopted. Proposals have also been presented to allow the operators of multilateral trading platforms to be registered also under the label of "SME growth market"; and, for a proportionate regime that will decrease administration costs and burdens for SME's accessing markets for funding. In parallel, there has been growth in long-standing markets, such as asset finance and supply-chain finance, as well as financial innovations making use of technology and the internet, for example through crowd-funding. But these measures may not be sufficient to address the difficulties of SMEs to access finance.

This article presents initial study of problem area concerning the impacts of world economic crisis on business entities among EU member countries. The further research among SMEs economic and financial results within period of crisis has to be done to reveal the causalities of respective industry representatives' development. Nevertheless, economic development in EU countries is analysed mainly at macroeconomic level, so authors have to cope with lack of information resources.

SUMMARY

The economic results of businesses are significantly influenced by the negative macroeconomic development at both national and international level. The aim of the paper is to fill the gap in economic research and to analyse the impact of the ongoing crisis on business entities in selected eurozone member countries. Two countries are included to the analysis – Greece and Ireland. The development among the corporation's sample in Greece and Ireland within the period of world's economic boom from the industrial branch point of view is summarized in Figs 1, 2 and Tabs. III, V. The negative development of observed businesses' profitability in Ireland within the period of world financial crisis was identified (see Fig. 3 and Tab. VIII). Positive development of profitability indicator ROCE in Greece and Ireland within the period of world financial crisis is described in Fig. 4 and Tabs. IX and X. As the most significant variable from those included to the cluster analysis did come out the size of the company. There are 4 clusters which are more or less mitigating the structure of the companies according the SBA surveys. However the distances between clusters are more significant in years after the crisis. Among EU member countries there are two different types of programmes and policies which played significant role during the crisis period. The first set of policies is oriented on employment, the second on access to financing.

Acknowledgement

This paper is part of the activities of Jean Monnet Centre of Excellence, Mendel University in Brno, Czech Republic (Grant Decision Nº 2012-2861).

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