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THE RATING AGENCIES IN THE INTERNATIONAL POLITICAL ECONOMY

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Abstract: The internationalization of the economy, the integration of national markets for goods, services and capital, the internationalization of production and generally augmentation of international movement of factors of production and the growing economic interdependence in recent decades have caused a rapid increase in the construction and use of indicators for assessing countries. Typically the comparative evaluation of countries is conducting, using simple or complex indicators, based on quantitative and / or qualitative variables. The results of comparative evaluation of counties usually concern the policy makers, markets and public opinion. The concentration of information in an index seems to have a practical significance and facilitate comparison between countries. From the position that a country conceives in the list of evaluation has certain economic and political implications. The different evaluation systems (indicators) of countries have however advantages and disadvantages. Many organizations for example publish indicators for the competitiveness of countries. Widely known indicators are competitiveness of World Economic Forum (WEF, Geneva) and the Institute for Management Development (IMD, Lausanne). There are also indicators of corruption, bureaucracy and regulations, investment climate, political risks and security risks. Agencies and organizations like the World Bank, IMF, EU and the OECD publish indicators often for a number of specific issues.
The indicators and assessment methods of countries are often the basis for empirical economic research, data useful for counseling policy and guide action. For governments evaluation of countries is an important form of information. The advantage is that the indicators reflect complex relationships of world economy. The advantage is at the same time the disadvantage. And this is because they provide only general information. The aim of this article is to evaluate the importance of rating agencies to the configuration of world economy. For this reason, we will study the historical development of rating agencies and the causes of this development. The article also examines the issue of interest conflict and the potential impacts to state economies. Finally, it is examined the impact of rating agencies to international economic crisis.

Keywords: Rating Agencies, International Political Economy, International Economic Crisis, Interest Conflict

JEL Classification Codes: F30, F59

1. INTRODUCTION

The global financial credit crisis of 2008 abruptly halted the development of financial markets which for the period from 1995to 2005 recorded an increase in capital flows by 166.67%; from 6% to 16% of global GDP (Deeg and O'Sullivan 2009). Within just a few months 14 trillion dollars in bonds, with high evaluation rate, were considered junk. As a result the chaos created in the financial market highlighted the phenomenon of global mistrust against global markets assessment system (Scalet and Kelly 2012). At the same time it was obvious that practically globalization was accompanied by an in parallel burst of economic, financial and credit services as a percentage of the total economic activity. Also their influence was expanded over the rest of political economy, a fact certified by the agenda of the newly established Group of 20 (G20), where for the first time it was so intensively expressed the need of formulating policies and rules of operation for these services. (Helleiner and Pagliari 2011).

Bond Credit Rating Agencies have both a dominant role in financial market but also in the debate regarding the causes of global crisis (Papaikonomou 2010). Friedman's publication in New York Times is characteristic by claiming "There are two superpowers in the world today in my opinion. There's the United States and there's Moody's Bond Rating Service. The United States can destroy you by dropping bombs, and Moody's can destroy you by downgrading your bonds. And believe me, it's not clear sometimes who's more powerful ". Especially after the outbreak of the crisis there have been many studies and scientific analyses that deplore the role of bond credit rating agencies in global financial credit crisis (Calomiris and Mason 2009, Pagano and Volpin 2010, Becker and Milbourn 2008, Hunt 2009). They pay special attention in both cases; the bankruptcy of Enron, where all three major bond credit rating agencies have suggested to their clients to invest in Enron bonds, just five days before her bankruptcy; and in the case of Lehman Brothers where she was upgraded shortly before collapsing.

This paper aims in determining bond credit rating agencies' role and overall power over international politics and economy by exploiting a multilevel approach, using the toolbox of international political economy, notably through the analysis of effects and empirical investigation. More particular, the analysis focuses on the investigation of the role and function of rating agencies in market organization but also in evaluation models and methods applied. Also it will investigate all factors that transformed rating agencies, in international economical protagonists and the way they apply influence in economic policy and politics in general. Finally we will try to demonstrate the role of bond credit rating agencies during global financial credit crisis.

2. ROLE AND OPERATION OF CREDIT RATING AGENCIES

Bond credit rating agencies are considered key players in modern international capital market. They act as peculiars intermediates between lenders and borrowers. These intermediaries provide information and assessments focused primarily for the future and not for the past. Having as a basic function to increase transparency in capital markets and the mitigation of information asymmetry between borrowers and lenders they produce public good, although they are private entities. The added value of information provided depends on their level of information's access, their manpower and their motivation for quality. Bond credit rating agencies were established for providing investors with reasoned analysis of risks associated with a wide range of investment products such as bonds and other securities, but also for evaluating creditworthiness of government and private firms bonds. Typically, rating

agencies are not part of the purchase or sale procedure of securities, but rather they estimate the probability of the issuer to meet its loan obligations (repayments and interest payments). Therefore, their ratings have broad implications in international financial markets.

The development of railway network and companies in U.S. in the mid-19th century, their desire in raising funds from general public and the need for objective public's information triggered the first credit ratings. Thereafter and particularly the global crisis of 1929, significantly increased their effect. Today, of great importance is the credit evaluation of countries (Sovereign Ratings). National governments are the largest customer of international capital markets with over 60% of issued loans. State's credit ratings were established in order to protect lenders, but primarily banks that mainly lend to states, and more generally for ensuring smooth functioning of capital markets.

However, the effects from bond credit rating agencies operation have been amplified dramatically over the past 20 years. Today assessments are associated with financial contracts and investment procedures, thus with the whole regulatory framework. The announcements of these firms have systemic consequences (Bank of England 2011). The firms must balance between stability evaluation and short-term accuracy. The assessment should be modified when also the final credit rating is modified (Löffler 2005) and observation and investigation of crediting rate should be continuous. For mitigating contrast between stability and accuracy, rating firms publish statements of intentions, without however changing rates. It is a common misconception to underestimate the importance of statements compared to rating, although in practice they have almost the same impact on markets (Afonso et al 2011, Alsakka et al 2011, IMF 2011).

3. ANALYZING GOVERNMENTAL CREDIT RATING AGENCIES

All three major rating agencies after the global financial crisis of 2007/8 are considered as key factors in international economics and politics (Sinclair 2008). Initially they suffered aggressive criticism for their extremely favorable (inflationary) of many heavily indebted credit institutions such as Lehman Brothers, and many derivatives and structured financial instruments linked to mortgages. Some market individuals consider bond credit rating agencies as one of the major factors that contributed in U.S., housing bubble and its burst, which triggered the global financial crisis. After year 2010, bond credit rating agencies were linked to the EU's debt crisis, Eurozone's systemic crisis, and also to the effecting management of U.S. government debt. The constant and intense degradation of most EU countries credit rating, but also the deterioration of U.S. rating, for the first time in its history by S&P, provoked strong objections, mainly from the political arena. In some cases, they are accused for aggressive or even for on purpose state downgrading, and conspiratorial attitude towards the euro currency and euro area member states. For example, Gysi, of German party Die Linke, spoke for "war against the European people". Another German Member of Euro Parliament and staff officer of German Christian Democrat Party spoke of "currency war" and for promotion by bond credit rating agencies of "Anglo-American political interests." A former stockbroker, Dirk Müller said: "I am certain that the American rating agencies are in close coordination with the American government, which in turn has been dominated for many years by Wall Street" (http://www.spiegel.de/international/europe/0,1518,809696,00.html).

These developments have given great impetus to relevant scientific research with a large number of publications on their role and functions on capital market organization, their links with large businesses and financial policy, the interests they may serve, the impact of their

assessments, the need of auditing or replacing them, their influence on governments and economic policies, etc. Beside scientific research, the, for decades unknown, bond credit rating agencies were suddenly well known to the general public through public media. Furthermore, it seems that two major trends or concepts are being formulated: the first one includes most politicians and a part of researchers and analysts who consider bond credit rating agencies as a factor causing the crisis, due to their dedication in serving specific interests and / or because of certain methodological and operational drawbacks. Consequently, a number of concrete, although divergent, interventions for structural changes in evaluation systems are suggested. But there is also another view which claims that bond credit rating agencies are performing an important work on the functioning of international financial markets, despite the unquestionable drawbacks and omissions of their applied methodologies, and thus they are unfairly blamed for causing crisis; also rejecting any conspiracy theories,. The statement of Stefan Kaiser from Spiegel online is an indicative text for this point of view: «Even if one ignores the lack of evidence, the arguments put forward by the conspiracy theorists are extremely thin. What interest would the US economy have in the euro plunging in value? How would a collapse of the monetary union help? On the contrary: Washington needs the euro. A strong European currency makes American exports cheaper in the euro zone, helping the US to reduce its enormous trade imbalance. In addition, the US could hardly remain unaffected by a deep recession in Europe and the potential break-up of the currency union. That is why US President Barack Obama has repeatedly urged European leaders to act decisively. US banks would also suffer greatly in case the euro zone collapses. Some of them are deeply exposed to the euro. Their balance sheets either contain government bonds issued by ailing euro-zone states or they have issued credit-default swaps, which must be paid out as soon as a euro-zone member state goes bankrupt. According to the Bank for International Settlements, the bulk of such securities have been issued by US institutions. This leaves the US hedge funds, which have supposedly been betting against the euro and want to earn big bucks by doing so. That may be, but are just a few hedge funds enough to organize a great American conspiracy? An alternative interpretation is much more likely. Politicians, authors and bank analysts prefer to present rating agencies as bigger and more powerful than they really are. The beautiful conspiracy theories which result are useful in distracting attention from one's own mistakes(http://www.spiegel.de/international/europe/0,1518,809696,00.html).

4. THE CAUSES OF INTERNATIONAL EXPANSION AND OPERATION OF CREDIT RATING AGENCIES

Credit rating agencies had for decades only national dimension, operating just within the U.S. Their appearance on the international stage and development of international power and influence occurred during the last 20 years. The question that arises relates to the factors that contributed to this international emergence. In summary, the key factors of internationalization and strengthening of rating agencies were:

- The debt crisis in Latin America and the banking-currency-financial crises in Southeast Asia in 1997/8.

- The internationalization of financial markets. The interdependence of national money and capital markets, the development of relations between institutions of all countries, the international expansion of commercial banks', investment banks' and hedge funds' activities and networks, the international allocation of national financial products, etc. triggered the creation of an international regime of transparency and information

among market participants. This role was assigned to the experienced and incorporated in the market of U.S. credit rating agencies.

- The need for public and private borrowing in U.S. markets: The international trend of public and private sector to issue bonds and other securities in U.S. dollars, along with their willingness to be funded by U.S. credit institutions due to the largest and deepest capital market worldwide, demanded for institutional and practical reasons, the initial evaluation of certified U.S. agencies.

- The growth of securitization and financialization of international capital markets. The turn from traditional financing through bank loans to finance by issuing new complex structured securities increased the need for evaluating the creditworthiness of issuers and of securities themselves. The creation of structured products and derivatives such as CDS, CDOs and the expansion of covered financing (asset-backed finance, 40% of a purchase of $ 30 trillion) through securities (collaterals) caused a dramatic increase in international financial market and expanded credit rating agencies' activities.

- Institutional arrangements. For decades only U.S. authorities demanded previous assessment of both securities and issuers by certified bond credit rating agencies in order to approve certain methods of financing. Subsequently, similar institutional arrangements were introduced in other countries including EU. In parallel in international level, taking as an example "Basel 2", the evaluation obligation for determining the necessary reserves and banks' risks was established. Therefore, it was the states and the international organizations themselves that contributed in the expansion of international presence and activities of credit rating agencies. After the international financial crisis and Eurozone's debt crisis a significant effort is applied for reducing the importance of external evaluation and promoting internal evaluation procedures of financial institutions.

- The political factor: It is of great intense the criticism often practiced by leading politicians to credit rating agencies that has resulted in an increased effect of their point of view in public opinion. These practices reveal the importance that politicians are giving to credit rating agencies blaming them (rightly or wrongly;) for the economic problems their countries experience. Therefore, it is suspected that credit rating agencies often play the role of a scapegoat. On the other hand, despite intense criticism, in practice, policy makers seem to be decisively influenced by the reviews. It's a characteristic example the peculiar economic diplomacy that is developed in Eurozone, where a group of four countries with AAA rating, meet and consult as a group outside the established procedures of the Eurogroup.

5. CREDIT RATING AGENCIES OPERATIONAL EVALUATION

Rating Methods and their Reliability

Scientific research aims in estimating reliability and completeness of evaluation methodology of the certified agencies. However, agencies constantly refuse in publicizing details regarding the applied methodologies and their evaluation criteria. Only recently there have been certain changes in legislation, in order to ensure greater transparency in evaluation methods. For example, S&P published its June 2011 relevant report (Standard & Poor's 2011).

Some studies conclude that the most heavy weighted variables for these agencies to rate countries' creditability are the per capita GDP, growth rate, public debt and deficit. (Afonso / Gomes / Rother 2011, Pagano / Volpin 2009). They seem however to offer less weight, in

factors of great importance such as liquidity, debt composition, currency imbalances, asset prices etc. that however are useful for estimating and predicting debt crises (Detragiache / Spilimbergo 2001). Also, they do not measure important indicators such as competitiveness and real wages.

Reinhart studied 62 country cases and concluded that the macroeconomy indexes were more accurate for predicting a debt crisis, than the estimates of S&Ps (Reinhart 2002, Goldstein et al 2000).

Regarding ratings' accuracy it is noted that all these evaluations are directed linked to probabilities. For example, as it can be clearly shown by an empirical observation, an issuer with a bad score can avoid bankruptcy, while a high rated can bankrupt. An AA degree means a low probability of bankruptcy, while BBB indicates a higher one. The evaluators do not publish exact ratios. Consequently, their reliability cannot be measured in individual cases, but rather in comparison between each case. Thus research needs to be performed for linking probabilities and temporal checks, something that have not been done so far.

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One of the major issues for evaluating Eurozone countries refers to the lack of experience and a well defined methodology for assessing a single country inside the monetary union. Much more this statement is valid for assessing the risk of transmission of a debt crisis (domino effect) in other countries inside the monetary union.

Regarding the correlation of evaluations of all agencies, Cantor and Packer (1996), found that three incumbent firms evaluate in a common gait. Strong correlation can be observed in S&P's and Fitch's evaluations in downgrading Greece (0.98) and S&P's and Moody's for Ireland and Portugal.

Also it was found that evaluations show strong correlation when the economy is in growth phase while they divergent when the economy is in recession (Croce / Lugo / Faff 2011, Cantor / Mann 2007, Wang 201).

Conflict of interest and biasing

Credit rating agencies as profit making companies are paid by issuers (principle "issuer-pays»). The publisher orders to a credit rating agency the evaluation of the securities he issues or just an interim or ongoing assessment. This practice was established during the seventies. Previously credit rating agencies were paid by investors through subscriptions («subscriber-pays»). The leak of information and the inability to in depth analyses led to this change in fees model, thus payment for the investor to the issuer (borrower). Also, according to the Congressional Research Service, this shift in payment from the subscriber to the publisher was supported by the observation that loan publishers were more willing to pay for the valuation of their securities. The information is offered to the investing public free of charge. The fact that the issuer pays adds an important point of criticism to credit rating agencies for conflict of interest in the sense that the one who pays for the relevant rating might demand a more favorable evaluation, resulting in tricking investors (Wighton 2009). Inflationary assessments for a number of institutions and securities in the U.S. are used to substantiate this criticism. The favorable treatment of publishers has been pointed by another company that is still based on the subscriber pays principle (Egan-Jones Ratings Company). American Enterprise Institute is also more favorable of this principle. In defense of the practice applied however it is the opinion that long-term reputation and credibility of credit rating agencies is

much more important considered to the hypothetical economic benefits of favoring a loan publisher.

The oligopolistic market structure and its implications

The bond credit rating market is dominated by three large companies, the so-called Big Three. Their share in the relevant market is approx 95% (2010).

The three big agencies appear to be US orient. For example, 54%of Moody's turnover originates from U.S. market where is located the 52% of its total manpower. The same figures for Fitch are 42% and 35% respectively. Due to the oligopolistic market structure their profit margin appears to be extremely high (45% for S&P, 38% for Moody's and 30% for Fitch for year 2010). Because of their dominant position for more than 100 years, new entrants have failed to take significant shares of the market. It is noted that firms evaluate different types of publications, not just countries. For example, Fitch announced that during 2009-10 has evaluated 6,000 financial institutions 2,000 non-financial corporations, 100 states and 200 communities, 300 bond issues for infrastructure construction projects, 46,000 U.S. municipal bond issues and 8,500 publications of structured products (Annual Report of Fimalac 2009/10). There are strong suspicions that lower charged fees by credit rating agencies converge, which indicates a concerted practice. On the other hand, however, regular customers negotiate their payments, which lessen the importance of harmonized taxes (Bolton et al 2009)

Oligopolistic structure of the credit rating market is a further point of criticism for excessive force, for existence of artificial entry barriers, for low evaluations quality due to lack of sufficient competition, etc. The debate regarding the oligopolistic structure however has not primarily to deal with the presence of just three companies, or with the indications for abusive pricing policy, but rather with the quality of the applied assessment methods and ratings accuracy. According to a survey, competition reduced the quality of assessments; they often have common assessments (Becker / Milbourn 2010). In the absence of competitors may be little fear of reliability loss in the case of occurred errors. For example, despite their inaccurate rankings during 2008 crisis, all three houses retained their market shares.

High market share concentration does not necessarily mean lack of competition. Other markets, highly concentrated, (eg Coca-Cola and Pepsi Co., Financial Times and Wall Street Journal, Thomson Reuters and Bloomberg, Boeing and Airbus) have intense competition. It is possible, that financial markets do not desire different scoring methodologies difficult to comparison among them. According to the relevant World Bank publication, "there may be a benefit in having a limited number of global credit rating agencies" (Katz, Salinas, and Stephanou 2009). According to another opinion, credit rating agencies do not prevent themselves new firms' entry. It is the long time since their establishment, the necessity for word of mouth and the necessary amount of investment in capital that really set the most important barriers to entry in this market (White 2002).

Also, the fact that the two largest companies (S&Ps, Moody's) have their headquarters in the U.S. and are subsidiaries of major investment banks or other commercial enterprises raises objections for their impartiality, but also feeds conspiratorial theories for aggressive practices against euro and in fond of dollar. Against these conspiratorial theories, stands, for example, the fact that S&Ps downgraded U.S. ratings during a critical period of time, the fact that they have subsidiaries outside U.S. or that Fitch is a subsidiary of Fimalac, a French company. After the downgrading of U.S. creditability by S&Ps on August 7, 2001, the U.S. finance Minister Timothy Geithner said that S&Ps "shown really terrible judgment and they've handled themselves very poorly».

Table 1: Basic Business Data of the Rating Agencies

Year 2010	S&Ps	Moody's	Fitch	Others
Proceeds (Million USD)	1,696	2,032	657	n/a
Operating Profits	762	773	200	-
Market Share	43%	44%	11%	2%
Outstanding Assessments	1,190,500	1,039,187	505,024	81,888
Analysts & Supervisors	1,345	1,202	1,049	392
Percentage of Total	34%	30%	26%	10%

Source: http://conversableeconomist.blogspot.gr/2011/11/credit-rating-agencies.html

6. THE ROLE OF CREDIT RATING AGENCIES IN THE INTERNATIONAL FINANCIAL CRISES

Many academics, researchers, politicians, journalists, etc. believe that credit rating agencies have an enormous responsibility in causing the global financial crisis. According to U.S. Congress, credit rating agencies, including investment banks, have the primary responsibility for the real estate bubble and the following collapse of financial markets causing a widespread global recession.

Specifically, credit rating agencies are not blamed that much for their inability to foresee the coming crisis, but rather for their extremely favorable (inflationary) gradations of many investment banks, derivatives and toxic products. Although S&Ps and Moody's on 2003 warned the public for malfunctions in the property market, continued to give high ranks to involved companies and securities, thus contributing to the continuation and expansion of the speculative bubble and as a result it contributed in the fraudulent of end-investors. Benmelech and Dlugosh (2009) examined 4,000 Collateralized debt obligations-CLOs and found that 4/5 of these were assessed by AAA, despite the fact that the average assessment of collaterals was B +. Not surprisingly, their value fell by 70% between 2007-8 (Pagano / Volpin 2010).

A number of researchers estimates that this is due to the fact that rating reports are been paid by investment banks and other issuers of securities (http://hsgac.senate.gov/public/_files/ Financial_Crisis/FinancialCrisisReport.pdf., Partnoy 2009).

Also, credit rating agencies failed in properly rating mortgage market issues, since their reviews didn't link individual investment bank cases with the possibility of a general decline in the U.S. financial market. In other words, the evaluations focused only on microeconomic data, without studying their interactions with the macroeconomic ones. For example this was the case of Lehman Brothers, AIG, Washington Mutual's etc.

7. CONCLUSIONS

During the last few decades the influence of markets was boosted over politics. The liberalization of financial markets, the deregulation and reduction of control and supervision of financial institutions, the creation of new complex financial products, the exponential growth of the derivatives market, the international interconnection of markets, the increased speed of disseminating information and international capital transactions, the decrease of state influence in modern mixed economies in favor of markets and the acceptance of markets as

the primary mechanism to exercise discipline against policy (market discipline), limited the interventionist role of the state and largely subdued economic policy, and up to a certain point democracy, functioning according to markets' desires (Rodrik 2011). Furthermore, increased competition among national systems e.g. national fiscal, social, environmental, regulatory, etc. based on the criterion of which system is more favorable for financial markets. Therefore, it is overlooked the fact that for most countries markets were at first chosen as a mean for more efficient allocation of resources and increase of economic performance of their economic system, and not as an end in itself or as a general and absolute component of sociopolitical organization.

As a consequence we observe a constant alignment of economic policy with the priorities of the markets and the abandonment of its key objectives such as growth, employment, social and environmental protection, stability and general interests of society as a whole. Thus, we downgrade to a false primary objective for economic policy which is to satisfy markets and the subjugation of all others players to their needs. On the other hand, market failures, as expressed in the form of constantly repeated crises, put into test economic policy, which often shares the responsibility for these crises, which in its effort to deal with these situations shifts costs to society as a whole.

Our experience from financial bubbles indicates that financial markets do not function rationally. The constant cultivation of an optimistic attitude leads in stock market bubbles the bursting of whom is accompanied by panic and over-pessimism that leads to complete collapse. The phenomenon of herd behavior in markets may be the result of evaluations methodologies. The information channel that credit rating agencies are almost exclusively operating is able to engage in the same direction all the investors and thus causing herd behaviors (Berleman / Vöpel 2011). The U.S. stock market surveillance authorities are investigating whether the rating agencies poured insider information to brokers in order to speculate. Moreover, all dominant credit rating agencies are associated with large banks and hedge funds. The S&Ps is a subsidiary of McGraw-Hill, whose shareholder is the investment firm Capital World Investors. Moody's shareholders list includes Berkshire Hathaway, Warren Buffett, who is also a participant in Goldman Sachs. Finally Fitch is a subsidiary of French Fimalac, who is also involved in various forms of gambling activities.

A typical example of market domination over politics is the Eurozone case. Its member countries established a system where central banks are prohibited from providing liquidity to public sector and, therefore, the Eurozone countries may be funded only by financial markets. Given the international mobility of capital, countries that do not follow markets' wishes have the option of borrowing more expensively or not finding any funding available. Consequently, the euro area Member States voluntarily accepted their absolute dependence on markets. As it was made obvious after the 2009 crisis, all crisis management efforts aim to "reassure the markets" or "to persuade the markets" through rescue packages, through governments of technocrats, who "have more confidence in the markets", by prohibition of statements that "disturb the markets", by implementing policies that would "convince" markets about their intensions and so on. No real discussion is made regarding democracy and policies consistent with national and social interests.

In periods of crisis there is generally an overreaction from money and capital markets. The same was the case during the recent crisis in eurozone. A significant increase in interest rates was triggered of falling prices of bonds on secondary markets and this effect was not limited only in countries which faced real dept problems. Further it was observed a dramatically availability decrease of private funding to financial institutions and enterprises, thus exacerbating the problem of liquidity and hence recession in these countries became

more severe. The pressure that came from the markets has led the northern EU countries, to largely finance the into crisis countries and actually save the markets or in some cases, such as the Greece case, limited their losses. Important role in this situation was played by credit rating agencies' reports and forecasts which influenced the behavior of markets, as long as risk premiums markets, without having any democratic legitimacy.

The question here relates to the real role of credit rating agencies. Does the practice of evaluations strengthen the domination of markets over politics? Does the failure to adapt to markets' priorities and desires or implementing market-friendly policies leads to downgrades that in the aftermath strengthen markets' power? Are credit rating agencies parts of the financial markets system or they simply act as objective intermediaries between politics and markets?

In the debate on the importance and function of credit rating agencies the regulatory framework plays an important role (IMF 2010, Basel Committee on Banking Supervision 2010, Financial Stability Board). On the one hand, the institutional integration in a series of financial transactions and arrangements of credit rating upgraded their role as principal actors in international capital markets. On the other hand, in recent years politics are attempting to establish national and international rules and framework for their operation and supervision. However the debate regarding regulating credit rating agencies is much older. As soon as the end of Asian crisis in 1997/8 strong criticism was applied regarding agencies wrong practices, but the suggested improvements for controlling and supervising their operation did not proceed. The same thing happened in 2001 after the dot.com crisis.

The necessity of rating for conducting certain financial transactions was initiated by SEC (Securities and Exchange Commission) in the U.S. in 1936. In 1975 the U.S. established the Nationally Recognized Statistical Rating Organization (NRSRO), which approves these firms whose evaluations are approved by the SEC. The actions of international credit rating agencies, although their ratings were recognized as a prerequisite for institutional bond issuing, for approving acceptance or securities by central banks in open market policy, for determining capital adequacy of banks etc remained unregulated for decades however. After the initiation of the international financial crisis, many countries such as Japan, Australia, Hong Kong and the EU established national frameworks for regulating credit rating agencies' operation. These arrangements however have limited effects because of the territorial application of the law, and since most powerful credit rating agencies are U.S. based and therefore subject to American law.

In 2010, under the Dodd-Frank Wall Street Reform and Consumer Protection Act (http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf), new rules were adopted in order to improve the institutional framework for evaluations and the functioning of credit rating agencies. These include among others:
   • Annual internal audit reports of credit rating agencies
   • Checks for conflict of interest
   • Publication of evaluation and statistics methodologies
   • Penalties and sanctions coding

In international scope, in 2008 IOSCO (The International Organization of Securities Commissions) revised its Code of Conduct Fundamentals for Credit Rating Agencies in order to resolve operational issues of credit rating agencies such as independence, conflict of interest, transparency and competition. Basel Committee requires from banks to perform their own assessments and downsize the importance of evaluation by outside firms. The Financial

Stability Board (2011) published a set of principles for limiting the weight of assessments from credit rating agencies in rules, laws and regulations.

In the EU the effort to create a new regulatory framework for credit rating agencies was initiated by EU Parliament even before the international crisis of 2008 (Katiforis Report 2004). But only in 2009 the first regulation was adopted, which was amended in 2011 (Regulation 1060/2009 of 16 September 2009, OJ 17.11.2009. Regulation 513/2011 of 11 May 2011 amending Regulation (EC) No. 1060/2009 on credit rating agencies, OJ 31.05.2011).

The 2009 EU regulation demands from credit rating agencies their registration and constant supervision, defines their operating framework, sets rules for their management and operation, requires declaration for possible conflicts of interest and disclosure of major customers, together with providing vital information regarding the applied methodology, rating models and assumptions. With the 2011 amendment ESMA (European Securities and Markets Authority) undertakes the supervision of credit rating agencies and establishes rules similar to those of the U.S. SEC. By August 2011, 10 out of 22 credit rating agencies had applied for registration in the ESMA. However none of the 3 big agencies did so.

For economic policy and, especially, for the interventionist role and effectiveness of monetary policy, of significant importance is the role that central banks gives to ratings of government bonds issued by credit rating agencies. That is, whether in the framework of interbank lending, ownership of rated state titles is taken under account. For example, the U.S. Federal Reserve (FED) does not take account of bonds rating, in contrast to the ECB and Basel Committee on Banking Supervision. Also, the European Directive UCITS III (Undertakings for Collective Investment in Transferable Securities), which regulates the distribution of active investment funds, requires the evaluation of investments by authorized credit rating agencies.

As a result rating agencies have an excellent market position in EU, due to her legislation, which despite the new regulations their influence is not restricted. For example, EU law does not affect the most important element of the functioning of credit rating agencies, the principle of "issuer pays" (Lannoo 2010). Preserving this principle, it is the power of the 3 large incumbent firms that is supported.

In addition, in order to upgrade ratings quality and and reduce or even eliminate the conflict of interest phenomena, the important issues of agencies' liability and the compensations they must submit in case of important mistakes, has to be promoted and resolved. The civil liability was established in the U.S. by Dodd-Frank-Act, but the SEC, for a number of reasons was not put into practice. We should also keep in mind that no legal action has been approved against rating agencies in response of lawsuits from victims of bankrupt financial institutions.

From all those mentioned above it is obvious that there is a fragmented regulatory framework, with little efficacy. Also, many regulations appear to have contradictory effects. Furthermore, there is not a uniform international approach to a global phenomenon affecting all countries. Therefore, the need for a thorough evaluation of the previously introduced legislation is recognized. Finally, the possibility of establishing a common international regime that will regulate the issue of credit rating and the agencies and businesses that carry them out should be investigated. Also, from the legal and ethical point of view, it is of great importance the question over agencies' civil liability and financial compensation, in case of misleading the investing public.

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MANAGERIAL ACCOUNTING AND ENVIRONMENTAL PERFORMANCE OF BAKERY COMPANIES

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Abstract: The complexity of the economic life, the economic and financial crisis and the social and environmental problems determine the increase in the role of information provided by managerial accounting in decision-making. The efficient management of any economic unit is based on the existence of a well structured information system, according to managers' information needs, the main component of such system being accounting. The article aims at clarifying certain aspects concerning the role of managerial accounting in the correct assessment and in managing performance in bakery companies.

Keywords: performance, managerial accounting, bakery, calculation, environmental management accounting

JEL Classification Codes: **M40, M41**

1. INTRODUCTION

When problems are thoroughly investigated we can notice a certain perception of companies, to act and react, to make decisions and to use different systems as compared to the current ones, especially the American and Japanese ones and which are often difficult to describe, formalize, but which exist. On the other hand we can notice the difference among the European countries. The tools specific to the management are identical but they are not applied in the same way into practice. In this context, our mission is to fundamentally contribute to the development of scientific creation and national culture in a European context, to expand and diversify the education offer and to make a connection between it and the economic environment.

Economic competition, increasingly fierce nowadays, requires yield and performance from the economic environment. On the other hand, fulminating development of technologies requires continuous upgrading of skills and new forms of organization and management of work. In this dynamic context, managerial accounting becomes vitally important because it transforms organizations and has an impact on the social, economic and physical environment. Business decisions on the development of new products, the pricing policy, staff recruitment and their remuneration are dependent accounting information, and managers' behavior is influenced by the accounting data because they have an impact on their possibilities to act, managers being at the same time the generators and the recipients of this information (Horngren et all, 2005).

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The problems of the change in the economic environment and the and the companies' need to adapt determined the reorientation of the managerial accounting. At the same time, given that the techniques and practices used by traditional managerial accounting, applied in new production conditions have not yielded the expected results, it is increasingly evident that the managerial accounting system needs to improve.

Currently, there is a marked international trend to progressively open managerial accounting towards observing changes that are taking place in the organization, customers and suppliers, in order to highlight the sources of better economic performance with the purpose of change classical organizations into sustainable "enterprises". This vision causes the Ray Proctor (2002)[3] to distinguish between "management accounting" and managerial accounting "saying: "Management accounting is oriented towards the future. It is primarily concerned with the provision of information to managers to help them plan, evaluate and control activities. It is essentially a service function, a means to an end rather than an end in itself. Managerial accounting also fits this definition, but the use of the word "managerial" emphasises the service role. This may seem obvious, but for much of the twentieth century, management accounting was used mainly to serve the needs of financial accounting, rather than to assist managers in their tasks… Managerial accounting is about improving the future performance of organizations".

Therefore, a model, a simplified representation is expected from managerial accounting to highlight the link between variables, between causes and effects, a model to help explain and analyse financial performance.

2. DEFINING PERFORMANCE

Studying the literature, we note that in the definition of the concept of performance three main views stand out, i.e.: defining performance depending on the level of achievement of the objectives, according to the productivity and efficiency of the company, and according to the creation of value.

Defining performance depending on the level of achievement of the objectives belongs to A. Bourguignon (1995)[4] who defines performance as being the "achievement of the organizational goals, whatever their nature and their variety". In other words, performance in the company represents everything that contributes to reaching the strategic objectives. M. Lebas (1995)[5] deems that the definition of performance given by A. Bourguignon seems incomplete, as it is limited to the definition of the characteristics of performance without looking for an operational means.

In our opinion, the performance must be assessed according to the objectives proposed in advance. It is impossible to assess performance in the absence of clearly established objectives that can be expressed quantitatively or qualitatively, and it must have a deadline. The forecasting activity necessarily involves measuring the activity required to provide information to managers so that they can make decisions meant to improve performance. So performance can be seen through the way of achieving or exceeding strategic objectives. Company performance must be assessed according to the level of these objectives. We must

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[3] Proctor, R. - *Managerial Accounting for Business Decisions* . UK: Pearson Education, 2002, p.XVII
[4] Bourguignon, A. – *Peut-on définir la performance?*, Revue Française de Comptabilité, n° 269, juillet -août 1995, pp. 61-66
[5] Lebas, M. – *Performance measurement and performance management*, International Journal of Production Economics, Volume 41, Issues 1-3, October 1995, pp. 23-35

take into account that, if the established objectives were modest, reaching or even exceeding them is a modest performance.

Defining performance based on the company productivity and efficacy belongs to E. Cohen (1995)[6] who assimilates performance with efficiency and defines it as a *"the ratio between the results generated by the company and the means used"*. We consider this assessment as erroneous, because a company can be effective without achieving its objectives, and therefore without performing. The company can operate efficiently, but if efficiency is not achieved as expected, performance is not achieved.

M. Ristea (1997)[7] associated the concept of performance to three notions: inexpensive (purchasing resources at the lowest cost), efficiency (to maximize the results, starting from a given amount of resources, or to minimize the amount of resources for a pre-established result) and effectiveness (the results obtained must achieve the expected results). In our opinion, this view is correct because under the current circumstances when the price is set by the market, positive results are obtained by companies that succeed in acting on several ways as follows: controlling costs by purchasing resources at the lowest cost, achieving the best results given the current resources, achieving pre-established performance objectives.

The definition of performance based on the creation of value has long been considered a revolution in economic theory, which is still based on fundamental and applicative research. The concept belongs to M. E. Porter (1986)[8] who considers that "company performance depends on its capacity to create value for its clients". The company is efficient if the value it can obtain exceeds the costs of creating the product. Later, Ph. Lorino (2000)[9] shows that "performance for the company is what helps improve the value-cost couple". In other words, performance is a ratio between the cost of the company operation and the value of the good or services obtained.

No matter which of the three performance definition trends we choose, the role of managerial accounting in measuring its management is crucial. In our opinion performance measurement is a prerequisite for the development of a company, but it is not sufficient and must be one of the components of performance management. Our opinion is not unique in the literature, many authors prefer talking about a performance management system rather than about a performance measurement system, an aspect also highlighted by E.Lardenoije et all (2005) [10].

In the last two decades we have witnessed an evolution of the company performance measurement system, a trend which had three main directions:

● performance measurement both by traditional financial indicators but also with non-financial indicators has become widely accepted;

● the relationship between the strategic planning process and performance measurement was enhanced at every level of the enterprise;

● company performance is no longer viewed inn economic terms but also from the social and environmental point of view.

Each of the three directions has distinct features and an impact on management accounting as the main source of information for the decision-making process.

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[6] Cohen, E. – *Analyse financière, 2- eme edition* , Les Edition d'Organisation , Paris, 1995
[7] Ristea, M. – *Contabilitatea rezultatului întreprinderii*, Editura Tribuna Economică Publishing House, Bucharest, 1997
[8] Porter, M.E. – *Competition in Global Industries*, Harvard Business School Press, Boston, 1986
[9] Lorino, P. – *Mesure de performances*, Les Editions d´Organisation, Paris, 2000
[10] Lardenoije, E., van Raaij, E., van Weele, A. – *Performance Management Models and Purchasing: Relevance Still Lost*, Researches in Purchasing and Supply Management, the 14th IPSERA Conference, 2005, pp. 687-697

Any accounting system has among its main objectives the measurement of company performance. The accounting theory and practice have imposed certain conventions, principles and concepts that give the definition and performance measurement an objective basis, taking into account the economic and political context specific to each accounting system as deemed by M. Minu (2002) [11]. Although we agree with the view that the accounting result is viewed as the main indicator for measuring the financial performance of the company, we believe that it has a number of limitations as follows:

• this indicator, by the way it is calculated is directed towards the past, serving as a basis for assessing the results of the activity, over a period of time past;

• is not enough to know the past performance of the company but it is also necessary to carry out thorough analyses in order to forecast future performance.

Between the concept of performance the concept of value there is a close connection. In this respect, I. Ioniță (2006) [12] defines performance as "the method of representing the increase in the value of a business between two moments plus the profit appropriated by the investor for other usages".

Measuring the performance of a company requires the consideration of several factors, such as:

• the multiple meanings of the concept of performance;

• the complexity of the economic activity;

• the peculiarities of the areas of activity of the company, which is why in carrying our the process of measuring performance multitude of indicators should be used instead of just one.

We believe that in the baking industry, given the type of production, the use of non-financial indicators has special importance derived from customers' expectations concerning the food products. In this context, these indicators should be monitored especially carefully because the level of sales is dependent on the customers' perception of the company and its products.

Consequently, the sustainable maintenance of any company in a competitive market cannot be achieved without the ongoing concern for performance, achievement and success. The notion of performance is quite complex and has many facets. In economics, the concept of performance is interfered with concepts such as profitability, productivity, efficiency and growth. Performance analysis should be carried out in conjunction with long-term objectives of each company.

3. ENVIRONMENTAL PERFORMANCE - AN OBLIGATION IN THE CURRENT CONTEXT

In recent decades economic vocabulary was enriched with new terms such as eco-development, sustainable development, eco-performance and others. Since the 1970s, the environmental and social issues have gained more importance and financial models for assessing company performance began to be increasingly criticized. Currently it is deemed that a company is globally efficient when it answers both the requirements of the internal as well as of the external environment.

The term of *eco-development* was first used in the Conference on the Environment of the United Nations of Rio de Janeiro in 1972. In 1987 in the report of the Brutland

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[11] Minu, M. – *Contabilitatea ca instrument de putere*, Economic Publishing House, Bucharest, p. 96

[12] Ioniță, I. – *Diagnosticul financiar-contabil privind performanța întreprinderii*, The Publishing House of the University of Suceava, 2006, p. 81

Commission the term *sustainable development* was used. Sustainable development is the type of development that creates viable structures over time, ensuring sustainable economic growth and welfare. Currently we are in the era of knowledge economy but also of the green economy as form of the new economy.

Sustainable development is based on three main objectives: improving economic results of the company (economic performance), environmental protection (environmental performance) and development of human society as a whole (social performance).

In certain developed countries the obligation to report social performance was required, but in most of them their reporting is left at the discretion of the company management. In the absence of standards for the preparation of reports, companies have difficulties in proving social and environmental performance. Social performance of the company can be assessed taking into account a number of criteria such as: the jobs created, the impact on regional development, providing professional development opportunities, actions taken to combat corruption, imposing ethical standards on employees, observing the rights if employees and consumers, investment in areas such as education, culture and health.

The ISO 14.000 standards provide a system of environmental management as part of the general management system.

The environmental management system includes: the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for the development, implementation, achievement, revision and maintenance of the environmental policy.

According to the author L. M. Băloiu (2006)[13], the environmental policy of the company must set commitments for:

• the reduction of any significant impact of its activities and products on the environment;

• the development of procedures for the assessment of the environmental procedure and of the associated indicators;

• the prevention of pollution, waste and resource consumption reduction;

• to encourage suppliers and contractors to adopt an environmental management system.

ISO 14001 standard defines the environmental performance as the "measurable results of an environmental management system on controlling an organization's environmental issues, according to its policy and its objectives in this area".

The milling and baking industry affects the environment through:

• water pollution resulting from wheat washing in the milling sector and from washing the tools in the bakery industry;

• the pollution by the dust in the grains flour powders p released into the atmosphere can form a suspension under high relative humidity of the air;

• noise.

Companies with notable social and environmental performance certainly have a more favorable image on the market and a competitive advantage[14]. Unfortunately, in recent times there is a tendency for companies to demonstrate that they are concerned with achieving social and environmental performance, only in order to create a favorable image among

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[13] Băloiu, L. M. – *Politici ecologice*, the Publishing House of Titu Maiorescu University, Bucharest, 2006, p. 216

[14] The Swiss company Pistor AG, specialising in supplying frozen, fresh semifinished products, ingredients, etc. for bakeries and pastries launched a type of bread called *Pain d`eole*. It is bread made of flour for the milling of which wind power was used. The product benefits from an ecological image and it is obviously in the attention of consumers sensitive to environmental issues.

consumers in particular. In our opinion, this phenomenon can be prevented by legislation through the requirement of social and environmental performance reporting standards.

The public opinion in general and consumers in particular sanctioned companies when there is inconsistency between image campaigns and behavior in relation to society and the natural environment.

4. ENVIRONMENTAL MANAGEMENT ACCOUNTING – A NECESSARY TOOL

From the perspective of the environmental issues, con, traditional accounting has a number of drawbacks. Thus, it is not easy to obtain information on environmental costs, which are often hidden costs of the company. For example, the salary costs for the staff involved in the environmental protection measures are included in the same account as the other costs of living labor. We deem that it is necessary to supplement the general chart of accounts by creating new accounts to record environmental information.

Traditional management accounting does not recognize the importance of the environmental issues, this resulting in the following:

- the environmental costs are often considered unimportant;
- certain types of environmental costs are not identified and monitored;
- in the case of investments environmental costs are not always taken into account.

The concept of environmental management accounting (EMA) has found its place in the accounting system in recent decades.

The term *environmental accounting* is used in three different contexts, as can be seen from the figure no. 1:
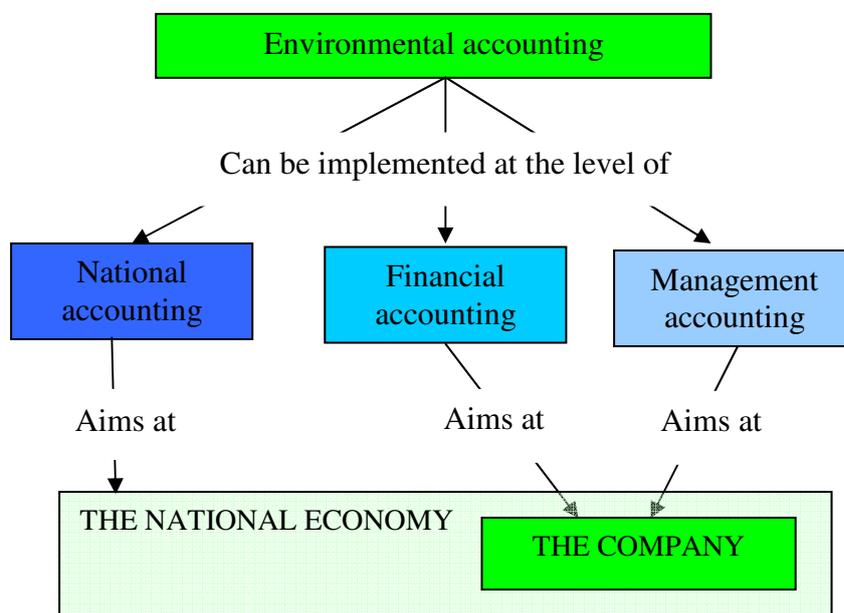
Figure no. 1. Opportunities to implement the environmental accounting

Source: Ţaicu, M. - (2010) Contabilitatea managerială a mediului şi dezvoltarea durabilă a firmei, Provocări contabile. Articole, studii şi cercetări, Editura Universitaria, Craiova, pp. 168-173

The environmental accounting called green accounting aims to incorporate environmental costs and benefits into the decision-making. The interest in environmental performance and in the EMA derives from several key factors: the legal regulations in some

countries require the publication of annual reports on environmental performance, the increase in the voluntary acceptance of the importance of the management of environmental issues, the promotion of EMA by some national and international organizations, the environmental taxes imposed by the State and the customers who request that products observe the environmental standards.

The International Federation of Accountants (IFAC) considers that environmental management accounting is "the environmental and economic performance management through the development and implementation of theoretical and practical environmental accounting systems". EMA is the is the identification, collection, analysis and use of two types of information needed for decision-making:

• physical information on the use, flows and purpose of the electrical power, water and materials (including wastes). These are very important especially for large companies, which have considerable spaces (companies in the mining, oil extraction sectors);

• monetary information on environmental costs, profits and savings.

The environmental management accounting is focused of the environmental costs and provides users with information on the movement and consumption of natural resources and energy. EMA is a support for decision-making providing information useful for obtaining financial and environmental performance. It must be noted, however, that its implementation at company level is not guarantee for the obtaining financial and environmental performance. The role of EMA should not be reduced to the calculation of environmental costs, but should also allow decision makers within the company to act on the costs in order to control them.

For the implementation of EMA in any economic entity, it is necessary to adapt the current information systems or to adopt new information solution, cheap, yet meeting the quality requirements if the users. In conceptual terms, we can delimit the level of environmental accounting at company level from the environmental accounting at country level.

The environmental costs can be classified[15] into the following categories:

• categories reflecting the type of environmental work (such as waste control vs. waste prevention);

• more representative categories for traditional accounting (costs of materials vs. labour costs);

• environmental categories;

• categories reflecting the visibility of the data in the accounting statements (visible costs vs. hidden costs).

The implementation or EMA has a number of advantages. First, EMA provides decision-makers with detailed information in which the environmental costs are shown separately. Although, conceptually, EMA is not something new, in practice it is in an early stage. Companies that implement it can thus benefit from a competitive advantage. The efforts of the company towards reducing environmental costs will create benefits for the whole human society. A company that strives to reduce the environmental impact of its activities on the environment improves its image and can attract more valuable personnel, with long-term effects on its activities. In addition to the presented aspects, the benefits of the implementation of EMA also result from its support for[16]:

• the environmental protection through the compliance with the environmental standards and the environmental policies adopted at the organizational level (planning and

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[15] IFAC, *Environmental Management Accounting* – International Guidance Document, 2005, p. 37

[16] German Environment Ministry, *Guide to Corporate Environmental Cost Management* , Berlin, 2003

implementing pollution control investments, finding and buying substitutes for toxic materials, reporting wastes and emissions to competent authorities);

• the simultaneous reduction of the costs and environmental impact through a more efficient use of the energy, water and materials (a more accurate monitoring of the energy, water, material and waste flows);

• evaluating and implementing programs to ensure the strategic position of the company.

The environmental cost analysis can identify new opportunities, and savings can be made by recycling resources or by using them in other activities.

5. CONCLUSIONS

There is a close interdependence relation between the three types of performance - economic and financial, social and environmental. Thus, obtaining economic performance allows the company to invest more to solve problems related to social and environmental areas, and obtaining performance in these two areas can lead to increased economic performance. In recent decades the social function of the company has increased significantly and it generates a number of hidden costs, unexplained by traditional management accounting systems. Management accounting should be improved so that hidden costs be known to the makers of company offering the opportunity to work towards reducing them. In most countries, companies have responsibilities established by law to protect the natural environment. Some companies set objectives concerning the environmental goals higher than those required by law. The performances of these companies in environmental matters are reported as part of the manifestation of social responsibility. Given the developments in the world in recent years, we hope that in the decade that began a triple performance reporting will be generalized: that of the economic, social and environmental performance.

In our opinion, although the social and environmental performance are very important, including for the bakery companies, we should not forget that economic performance is what motivates the investor in a business and represents the reason of the existence of any company.

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22. *** IFAC, *Environmental Management Accounting – International Guidance Document*, www.ifac.org, New York, 2005;

23. *** German Environment Ministry, *Guide to Corporate Environmental Cost Management*, Berlin, 2003;

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THE EVOLUTION OF AGRICULTURAL SECTOR THROUGH FINANCIAL STATEMENTS ANALYSIS

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Abstract: In 1950 Hellas was probably the most agricultural country of the West. Within the first thirty years (1950-80) the economic model that was followed had as a consequence the contraction of the sector. Nevertheless, in 1981, when the country entered European Union, it had still an extended agricultural nature. Even in 2010 (after the enlargement of E.U. to 27 members in 2004 and 2007) the labor force percentage of the farming sector was among the highest rates.

Herewith it is intended to present the evolution of the sector though the analysis of the balance sheet variations of Greek agriculture. Based on a former extended literature survey, but also extracting data from Agricultural Bank of Greece (ATE), it was tried to evaluate, not only at the country level, but also at the prefectural one, data of assets and liabilities during the post-war era and per decade.

The evidence derived from the fixed assets movements suggests that despite the capital accumulation, and the relatively satisfactory lending in working capital by ATE, the sector is moving near the edge of the cliff. Neither the integration of the country in the E.U. or later in the Economic and Monetary Union in 2000 managed to alter the trends formed in the period 1950-80.

The contribution hereof lies in the presentation of the financial statements variations, on the one part, a methodology rather rare in Greek bibliography and relatively uncommon in the international one (data being assessed mainly with macroeconomic tools) and on the other part, in the investigation of the consequences of the economic policy applied throughout the post-war period.

Keywords: *agricultural sector; financial statements; balance sheet; fixed assets; working capital; European Union*.

JEL Classification Codes: Q14, Q18

1. METHODOLOGY

The items that compose the asset have been calculated for all years as follows:

1.1 Fixed Capital

It consists of two components the *Public* and the *Private*.

The *Public Fixed Capital* arose from state's activities, while the *Private* from individual initiative.

1.1.1. The *Public Fixed Capital* is consisted of seven parts:

I. Public Fixed Capital of Agriculture.

Its estimation arose after gross public investment logging in buildings, plants, nurseries (plant breeding) etc. All the expenditures referred to the primary sector. Naturally, the expenditures related to processing or standardization or packaging of agricultural products was

not taken into consideration. Further were removed the subsidies (were assessed in the capital of private sector). For every one of the 27 categories of which the fixed capital is consisted, a special depreciation rate[17] was calculated, which arose after a special research.

II. Public Capital Asset of Livestock Farming.

Accordingly were estimated the gross public investments which were related to livestock farming and special depreciation rates[18] were adopted.

III. Public Fixed Capital of Fishery.

Respectively were taken into account investments related to fishing works or aquaculture and a depreciation rate was calculated depending on the type of the work[19].

IV. Public Fixed Capital of Forests.

It was estimated the fixed capital which was formed by the public investments. These concerned works:

- in forest protection (tanks and observatories) the depreciation rate was 2,5%, while in forest tracks (fire safety zones) was 12,5%
- in reforestations and nurseries the rate was estimated at 3%
- in torrents and generally in mountain water supplies, there were separate rates[20] depending on the type of the intervention
- in forest road construction, the depreciation rate for the forest roads was established equal to 20%, while for the buildings (outposts, watchtower etc) was 1,67%.

Forest grazing lands (pastures, meadows)

Following the torrents works, the forest pastures occupied a significant portion of the expenditures. The depreciation rates ranged according to work type[21].

Other categories of forest expenditures

These categories are related to various forest scopes, forest mapping, land classification etc. The depreciation rate ranged per expenditures between 2,5-4%.

Deprived forests

In this category, there are expenditures for the forest improvement (depreciation rate 1,67%)

V. Public fixed capital of agricultural electrification.

The expenditure for the agricultural electrification comes from Ministry of Agriculture and Public Power Corporation. The depreciation rate was estimated at 4%. The agricultural electrification program systematically started after 1970.

VI. Public fixed capital of agricultural road construction.

The expenditure for the agricultural road construction was covered by Ministry of Interior, Prefectures and Ministry of Public Works. The depreciation rate range, depending on the period, between 10-25%

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[17] Some examples: structures (agricultural schools): 2-2,5%, equipment: 6,66%, nurseries-greenhouses: 10%, upgrades: 2-2,5%

[18] Livestock farms: 3-10%, veterinary clinics: 2%, stables: 2%, works on pastures: 2-5%, procurements-equipments 6,66%

[19] Hatcheries: 4-6%, fishing shelters: 2,5%, fisheries: 4-5%, vessels: 5-6,66%, buildings: 2-2,5%

[20] Stone-structured dams: 2,5%, concrete-structured dams: 2%, dry-stone dams: 3%, drainage ditches dams: 5%, earth-fill dams: 6,66%

[21] Rainwater tanks: 2-2,86%, drinking troughs: 2-2,86%, fixed covers-stables: 2,5%, barriers: 2%, forest roads: 10%, fences: 5%

VII. Fixed public capital of land improvement works.

This is the biggest component of public fixed capital. It arose from works of Ministry of Public Works, Ministry of Agriculture, National Economy and Prefectures. From the total expenditure was removed those which did not consist an investment, such as expropriations, compensations for crop damage due to works.[22]

1.1.2. Private Fixed Capital

The fixed capital of private investments has been calculated on the basis of medium and long term loans by Agricultural Bank, as until 1990 ABG was the exclusive -by law- funder (financier) of agricultural sector. In the capital of the period 1990-2000 all the rest bank loans were also taken into account. The private fixed capital is composed of the following categories:

I. Private Fixed Capital of Irrigation Improvements

It concerns small works, the majority of which took place due to the public land improvement works. They were, however, cases where the opposite occurred: the non existence of public land improvements forced individuals to similar investments.[23]

II. Private Fixed Capital of Land Improvement

Various expenditures that concerned works relevant to land improvement constituted this category[24].

III. Private Fixed Capital of Agricultural and Livestock Built Structures

It includes investments in stables, warehouses etc. being made by farmers[25].

IV. Private Fixed Capital of Mechanical and Electrical Equipment

It concerns expenditures on purchase or maintenance of machinery, tools etc.

V. Private Fixed Capital of Greenhouse Plants

In this category, there are investments for the construction or maintenance of greenhouses. The depreciation rate ranged between 7-14% depending on the type of the construction.

VI. Private Fixed Capital of Other Improvements

It concerns expenditures which are not included in any of the above mentioned categories (struts- abutment, construction of cement threshing floors, etc). Depreciation rate 5%.

1.2. Plant Capital

For the evaluation of the plant capital, on account of the lack of data across the country in various years, so that the plantations value to be known, it was used the price of 1970 and the "productive" plantations area. This means that the young fruitless trees were subtracted. The tree species which were investigated were:

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[22] Basic grindings (leveling fields): 2%, systematize: 2-2,5%, procurements of electrical and mechanical equipment: 6,66-8%, constructions: 2%, etc.
[23] The depreciation rates were: wells, drillings, tanks: 3%, pumping stations, tube-drain, etc.: 7-10%
[24] The depreciation rate was accounted for 2,5%
[25] The depreciation rates ranged between 2,5-5% throughout various periods of time

a. orange trees, b. lemon trees, c. tangerines, d. apple trees, e. peach trees, f. apricot trees, g. cherry trees, h. almond trees, i. walnut trees, j. peanut trees, k. wine grapes, l. table grapes, m. currants, n. sultana raisin variety, o. olives (edible and oil-extractable).

1.3. Livestock

The livestock was calculated through the inventory method. The animal population was recorded. As livestock were viewed:

1. Horses, 2. Donkeys, 3. Mules, 4. Cattle, 5. Buffalos, 6. Sheep, 7. Goats, 8. Rabbits, 9. Pigs, 10. Hens, 11. Bee swarms. From cattle, only working, production and reproduction animals were taken into account (that is animals for fattening were subtracted as they were included in the current asset*)*. Accordingly for the pigs, as capital it was considered the one of boars and sows. As refers to the hens, only the ones that were used for egg production were included. Livestock capital derived by multiplying the animals number by the price each category had on 1970.

1.4. Land

From the total of farmlands, the productive plantations were removed (as they were included in plant capital). Also, the value of greenhouse plants has not been taken into account. That is, the value of arable crops and horticultural areas were estimated.

1.5. Current Asset

In the year 1950 only the stocks[26] were calculated due to lack of data. Within the following years the composition included stocks (animals for fattening etc., multiplying material etc.), seeds, supplies and other.

1.6. Asset

By this way, the *Asset* was derived which is composed of the following:

The sum of *Public* and *Private Fixed* constitutes the *Total Fixed Capital.* Afterwards, *Plant* Capital and *Livestock* were added forming, therefore, the *Stock Capital.* If we add the *Land* into this, the *Total Investing Capital* derives. Adding, also, the *Current Asset*, the *Asset* is shaped.

1.7. Liability

For reasons of simplicity, the *Total Liability* is presented by two components: *foreign (liability)* and *own capitals (equity).*

Foreign capitals were loans by Agricultural Bank (the only funder of the agricultural economy till 1990). They were consisted of short-term and medium-long term loans.

Own capitals were evaluated by special researches which were conducted.

2. RESULT

The Tables 1-6 show the findings of the research in years 1950, 60, 70, 80, 90, 2000. The data are in US dollars[27], while in the annex they are in drachmas (current prices).

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[26] The requirements (cheques etc.) and the fund were rudimentary in agricultural sector, at least by the year 1990.

[27] It should be noted that this "deflator" is not the best solution, because the parity of the Greek drachma to the dollar does not show completely the evolution of data. It is used hereby as a means of comparison. The parity of dollar for the mentioned years was: 1950 15, 1960 30.15, 1970 30.1, 1980, 43.062, 1990 158.515, 2000 365,412.

Table 1
balance sheet 1950

in dollars		in million	
Total assets	**6.880**	**Total liab. - equ.**	**6.880**
publ. fixed capital	310	liabilities	1.032
private fixed capital	123	equity	5.848
total fixed Capital	433		
plant capital	2.128		
livestock	613		
capital stock	3.174		
land	3.571		
total. Invest. Capital	6.745		
current	136		

Table 1 depicts that in 1950 the *current* was the 2% of the total *assets*. Due to the civil war, the agricultural production had not been restored the years before the war. It is noted that the 52% of the total was the price of the land. The *current* (136 million dollars) can be compared to the *private fixed capital* (123 million dollars), which is less. Apart from the land, the *plant* capital (31%) was an important component of the assets. On the contrary, the *fixed capital* (from public and private investments) was just 6,3% or 433 million dollars, less than the *livestock* (613 million dollars).

Examining the liabilities, it comes out that the equity was 5,8 billion dollars or the 85% of the total. The "*foreign capital*" represented loans that had been provided for rural exploitations by third parties (basically by Agricultural Bank), i.e. expenditure for the *current*, private investments, *livestock*.

It flows from Table 2 that the liabilities were differentiated to a great extent: the 'foreign capital" consisted in 48%. There was an extensive lending of the sector with negative results (over indebtedness, i.e. a quasi bankruptcy).

Table 2
balance sheet 1960

in dollars		in million	
Total assets	5.475	**Total liab. - equ.**	5.475
publ. fixed capital	336	liabilities	2.628
private fixed capital	305	equity	2.847
total fixed Capital	641		
plant capital	1.633		
livestock	461		
capital stock	2.735		
land	2.512		
total. Invest. Capital	5.247		
current	228		

In the *Assets* the *current* was the 4,2%, while the value of *land* represented the 46% towards 30% of the *plant* and 11,7% of the *fixed capital*. The double developmental squeeze of the sector resulted in the capital accumulation by the state and the farmers.

In 1970 the *current* came up to 5,8%, while the value of *land* had shrunken to 32%. (Instead of the increase of the cultivated field and the land improvements, the value of *land* was reduced due to extensive emigration).

Table 3
balance sheet 1970

in dollars			in million
Total assets	8.859	**Total liab. - equ.**	8.859
publ. fixed capital	982	liabilities	2.370
private fixed capital	1.010	equity	6.489
total fixed Capital	1.992		
plant capital	2.994		
livestock	551		
capital stock	5.537		
land	2.811		
total. Invest. Capital	8.348		
current	511		

The *plant capital*, thus, was the most important parameter of the *assets*, while the *fixed capital* was arisen to 22,5%. In the total *liabilities -equity*, 27% of the used capital had its roots in the non agricultural sector (loans and subsidies by the Agricultural Bank and by the relatives of the farmers). The over indebtedness of the farmers reached so high levels that the dictatorship (to gain popular support) eliminated most of the debts (seisachtheia).

On Table 4 (year 1980), the situation was differentiated significantly. The fast mechanization of agriculture (amongst the fastest globally) had as a consequence the important rise of the *fixed capital*, which reached the 33,3% of the *assets*, becoming the most significant ingredient for the assets. The *plant capital*, apart from its over doubling within the decade consisted the 24% towards 28,6% of *land.* The over indebtedness of the farmers (especially for the short-term liabilities), however, continued (the 58% was equity).

Table 4
balance sheet 1980

in dollars			in million
Total assets	31.476	**Total liab. - equ.**	31.476
publ. fixed capital	4.935	liabilities	13.112
private fixed capital	5.558	equity	18.364
total fixed Capital	10.493		
plant capital	7.603		
livestock	2.567		
capital stock	20.664		
land	9.003		
total. Invest. Capital	29.667		
current	1.810		

In 1990, the rhythm of the capital accumulation was strained. The *private fixed capital* remained at the same levels approximately of 1980 (this means that the investments hardly covered the amount of depreciation). The *asset*, generally, was trisected: 30% came from the *fixed capital*, 27,5% from *plant* and 29,7% from *land*.

Table 5

balance sheet 1990

in dollars		in million	
Total assets	44.695	**Total liab. - equ.**	44.695
publ. fixed capital	7.578	liabilities	14.328
private fixed capital	5.775	equity	30.367
total fixed Capital	13.353		
plant capital	12.302		
livestock	3.532		
capital stock	29.186		
land	13.276		
total. Invest. Capital	42.463		
current	2.232		

It seems that the *livestock* capital during the period 1950-1960 was reduced, instead of the subsidies from EU during the years 1980-1990. The *equity* was increased becoming the 68% of the total *liabilities- equity*.

In 2000 the share of *land* to the *asset* came up to 36%, while the *plant* capital to 40,4%. On the other hand, the rising of the fixed capital was decreased significantly. The public investments in the agricultural sector were limited, while the private moved in low levels. The *equity* is the 73% of the total in light of *liabilities-equity*.

Table 6

balance sheet 2000

in dollars		in million	
total assets	**87.557**	**total liab. - equ.**	**87.557**
publ. fixed capital	7.432		
private fixed capital	6.805	liabilities	23.311
total fixed Capital	14.237	equity	64.246
plant capital	35.353		
livestock	3.515		
capital stock	53.105		
land	31.336		
total. Invest. Capital	84.441		
current	3.116		

Although no definite data exist for 2010, it is appreciated that the *equity* are the 75% of the *liabilities-equity*, while the *land* remains in 30% of the asset, which is lower than the share of the *plant* (38%) to the asset. The *livestock* is the 4% and the *fixed capital* is approximately 17%.

3. CONCLUSION

In 1950 and especially in 1955-1970 it appears to be a significant capital accumulation from the side of the farmers and the state. The result was impressive. The *fixed capital* from 433 million dollars came up to 14,2 billion or was increased for 32 times within 50 years (1950 - 2000). The fastest accumulation (important for the global data) occurred until 1980. The growth of the *plant capital* was essential: from 2,1 billion dollars in 1950 came up to 35,3 billion in 2000 or it was raised for 16 times. The *livestock* was in low levels (that explains the extensive imports of the country in meat, milk etc). The value of *land* was increased for 8 times. The contribution of the state, the subsidies of EU etc played a significant role. In every case, the situation in 2010 seems in terms of "foreign" and equity, after 60 years, to fall down to the levels of 1950. The contribution of the farmers is increased while the loans are reduced.

Due to the current crisis since 2008, it is highly expected that the "foreign" capitals (state loans etc) will be limited and the contribution of farmers will be reinforced. It is likely that in 2020, if the tendencies will continue, the equity will reach or even go higher of the 85% of the liabilities. The structure of the balance sheet of the Greek agriculture in 2020 is expected to be the following:

Further reduce of the fixed capital (private and public), decrease of the livestock, rising of the plant (cultivation of olive trees) and preservation of the value of land. As far as the liabilities are concerned, increase of the participation of equity will occur.

REFERENCES

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Appendix

Table I
balance sheet 1950

in current prices			mil. drachm.
total assets	**103.207**	**total liab. - equ.**	**103.207**
publ. fixed capital	4.643	liabilities	15.481
private fixed capital	1.852	equity	87.726
total fixed Capital	*6.495*		
plant capital	31.921		
livestock	9.199		
capital stock	*47.615*		
land	53.558		
total. Invest. Capital	*101.173*		
current	*2.034*		

Table II
balance sheet 1960

in current prices			mil. drachm.
total assets	**165.078**	**total liab. - equ.**	**165.078**
publ. fixed capital	10.123	liabilities	79.237
private fixed capital	9.204	equity	85.840
total fixed Capital	*19.327*		
plant capital	49.234		
livestock	13.893		
capital stock	*82.454*		
land	75.740		
total. Invest. Capital	*158.194*		
current	*6.884*		

Table III
balance sheet 1970

in current prices			mil. drachm.
total assets	**266.656**	**total liab. - equ.**	**266.656**
publ. fixed capital	29.566	liabilities	71.329
private fixed capital	30.403	equity	195.327
total fixed Capital	*59.969*		
plant capital	90.117		
livestock	16.589		
capital stock	*166.674*		
land	84.597		
total. Invest. Capital	*251.271*		
current	*15.385*		

Table IV

balance sheet 1980

in current prices

mil. drachm.

total assets	1.355.441		total liab. - equ.	1.355.441
publ. fixed capital	212.497		liabilities	564.632
private fixed capital	239.360		equity	790.809
total fixed Capital	*451.857*			
plant capital	327.421			
livestock	110.554			
capital stock	*889.832*			
land	387.677			
total. Invest. Capital	*1.277.509*			
current	*77.932*			

Table V

balance sheet 1990

in current prices

mil.drachmas

total assets	7.084.841		total liab. - equ.	7.084.841
publ. fixed capital	1.201.209		liabilities	*2.271.210*
private fixed capital	915.375		equity	4.813.631
total fixed Capital	*2.116.584*			
plant capital	1.950.055			
livestock	559.820			
capital stock	*4.626.459*			
land	2.104.523			
total. Invest. Capital	*6.730.982*			
current	*353.859*			

Table VI

balance sheet 2000

in current prices

mil. drachm.

total assets	31.994.408		total liab. - equ.	31.994.408
publ. fixed capital	2.715.740		liabilities	8.517.987
privat ed fixed capital	2.486.674		equity	23.476.421
total fix. Capital	*5.202.414*			
plant capital	12.918.450			
livestock	1.284.328			
capital stock	*19.405.192*			
land	11.450.705			
total. Invest. Capital	*30.855.897*			
current	*1.138.511*			

GOVERNING EUROPEAN UNION TO FINANCIAL STABILITY

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Abstract: In the last four years, a significant part of the European Union members has recorded a real decline in the sustainability of their public debt. The failure of Greece, Italy, Belgium or Spain to easily find funding at previous interest rates has induced the fear that the European Monetary Union would disintegrate. Such as scenario is not realistic because does not take into account the economic interdependencies that have been created between the countries participating at the monetary zone. Nevertheless, we can say that the Stability and Growth Pact which aimed towards the coordination of national fiscal policies for ensuring the stability and prudence of the budgetary climate, has failed. This failure was primarily due to the lack of specific sanctions for those members that have not fought against the fiscal imbalances and secondly to the stopping the steps forward towards a common fiscal policy. Thus, we can say that the European Monetary Union is driven now by the wrong rule of "no taxation with representation". For these reasons, this paper aims at showing that the European fiscal federalism is still far away from becoming reality and that the new instruments chosen for the new stability of the European Monetary Union will be the task of the Member States themselves. This paper will also review the main rules that are projected to be the source for the future European financial stability and growth: the balanced budgets and the deficits built only on the "Golden Rule" premises, for which other amendments on European Treaties are expected.

Keywords: nominal convergence, golden rule, deficits, public debt.

JEL Classification Codes: E61, H61, H63.

1. INTRODUCTION

The main fiscal rules of the European Monetary Union which have established a threshold for budgetary deficit at up to 3% of GDP and for public debt at up to 60% of GDP were built in order to guarantee a relative solvency of Member States and to escape their governments from temptation to promote pro-cyclical policies. Furthermore, the fiscal nominal criteria laid down in Maastricht were aimed to remove any potential tensions between members, due especially to the spread of negative effects of economic imbalances.

Although the fiscal limitations were intended to strengthen the financial stability of the monetary area, these criteria have been strongly criticized from the very beginning as too rigid and limitative for growth and many countries have already questioned their optimal character, even the possibility of relaxing them. Among the states who wanted to relax the fiscal criteria were always Italy and Greece.

Another important issue is related to the lack of any type of sanctions against the countries that failed to combat effectively the excessive budget deficit, in the term of grace granted by excessive deficit procedure. Under these circumstances, Members like Greece, Italy, Belgium or Portugal have overlooked the fiscal recommendations laid down in the Stability and Growth Pact right from the creation of the European Economic Union. This attitude of disregard for the fiscal

rules was extended among the other members, some of whom have had fiscal rules harsher than those required by the Stability and Growth Pact. Regarding this latest issue, the best example is United Kingdom which has abandoned "the Golden rule" a fiscal policy principle set out in 1997, which required keeping the public debt at a prudent level, below at 40% of GDP.

Figure 1 - Public Debt Dynamic in E.U. 2000-2010
(Percentage of GDP)
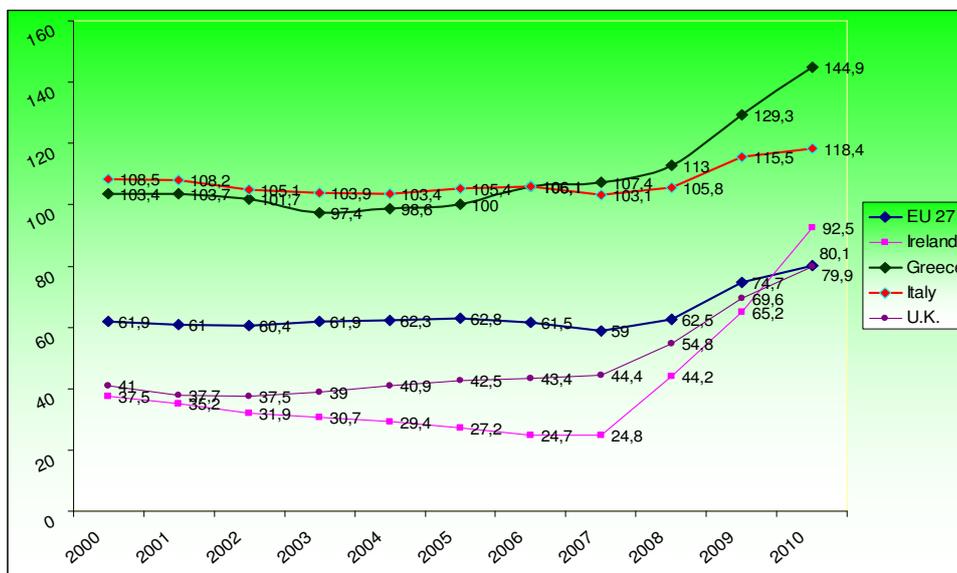
Data source: *Eurostat, November 2011*

Halfway into the year 2007, the economic slowdown and the consequent reduction of revenues caused a stronger deterioration of public debt, and the frequently expressed growing fear of the sovereign risk chance of emerging. The concerns about the manifestation of such risk occurred not only among developed countries whose public debts exceeded their GDP, but also among the new Member States which still have relatively low debt levels, but faced with a general mistrust of credit markets.

The negative externalities arising from the debt restructuring of Greece, in October 2011, the spillover effect on governmental bond interests and the new wave of skepticism around the feasibility of the European currency in the absence of the common fiscal policy requires a fast action which must treat the causes of debt sustainability and not only the effects.

Several years ago the overestimation of economic growth due to "political distortions" on governmental policies were considered an exclusive feature of emerging economies (Gavin and Perotti, 1997; Talvi and Vegh, 2005, Iron and Bivens, 2010) and the main cause of the large annual deficits, leading to a higher public debt. Today, we can find that a similar fiscal behavior has been learned even by the developed economies.

We can say that the next way to reach the new financial stability is related to the constraint of political actors to adopt projects only within the potential resources of the national economy.

2. REDISCOVERING AN OLD PARADIGM

The balanced budget pattern and the dismissal of public debt is not at all a new concept about financial stability of a national economy. In the nineteenth century, the classical economists have strongly rejected the government borrowings for regular expenditures. The classics were not so much opposed to the potential use of loans for the capitalization of the

economy, but rather opposed to the temptation to give an unproductive use of resources borrowed.

In the twentieth century the balanced budgets had been demystified, understanding the need for a safety belt if an economic shock were to take place. Even the economists defending balanced budgets have accepted the strong need to allow the exception for loans, but achieving the circumstances of these exceptions was a very hard mission.

In 1929, Arthur Cecil Pigou, one of those economists which considered that a well-organized economy can cover their current expenditures by taxes, without needing loans, admits the need for exceptions. The exceptions that Pigou had anticipated were related to the spending for removal of negative consequences of natural disasters or caused by war that could negatively affect the capacity to collect taxes from the economy for a while. Pigou also recognizes that the loans made for the accumulation or production of capital goods can not be seen as dangerous.

Once the existence of an extraordinary budget deficit and the accumulation of public debt have been relatively accepted, a number of dilemmas were brought to light. "Who will pay? How much to loan? When to loan?" asked James Buchanan and Richard Wagner, thinking of the consequences in the field of intergenerational equity. The same economists defined the burden of accumulating a high stock of public debt through the analogy with the tax burden, considering the opportunity cost of public debt is the value of private goods that are given up in exchange for public goods (Buchanan and Wagner, 1958).

James Meade believes that a clear distinction must be made between external debt and domestic debt. While external debt is a burden for the community, because it produces transfers of real goods and services between debtor and creditor, domestic debt is a transfer from citizens, as taxpayers, to citizens as property owners and consequently nothing is lost (Meade, 1958).

Another dilemma is related on the long-term implications of public debt on economic growth. If the governments spend, for projects that produce a yield in the future, the gross debt burden could be offset by the expenses, so that the gross yield net result would be quite positive (Modigliani, 1961).

Through a rigorous analysis Fabrizio Balassone has reviewed the most relevant theories expressed about the distinction between ordinary and extraordinary expenditures or a budgetary distinction between ordinary and capital expenditures (Balassone, Franco, 2001, Balassone, Franco, Zotteri, 2004). This distinction leads the Italian economists to the double budget theory in order to explain which expenditures can be financed by recurrent revenues and which may be financed by deficit. In respect of this view the public budget may be divided into a current and capital account. "*While the former must be balanced or in surplus, the later can run a deficit*" (Balassone, Franco, 2001).

This latest budget conception has already been put into practice by the United Kingdom into the so called "Golden rule". This budgetary rule stipulated in annex B, "public finances", of the British Pre-budget Report 1999, states that over the economic cycle, the Government will borrow only to invest. The golden rule will be met if the average annual surplus on the current budget expressed as a ratio to GDP, measured from the year in which the economic cycle begins up to and including the year in which the economic cycle ends is in balance or surplus.

$$d - i = g_c - t + rb \leq 0$$

Where d is the deficit, seasonally adjusted, i - the net investments (% GDP), g_c – government spending, t – taxes, r – interests, b – public debt stock.

The second Government's fiscal rule regards the sustainable investment rule which requires that the public sector net debt as a proportion of GDP must be held over the economic cycle at a stable and prudent level to below 40 percent of GDP over the economic cycle. Also, the automatic stabilizers have a significant impact on the public finances. The British Treasury estimates suggest that, after two years, a 1% increase in output relative to trend will lead to: an increase in the ratio of the surplus on the current budget to GDP of just under 3/4 percentage point; and a decrease in the ratio of public sector net borrowings to GDP of just under 3/4 percentage point (HM Treasury, 1999).

It must be said that the British model of fiscal consolidation requires a balanced budget over the economic cycle and not for one fiscal year. So, the fear of Balassone and Franco that the introduction of a deficit ceiling can conduct automatically to a reduction in net investments (Balassone, Franco, 1999) is ousted. Allowing the deficits in the bad years offset by surpluses in the next growth years and the permission for lending to public investments should disperse the worries that the objective of fiscal consolidation will adversely affect the investment and the economic growth perspectives. The permission for deficits in the bad times may calm the Krugman's fury on frequent adopted policy in the latest years, which meant the reduction of the government expenditures and investments, for trying the construction of balanced budget in times of hard recession (Krugman, 2008).

Even the latest British Pre-Budget Statements was widely seen as an abandonment of Gordon Brown's "Golden Rule", more European members have already seen this rule feasible and have made engagements to include in their constitutional law the rules very similar to the English fiscal model.

3. TOWARD A COMMON FISCAL POLICY

It must be noted that in the latest European Council, held in Brussels, on the 9th of November, just the United Kingdom was radically opposed to the change of fiscal rules in the E.U. Treaty, in order to increase the fiscal integration of Member States. We have to admit that the U.K. has permanently expressed solid doubts on the advanced integration in monetary and fiscal field of European Union.

Despite the use of the U.K.'s "veto", European members have understood that the European Monetary Union and the countries willing to use the European currency in the next years need a high level of integration of their fiscal and budgetary policies (Balassa, 1962).

Nevertheless, the main commitments stipulated in the Declaration of the Heads of States and Governments is far to be considered a progress towards the establishment of a common fiscal policy. The main rule adopted in this Council regards the objective of the signatory States to ensure balanced budgets or in surplus; this condition is considered to be met if annual structural fiscal deficit is below 0.5% of nominal GDP and accrual deficit at below 3% of nominal GDP. The option for permanent balanced budget is also an option for "tax-smoothing rule" (Barro, 1979) considering the tax revenues will be planned to be a constant share of GDP, the permanent tax rate or share (Buiter, 2003). The effectiveness of Council's decision depends on the introduction of this budgetary mechanism into the national constitutions or into the laws with constitutional rank. The rules pursuing fiscal stability should not necessarily be implemented into the constitution of the State in order to achieve them (Catrina, 2011).

The balanced budget and the strong fiscal policy must be first of all an attitude of Governments, because the statement of some fiscal rules into constitutional acts does not guarantee the achievement of the financial stability objective. The best example is the U.S.'s fiscal performance which in the nineteen century and the first half of twentieth embodied a norm of balanced budget, without being stipulated in constitution but it was a part of "*an accepted set*

of attitudes about how government should, and must, carry on its fiscal affairs" (Buchanan, 1997).

It is possible to think a balanced budget rule could be used in the European Union? At this moment, the European budget is too small to achieve the fiscal redistribution, economic and social cohesion in the European Union. The latest crisis has clearly shown that the European Monetary Union needs a stronger fiscal policy in order to sustain the monetary policy.

It is true that in the compromised solution taken at the European Council held in Brussels, on the 9th of November 2011, we can find more decisions that significantly change the European fiscal policy. If the Maastricht Treaty has granted to Member States exclusive competence on fiscal policy, in the near future we will see the sharing of this power. As a result, the fiscal consolidation will start with the supervising of national budgets by European Commission and the automatic penalties for those which ignore the new budgetary nominal criteria. The implementation of these measures can be considered as one small step towards the common fiscal policy dreamt by the European federalists. Their view implies a common fiscal authority, a common strong budget and a common policy of taxation. It is also true that a common fiscal authority can be more efficient and faster in implementation of budgetary adjustment measures, can increase the trust in the Euro zone and can drive easier to financial stability. It has been already shown that the different systems of taxation have stimulated fiscal dumping, especially in Eastern Europe, like a solution to attract the foreign direct investments. For this reason it is necessary, as much as possible, the unification of the taxation system into the European Union. If this goal seems to be unreachable right now, a unification of taxation systems can be started in several stages.

A first step on the unification of the taxation should be the setting of a band of oscillation / a fiscal tunnel with a comfortable oscillation (+/- 2.5%) for the main European taxes: VAT, income taxes, profit taxes and others. I don't believe that we should think about the construction of a new fiscal and budgetary authority, from the ground, while the European Commission already exists and has enough democratic legitimacy, legal instruments and experience to act in a multinational context. The European Commission has already been performing for many years in other European economic sectors like competition, agriculture, transports and others. Something that the European Commission is missing and should consider getting is a real fiscal and budgetary authority. First of all the European Commission lack the fiscal and budgetary powers coming by transfer from the European Union member states. I think that the transfer of monetary powers to the European Central Bank has already destroyed the myth of impossibility to yielding the sovereignty, despite the fact that the national currency was once the most important symbol of national states.

A common European budget must be also a stronger financial statement, by increasing transfers to up to 5% of GDP of each member, compared to current contribution limited to up to 1.1% of GDP, even though members like Germany, Italy, France or U.K. would become donors. A strong budget could increase the transfer capacity to less developed members and so the economic cohesion would be achieved and positive effects would be on the whole European Union. But, we should not ignore that a stronger European budget needs a clearer definition of levels of administration or in other words a reform of administrative decentralization, for telling us precisely where the European budget works and what will remain in the responsibility of local communities.

4. NEW MEMBER STATES NEED STABILITY AND FASTER GROWTH

For the New Member States who joined the European Union in 2004 and 2007, one of the goals sets in Copenhagen, in 1993, was the adoption of European currency within the shortest possible time. This objective has been misunderstood by the New Member States, because the

adoption of the Euro is not at all the end of the complex process of convergence but only one of its stages. Entry into the Euro area does not mean removing the need to solve macroeconomic imbalances existing in the Member State wishing to join the common currency. The wrong idea that macroeconomic imbalances are a natural component of the convergence process, rather than the result of bad management, has slowed the rhythm of the structural reforms in the most of the New Member States, after accession. Moreover, they have been misunderstood that the achievement of real convergence will be easily accomplished and that is a short time process. The previous accessions of Greece, Ireland, Spain or Portugal, have shown undoubtedly that the catching up takes a very long time and continue also a long time after accession and did not end with this. Despite the fact that these four countries have had a higher development degree than the New Members, it is important to note that for Greece the revenues fell soon after accession, for Ireland the revenues growth came much later than would be expected and Portugal has needed over 10 years to gain 17% GDP per capita growth. (IMF, 2006)

It must be said that, in the New Member States, the nominal convergence was privileged in relation to the real convergence, even if the fulfillment of the fiscal criteria had been negatively influencing the real economic variables. In fact, the two processes, the real and the nominal convergence, can not be seen but complementary. Even though the nominal convergence produces a deceleration of the real economic performance, fulfilling all the Maastricht criteria ensures a greater economic stability and a solid economic growth for a long run. For example, reducing inflation rate will lead to the higher economic performances and the increase of the real convergence of the revenues. Lower interest rates will also stimulate the growth of the investments and the growth of the real GDP. Knowing that the economic disparities between EU15 and the New Members States are still significant, the next fiscal measures, aiming the financial stability, should also respond to the high needs of catching up. The catching up process must be based on a higher rate of economic growth rather than average growth of the most developed economies of European Union.

How will the New Member States be affected by implementation of the latest budgetary plan adopted in Brussels? We have to say that so far the budgetary plan is only a project, a sum of ideas, which only defines the new levers of financial stability: the limitation of structural budgetary deficit (Blanchard, 1990) at below 0.5% of GDP. The choice for the structural deficit as the best barometer of public finances stability should be welcomed, because it reflects better the fiscal position through removing the economic cycle influences on the budget balance. But no one can say how much time is required to achieve a structural deficit at below 0.5% of GDP. An aggressive fiscal adjustment could compromise the future potential economic growth and the catching up objectives for the New Member States. This may happen as a result of the very rigid structure of the public expenditures and the option for a fast fiscal adjustment would reduce the public investments potential or the government capacity to create fiscal stimulus for growth.

5. CONCLUSION

Despite the negative effects of the economic crisis, which in Europe were reflected in the strong increase of government costs for financing excessive deficits and for refinancing the large public debts, neither the EU nor the EMU will disintegrate. The interdependencies that have developed between the European economies and the effects that could lead to disintegration are difficult to be estimated. In the latest sixty years, the European integration was many times faced with difficulties on the road of integration. The transfer of sovereignty to a supranational authority was always one of those difficulties, overcome by establishing the intermediate stages of transfer and integration of national policies. The current European debt crisis forces us to

return to the optimum currency area theory which recommends a mix of the monetary and fiscal policy for ensuring internal and external equilibrium.

Sooner or later, the fiscal union will be reached in the European Union. It's also hard to say that the fiscal policy will be instantaneously shared and without intermediate stages of fiscal adjustments. The new budgetary amendments and the creation of the fiscal mechanism for automatic stabilization is not a short time process, as expected in Brussels. Conversely, the change of the constitutional laws will take at least two years, taking into account the different way of ratification in each Member State. Furthermore, the fiscal adjustments and the creation of automatic fiscal mechanism should be made gradually, without compromising the economic growth and the irreversible out of the recession.

The EU founders and the new members have to work together as a two-speed Europe, in terms of economic growth, faster for the new members in order to catch up to the EU15, but without exceeding the potential growth of New Member States.

The limitation of the deficits by constitutional laws will certainly affect the economic growth in the New Member States, through the impracticality to create fiscal stimuli or public investments. So, the only chance for stronger growth in these economies, and for reducing the gaps, remains the increase of transfers for new members from 4% of GDP to up to 6% of GDP. Although at first glance this decision would disadvantage the developed economies, the increase of the real convergence would reflect in a stronger European Union, more convergent, more competitive and less vulnerable.

The "Golden Rule" is feasibly for all the members of EU. Furthermore, for removing the negative effects of potential external or internal shocks, we could imagine together with the "Golden Rule" implementation, a new safety belt which takes the form of a budgetary buffer set between 2% and 5% of GDP.

The public debt threshold for New Member States should be revised and set below 40% of GDP and should be complemented with additional early warning mechanism to lower thresholds, 30% and 35% of GDP, limits which should lead to fast adjustment of public expenditures.

Whatever model chosen, it must be said that financial stability should be a tool and not the main goal of the fiscal policy. Financial stability should lead to a sustainable growth for all the 27 economies of the EU and should increase the living standards for all European citizens.

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CONDITIONAL EFFICIENCY ESTIMATION WITH ENVIRONMENTAL VARIABLES: EVIDENCE FROM GREEK CEREAL FARMS

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Abstract: The objective of this paper is to assess technical efficiency of cereal production in Greece in a nonparametric framework while accounting for a set of exogenous variables. To this end, we implement robust partial frontier techniques on a sample of cereal-producing farms included in the Farm Accountancy Data Network (FADN). Moreover, we assess the partial impacts of the environmental variables using non parametric regression tools.

Keywords: Nonparametric estimation, conditional efficiency, cereal farms

JEL Classification Codes: D24, Q12

1. INTRODUCTION

The assessment of technical efficiency provides information to managers and to policy makers about differences in performance among production units and the potential for improvements. Over the last 40 years the research on this important topic has evolved largely around two alternative approaches, namely, the deterministic and the stochastic frontier models. The latter allow for random noise and, as a consequence, for some observations to lie outside the production set; the former assume that all observations belong to the production set with probability equal to 1. The stochastic frontier models require parametric restrictions on the shape of the production frontier (benchmark) and on the underlying data generation process (e.g. Stevenson, 1980; Battese and Coelli, 1988). Therefore, they lack robustness in cases where the functional form of the frontier and/or the error structure is not correctly specified. The estimation of deterministic frontier models has been, until recently, pursued through envelopment techniques such as the DEA (Charnes et al., 1978) and the FDH (Deprins, et al. 1984) that are quite appealing because they rely on very few assumptions. They are, however, by construction very sensitive to outliers or to atypical observations. This is certainly an important problem when one is interesting in assessing technical efficiency of production units in economic activities where the amount of output is subject to random shocks. In farming, for example, the level of realized output can be quite different from the planned one because of weather conditions and pest attacks.

During the last decade considerable research effort has been devoted to the development of robust non parametric efficiency estimators. These estimators rely on partial frontiers which do not envelop all data points. As such, the partial frontiers provide less extreme surfaces to benchmark individual units and, thus, they are more robust to extreme observations compared to the full frontiers. The robust efficiency estimators have the same asymptotic properties of the FDH and the DEA estimators, the same Weibull distribution, but they attain better convergence rates (e.g. Daraio and Simar, 2007; Aragon et al., 2005; Cazals et al., 2002).

It is well recognized that efficiency estimates which do not account for the operational environment have only a limited value. Therefore, if the individual units in a given sample are influenced by environmental/exogenous factors the efficiency analysis should control for this heterogeneity (e.g. Daraio and Simar, 2005; De Witte and Kortelainen, 2008). The partial frontiers are based on a probabilistic formulation of the production process and they incorporate the operating environment in a very natural way (that is, by conditioning on the exogenous environment). The so-called conditional efficiency approach generalizes previous models and allows a researcher to investigate the impact of environmental variables on the distribution of inefficiencies.

The robust non parametric efficiency estimators have been applied to banking, mutual funds, post offices, and education (e.g. Blass Staub and da Silva e Souza, 2007; Daraio and Simar, 2005, 2006; Daouia and Simar, 2007; Cazals et. al., 2008; de Witte and Kortelainen, 2008). It appears, however, that there have been so far no applications to the agricultural sector. This is disconcerting since the approaches relying on partial frontiers are very suitable for measuring efficiency in the presence of random shocks.

In this context, the present work relies on the robust non parametric order-m estimator to assess efficiency in a sample of cereal farms in Greece. In what follows section 2 presents the analytical framework (unconditional and conditional order-m efficiency measures, and influence of the operational environment). Section 3 presents the data and the empirical results. We note that there is a number of earlier works on efficiency of cereal farms in Greece and in other parts of the World. It is, therefore, interesting to compare their results to those from the robust non parametric order-m estimator (especially with respect to the influence of certain environmental factors on efficiency). Section 4 offers conclusions.

2.   ANALYTICAL FRAMEWORK

2.1 The Unconditional Order-m Efficiency Estimator

Let $X \in R_+^p$ be the vector of inputs and $Y \in R_+^q$ be the vector of outputs from a given production process. Let also Ψ be the production set (that means, the set of all feasible input-output combinations) for that process where Ψ satisfies the assumption of free disposability (e.g. Deprins et al, 1984). As noted by Cazals et al. (2002) and Daraio and Simar (2005) the data generating process (GDP) of the random variable (X, Y) can be completely characterized by the knowledge of the probability function

$$(1) \quad H_{XY}(x, y) = prob(Y \geq y, X \leq x)$$

giving the probability that a decision making unit (DMU) that operates at level (x, y) to be dominated; the support of H_{XY} is the production set Ψ. Relation (1) can be expressed as

$$(2) \quad H_{XY}(x, y) = prob(Y \geq y | X \leq x) prob(X \leq x) = S_{Y|X}(y|x) F_X(x)$$

where $S_{Y|X}(y|x)$ stands for the (non standard) conditional survival function of Y and $F_X(x)$ for the distribution function of X.

The traditional non parametric efficiency estimators are deterministic in nature since they assume that $prob((x, y) \in \Psi) = 1$ (meaning that all observations belong to the production set). As such, they are sensitive to outliers that can heavily influence estimates of the upper boundary of the support of $S_{Y|X}(y|x)$. To address this problem for the output-oriented efficiency Cazals et al. (2002) suggested to consider, instead of the maximum output levels for given input levels, the expected values of m random variables $Y_i, i = 1, 2, ..., m$ generated by the q-variate conditional

survival function $S_{Y|X}(y|x)$. Thus, instead of considering the full frontier, one draws a partial frontier depending on a random set of m variables consuming, at most, x resources. The partial frontier generated in this way is a less extreme benchmark (it is less likely to be influenced by outliers) relative to full frontier of the deterministic non parametric efficiency estimators.[1] The order-m output efficiency measure is defined as

$$(3) \quad \lambda_m(x,y) = \int_0^\infty [1-(1-S_{Y|X}(uy|x))^m]du,$$

where u is a dummy of integration. The estimator of $\lambda_m(x,y)$ from a sample of n observations, denoted as $\hat{\lambda}_m(x,y)$, is obtained by replacing $S_{Y|X}(y|x)$ in (2) by its empirical analog

$$(4) \quad \hat{S}_{Y|X,n}(y|x) = \frac{\hat{H}_{YX,n}(x,y)}{\hat{H}_{YX,n}(x,0)}$$

In (4) $\hat{H}_{YX,n} = \dfrac{\sum_{i=1}^{n} I(x_i \le x, y_i \ge y)}{n}$ is the estimator of the probability function H_{YX} with $I(.)$ being an indicator function.

When the output-efficiency score is $\hat{\lambda}_m(x,y)=1$, the unit in question lies on the robust partial order-m frontier; when $\hat{\lambda}_m(x,y)>1$ an increase in all outputs by $(\hat{\lambda}_m - 1)100\%$ is required in order the decision making unit to be located at the order-m frontier; when $\hat{\lambda}_m(x,y)<1$ the unit is classified as "super-efficient" (it is located above the order-m frontier). Note that the order m efficiency estimator is $\sqrt{n}$ − consistent (it converges to its true value as quickly as the parametric efficiency estimators). Cazals et al. (2002) show that as $m \to \infty$ the order-m efficiency estimator converges to the FDH output efficient frontier. Nevertheless, even for large finite values of m the two estimators are different, with the order-m estimator being less sensitive to outliers and to atypical observations compared to the FDH estimator.

2.2. The Conditional Order-m Efficiency Estimator

Let $Z \in R^r$ a vector of environmental variables which, although exogenous, they may influence the probabilistic production process. To account for the operational environment in efficiency estimation with robust partial order-m frontiers Cazals et al. (2002) and Daraio and Simar (2005) considered the GDP of the random variable (X,Y,Z) and focused on the conditional distribution of (X,Y) for a given value of Z

$$(5) \quad H_{XY|Z}(x,y\,|\,z) = prob(Y \ge y, X \le x | Z = z) = S_{Y|X,Z}(y|x,z)F_{X|Z}(x|z)$$

giving the probability that the unit (x,y) will be dominated by other units facing exactly the same operational environment; the support of $H_{XY|Z}$ is denoted by Ψ^Z (a set possibly different from the production set Ψ). As in sub-section 2.1 one can draw m random variables Y_i, $i=1,2...,m$ (with $X \le x$ and $Z = z$) to obtain the relevant partial frontier. The corresponding conditional order-m output-efficiency measure is

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[1] In the limiting case with $q=1$, the partial frontier is the expected output function of order m denoted by $f_m = E(\max(Y^1, Y^2, ..., Y^m)|X \le x)$.

$$(6) \quad \lambda_m(x,y|z) = \int_0^\infty [1-(1-S_{Y|X,Z}(uy|x,z))^m]du$$

The individual conditional efficiency measure $\lambda_m(x,y|z)$ has the usual interpretation (that is, $(1-\lambda_m(x,y|z))100\%$ stands for the radial feasible change in all outputs a unit operating at (x,y) should perform to reach the efficient boundary of the set Ψ^z).

The non parametric estimator of the survival function in (6) must be obtained using smoothing techniques on z (because of the equality constrain $Z=z$). In particular, the estimator is computed as

$$(7) \quad \hat{S}_{Y|X,Z,n}(y|x,z) = \frac{\sum_{i=1}^n I(x_i \le x, y_i \ge y)k_h(z,z_i)}{\sum_{i=1}^n I(x_i \le x)k_h(z,z_i)},$$

where k_h is a kernel and h is an appropriate bandwidth. The conditional order-m efficiency estimator $\hat{\lambda}_m(x,y|z)$ then follows by plugging $\hat{S}_{Y|X,Z,n}(y|x,z)$ from (7) into (6).

2.3. Global Separability and Assessment of Impacts of Environmental Variables

The vector of environmental factors Z may either affect the range of attainable values of (X,Y), including the shape of the production set, or it may only affect the distribution of inefficiencies inside a set with boundaries not depending on Z (meaning that only the probability of being less or more far from the efficient frontier may depend on Z) or both (Badin et al., 2010). A given vector of environmental factors $Z=z$ is associated with a different conditional distribution $H_{XY|Z}$ which is in turn associated with a different support Ψ^Z. Under separability, the environmental factors have no influence whatsoever on the support of H_{XY} and it is the case that $\Psi^Z = \Psi$ for every $z \in Z$. If the separability condition is verified, the only potential remaining impact of the environmental factors on the production process may be on the distribution of the efficiencies. Daraio et al. (2010) propose a global test of separability which is based on the distance between two efficient boundaries (namely one with support Ψ and the other with support Ψ^Z). The null hypothesis for the global separability test is $\Psi^Z = \Psi$ for every $z \in Z$ and its complementary that there is $z \in Z$ such that $\Psi^Z \ne \Psi$. The test statistic for a sample of size n is

$$(8) \quad \hat{\tau}_n = \frac{\sum_{i=1}^n (\hat{D}'_{FDH,i,n})(\hat{D}_{FDH,i,n})}{n} \ge 0,$$

where $\hat{D}_{FDH,i,n} = Y_i(\hat{\lambda}_{FDH,i,n}(X_i,Y_i) - \hat{\lambda}_{FDH,i,n}(X_i,Y_i|Z_i))$ and $\hat{\lambda}_{FDH}$ is FDH efficiency estimator based on the full frontier. The null is rejected for "large" values of $\hat{\tau}_n$. The optimal Critical Value for testing global separability can be obtained by a bootstrap procedure proposed by Daraio et al. (2010).

For the purposes of management and policy formulation of critical importance is the sort of impact (favorable or unfavorable) of each individual environmental factor on the performance of production units. This can be assessed using the ratio of the conditional to unconditional order-

m efficiency scores (that means, the ratio of the radial distances from the conditional and the unconditional frontiers, respectively) and non parametric regression techniques. Specifically, Daraio and Simar (2005 and 2007) propose the estimation of the following smooth non parametric regression model

$$(9) \quad R_{m,n,i} = g(z_i) + e_i$$

where

$$(10) \quad R_{m,n,i}(x_i, y_i | z_i) = \frac{\hat{\lambda}_{m,n,i}(x_i, y_i | z_i)}{\hat{\lambda}_{m,n,i}(x_i, y_i)}, \quad i = 1, 2, ..., n,$$

g is a conditional smooth mean function, and e_i is the usual error term (with $E(e_i | z_i) = 0$). In the output-oriented efficiency and for a univariate and a continuous Z, a horizontal smoothed regression curve implies that the environmental factor has no influence whatsoever on efficiency; an increasing (decreasing) regression curve implies that efficiency rises (falls) with the amount of Z. When an environmental factor has a favorable impact it can be viewed as substitute input which augments the productivity of the X inputs. In the opposite case, the presence of Z reduces productivity by entailing more of the X inputs per unit of output. It should be noted the impact is not necessarily monotonic for all values of Z. An increasing part of the regression may be followed by a decreasing one (and the opposite). Therefore, the approach allows for the existence of different impacts locally.

With multivariate continuous Z factors, the visualization of individual impacts can be achieved through the so-called partial smooth regression plots where only one such factor at a time is allowed to change and the rest are kept at fixed values; for instance, the rest of the environmental factors are set at the first, the second or the third quartile (e.g. De Witte and Kortelainen, 2008; Daraio and Simar, 2007; Badin et al. 2008).

3. AN EMPIRICAL APPLICATION TO CEREAL FARMS IN GREECE

The empirical analysis in this study relies on a sample of 249 cereal farms in Greece. The relevant information has been obtained from the Farm Accounting Data Network (FADN) of the EU and refers to year 2008. Farm output (Y), which is revenue from the production of cereals, is measured in Euros. The production inputs (X) include: (a) total labor (comprising all family and non family one), measured in working hours; (b) total land under cereals, measured in $100m^2$; (c) fertilizers and pesticides, measured in Euros; and (d) other operation costs (seeds, electric power, fuel, depreciation, interest, and miscellaneous), measured in Euros. We note that the vector of X inputs considered here is in line with those used in earlier empirical studies on efficiency of cereal farms in Greece as well as in other countries (e.g. Madau, 2007; Tzouvelekas et al., 2002; Giannakas et al., 2001).

The environmental factors (Z) include: (a) the age of the farm owner; (b) the ratio of land under cereals to total farm land (degree of specialization); (c) the ratio of land under cereals to labor; and (d) the ratio of capital stock to labor. The choice of environmental factors is to a certain extend constrained by data availability. Nevertheless, the farmer's age, the degree of specialization, and technology proxies (such as the ratio of capital to labor and/or the ratio of land to labor) has been considered as relevant environmental variables in almost all earlier empirical studies on the efficiency of crop production (e.g. Latruffe, et al., 2008; Madau, 2007; Tzouvelekas, et al., 2002; Giannakas et al., 2001).

Table 1 presents descriptive statistics for the variables used in the empirical analysis. The sample includes very small as well as very large cereal farms (in terms of land under cereals).

Considerable variability also appears to exist with respect to the use of the production inputs. As far as the environmental variables are concerned, the age of the average farmer is 52, the average degree of specialization is high (above 0.8). The lowest capital to labor ratio is 1.61 and the highest is 313; the lowest land to labor ratio is 0.05 and the highest is 7.54.

Table 1: Descriptive Statistics for the Variables Used in the Empirical Analysis

	Minimum	Maximum	Mean	Standard Deviation
Output (Euros)	700	49136	11441	8298
Labor (hours)	300	7500	1647	1174
Land (100m^2)	107	8606	1520	1376
Fertilizers and Pesticides (Euros)	10	30600	4792	4590
Other Costs (Euros)	925	45210	11873	8336
Age of the Owner	31	75	52	10
Degree of Specialization	0.19	1	0.83	0.19
Land to Labor Ratio	0.05	7.54	1.20	1.14
Capital to Labor Ratio	1.61	313.02	66.24	49.94

Starting with the test of global separability, the empirical value of the $\hat{\tau}_n$ statistic is zero and so is the critical value resulted from the bootstrap procedure of Daraio et al. (2010). Global separability, therefore, is consistent with the sample data. This suggests that the environmental factors considered here affect only the distribution of efficiencies and not the attainable input-output combinations (or the shape of the underlying production set).

For the empirical implementation of the unconditional and conditional order-m efficiency estimators one needs to select the size of the partial frontier (m) first. According to De Witte and Kortelainen (2008) the size must be selected in such as way as to leave the percentage of "super-efficient" units more or less stable. Here, the required stability has been achieved for $m = 130$. For the empirical implementation of the conditional order-m estimator, in particular, one also needs to select a kernel function with an appropriate bandwidth. In this study, following Hall et al. (2004) and Li and Racine (2007), we rely on least squares cross-validation for the bandwidth choice (conditional bandwidth estimation) and we use the multivariate product Gaussian kernel.

Table 2 presents the frequency distributions of the estimated unconditional and conditional efficiency scores. The average value of the unconditional scores is 1.16 suggesting that output could be increased by 16 percent, provided that all farms in the sample will follow the same rules of input use as those located on the unconditional partial order-m frontier; 45% of the farms have achieved efficiency scores in the interval [1, 1.25). From these, 58 farms (or 23.3% of the total) are efficient. A considerable proportion of farms (25.3%) have been classified as "super-efficient", while 12.8% appear to be highly inefficient with scores above 1.5. The average value of the conditional efficient estimates is 1.1 suggesting that output could be increased by 10%, provided that farms will follow the same rules of input use as those located on the corresponding conditional partial order-m frontier. The overwhelming majority of farms (80.3%) have achieved efficiency scores between 1 and 1.25. The proportion of "super-efficient" farms has fallen to only 3.2%, the proportion of highly inefficient ones has fallen to 6.4%, while the

proportion of efficient has risen to 52.6 %. Overall, accounting for the operational environment leads to a much more concentrated distribution of the estimated efficiency scores suggesting that the operating environment does affect the productive performance of the cereal farms in Greece.

Table 2. Frequency Distribution of the Estimated Unconditional and Conditional Efficiency Scores

Efficiency Score	Unconditional Estimates		Conditional Estimates	
	No. of Farms	% of Farms	No. of Farms	% of Farms
[0.85, 1)	63	25.3	8	3.2
[1, 1.25)	116	46.6	200	80.3
[1.25, 1.5)	38	15.3	25	10.1
[1.5, 2.01)	32	12.8	16	6.4

To examine the influence (i.e. favorable or unfavorable) of the environmental variable, we nonparametrically regress the environmental variables on the ratio of the conditional to the unconditional efficiency scores. As in De Witte and Kortelainen (2008) and Jong et al. (2008) the non parametric regression has implemented through the Local Linear estimator (which is less sensitive to boundary effects compared to alternative non parametric estimators such as the Nadaraya- Watson) relying again on least squares cross-validation for the bandwidth choice and on multivariate product Gaussian kernel. Also, for the estimation of each individual effect (through the so-called partial smooth regression plots) the remaining environmental factors have been set at their 50 quantile value (a choice typically made in earlier applications).

Figures 1 to 4 present the partial regression plots.[2] Figure 1 indicates that age has a positive impact on efficiency. This result in line with the findings of Tzouvelekas et al. (2002) and Madau (2007) who assessed the performance of wheat farms in Greece and of cereal farms in Italy, respectively, using stochastic frontier models with inefficiency effects. The experience that comes with age is, ceteris paribus, a proxy for management skills. One, therefore, may conclude that higher management skills work towards a better performance of cereal farms in Greece. Figure 2 indicates that specialization has a positive impact on efficiency. This finding is in agreements with those of Tzouvelekas et al. (2002) and Giannakas et al. (2001) (who also used a stochastic frontier model with inefficiency effects to assess the performance of wheat farms in Canada). The favorable effect of this environmental factor, however, should be evaluated with a proper care. The reason is that although a higher specialization level may increase expected profits, it may also deprive a farm owner of the benefits from diversification; production of agricultural commodities is a risky business and diversification is a reasonable strategy for risk averse agents. The agricultural economics literature offers plenty of empirical evidence that farmers are risk averse and, therefore, they are willing to trade expected profits for lower variability of profits (e.g. Sckokai and Moro, 2006). From Figure 3 the land to labor ratio appears to have a positive effect on the efficiency of cereal farms in Greece. This finding, which provides an indication that cereal farms are overmanned for the area cultivated, appears to be quite reasonable. "Hidden-unemployment" has been a long-lasting problem in Greek agriculture; farm work traditionally has played the role of a substitute for limited employment opportunities in other sectors of the economy. From Figure 4, the capital to labor ratio appears to have a negative effect on efficiency indicating that the farms in the sample are overcapitalized. Since

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[2] All computations for the present work have been carried out in *R*. The code utilizes *np* package by Hayfield and Racine (2008).

capital in our work is a stock variable, this result may reflect poor management decisions with regard to purchases of new machinery and equipment and the construction of new building. Our findings vis-à-vis the impact of the two technology proxies on efficiency are in line with those reported in Latruffe et al. (2008) for crop and livestock farms in Poland.

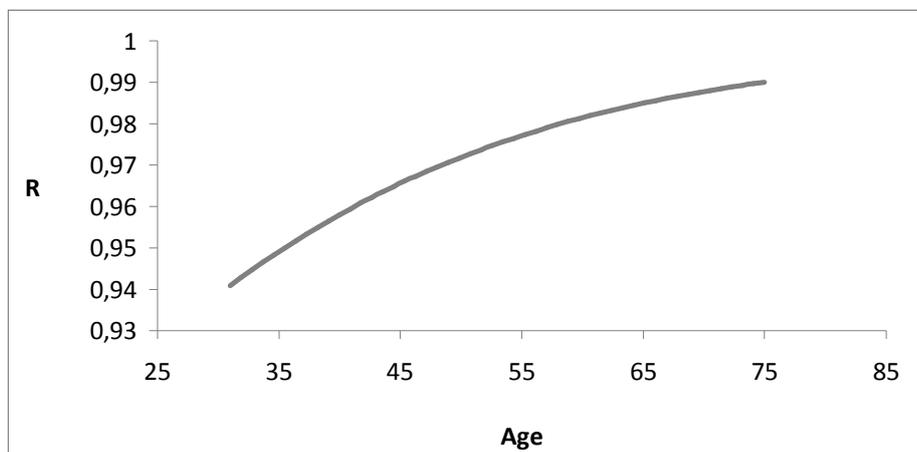**Figure 1. Partial Regression Plot: Impact of Farm Owner's Age**

Figure 2. Partial Regression Plot: Impact of Specialization
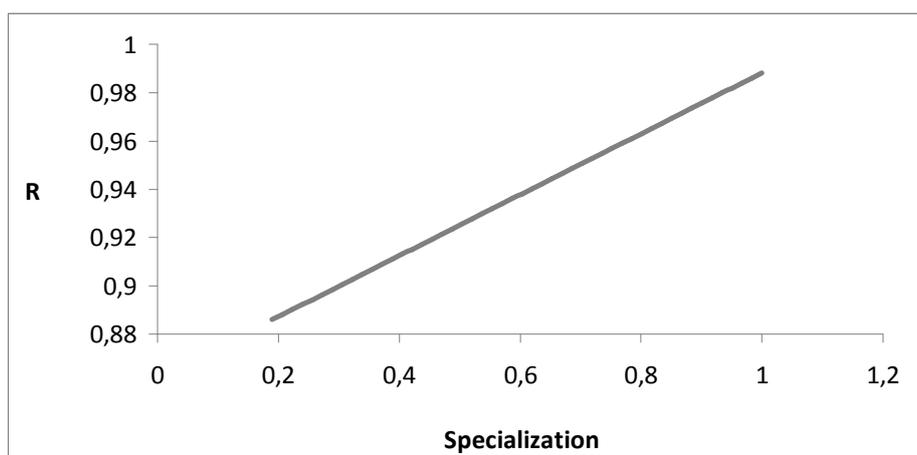
Figure 3. Partial Regression Plot: Impact of the Ratio of Land to Labor
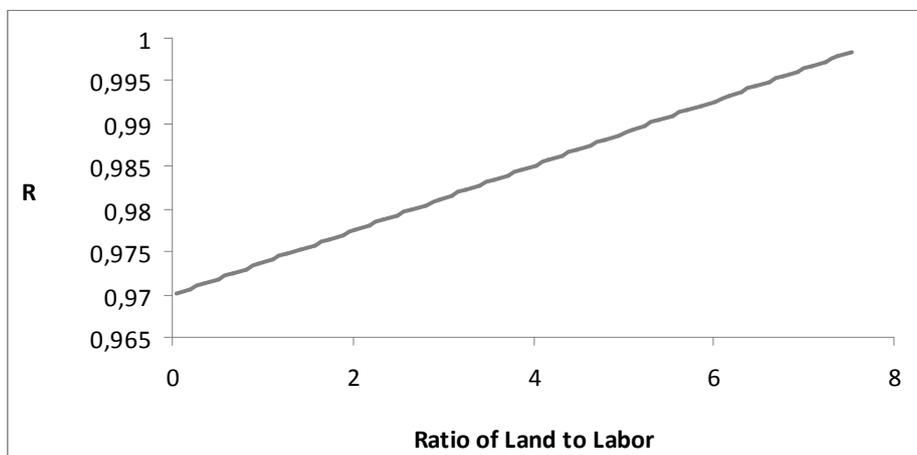
Figure 4. Partial Regression Plot: Impact of the Ratio of Capital to Labor
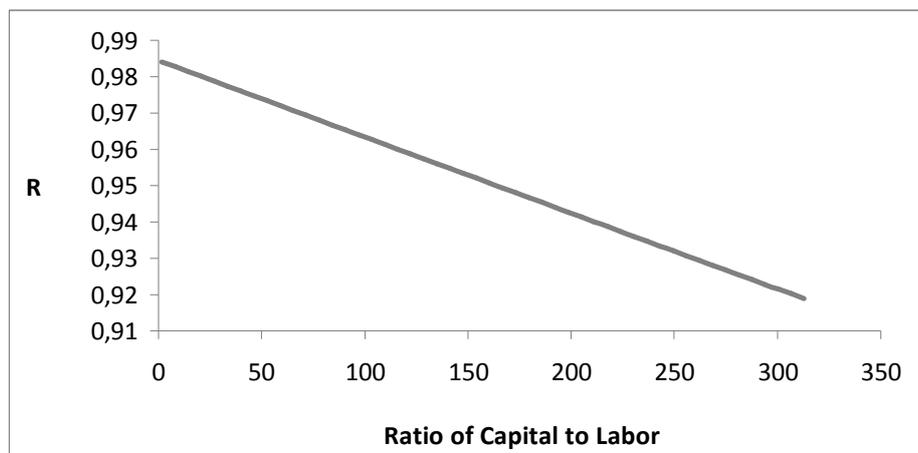
4. CONCLUSIONS

The measurement and the explanation of efficiency differentials among decision making units has been an important topic of economic research over the last 40 years and it has been pursued using alternative methodologies. This is not accidental, since the efficiency analysis provides valuable information to managers and policy makers regarding the productive performance across a sample of units and the potential for improvements. In this context, the present work investigates the performance of cereal farms in Greece using data from the FADN of the EU and recently developed non parametric robust partial frontier techniques (the order-m estimator). According to our results:

(a) The environmental factors considered (owner's age, degree of specialization and two "technology proxies") affect only the distribution of efficiencies and not the attainable input-output combinations or the shape of the production set.

(b) The unconditional estimates indicate considerable efficiency differentials among the 249 farms in the sample (more than 12 % have been classified an extremely inefficient and more than 25% have been classified as "super-efficient"). The conditional estimates, however, suggest that much of the efficiency differentials disappear once the operational environment is accounted for. Indeed, on the basis of the conditional estimates, almost 80% of the farms achieved efficiency scores below 1.25, while only 3% have been classified as "super-efficient" and 6.5% as extremely inefficient.

(c) The owner's age (a proxy for experience and managerial skills) appears to have a positive impact on the efficiency of the farms in the sample. The same is true for the degree of specialization in the production of cereals and for the land to labor ratio. The capital to labor ratio, however, appeared to have a negative effect on the efficiency. The last two results are probably indications of underutilization of the labor and the capital inputs, respectively, due to the lack of alternative employment opportunities and to poor managerial decisions with respect to machinery and buildings.

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SOCIAL ENTREPRENEURSHIP IN TIMES OF ECONOMIC AUSTERITY: A SPARKLE OF LIGHT FOR THE ECONOMIES IN CRISIS?

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Abstract: Even though Social entrepreneurship as a concept dates back to the second half of the 18th, it is still poorly defined. It has been defined via the use of terms such as social enterprise, social innovation, nonprofit ventures and social responsibility. Its boundaries to the other fields are unclear and its practice is in low level.

However, social entrepreneurship is an emerging area of entrepreneurship, and literature on this field, has grown the last two decades. It attracts attention mainly to its high importance for the economies in terms of social and economic value creation. This paper studies social entrepreneurship and its role in economies of austerity, with emphasis placed on European countries and it provides a mapping of the situation.

"When we will stop thinking the poor people as victims and instead recognize them as creative and future entrepreneurs the sparkle of light will be the sun".

Keywords: social entrepreneurship, social cohesion, economy, European countries, Greece.

JEL Classification Codes: M00, O10, Z00

1. INTRODUCTION

Social entrepreneurship is an emerging area of entrepreneurship. It differs from "traditional entrepreneurship" due to the high importance of social and economic values (Okpara and Halkias, 2011). Many authors argue that social entrepreneurship can be described as a multidimensional construct with the characteristics of not-for-profit companies (NFPs) (Mort et al, 2003).

Nowadays, social entrepreneurship seems to be one of the most difficult and misunderstood concepts in the field of entrepreneurship. Thus there is no consensus about its definition.

Social entrepreneurship aims to social cohesion, to reduction of unemployment, to creation of jobs and generally to improvement of the economy. It is observed that in times of economic austerity the feeling of help to "each other" is strong and the entrepreneurial initiatives aim is shifted more towards society, followed by profit generation. Therefore could social entrepreneurship provide a sparkle of light for the economies in crisis?

This paper will try to explore the issue in an attempt to provide an answer in this question. First definitions of social entrepreneurship and social entrepreneur are presented and the framework of the analysis to follow is provided. Then reference is made to the international mapping of social entrepreneurship and the steps that the European members have taken in relation to social enterprises legislation, followed by an analysis of the role of social

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entrepreneurship in the economy. The example of the Greek economy is presented as a case analysis. The last part serves as the epilogue to the paper.

2. METHDODOLOGY

The difficult economic circumstances have empowered social entrepreneurship and many cooperatives, voluntary organizations, associations and NGO's have been established aiming to improve economic conditions, social cohesion, employment percentage and generally the production of goods and services.

The assessment of social entrepreneurship in economies of crisis is examined through the study of the existing bibliography and the analysis of related data of Global Entrepreneurship Monitor (GEM, 2010). Related data shows that about 10% of businesses in Europe are social, employ 11 million employees and the 10% of jobs created in recent years in the European Union are related to activities in the field of social economy. Social economy represents the 5.9% of total employment and 6.7% of salaried employment.

It is also supported that the expansion of social economy sector stimulates entrepreneurial spirit, creation of suitable conditions for peoples' employment with difficulties in access and mainly promotes social cohesion.

Findings suggest, that non for profits, non-governmental organizations and individuals play an important role in promoting, funding, solving and informing social entrepreneurs around the world and social entrepreneurship increasingly gains grounds.

The paper's originality lies in the review of social entrepreneurship and steps taken by European countries in this sector, adding more evidence on the existing literature on the relationship between social entrepreneurship and its positive contribution to economies in austerity using the Greek economy as an example.

3. WHAT IS SOCIAL ENTREPRENEURSHIP

In recent years, entrepreneurship aiming to social contribution gains ground. Its main objective is not profit and it aims to solve social problems through the authorities of classical entrepreneurship. In other words, it combines social vision with innovation (Okpara and Halkias, 2011; Boschee and McClurg, 2003; Mort et al, 2003).

The dissatisfaction in the management of typical charities, bad government administration of social services, people suffering because of catastrophic events, such as the 2004 tsounami in Asia, the hurricane Katrina in Louisiana and many other similar events, with negative social aspects (Okpara and Halkias, 2011) has led people with vision and social sensitivity to undertake entrepreneurial initiatives with social characteristics.

Social entrepreneurship research is a large and interesting phenomenon, however, is still poorly defined, its boundaries to the other fields are unclear (Mair and Marti, 2006) and its practice is in low level (Okpara and Halkias, 2011).

Bill Drayton introduced the term "social entrepreneur" in 1980, when he founded Ashoka foundation, designed to help social entrepreneurs through funding, and professional networking in order for social entrepreneurial ideas and solutions to be developed. One could say that the origins of the idea can be traced back to the 18th century when William Lloyd Garrison, founder of the Anti-Slavery Society (ASS, 1833) and the publisher of the first anti-slavery newspaper, "Liberator" fought against the slave trade and slavery as well as. Or when Jane Addams a social worker, founded the social arrangement Hull House in Chicago in 1889, providing accommodation and prosperity to poor people (Okpara and Halkias, 2011).

Their example inspired other remarkable social entrepreneurs whose work became known, as Florence Nightingale, the founder of the first nursing school, Robert Owen, the founder of the

cooperative movement and Muhammad Yunus, the founder and manager of Grameen Bank, who was interested in empowerment of women in Bangladesh and was awarded a Nobel Peace Prize in 2006 (Mair and Marti, 2006; Martin and Osberg, 2007).

Social entrepreneurship differs mainly in terms of its priority, which is creation of social wealth instead of profits. As Light and Wagner (2005) support, it aims to promote social and development economic values.

But what is social entrepreneurship and how can social entrepreneurs be defined? According to Martin and Osberg (2007), the definitions for social entrepreneurship must begin with the word "entrepreneurship" and "social" has to modify it. For this reason, we will start our analysis defining firstly entrepreneurship.

Entrepreneurship comes from the French verb *entreprendre* and the German word *unternehmen* (Okpara and Halkias, 2011; Schaper and Volery, 2007; Swedberg, 2000). All these words mean the same, to undertake (Okpara and Ohn, 2008). However, Schumpeter has introduced the modern definition of entrepreneurship in 1934, stating that, the creation of business combinations is named enterprise and individuals are the entrepreneurs.

There is a growing body of literature suggesting that entrepreneurship plays a significant part in regional development. Therefore, it is crucial for policy makers to recognize the factors affecting entrepreneurial activity. The role of entrepreneurship and its importance are considered as important factors for growth, even in periods of economic crisis (Sarri and Trixopoulou, 2012; Zikou et al, 2011). According to Bates (1990) and Dolinsky et al. (1993) the initial entry to entrepreneurship is increased with the increasing level of educational attainment.

Timmons (1994) defines entrepreneurship as creation and value building from something that almost does not exist. Someone creates and follows the opportunity independently by the sources that he or she has (Schaper and Volery, 2007; Hisrich et al, 2006).

Venkataraman (1997) supports that search of entrepreneurship aims to understand how the opportunities have been discovered and from whom and with what consequences, while Carton et al. (1998), define entrepreneurship as the opportunity for creation of an organization followed by the desire of value creation of participants whereas, entrepreneurs are the individuals that identify the opportunity, find the appropriate resources and create the organization.

Rural Policy Research Institute (RUPRI)[4] defines entrepreneurship as the processes through which entrepreneurs create enterprises. According to David Audretsch and Max Keilbach (2004), entrepreneurship is crucial in driving the process of selecting innovations, hence in creating diversity of knowledge, which operates as a mechanism facilitating the spill over of knowledge across individuals. Mark Casson (2005), also defines entrepreneurship as the key to the growth and survival of firms in a volatile environment, because entrepreneurial judgment is necessary for success in making complex decisions under uncertainty. Additionally, Minniti and Levesque (2008), support that entrepreneurship matters for individuals, organizations and countries. Together with other social and management sciences, economics help to understand how individuals make decisions, create and grow organizations and what the intended and unintended consequences of these actions are (Zikou et al, 2011).

Definitions about social entrepreneurship and social entrepreneurs differ from entrepreneurship mainly in terms of the priorities in the mission and the objectives of the firms as presented in the following table where we have summarized definitions from the related bibliography (Table 1 & 2).

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[4] RUPRI is a joint venture of Iowa State University, University of Nebraska, and University of Missouri (MU). It was established by Congress in 1990 to provide non-partisan, independent analysis and counsel to policymakers.

Table 1: Definitions of Social entrepreneurship

King and Roberts (1987)	Innovation and leadership.
Leadbeater (1997)	Expression of economic, educational, social and welfare activities engaged in different organizations.
Prabhu (1998)	Social change with mission to develop people.
Wallace (1999)	Establishment of social purpose enterprises that trade like any other commercial establishment but return the profits to a social organization.
Thompson et al. (2000)	Process of adding something new and different.
Dees (2001)	Social value creations, innovation and opportunity.
Weerawardena and Mort (2001)	Results in an organization achieving a sustainable competitive advantage in order to achieve its social mission.
Drayton (2002)	Change that will solve society's social problems.
Boschee and McClurg (2003)	Income earned to solve society's social problems.
Mort et al. (2003)	Creation of better social values for society.
Alvord et al. (2004)	Alleviation of social problems and catalysis of social transformation.
Austin et al. (2006)	Not-for-profit initiatives in search of alternative funding strategies.
Hartigan (2006)	Social transformation.
Korosec and Berman (2006)	Identifying and addressing important social issues in the society.
Mair and Martí (2006)	An expression of altruism.
Morfopoulos et al. (2006)	Realistic, affordable, profitable actions and benefits for society.
Ashoka Foundation	Provision of innovative solutions to solve society's social problems.
Schwab Foundation for Social Entrepreneurship	Innovation by finding a new product, service or approach to do things that are socially responsible.
Okpara and Halkias (2011)	Innovation, leadership, opportunity, profitability, value creation and social benefits.

Table 2: Definitions of Social entrepreneur

Young (1986)	Break new ground in his organizational role rather than engage in an ordinary decision-making.
Cornwall (1998)	Have social responsibility to improve their communities.
Prabhu (1998)	Provide innovative or excellent leadership in social enterprises.
Dees (2001)	Their primary purpose is to create more social value for their clients.
Thompson (2002)	Operate in the community and are more concerned with caring helping than making money.
Boschee and McClurg (2003)	Earning money while trying to implement a social aim.
Baker (2009)	Want to find something that feeds their soul.
Shoemaker (2009)	Have to appreciate profit only for what it is.
Okpara and Halkias (2011)	With his/her leadership and innovative capabilities find an opportunity to create a new product, a service or a new approach.

So, according to above definitions for social entrepreneurship and social entrepreneurs, we could say that social entrepreneurship is an expression of altruism as opposed to entrepreneurship, which is mainly related to innovation and creativity for profit creation. Social entrepreneurship is a not-for-profit initiative with realistic, affordable and profitable actions, benefits for society. In other words, it is a social transformation. Social entrepreneurs according to the bibliography, have as primary goal to earn money implementing social aim, helping society and mainly do things that feeds his/her soul.

Social entrepreneurship is closely related to "social economy". Social economy refers to private and public sector in which economic activities are initiated with social aims and objectives. Moreover, it refers to economic activities of enterprises, institutions, organizations whose ethics and objectives are summarized in the services provided by their members or the public good offered, always giving priority to the needs of the people. These actions are mainly cultural, environmental and generally actions for development and promotion of local products and provision of social services (Trixopoulou and Magoulios, 2012).

Social economy evolves within the market and economy, relates to the principle of democratic organization promoting social cohesion. Furthermore, the bodies of social economy create jobs according to the principles of social solidarity (integration of people labor market), while in many cases provide social services. Social economy is active in the fields of social inclusion, local development, sustainable development and development of democratic structures (Trixopoulou and Magoulios, 2012).

It is important to underline, that according to the *Luxembourg summit for employment*, the development of entrepreneurship is one of the four pillars of European strategy for employment. Specially, in this pillar is stated the necessity of the Member States to promote the employment in the social economy at local level. The aim is not only jobs' creation but also fostering social cohesion. Indeed, the social economy enterprises are looking for the balance between resources and social cohesion (Kriatsioti, 2010).

However, in the Greek institutional framework there is no recognition of social entrepreneurship and social economy, and consequently all these forms that combine entrepreneurship with public

good are not present. The only institutional form of social enterprise in Greece is the Ltd Social Cooperatives (Trixopoulou and Magoulios, 2012).

4. AN INTERNATIONAL MAPPING

Non for profits and non-governmental organizations and individuals play an important role to promote, fund, solve and inform social entrepreneurs around the world. A huge number of universities and colleges create programs on educating and training social entrepreneurs.
It is known that the majority of European countries have taken many innovative steps on the field of social entrepreneurship (Trixopoulou and Magoulios, 2012). This indicates the importance and the necessity of a worldwide society with social and innovative enterprises ensuring the justice and solidarity between entrepreneurs.

According to Schwab Foundation for Social Entrepreneurship[5], there are 38 social entrepreneurship organizations in Europe in different fields impacting different geographical areas. The most popular fields are education, health, enterprise development, children and youth, rural development, environment, financial inclusion, labor conditions and unemployment, technology, women while the less popular are the biodiversity, migration, human rights, consumer awareness and many others as we can see in the following Diagram (Diagram 1).

More specifically, in the United Kingston, there are social enterprises in the sector of biological products, environment protection, services aiming to the fight of unemployment and social exclusion. Moreover, in 2002 seven nonprofit organizations established the foundation for social entrepreneurs in order to provide with cash awards and practical support including training, and many networking opportunities in order to help the community projects. In Netherland, there are developmental companies oriented towards environment protection and citizens' quality of life. In Sweden, there are social cooperatives in the area of adult education, entertainment, culture and personal services for people with disabilities. In Finland, there are workers' cooperatives aiming in the provision of training and social services, reinforce the volunteerism sense and help the excluded groups that they can be incorporated again in the society and labor market. In Austria, social economy is present through the offering of social services mainly for children home caring. In Ireland, agricultural associations and cooperatives for people with psychosocial problems create many partners, such as NGO's, social enterprises, credit unions and local development agencies. In Luxembourg, the situation is similar. Many organizations have been established aiming to integrate women and long-term unemployed people into the labor market mainly in the fields of culture, work integration, agriculture and environment. In Germany, initiatives for employment integration and job creation have been developed as a consequence of unemployment. Their goal is the activation of social capital and the reduction of unemployment through educational programs and temporary employment. In France, there are many initiatives for employment integration economical and social, while, in Belgium there are initiatives such as the «enterprises for social purpose» as imposed by the law in 1995. In addition the aim of these newly established enterprises is the integration of unemployed people into the labour market providing employment contracts (Kriatsioti, 2010).
Moreover, in different places in the world there are organizations such as Ashoka, the Schwab Foundation for Social Entrepreneurship, the Canadian Social Entrepreneurship Foundation, the Skoll Foundation focusing on training, informing, advising and helping social entrepreneurs and entrepreneurship in general.

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[5] The Schwab Foundation for Social, Entrepreneurship is a not-for-profit, independent organization founded in 1998 with the purpose to advance social entrepreneurship and foster social entrepreneurs' innovation and progress. This Foundation is under the supervision of the Swiss Federal Government and it is based in Cologny, Geneva (Switzerland).

Diagram 1: Fields of Social entrepreneurial activities globally
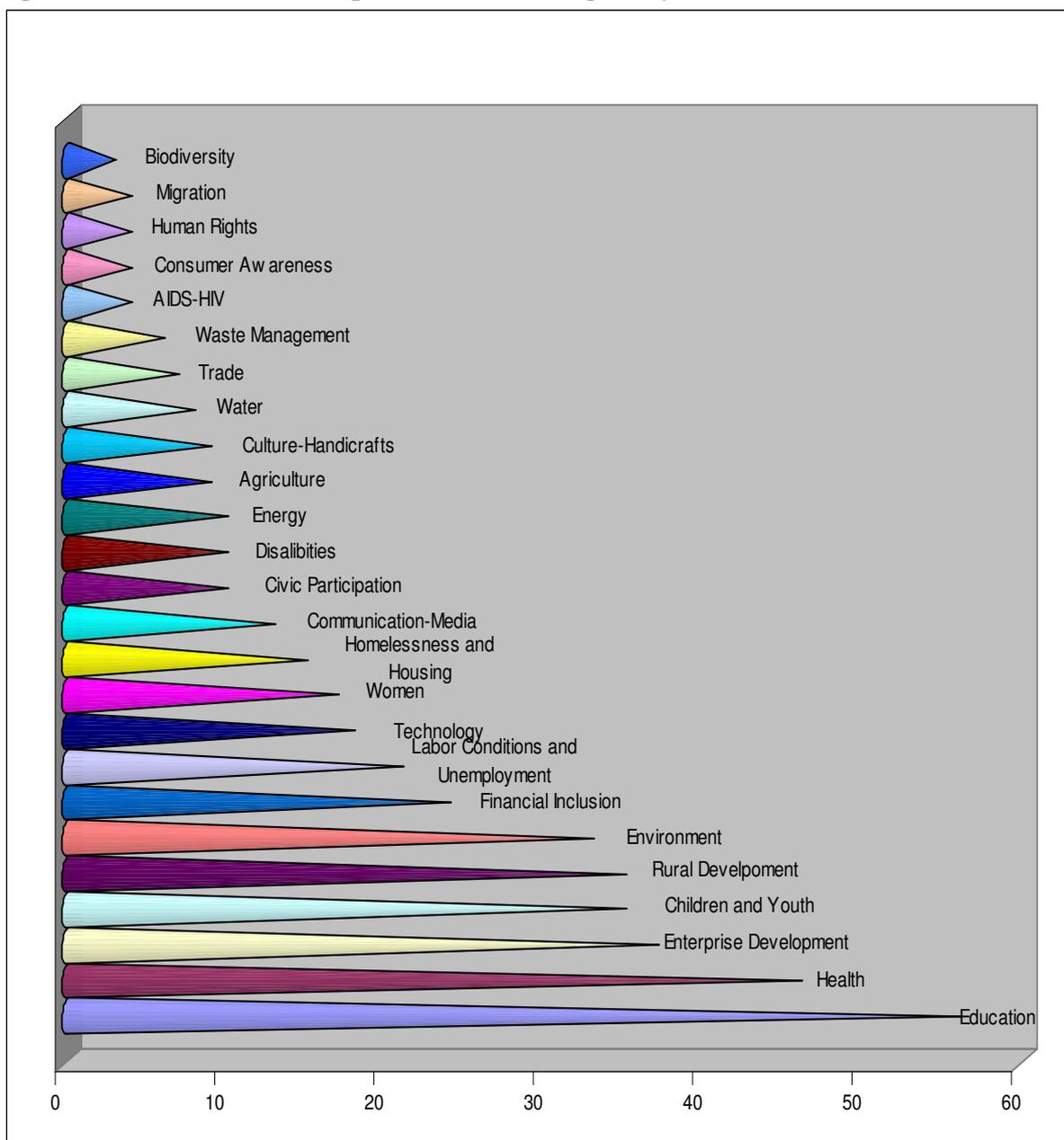
Source: Schwab Foundation for Social Entrepreneurship, 2012

Below, in table 3 the distribution of four general categories of social enterprises for 18 countries is presented. The social initiatives are divided into 4 main categories according to 3 different characteristics of social enterprises.

These characteristics are:

- The dominance of social/environmental purposes
- The greater reliance on income that comes from work, comparatively with the total revenues of organization and
- Innovation

The four categories of social entrepreneurial initiatives are:

- *Typical NGO's*, a form of employing Social entrepreneurship in terms of top priority, is social/environmental purposes and not for profit.

- *Non-profit social entrepreneurship* has high levels of social/environmental priorities, not for profit combined with innovation.
- *Hybrid social entrepreneurship* which is mainly concerned with social/environmental purposes and any related profits are not distributed to the shareholders but are rather reinvested in the company and,
- *Profit social entrepreneurship*, exercised by firm in a form similar to corporate social (Ioannidis et al, 2010).

As we can see in the table 3, the majority of ventures are related to non-profit and hybrid social entrepreneurship and Greece is a very good example.

Table 3: Types of Social entrepreneurship by state (%), 2009

	Typical NGO's (Category 1)	Non-profit (Category 2)	Hybrid (Category 3)	Profit (Category 4)	Social enter. Profit oriented	Other
Belgium	13	25	28	10	19	6
Finland	7	19	43	16	9	6
France	5	17	33	21	17	6
Germany	19	17	29	14	22	0
Greece	8	48	24	3	13	4
Hong Kong	0	18	24	12	41	6
Iceland	5	34	44	5	6	6
Israel	7	36	25	13	13	6
Italy	13	25	25	22	11	3
Korea	0	40	0	0	40	20
Netherlands	13	25	44	10	7	1
Norway	3	38	32	12	15	0
Slovenia	12	28	34	14	12	1
Spain	11	36	22	8	20	4
Switzerland	3	17	20	17	31	12
Un.Arabic Emirates	6	30	32	13	13	7
United Kingdom	1	14	21	23	37	5
USA	8	35	26	11	13	6

Source: Ioannidis et al, 2010

According to the data of Global Entrepreneurship Monitor (GEM), the social entrepreneurial activity in 2009 for 49 countries shows that the percentage of population involved in social activities varies around the world. The percentages vary from 0.2% in Saudi Arabia to 7.6% in Argentina, with an average of 2.8% for all the countries in the above table.

Moreover, about the 10% of European business are social and employ 11 million employees. The 10% of jobs that were created in recent years in the European Union are related to activities in the field of social economy, while social economy represents the 5.9% of total employment and the 6.7% of salaried employment (Trixopoulou and Magoulios, 2012).

However, there seems to be a lack of related regulatory legislation. In the early 1990, the only Member State with special legislation on social enterprises was Italy. Belgium introduced a relevant law in 1995, followed by France, Portugal, Finland and Lithuania, while in Germany laws related to social enterprises was introduced later on (Kriatsioti, 2010).

5. THE ROLE OF SOCIAL ENTREPRENEURSHIP IN THE ECONOMY

Economy is not an independent kingdom that limits its impact on society. It is integral to society. For this reason economy needs to be informed in order to serve society more broadly. It is supported that the importance and necessity of social innovators lays not only in their impact on goods and services but also in their role to broader social transformation (Schwab Foundation for Social Entrepreneurship, 2012).
In East and Central Europe, the main aim of economic transition was the institutionalization of market economy. It is known that social entrepreneurship offers innovative solutions especially for poverty and unemployment and it makes social entrepreneurship the most exciting field of public service (Schwab Foundation for Social Entrepreneurship, 2008).
Moreover, countries that are based on innovation have higher GDP and the presence of social entrepreneurship is more frequent. This could be explain, because in these countries, in which GDP is high, people have more money, their quality of life is better and can become more sensible to other people and their problems as, they do not have to face with so significant problems and difficulties, as other people have (Ioannidis et al, 2010).
Furthermore, it is remarkable the view of European Union member states, that the development of social economy sector stimulates entrepreneurial spirit and creation of suitable conditions of employment for people with difficulties in access in the labor market.

This positive atmosphere, strengthen from the view of President Barak Obama, who supports that social entrepreneurship have to be based on characteristics such as, low cost of skilled labor, less expensive supplies, tax benefits, new tools as design templates, blogs, social networks that make easier the entrance to business and the feeling that you are the boss and you have freedom and flexibility into your work (Putten and Green, 2011).
Furthermore it is being supported that social entrepreneurs serve as models of success, particularly in unstable environments and they are needed when we call for ways to tackle the economic, social and environmental challenges (Schwab Foundation for Social Entrepreneurship, 2012; Leadbeater, 1997). In addition, social enterprises have been identified vital for the development and the innovative approach to social problems (Shaw and Carter, 2004). The positive effect of social entrepreneurship on a country's economy may be illustrated through the example of Scotland and United Kingdom. In Scotland the voluntary sector covers the largest part of social economy and it accounted for 4% of the GDP in 1998. Moreover, the Scottish Council for Voluntary Organisations (SCVO), estimates that the voluntary sector employs the equivalent of 49,000 full-time jobs, supported by 300,000 volunteers and has as turnover 1.8 billion £ annually. Similarly, according to Inner City 100 Index, that gives evidence of growth for social enterprises in the United Kingdom, entrepreneurial abilities in social issues have significant and direct contribution to economic and social prosperity. Especially, between 1996 and 2000, these 100 enterprises created 3,541 jobs and the average turnover grew to 274% (Shaw and Carter, 2004).

6. THE CASE OF GREECE

It is known that, in Greece the activities of social economy are not highly developed and any relevant recent efforts, encountered lack of adequate institutional and financial framework (Trixopoulou and Magoulios, 2012).

Greece has the smallest percentage of social enterprises among the 15-member states of European Union, in relation to the other EU members. Employment in social economy represents only the 1.8% of total employment and 2.9% of wage labour.

Furthermore, according to the data cited in the explanatory memorandum of Law for «Social economy and Social entrepreneurship» (2011), it is estimated that in Greece there are:

Table 4: Forms of Social entrepreneurship in Greece

8.400 cooperatives with 950.000 members.
1.500 – 2.000 voluntary organizations → 200-300 are active and 115-200 of them are active in the field of environment and ecology.
joint organizations and associations recognized as a charitable, civil non-profit companies have as aim integration of excluded groups into labor market.
71 women's cooperatives with 1.903 members.
68 co-treatment units in psychiatric hospitals.
15 social cooperatives with limited liability aim on the integration of mentally ill people in labor market and on the production of goods and services.

However, social entrepreneurship in Greece increasingly gains ground, as in the most European member states, particularly among young, more educated and higher economic status social groups, because it can relieve needs of local society that state is unable to do and private sector think that is unprofitable (Trixopoulou and Magoulios, 2012).

According to data of GEM (2010), 1 to 3 social enterprises support that they import a new product to market, while the same percentage believes that is introducing an innovative way of production. Furthermore, 48% of social entrepreneurs in Greece think that they act in one niche market or customers. This positive situation is confirmed through the present of social enterprises, which have (geographical) impact in Greece. These social enterprises are two. The Acta Vista of Castagnède Arnaud and the Unlad Kabayan Migrant Services Foundation of Villalba Maria A (Schwab Foundation for Social Entrepreneurship, 2012).

The first organization was founded in 2002 in France. Its geographic areas of impact are Cyprus, France, Greece, Italy and Malta and the model is hybrid non-profit. Its aim is the restoration of heritage sites through training and professional inclusion of people otherwise they are excluding from the society. The second organization, was established in 1996, in Philippines. Its geographic area of impact is Philippines, Hong Kong, Singapore, South Korea, Taiwan, Netherlands, US and Greece and its model is the same. This organization cooperates with migrants who work abroad, providing education in economic issues and training in business skills.

In the following table (Table 5), the percentages of social enterprise by gender for 2009 are presented. Greece, is in the seventh position with rates 1.9% to total population in the early stages of a business when, the first state has 4.3%. Moreover, the percentage of men reaches to 1.3% and the women to 0.6%.

Furthermore, in Greece, the majority of social entrepreneurs have not developed any other form of entrepreneurial activity beyond their social enterprise. At the same time, 7 out of 10 "socially active" individuals combine social entrepreneurship with working for an employer at the same time. Local enterprises with social or environmental characteristics differ in terms of the staff employed.

Table 5: Social enterprise action by gender for 18-64 years, intensive innovation, 2009 (%)

States	Social entrepreneurship in early stage (%)		
	Total	Men	Women
Belgium	1.7	1.2	0.5
Finland	2.6	1.4	1.2
France	2.2	1.5	0.7
Germany	0.7	0.5	0.2
Greece	**1.9**	**1.3**	**0.6**
Hong Kong	0.5	0.3	0.2
Iceland	3.9	1.8	2.1
Israel	1.8	1	0.9
Italy	1.2	0.7	0.5
Korea	0.7	0.6	0.2
Netherlands	0.9	0.6	0.3
Norway	0.9	0.7	0.2
Slovenia	2	1.3	0.7
Spain	0.5	0.3	0.2
Switzerland	2.7	1.8	0.9
Un. Arabic Emirates	4.3	3.9	0.4
United Kingdom	2.1	1.3	0.8
USA	3.9	2.1	1.9

Source: Ioannidis et al, 2010

The 4.6% states that in total they employ 500 people (including volunteers) and this could point towards the direction of local branches of international social enterprises such as, Greenpeace, WWF. However, half of them employ a maximum of 8 people (Ioannidis et al, 2010).

As we have mentioned before, the fact that in the Greek institutional framework there is no recognition of social entrepreneurship and social economy is remarkable.

6. EPILOGUE

The continuous increase of poverty and the social exclusion that exacerbate due to economic crisis have resulted in a rapid increase of unemployment and additional difficulties in employment access of socially vulnerable groups. These causes made the role of social entrepreneurship necessary and important for society recovery and equal opportunities for all.

Social entrepreneurship is also, extremely important due to the relation of the growing needs of the market and the increased competition (Mort et al, 2002) while it is notable that nowadays, universities, philanthropic foundations and many other organizations support social entrepreneurship and its social initiative.

Social entrepreneurship as we have said before is not a new concept. However, in these difficult economic circumstances, it is a solution to get out of the crisis and generally to defeat the negative situation as illustrated through well-known examples-spread in different parts of the world. Through social entrepreneurship employment problems, the marginalization of excluded groups from market, the problem of social cohesion that becomes bigger day to day and many other environmental problems can be resolved to a certain point.

Reduction of unemployment, increase of GDP, job and wealth creation, social cohesion, creation of social basis with democratic organization are some of the most important aims and results of this form of venture.

European member countries and social employers have understood the significant role that social entrepreneurship plays and try to help the local and global economy and population through the use of this vehicle.

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MARKETING POLICIES THROUGH THE INTERNET: THE CASE OF SKIING CENTERS IN GREECE

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Abstract: *Lately, Internet constitutes a major tool for transactions in every aspect and supports innovative marketing policies. Broadband Internet has become "the key to success" for businesses, as it offers various advantages and benefits through Internet marketing (e-marketing) policies. In Greece, mountainous areas are usually covered with snow during winter months; so, skiing centers have become an important asset for winter tourism. The Internet evolution and the development of network infrastructure enhance marketing policies for winter tourism activities. This paper studies the use of marketing policies in Greek skiing centers through the Internet, such as promotional activities, website interactivity, accommodation & entertainment information, online weather forecast, guest book, etc Therefore, the paper aims to optimize and evaluate skiing centers in Greece, qualitatively and quantitatively according to e-marketing policies used as criteria, based on the multicriteria method of PROMETHEE II and further to classify them in groups. Finally we identify and describe the optimum group of skiing centers to be used as a model with enhanced customer communication services.*

Keywords: marketing, marketing policy, internet, skiing centers, multicriteria analysis, Promethee II.

JEL Classification Codes: C65, M31, O32

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1. INTRODUCTION

Information and Communication Technologies (ICTs) offer huge opportunities for all to progress and benefit and new prospects exist for economic growth, better service delivery, social and cultural advances (Andreopoulou et al, 2007). ICTs in every human activity have achieved a great acceptance during the last decades, mostly due to the easy release of essential social services. ICTs, the so-called new technologies, can effectively support in the improvement of rendered services to the public, eliminate bureaucracy and increase productivity (Andreopoulou, 2011). ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data (Tutor2u, 2011). Companies and individuals have become more familiar to do business as and when they like; therefore, conventional companies in every area of interest are increasingly searching for internet-enabling their products and services (Krueger & Swatman, 2004). New ICTs have disrupted many traditional forms of community but enabled the emergence of new ones (Connery & Hasan, 2005). It has to be stressed that people usually move between not using ICT and using ICT during their life depending on the variations between technologies (Selwyn, 2003). The complexities and challenges involved in IT implementation are well documented but IT application processes are difficult to understand and to manage, with several barriers that hinder the achievement of the intended organizational impacts (Nilsson, 2007). In business, ICT is often categorized into two broad type of product (Tutor2u, 2011): *the traditional computer-based technologies*, things somebody can typically do on a personal computer or using computers at home or at work and *the more recent, and fast-growing range of digital communication technologies*, which allow people and organizations to communicate and share information digitally through the internet.

Enterprises aim at their participation in the internet society since the benefits are high and electronic systems are ready to serve clients all over the world 24 hours per day 7 days a week (Andreopoulou, 2008) when the cost keeps decreasing. The internet has become a major resource in modern business and many businesses are creating a web presence (Calitz & Scheepers, 2002) and enable transactions in an e-environment, sharing information with whoever interested (Tsekouropoulos et al, 2008). They use the internet not only for retrieving information and marketing but also for the enhancement of their communication with business-partners and clients (Tsekouropoulos et al, 2005). Enterprises find in the internet a mean to reduce customer-service costs, to further sustain customer relationships, to extend marketing messages personally and thus enable mass customization (Johnson, 2002). E-marketing can be defined as the use of Internet and related digital technologies to achieve marketing objectives and support the modern marketing concept (Eszes, 2010).

E-marketing gives business of any size access to the mass market at an affordable price and allows truly personalized marketing. Specific benefits of e-marketing include (Department of Trade and Industry of United Kingdom, 2004; The National B2B Centre, 2011):
- *Global reach*. A website allows finding new markets and trading globally for only a small investment.
- *Lower cost*. A properly planned and effectively targeted e-marketing campaign can reach the right customers at a much lower cost than traditional marketing methods.
- *Trackable, measurable results*. Web-analytics and other online metric tools make it easier to establish how effective the campaign has been. Detailed information can be obtained about how customers use the website or respond to the advertising.
- *24-Hour marketing*. With a website the customers can find out about the products even if the office is closed.
- *Shorter lead times*. If there is a website or an e-mail template, the reaction to events will be more quickly, giving a much more contemporary feel.

- *A level playing field.* With a well-designed website, the enterprise could look like professional and credible as the larger competitors.
- *Personalization.* If the customer database is linked to the website, then whenever someone visits the site, can be greeted with targeted offers. DataBase Management System (DBMS) is a software package that allows data to be effectively stored, retrieved and manipulated (Andreopoulou et al, 2011).
- *Openness.* By having a social media presence and managing it carefully, the entrepreneur can built customer loyalty and create a reputation for being easy to engage with.
- *Social currency.* E-marketing lets the entrepreneur create engaging campaigns using different types of rich media. On the internet these campaigns can gain social currency- being passed from user to user and becoming viral.
- *Improved conversion rates.* If the enterprise has a website, then the customers are only ever a few clicks away from completing a purchase. Unlike other media which require people to get up and make o phone call, or go to a shop, e-marketing can be seamless and immediate.

Together, all of these aspects of e-marketing have the potential to add up to more sales.

One of the biggest forces changing business is the Internet (Mc-Graw Hill Higher Education, 2008). Internet is certainly a means of communication, which can convey messages to public, but there is a particularity as a means of advertising since it also acts as a means of interaction (Vlachopoulou, 2007). E-marketing policies enable people to communicate in new ways, provide new business models, permit businesses to operate more efficiently and take advantage of the new global network economy. E-business expresses the continuous improvement of the services of an enterprise through digital technology. It also includes all the marketing policies, which take place in an enterprise (Tsekouropoulos, 2009) such as: e-marketing, Business intelligence, Customer Relationship Management, Supply chain Management, Enterprise Resource Planning. Marketing through corporate websites must be innovative, add value, and provide useful information.

It is not only usability that affects a website's appeal and number of visits. Studies have identified a number of specific site policies (actual or perceived) that impact website appeal. Among these policies are (Blake et al, 2005):

- *Security.* Secure communications are an important prerequisite of e-commerce transactions and are required for confidential electronic communications (Masoud et al., 2009).
- *Vividness and its correlated riskiness*
- *Approval by referrers* (like family or friends)
- *Policies organization*
- *Quality of content.* Perceived quality and flow state are major determinants of satisfaction and positive emoticons (Cruz et al., 2010).
- *Price*
- *Recognisability and/or desirability of brand*
- *Time delay/download speed*

Similarly, the promotional content is the most highly valued website feature (Burgess et al, 2005). Portals can extend their reach to potential customers worldwide (Chan & Chung, 2002), through the use of the Internet as a marketing tool. Moreover, if the company primarily has other companies as customers, it is more likely to use an e-business framework (Nurmilaakso, 2009).

1.1 Skiing centers in the internet

E-services should be used as an important component in achieving sustainable development in mountainous areas and should be encouraged (EU, 2007). Greece is a mountainous country with intense contrasts and so the snow coverage in mountainous areas is a

usual phenomenon. The above climate circumstances provide to people the ability to make winter sports such as ice skating, snowboarding, ski mountaineering. The ability for ice skating that offers the snow, contributes to the evolution of the mountainous tourism (Pavlidis, 2007). Tourism is one of the main industries in Greece that stimulates economic development in industries from hospitality, transport, construction and retail, to small businesses such as restaurants, bars and tourism agents (Tsiotsou, 2006).

The sport of skiing is expected to display great development in the future in Greece because more and more locals prefer to spend their weekends or winter vacations in skiing centers located in the country, and so become the strongest tool for its evolution. The sport industry is unique because it appeals to a variety of people for many different reasons. The core benefits to customers who purchase sport products include entertainment, health, and achievement (Mullin et al, 2000). Already by 1970, the development of the Hellenic Ice Sports, with the ski-resort construction, was rapid (Pavlidis, 2007). Some places have become very popular and attract tourists in high number during winter especially at weekends. Because winter tourism is a very important sector in Greece and skiing centers are rapidly growing, it is imperative to study and understand the positive impact of Information and Communication Technology (ICT) and e-business solutions on the optimization of the business processes.

E-business in skiing centers focuses on e-marketing for a destination (critical business function), marketplace for e-commerce (critical business function) and electronic ticketing (in implementation stage) (E-business w@tch, 2005)[1]. Critical policies are called the business functions that are most sensitive to downtime, fulfill legal or financial obligations to maintain cash flow, play a key role in maintaining the business market share/reputation and safeguard an irreplaceable asset (Prepare my business, 2010). E-business implementation makes it easier for the individual enterprise to reach customers and vice versa for the customer to understand the possibilities provided by the area (E-business w@tch, 2003). The success stems from a well-designed website that relies on the right online tools to reach and resonate with a global customer base (Payne, 2008). The goal is to provide an attractive, interactive and integrated service that meets the requirements and expectations of various user groups. This goal includes ensuring access to current information without delays and, further, controlling access to information and implementing a charging mechanism (Ernie & Norrie, 1997). Skiing center corporate websites and the marketing policies included, play an important role in the successful development of skiing centers.

This paper studies the use of marketing policies in Greek skiing centers through the Internet, such as promotional activities, website interactivity, accommodation and entertainment information, online weather forecast, guest book, etc Therefore, the paper aims to optimize and evaluate skiing centers in Greece, qualitatively and quantitatively according to e-marketing policies used as criteria, based on the multicriteria method of PROMETHEE II and further to classify them in groups. Finally we identify and describe the optimum group of skiing centers to be used as a model with enhanced customer communication policies.

2. METHODOLOGY AND VALIDATION

The websites of skiing centers that were used for the research were collected from the Greek Internet with the use of proper search engines.

Initially, qualitative analysis was performed in order to examine the type of common e-marketing criteria, representing marketing policies, found in these skiing centers websites; then a quantitative analysis was carried out, in order to examine the presence or absence of these criteria/characteristics.

Various e-marketing policies were introduced in the retrieved websites and 5 different criteria were identified and introduced in each website. Each e-marketing policy constitutes a criteria/characteristic and it is finally attributed in a variable Z_i (Table 1). Additionally, a 2-dimentional table was developed and was used in order to examine the existence of the criteria and evaluate the policies in the websites. For that purpose the values were attributed to variables Z_1 to Z_5, respectively.

Table 1. Variables attributed to e-marketing criteria, representing marketing policies

Variable	E-marketing policies to become criteria achieved by the ski centers website
Z_1	Capacity of information provision to online visitors (weather forecast, accommodation, entertainment)
Z_2	Interactivity and Online communication
Z_3	Provision of advertising other companies through the website
Z_4	Autonomous presence within the internet
Z_5	Promotional activities, sales discount e.t.c.

Variable Z_1 refers to the capacity of information provision to the online visitors. The website provides up-to-date detailed local and theme based information, destination maps, generation of weather forecast warnings, enhanced navigational experience through web camera, snow cover maps and statistical summaries of snow. This is a comfortable marketing policy for the guest and a potential source of additional revenues for the skiing centers (E-business w@tch, 2005)[1].

Variable Z_2 represents the interactivity marketing policy where the skiing center website provides online reservation functionalities, online booking system for accommodations, packages offered online, online rental of sports equipment, e-ticketing service and e-mail marketing. Also, the potential customers are able to chat with the employees of the skiing center for further information or with each other in a virtual community (social media). Social media is playing a major role in accelerating the decision cycle of consumers who patronize skiing centers (Levins, 2009). The type of communication can be either synchronous or asynchronous. In synchronous communications all participants are online at the same time (e.g. IRC), while asynchronous communications occurs with time constraints (e.g. e-mail) (Wikipedia, 2011). E-mail marketing is allowing the ski center to create the equivalent of impulse shopping at the check-out stand. The addition of direct mail to the marketing mix seems like a natural, given the resorts' mostly young and technology savvy audience. The resort solidifies its relationships by taking guests to a conversational, personal level online. The e-mail system adds the benefit of real-time information to subscribers, boosting their usage and frequency (D'Antonio, 2000).

Variable Z_3 stands for the policy of advertisement for other local enterprises, such as restaurants, hotels, ski-equipment rentals, travel agency, etc.

The marketing policy of autonomous internet presence (Z_4) might include: access to the internet, e-mail address, website, listings in directories/search engines and other communication tools (Media College, 2010). The skiing centers that don't have an autonomous internet presence can be found through websites with general information about the skiing centers in Greece.

Finally, variable Z_5 represents the marketing policy to enable sales discounts such as online exclusive coupons. It also represents the existence of other promotional activities. Sending last-minute e-mail invitations will contribute to the dramatic increase in the frequency of guest visits to the resort.

Whenever a criterion was achieved for a website the value 1 was attributed to the respective variable aiming at justifying the relative policy within the evaluation of the website. The findings were further analysed the achievement of each e-marketing policy/criteria in the sample websites.

The total amount of e-marketing criteria achieved in each website was also studied. For each skiing centre website, the total number of achieved criteria is attributed to a new variable, named t. Variable t presents the sum of e-marketing policies achieved, therefore takes a value between 1 and 5.

Then, the total ranking of the websites was studied. The method that was used for the total ranking was the multicriteria analysis named PROMETHEE II. That method applies a linear form of service in this particular case, using the e-marketing policies of the websites identified as criteria. The PROMETHEE II method is part of the outranking relations theory (Brans & Vincke, 1985; Brans et al, 1986; Siskos & Zopounidis, 1987; Brans et al, 1987; Brans et al, 1998; Zopounidis, 2001). The PROMETHEE II method for multi criteria analysis uses six types of general criteria with the corresponding criteria services, in order to determine the superiority (outranking) between two alternative solutions.

In this specific case, the aim was to determine the superiority of one website over another website. The general level test criterion was selected for this project, corresponding to a criterion service, which has an interval region for the determination of superiority (Brans & Vincke, 1985; Roy, 1991). The skiing centers websites were examined in pairs as alternative solutions (k_i, k_j) with i=1,2,…………23 and j=1,2………23 as to their supremacy, i.e. which of the two websites excelled based on the criteria used.

The service H(d), which was used to express superiority, was the following (1):

$$P(v_i, v_j), \text{outranking of website } v_i, \text{ if } d \geq 0$$

$$H(d) = \left\{ \right.$$

$$P(v_j, v_i), \text{outranking of website } v_j, \text{ if } d < 0$$

Where $P(v_i, v_j)$, $P(v_j, v_i)$ are the services of preference, and d is the difference between the values of each pair of websites (v_i, v_j), for the criterion under evaluation. When we examined which of the two websites (v_i, v_j) is superior, the superiority service H(d) was applied according to the value d (positive or negative) for each criterion.

In this study, variables $Z_1,\ldots,Z_5$ were used, which are the criteria described in Table 1. The variables are unambiguous and are marked with either 0 or 1. For this reason, the service used is of linear form $\rho=1$.

The multicriteria indicator of preference $\Pi(v_i, v_j)$ which is a weighted mean of the preference services $P(v_i, v_j)$ with weights w_i, express the superiority of website v_i against website v_j after all the criteria have been tested.

The values of $\Pi(v_i, v_j)$ are calculated using the following equation (Brans et al, 1986):

$$\Pi(v_i, v_j) = \frac{\sum_{t=1}^{k} W_t \cdot P_t(v_i, v_j)}{\sum_{t=1}^{k} W_t} \quad (2)$$

We receive 50 scenarios of weights (one scenario of weights w_i corresponds to all criteria) and for each scenario of weights we receive 10 scenarios on the standard deviation for every criterion. In total, we have 500 different net flow values for each website of skiing centers. We use the average of these 500 values as the final net flow value for each skiing center website.

K is defined as the number of criteria and $P_t(v_i, v_j)$ the preference services for the k criteria. The multicriteria preference indicator $\Pi(v_i, v_j)$ takes values between 0 and 1. When two websites

(v_i, v_j) are compared, one is assigned two flow values: outgoing flow and incoming flow. The outgoing flow is calculated by the following equation (Baourakis et al, 2001):

$$\Phi^+\left(v_i\right) = \sum_{v_j \in A} \Pi\left(v_i, v_j\right) \quad (3)$$

In both cases, A is defined as the number of alternative solutions for websites v_j. The outgoing flow expresses the total superiority of website v_i against all other websites v_j for all criteria. The incoming flow is determined by the following equation (Baourakis et al, 2001):

$$\Phi^-\left(v_i\right) = \sum_{v_j \in A} \Pi\left(v_i, v_j\right) \quad (4)$$

The incoming flow expresses the total superiority of all other websites v_i against website v_j for all criteria. The net flow for each website v_i is estimated by the following formula:

$$\Phi\left(v_i\right) = \Phi^+\left(v_i\right) - \Phi^-\left(v_i\right) \quad (5)$$

The net flow is the final number that is used for the comparison between the websites in order to obtain the ranking. The ten values (scenarios) range between 0.25s and 2.5s with step 0.25s, where s is the standard deviation of all differences d for each criterion. In total, we take 500 net flow values for each website and find the website's average value. Each website with a higher net flow is considered superior in the final ranking. The total ranking of SC is presented in Table 2.

The PROMETHEE II methodology was selected in order to perform evaluation and ranking tasks, for the following reasons: a) because the estimated relation of superiority (of one website over another) is less sensitive in small changes and that offers an easier analysis and discussion of the results (Zopounidis, 2001), b) the use of the superiority relation in the PROMETHEE method is applied when the alternative solutions (websites) have to be ranked from the best to the worst (Zopounidis, 2001), and c) the procedure of assessing and ranking complicated cases of websites is proper for the application of the above methodology in the sense that it is closer to reality (Zopounidis, 2001). In fact, there exist two types of the PROMETHEE methodology, the PROMETHEE I that ranks partially and also, the PROMETHEE II, which performs a full and complete ranking, based on all of the input data. The PROMETHEE II methodology was applied in this project because an overall ranking was required. It is also important that our variables concern qualitative data and PROMETHEE II methodology can successfully deal with that prerequisite (Koutroumanidis et.al, 2004). Moreover, regarding the application of PROMETTHEE II in the field of agriculture, food and environment, there are recent research papers in Greece where the method is successfully applied (Koutroumanidis, et.al, 2002; Polyzos & Arabatzis, 2006, Tsekouropoulos et.al., 2011).

The PROMETHEE methodology fits better to the targets of the project even if it is compared to other well-established methods. For example the ELECTRE methods are methods of superiority that use the rule of majority inside a relation of superiority. The target in the ELECTRE is to determine an alternative website, which is relatively "good", based on a majority of criteria without been too "bad" according to the rest of the criteria (Koutroumanidis et al, 2004). Nevertheless this is not the objective of this project where the objective is the total evaluation of the websites. The AHP method is also well-known and broadly applied (Koutroumanidis, et al, 2004). But, according to Alphonce (1997) the ability of the AHP to analyze different decision factors without the need for a common numerate, other than the decision maker's assessments, makes it one of the favorable multicriteria decision support tools when dealing with complex socioeconomic problems in developing countries.

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3. RESULTS AND DISCUSSION

Research on the Internet resulted in the retrieve of 23 websites concerning skiing centers in Greece that have an internet presence. The achievement of each one of the 5 e-marketing policies representing criteria, expressed in variables Z_1 to Z_5 is presented in Figure 1.
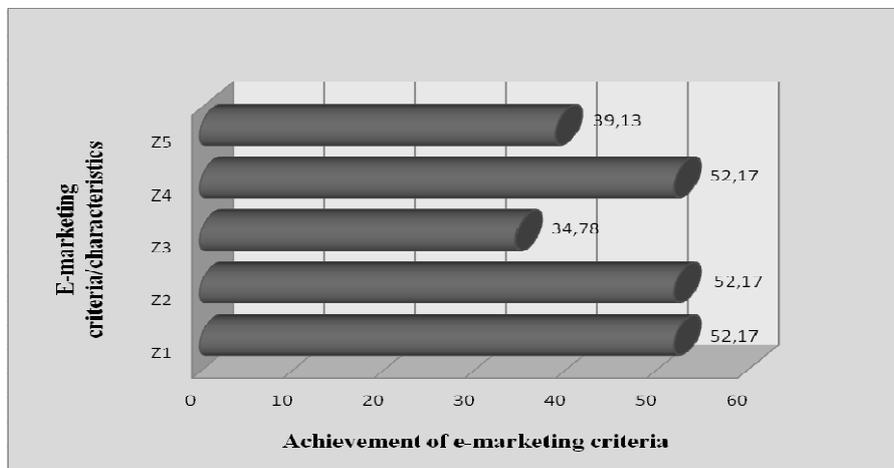
Figure 1. Achievement of e-marketing criteria about the skiing centers

Regarding the capacity of rich information provision to the online visitors of the skiing centers websites (Z_1) as a marketing policy, 52.17% of them fulfill that feature. Variable Z_2 that represents the e-marketing policy where the customers are able to interact and also chat for further information is found in 52.17% of the skiing centers. Third person advertisement through the website (Z_3) is provided in 34.78% of the skiing centers. In half of the skiing centers websites, there is an autonomous presence within the internet (Z_4). Finally, almost 40% of the skiing centers offer promotional activities such as sales discounts (Z_5).

Regarding variable t, that is the sum of e-marketing criteria accomplished by skiing centers websites, they are shown in Figure 2. Only seven skiing centers of the sample accomplish all five e-marketing criteria (t=5), 3 skiing centers accomplish four e-marketing criteria (t=4) and 2 skiing centers of the sample three (t=3). Finally none of the skiing centers accomplish two or one e-marketing criteria (t=2, t=1) while 11 skiing centers none criteria (t=0). 44% of the websites achieve between 4 and 5 e-marketing criteria. These skiing centres websites are really in a primal stage of e-commerce adoption that ensures that the website is accessible in many ways by all users that want to visit and interact with the interface in order to simply gain information.

Figure 2. Sum of the e-marketing criteria accomplished by skiing centers

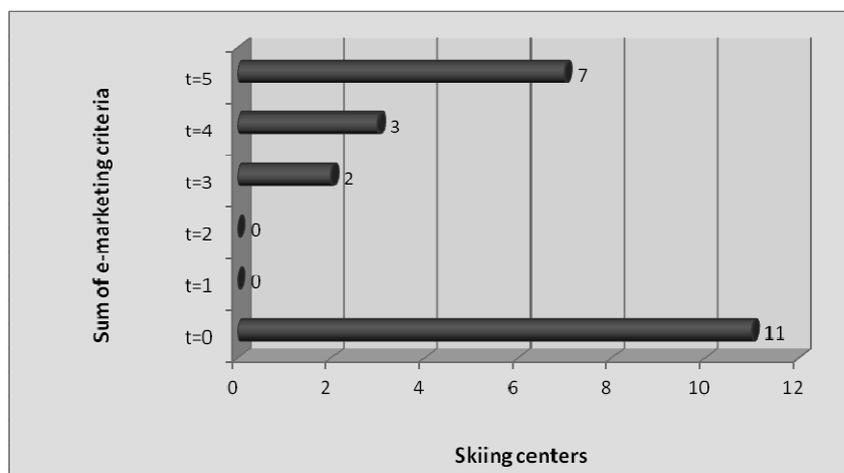## 3.1 Ranking of skiing centers websites using the multicriteria method PROMETHEE II

Based on the application of the multicriteria analysis method PROMETHEE II, the total ranking of the skiing centers websites is presented in Table 2. In the same Table it is also presented the total net flow that is estimated for each website and it is used for the comparison between the websites in order to obtain the total ranking, as each website with a higher net flow is considered superior in ranking.

Table 2. Total ranking of skiing centers, total net flows and classification in groups

Total ranking	Skiing centers	Net flow φ	Group classification
1	Falakro	+6,25	Group-1
2	Lailias	+6,25	Group-1
3	Paggaio	+5,2	Group-1
4	Kaimaktsalan	+5,04	Group-1
5	Vigla Pissoderi	+4,95	Group-1
6	Vitsi	+4,72	Group-1
7	Seli	+4,59	Group-1
8	Chriso Elafi	+4,4	Group-1
9	3-5 Pigadia	+3,65	Group-2
10	Elatochori	+2,75	Group-2
11	Vasilitsa	+2,22	Group-3
12	Olympus	+1,17	Group-3
13	Karakoli	-4.06	Group-4
14	Profitis Ilias	-4,39	Group-4
15	Pertouli	-4,49	Group-4
16	Agrafa	-4,49	Group-4
17	Pelion	-4,49	Group-4
18	Karpenisi	-4,49	Group-4
19	Parnassos (Fterolakkas)	-4,49	Group-4
20	Parnassos (Kellaria)	-4,65	Group-4
21	Parnassos (Gerondovrachos)	-5,05	Group-4
22	Kalavrita	-5,31	Group-4
23	Mainalo	-5,31	Group-4

According to these findings, the values estimated for total net flows φ present a great spectrum of values between +6,25 to -5,31 and that indicates a great difference concerning "superiority" between the first and the last case in the ranking of the enterprises' websites. Moreover, the total flows φ of the skiing centers websites, as derive from the application of PROMETHEE II method, allow a further grouping of the cases and to generate 4 groups as following:

− Group-1: In that group are classified 8 websites of skiing centers that achieve 5 criteria, with high positive total flows (6,25 to 4,4) that present a "high superiority" against the rest of the cases.

- Group-2: Classified in that group are 2 websites of skiing centers that achieve 4 criteria and medium positive total flows (3,65 to 2,75) that present a "good superiority" against the rest of the cases.
- Group-3: In that group are classified 2 websites of skiing centers that achieve 3 criteria and low positive total flows (2,22 to 1,17) that present an "average lag" against the rest of the cases.
- Group-4: Classified in that group are 11 websites of skiing centers that don't achieve any of the criteria, with low negative total flows (-4,06 to -5,31) that present a "high lag" against the rest of the cases.

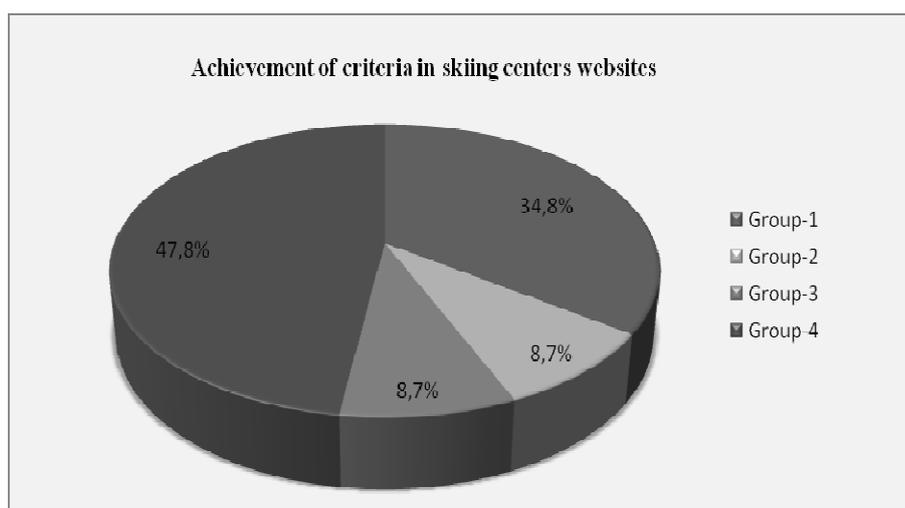In Figure 3 is presented the classification of e-shop websites in groups.

Figure 3. Achievement of criteria

4. CONCLUSIONS

Nowadays, the Internet, apart from a channel to collect information of all kind, it has also become a means of marketing and promotion and consequently, an effective business tool (Tsekouropoulos et al, 2011). The Internet has clearly transformed the lives of millions while disrupting and displacing the business models of traditional media channels around the globe (Fleishman Hillard, 2010). In the internet age, it is beneficial to set up a web platform for e-business enhancing e-marketing (E-business w@tch, 2005)[1].

E-marketing policies of skiing centers in Greece are still in an initial adoption level and the findings confirm that. The most developed and well organized skiing centers are these in Northern Greece which are located near popular tourist destinations. Their privileged location seems to be the motivation for adopting a competitive e-marketing strategy. The majority of the skiing centers don't achieve any of the e-marketing policies and the internet functions. In Group-4 are classified 47,8% of the cases, which implies that these websites present a high lag and occupy a negative net total flow and they represent almost half of the skiing centers. These skiing centers should definitely evolve and include innovative e-marketing policies to improve their websites. The websites of skiing centers in group-1 should be their model in that process. The 34,8% of the skiing centers is classified in Group-1 and they appear to have a high superiority against the rest of the cases. Most of them achieve all of the criteria listed and so, they profit from the advantages of e-marketing. Additionally, skiing centers classified in groups 2 and 3 should further evolve and use as benchmark skiing centers in group-1. Many online

policies have proven successful, but there is also need for further improvement (E-business w@tch, 2005)[1].

It would allow businesses in the skiing community to increase their efficiency and their profits in new ways, like easily marketing their services on the internet. The potential benefits of a well-funded and properly integrated internet focused marketing strategy are enormous for the tourism industry (E-business w@tch, 2005)[2]. The strongest business impact of the new IT system is the cost saving (E-business w@tch, 2005)[3].

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THEORETICAL CONSIDERATIONS OF PRICE STABILITY AS PART OF THE FINANCIAL STABILITY

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Abstract: Currently there are many authors who consider that the only objective of the central bank should be the price stability and between the respective objective and financial stability there is incompatibility. As far we are concerned, we subscribe the idea that between price stability and financial stability there are complementarities. And a strong argument in the favour of this position is also historical. Actually, many older or newer facts show that banking crises were often caused by the unfavourable macroeconomic situation coupled with the bad macroeconomic policies carried by the authorities. But, a monetary policy that aims the price stability reduces this risk. The truth is that the central banks have a series of tools that allow them to act for achieving both the objective of price stability, and that of the stability of financial sector. Although the financial stability is not, usually, an explicit objective for the modern central bank, the systematic financial instability can cancel their performances in achieving their major final objective: the price stability. Being that, because of the need that it creates to inject additional liquidity into the banking system, a crisis of the banking sector may directly affect the monetary stability. Here the mentioned complementarities arise between price stability and financial stability, although the achievement of the first does not necessarily involve the assurance of the last.

Key words: financial stability, price stability, evaluation, monetary policy.

JEL Classification Codes: E52, E58, E59

1. INTRODUCTION

In the literature there is a unanimous opinion that price stability refers to the aggregate prices evolution, that measured by various indices (CPI in the case of Romania) to be relatively constant or with small changes. Price stability is achieved when the money keeps its value over time and their speed of erosion is insignificant.

Price stability is in practical terms a challenge achieved in many countries, but this does not guarantee the financial stability.

Thus, as a result of economic globalization in the context of open economies, appears a potential conflict between price stability and financial stability.

The European Union requirements towards the financial crisis management assess the existence of a cooperation agreement between all the supervisory national authorities of the financial system, the central bank and ministry of finance.

To implement these requirements, 31 of July 2007 were sign the *Cooperation agreement in the field of financial stability and financial crisis management,* under which was established the National Committee for Financial Stability.

From the perspective of a central bank, the financial stability is defined as a situation where banking crises does not occur and that there is a certain stability of asset prices and interest rates.

But, the massive capital inflows worsen vulnerabilities and macroeconomic imbalances in host economies, having the potential to generate crises with adverse effects both price stability and also financial stability.

Currently, financial stability is essential for the effectiveness of monetary policy and therefore for the assurance of price stability.

2. THE COMPLEMENTARITY BETWEEN FINANCIAL STABILITY AND PRICE STABILITY

Price stability is achieved when the money keeps its value over time and their speed of erosion is insignificant. The concept of monetary stability overlaps over that of price stability.

The former president of the Federal Reserve System of the USA (central bank of USA), Paul Valcker defined price stability through the inflation anticipations: a useful definition of reasonable price stability, seems to be the situation where the anticipations of the general increase (or decrease) of the prices on a considerable period of time do not have a materially influence on the economic and financial behaviour (1983). From this perspective, the price stability involves the development of the decision documents in the economy within the assumption that the nominal and real values of the economic indicators are practically on the same horizon on which those decisions are adopted.

Alan Greenspan the president of the S.R.F. USA till 2006 (Alan Greenspan is an American economist, former president of the Federal Reserve. Greenspan led the American central bank in the period 1987 - 2006 and is considered the architect of the financial crisis during 2007 – 2009, because led legislative changes that strongly reduced the banking regulation, giving a green light to the big financial groups, and maintaining the interests at very low levels to encourage lending to large scale), stated that price stability is the situation where the public expected change in the average level of prices is sufficiently small and gradual that not actually be taken into account in final decisions and of the households not affecting their economic behaviour, and Allen Blinder, asserted that the price stability is the state in which ordinary citizens stop to think about inflation and worry about it.

Ben Bernanke, with the occasion of the hearings in American Senate as the president of the American central bank Federal Reserve FED (2005) showed that the price stability is the headstone of a strong economic growth.

In Europe personalities of the European Central Bank offered similar definitions. Thus Otman Issing argued that price stability refers to a stabile level of aggregate prices or to a low inflation level, and in the vision of Lucas Papademas, the price stability is defined as the state of the economy in which the general price level is stable in the strict sense or the inflation rate is so low and stable, that the considerations relating to the global dimension of the transactions cease to be a relevant factor for the economic decisions.

Although from the above mentioned there are no major discrepancies on the concept definition, of price stability, nowadays there are debates on the optimum modality to measure the level of prices increase (base inflation versus total inflation), to compose the price index (basket composition) and to identify appropriate time horizon.

For example the European Central Bank (ECB) explicitly defines price stability as inflation annual rate calculated on the harmonized index of consumer prices from the euro area under (almost) 2%, to be maintained over the medium term

There are also opponents of this definition (ex. Alan Greenspan) who consider that the prices indexes available now have an insufficient accuracy for this purpose and argues that, consequently, the inflation targets are an unnecessary and false prediction.

Unlike the price stability, for the financial stability there is not internationally a definition general accepted and there are no clear responsibilities in the statutes of the central banks around the world, (Isărescu, 2006).

In a broad sense, the financial stability can be considered the situation in which the financial system is capable to place monetary fund effectively and to resist to shocks without damaging the real economy.

From the perspective of a central bank, financial stability is defined as the situation where banking crises does not occur and that there is a certain stability of prices of all assets and the interest rate.

Generalizing, (Cernea, 2008) the financial stability is that state in which economic mechanism of prices build, of evaluation, and financial risks management, work well enough to contribute to the increase of economic performances.

More precisely „the financial stability" is the state in which is the financial system when is able to perform three essential functions:

- intertemporal intermediation (dynamic), efficient and without shocks of financial resources (transfer of funds from those who have to those who use them).
- evaluation, anticipation and correct management of the risks involved in this process.
- shock absorption that are suffered and/or are generated by the real or/and financial economy.

In terms of the above mentioned, the financial stability is a feature of the financial system that reflects its capacity to determine an efficient allocation – in space and time of the resources and to evaluate, divide and manage the financial risks through own self correctional mechanism.

In the area of the financial stability concept are financial markets, financial institutions and their infrastructure. As a result of the multiple existent links between these elements, any imbalance in the functioning of either of these links relieves the functioning of all the others.
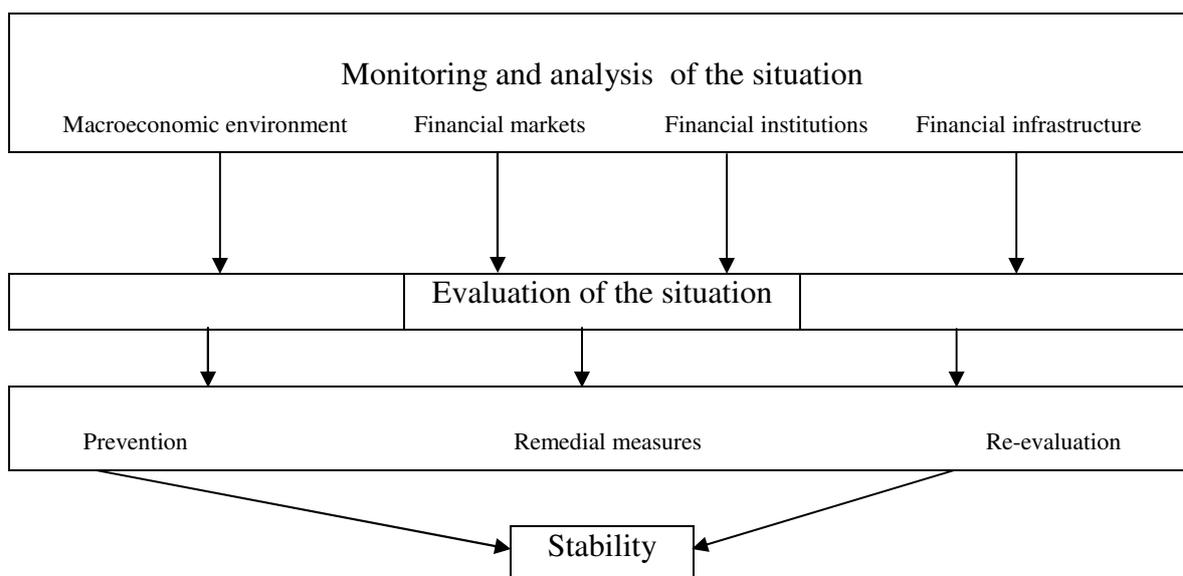

Figure 1. Evaluation of financial stability degree (*Schinasi, 2005, p. 106*)

The vulnerabilities that may arise and could endanger the financial stability are related to the three basic components of the financial system shown above: the market, institutions, and

infrastructure (endogenous components) respective the macroeconomic environment (exogenous source of vulnerabilities) in the context in which function this financial system (Dăianu and Isărescu, 2003).
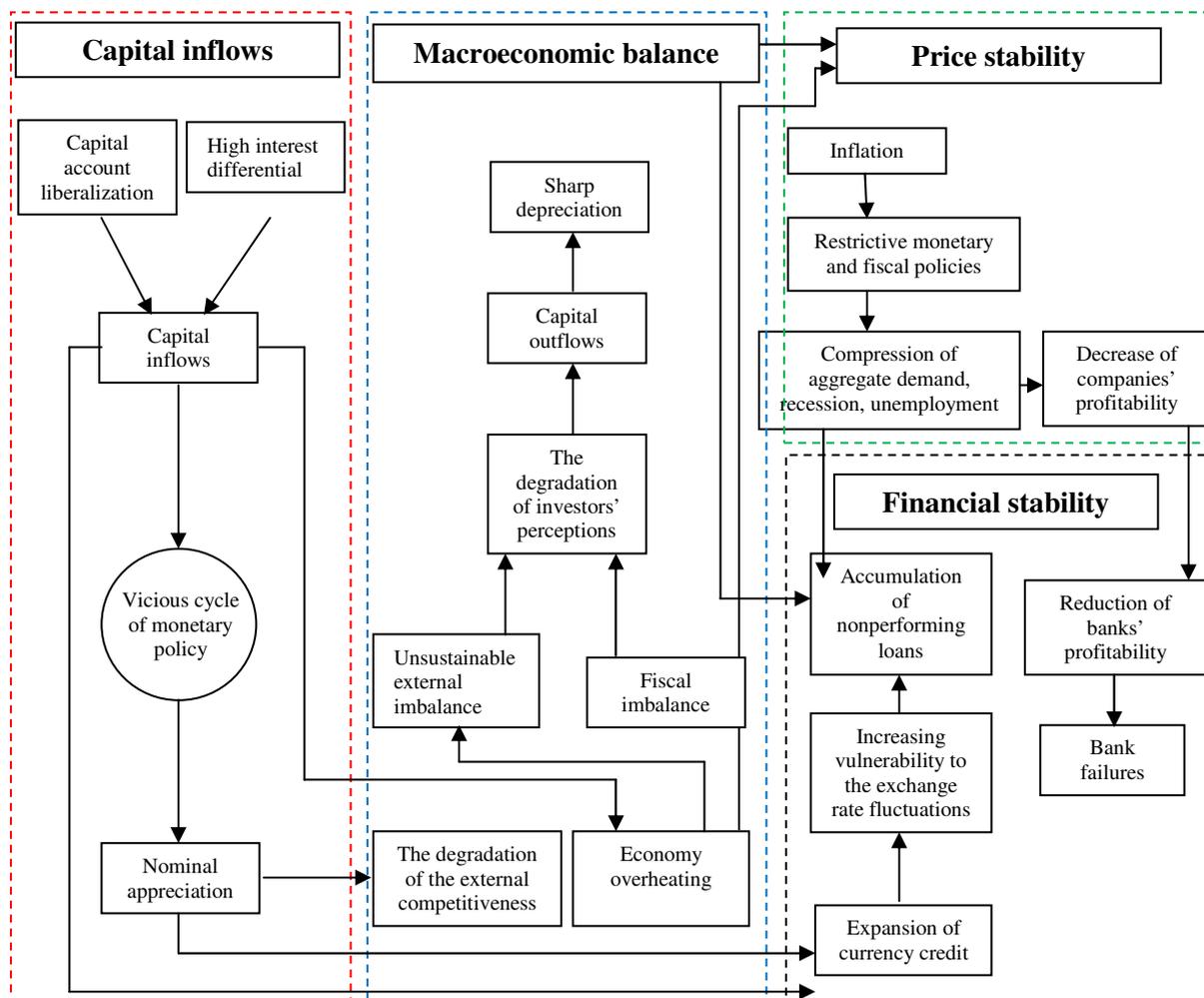
Figure 2. Vulnerabilities for the price stability and financial stability induced by the capital inflows

To the extent that the existing vulnerabilities are eliminated through appropriate mechanisms or measures, the risks is facing the financial system spread and endanger the whole socio-economic system. In other words, from risks they become systemic risks.

The financial stability when is touched by the above presented causes and vulnerabilities can create that systematic risk that has an adverse influence on the entire real economy: population and companies.

But, in the contemporary economy with the inflation stabilization at low levels, the literature emphasizes the creation of a new economic environment, which requires extremely careful reassessment of the report between price stability and financial stability.

The relation price stability - financial stability is based on the widespread belief that both kind of stability are supporting and are mutually reinforcing long term.

Some economists (Burda and Wyplosz, 2002) believe that price stability is a sufficient condition for ensuring financial stability while others just see it as a necessary condition.

Conventional approach is concordantly with the inflation treating as a principal factor of the financial instability.

Historical experience seems to confirm this approach, most acute episodes of financial instability and banking crises taking place in periods of high inflation or hyperinflation, (Dinu and Socol, 2006).

In the opposite direction, a low inflation proved not to be a sufficient guarantee to ensure a lasting financial stability.

In this respect, the experience of Asian countries in the years 1997-1998 is particularly relevant for the complexity of this report. Before the financial crisis there were accumulated substantial imbalances in the respective economies given that prices continue to maintain at a high level of stability.

In this context it is the question if the Central Bank can simultaneously provide the instruments that dispose the price stability and financial stability and how to can be reconciled the two types of stability.

An optimum construction between financial stability and prices stability can be the adequate objective of the Central Bank with the condition that the responsibilities to be properly distributed and the instruments availed to the institution to allow the following in a consistent manner of this objective

3. CONCLUSIONS

Currently, the international economic and financial environment became tenser, being marked by the sovereign debts crisis and by the concerns about the quality of balance sheets and the financing of some institutions and banking systems, especially in the euro area, and representing the source of some growing challenges inclusive for the financial stability in Romania.

The risks of the financial system stability generated by the domestic macroeconomic evolutions continued to ameliorate on the whole, especially in what concern the economic growth, fiscal consolidation and development of the current account deficit.

After two years of decline, economic growth returned in 2011 in the positive territory (+ 2,5 percent), and the prognosis show the continuation of the GDP growth in the period 2012-2013 at a higher rate than the EU average. The most important challenges to the domestic economic and financial evolutions concern: maintaining an appropriate rhythm of the real convergence process, while continuing the reduction process of external and fiscal imbalances and the implementation of the structural reforms, along with the improving of the level of European funds absorption (representing only 9.2 percent of the total at the end of June 2012); strengthening the efforts to resume the economic growth on a sustainable basis, inclusive through measures oriented on achieving the objectives assumed in the Europe 2020 program.

But, despite the positive developments recorded at the macroeconomic level, the banking sector in Romania recorded a deterioration of financial results in 2011, these being placed in the negative territory, as in the previous year.

This trend continued also in the first part of 2012.

Thus, the achievement of the objectives concerning the financial and price stability, in the context of fulfilling the commitments stipulated in the agreements with EU and IMF and other international financial institutions is essential for the assurance of a durable economic growth (Haldane and Vasileios, 2012)

Under these conditions, the financial crisis brought the problem of the conflict between the maintenance of the financial stability and preservation of the price stability. The two objectives that the central banks try to reconcile enter, sometimes, in conflict, because measures that are adopted, for example, to maintain price stability may have negative implications for financial stability. On the other hand, the economic theory shows that price stability is a condition for financial stability (Goodhart, 2010).

Thus, the National Bank of Romania earlier put the question of the conflict between financial stability and the prices stability and this dilemma do not appear only in periods of financial crisis, but also when there is a notable process of disinflation.

Romania is not currently confronting with the conflict between financial stability and price stability, but this problem remains valid on theoretic level.

But, there is a potential conflict between the fact that the instrument of the central bank (the key interest rate) while supporting the disinflation may not favour the financial stability and vice versa.

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PERSISTENCE IN PERFORMANCE FOR MUTUAL FUNDS IN PERIODS OF CRISIS

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Abstract: The study investigates the persistence in performance for a sample of South European funds, domiciled in Portugal, Italy, Greece and Spain. Employing the Sharpe ratio, risk adjusted performance is measured in an attempt to judge the influence of the 2008 crisis and the current debt crisis on funds' inclination to persist in their previous returns record. Examination period extends from January 2004 to December 2010 incorporating stages of relative stability in the stock and bond markets while also capturing the early stages of the eurozone crisis. We categorize funds as winners and losers in consecutive 6-monthly periods, thus being able to judge persistence in the short run, while our results suggest that the identification of winners and losers could enable us to investigate the possibility to gain investment advantages through this finding. Overall results suggest evidence of persistent results, whether positive or negative, both during the 2008 crisis and the current debt crisis, leading us to deduce that factors leading to performance persistence are not affected by market changes, since medium to long term persistence bypasses any temporary market mischief. This finding could be of use for fund managers aiming at establishing viable investment strategies, at their epicenter being the exploitation of such clues, suggesting persistence in returns. A fund of funds manager employing funds both in equities and fixed income could potentially choose to invest exclusively or more heavily in the winners of previous periods and avoid accordingly poor performers, thus achieving higher returns on average. For this purpose simple investment strategies are employed where we test the outcome of an investment strategy that would invest on fixed income securities by choosing those funds that were winners in the distribution of returns in the previous 6-monthly period, while disinvesting from poor performers and funds switching sides in performance persistence measurement in consecutive periods. The eurozone crisis makes more apparent the need to make use of such anomalies which could result in over performance relative to market benchmarks or reduction in overall losses during periods of unrest in fixed income markets like the one currently faced. Bond funds could also prove a valuable "helping hand" to portfolio managers when equity markets suffer, but that is not guaranteed by all funds under the same market conditions.

Keywords: Performance Persistence, Fixed Income, Sharpe Ratio

JEL Classification Codes: G15, G11, G23

1. INTRODUCTION

The current study attempts to shed light on the continuous performance phenomena in the organized funds market. Academic literature has continuously attempted to explore such phenomena with research focusing on individual fund markets. In this context we use both a sample of equity and fixed income mutual funds to explore persistence in the returns patterns of funds in the southern European region. We specifically focus on the pre and post period of the 2008 financial crisis, that did not leave unaffected south European markets, while we manage to capture early effects of the current debt crisis that affects south European economies, especially Greece.

The concept of performance analysis is of major importance to finance professionals, while it has been covered extensively in its various aspects through time. Studies focus their attention on exploring how mutual funds perform relative to market benchmarks, that being the basis for performance persistence measurement. In attempting to reach robust conclusions, researchers have been surveying whether the potential abnormal returns of the funds are due to fund managers' security selection ability, that allows them to detect and acquire possibly undervalued securities, or whether they have some informational advantages over their counterparts that allow them to effectively handle their portfolio of assets, thus depicting market timing capabilities. Market timing models measure whether the mutual fund managers have any capability of forecasting the relative market upward or downward movements so as to adjust their portfolio weightings accordingly.

By shedding light on the performance persistence element of fixed income funds we attempt to deduct conclusions towards the appropriateness of the fund management strategies followed. This is of increased importance given that the competition between mutual fund managers is growing especially in bond funds where returns are usually marginal thus creating ground for intense rivalry. Furthermore, the debt crisis has made evident the fact that fixed income portfolios are not zero risk. In fact since 2010 Greek bond mutual funds have been sustaining continuous losses, while the same applies for other country funds in the south european area, namely, following sequence in terms of magnitude of losses, Portugal, Spain and Italy. These market changes render even more interesting the analysis of performance persistence in mutual funds investing in fixed income since investors and fund managers have to come up with ways to reduce losses or possibly achieve returns in the midst of an unstable environment with recession looming ahead. Furthermore, however long the debt crisis will last, diversified funds will still be holding debt, as obliged by law directives, more or less applying in the same way to all four sample countries, and looking for equity placements that will do the trick to overall portfolio returns. More specifically in Greece, with government borrowing scheduled to resume possibly in 2015, investors might herd into Greek bonds lured by increased returns that are insured by the high credit default spreads, which will remain way above average in the coming years, even after government borrowing resumes. Therefore the understanding of performance persistence is of particular interest to investors, institutional or non, in order to be able to evaluate the quality of the investment management service offered to them by fund managers. Lastly it always poses interest to academics and regulatory authorities who wish to scrutinize various investment aspects of managed funds market.

2. MARKET OVERVIEW AND RECENT LITERATURE

Mutual funds captured the public attention in the last three decades when mutual fund investment hit record highs and investors experienced unprecedented returns, while having professional management for their large or small available money. Research on mutual funds has

been extensive, performance persistence capturing a significant percentage in the last fifteen years. During the period under scrutiny in this study though, investor demand for mutual fund units as measured by the net new cash flow declined. The global financial crisis played a major role in that. Globally the industry had a net cash outflow of $297 billion in 2010. In the same period most developed European countries experienced slower economic growth and weak stock markets. Emerging markets overcame the stock prices slump, achieving returns on a par with the United States. Funds under management worldwide in 2010, as expressed by the total net assets of mutual funds, amounted to $24.7 trillion, by far the biggest proportion being held by the American mutual fund market with 48% and second biggest market being the European one with 32% ($7.9 trillion). Bond and stock mutual funds in the south European region constitute about 20% of total funds managed by organized funds in the eurozone area.

International literature has attempted to identify the driving forces that lead performance. The US fund management industry has been the focus for the majority of this research. Brown et al. (1992) found that mutual funds that perform poorly relative to their peers are more likely to cease to exist, while Hendricks et al. (1993) after examining a sample of US open-end no-load equity funds in the period of 1974-1988, found a "hot hands" phenomenon in short run risk adjusted fund returns. However, they found no evidence of persistence for longer periods. Elton et al. (1996), using a sample of equity funds designed to control for the survivorship bias effect, reconfirms the performance persistence phenomenon identified in Hendricks et al. (1993). In Carhart (1997), a new measure of performance which adjusts for risk factors is introduced. Persistence in performance is explained by the one year momentum effect of Jegadeesh and Titman (1993) and overall results do not support the existence of skilled mutual fund managers. Droms and Walker (2001) conclude that no evidence of persistence is found over long-horizons, while Bollen and Busse (2005) find positive short-term performance persistence elements, but this does not apply for longer investment horizons. Our considered fund management strategy is influenced by their empirically confirmed view that investors may generate superior returns through a naïve buy-and-hold strategy by becoming performance seekers. In studies shedding their focus on European funds we find among others, Blake and Timmermann (1998), recording significant persistence among small equity funds in UK using contingency tables, Fletcher and Forbes (2002), who find no persistence in performance using the Carhart measure, while Cuthbertson et al. (2005) support the view that underperforming managers exhibit poor skills rather than bad luck. Otten and Bams (2002) performed a cross-country analysis of mutual funds in Europe, representing the major study attempting to tackle the performance persistence issue on a multiple country sample. Countries included were France, Italy, UK, Germany and the Netherlands for the period 1991-1998, recording weak performance persistence, with the exemption of the UK.

On performance persistence in more recent years we find Huij and Verbeek (2007), Polwitoon and Tawatnuntachai (2008), Du et al. (2009), Fortin and Michelson (2010), Chen et al. (2010). More specifically Polwitoon and Tawatnuntachai (2008) analyzing a sample of US based emerging markets bond funds, conclude that performance persistence is found, while interestingly highlight the diversification opportunities offered by emerging market funds developing a prelude to our own rationale in this paper. The tendency towards acknowledging clear elements of performance persistence is also supported in Du et al. (2009), who investigated corporate bond portfolios, that exhibited negative performance persistence before expenses in consecutive time periods. Contradicting though our rationale, they only offer an alternative to avoiding below average returns funds, at least in the short run, whereas superior returns funds manipulation is not proven viable.

The Greek related literature is not negligible. Babalos et al. (2007), uses non-parametric tests, finds evidence for persistence for separate periods, but not significant for the overall

sample period extending till 2004. Sporadic and short-lived performance persistence is also found in Drakos and Zachouris (2007) who examined Greek equity mutual funds from 1995 until 2003, indicating also an underlying self-correcting mechanism in the organized funds market. No superior market timing ability on the part of fund managers is found in Thanou (2008) while in Giamouridis and Sakelariou (2008) in the context of attempting to capture both stock picking and market timing ability, the analysis shows that mutual fund performance does not persist over short-term horizons.

The preceding analysis proves that there is still ample space for research attempting to clear the picture as to whether patterns of persistence can be identified, either in the short or long run, positive and negative likewise and if this information can be used in constructing continuously rebalanced portfolios.

3. METHODOLOGY AND DATA

The present research builds upon the apparently interesting element of persistent performance while focusing on the four markets of the troubled southern Europe. In this context selected data of fixed income funds, domiciled in four markets, were used, namely, Italy, Spain, Portugal and Greece, incorporating in their managed assets for the most part country of origin long and short term government debt. The examination period is seven years (January 2004-December 2010), the data used is weekly and the source databases were the local Institutional Investors Associations. The dataset almost equally contains data split into a bull and a bear market phase, thus covering different aspects of the economic cycle. As risk free rate we used the three–month Euribor rate for the period under question. Returns refer to the average weekly return achieved by the considered mutual funds measuring the change in the net asset value from period t-1 to period t. Income of any associated dividends is assumed to be reinvested thus incorporated in the fund NAV.

The data set has not been cared upon for the survivorship bias effect. That is our analysis ignored funds that ceased to exist somewhere in the beginning or middle of our examination period while the same applies for any other fund born after January 2004, for which no full data set is naturally available for the 7-year period. Prices quoted are net of expenses so we did not have to make any further adjustments to calculate returns before and after catering for fees charged by fund managers to unit holders.

Performance persistence measurement requires as the first step to measure performance using an acceptable methodology. In estimating the returns of a bond portfolio, in order to test for performance persistence on the second phase, various methodologies have been suggested. The traditional Jensen (1968) model still remains the basis for performance measurement given also further suggested extensions. Most studies employ variations of the traditional CAPM model and it still remains the basis for the estimations followed by many academics and market practitioners (indicatively see Christopherson et al. (1998), Becker et al. (1999) and Kothari and Warner (2001)).

The base for our own portfolio ranking approach involves the traditional Sharpe ratio, as developed initially by Sharpe (1966). The Sharpe ratio relates risk and returns as the basis for any investment decision and as a model requires no previous validation. This is partly a limitation of other popular calculating returns methodologies, such as the Jensen model, since they require the validation of the model with regard to the systematic risk involved. Representing the return of each portfolio above the risk free rate, based on the risk of the overall portfolio, the Sharpe ratio has some observed inefficiencies since during periods of extreme volatility returns might be over or under estimated. The performance measure debate is addressed in Eling (2008). It is found that the use of a large number of proposed Sharpe ratio modifications produced

almost identical, to the original Sharpe ratio, performance rankings. This finding is made even stronger in Eling and Faust (2010), where, after comparing a series of suggested measurement methods, they find identical ranking results using the original and some major suggested modifications (Israelsen, 2005).

The traditional Sharpe ratio is the following:

$$S_p = \frac{E_p - R_f}{\sigma_p} \qquad (3.1)$$

where S_p is the return of the portfolio based on the Sharpe ratio, E_p is the mean return of each portfolio, R_f is the mean return of the risk free portfolio and σ_p is the standard deviation of the returns of the examined portfolio.

The performance persistence hypothesis considers that mutual funds with an above average return in one period will also have an above average return in the next period and vice versa. The proposed statistical tests for performance persistence measurement attempt to identify to what extent fund performance during one period continues during the following period. The mechanism is as follows: Fund performance is measured for every 6-monthly period, the same measurement occurs for the next 6-monthly period, market average returns are calculated for each period and the fund is consequently considered to be a winner in the period in question, meaning having above average returns, and the same is performed for the latter part of the examination period. If the fund manages to surpass average returns in both 6-monthly periods then it's a case of a clear winner in both. Under the same rationale we identify losers in both periods. If funds tend to be winners or losers in consecutive periods, while statistical tests verifying the robustness of these results, we could judge performance persistence as being present in our data at least in the short run.

If the funds show persistence in performance, active fund selection based on past performance may be of interest to individual investors. On the other hand, if there is no sign of persistence, past information would have no value for investors. To investigate whether persistence in mutual fund performance is also present in our data set, we construct the winner and losers portfolios following the methodology described above, while the remaining funds go into two border portfolios (Winners-Losers and Losers-Winners). Therefore we have four types of categories for each six monthly period, winner funds (WW), loser funds (LL), winner-loser (WL) and loser-winner (LW). Following the construction of two way contingency tables, funds that achieve above average returns in two periods are characterized as winners, funds that underperform in consecutive periods are losers, while respectively we present bond funds that achieve above average returns in one period, but worse in the next as winners-losers and vice versa. These four equally weighted portfolios are then held for their 6-month period before we rebalance them again based on their returns over the next 6-monthly period. After completing this process we get a time series of returns for all four portfolios.

In determining performance persistence results are tested given the relevant statistical models. We utilize Kahn and Rudd (1995) as well as Brown and Goetzmann (1995) to determine, using relevant statistical measures, whether performance persistence holds. The described method is used extensively in the related literature including Agudo and Magallon (2005) and Ribeiro et al. (1999), studies that investigated the Southern European market.

More analytically:
a). The odds ratio (OR) by Brown και Goetzmann (1995):

$$OR = \frac{WW \times LL}{WL \times LW} \qquad (3.2)$$

where we calculate the winners times the losers ratio in consecutive periods relative to the winners-losers times the losers-winners.

The Z-test is then calculated upon the price derived from the below mentioned ratio:

$$Z = \frac{\ln(OR)}{\sigma_{\log(OR)}} \tag{3.3}$$

where

$$\sigma_{\log(OR)} = \sqrt{1/WW + 1/WL + 1/LW + 1/LL} \tag{3.4}$$

b). The chi-squared test (χ^2) by Kahn and Rudd (1995):

Considering that the probability of occurrence, of one out of the four scenarios is equal, the chi-squared test has as follows:

$$\chi^2 = \frac{(WW - N/4)^2}{N/4} + \frac{(WL - N/4)^2}{N/4} + \frac{(LW - N/4)^2}{N/4} + \frac{(LL - N/4)^2}{N/4} \tag{3.5}$$

where N is the total number of observations/portfolios.

The chi-squared is calculated in this respect and based upon its results, the likelihood of occurrence is calculated, as well as the ensuing performance persistence conclusion.

Based upon the preceding analysis investors and funds managers could distinguish consistently good and bad performers, being in this way able to make conjectures on the future returns pattern of individual portfolios. The essence of this analysis can be useful though to investors if we manage to see the inferences to real life portfolio construction and active management. Based on the work of Bialkowski and Otten (2011) we can regress excess the returns of the constructed portfolios relative to appropriate benchmarks for each of the four sample countries. Thus, we test separate regressions where as the dependent variable we use the weekly returns of our constructed portfolios of the funds that appear as being the best three winners-winners in consecutive periods. These constructed portfolios are continuously rebalanced to accommodate for the changing performers given the preceding results arising from the performance persistence analysis. By implementing the above mentioned alternative investment strategies, potential opportunities to exploit the performance persistence analysis results can be identified, in order to construct investment strategies that could lead to above average profits.

In this respect we test the following model:

$$P_{p,t} = \alpha_P + \beta_P P_{benchmark,t} + \varepsilon_P \tag{3.6}$$

where $P_{p,t}$ are the returns of our continuously rebalanced portfolio whereas $P_{benchmark,t}$ represents the benchmark returns for the same 6-monthly period examined. Results are run on ex ante basis for all periods but the first 6-monthly period of our sample (January 2004-June 2004), for which, due to the lack of data for the last quarter of 2003, we have not calculated abnormal returns. A positive alpha denotes above average returns for each of the four regressions run for each country included in our sample.

4. EMPIRICAL RESULTS

Our intention is to figure out whether performance is persistent in a sample of fixed income funds operating in the PIGS area. Having used the traditional Sharpe ratio as our ranking tool we rank all funds based on the past 6-monthly return according to the two following categories. In category one, that of winner funds, we include those with the highest examination

period returns relative to the median return for the whole country sample, while in category two, that of the loser funds, the ones with the lowest examination period returns relative to average returns, are included. Corresponding results are reported in Tables 1 to 4.

INSERT TABLES 1 TO 4

According to the results, at a six month horizon, for the seven –year period we find a positive spread of repeated winner funds. This means that for the surviving funds the documented persistence in performance is mainly driven by 'hot hands', that is positive performance persistence, even though 'cold hands' (negative performance persistence) as referred to in Hendricks et al. (1993) represents the second largest category in the observed results. This means that funds that underperform in one period are likely to be underperforming funds in the following period, but even stronger is the tendency for over performing funds to continue surpassing mean returns. In the case of Spain the WW funds are 704, while in Italy they were 445. For the same period, LL funds were 261 and 297 respectively. These figures might be indicative of positive performance persistence being stronger, but are still high when compared to funds turning from losers-winners and vice versa. When considering WL and LW funds, their correspondence is 1 to 7 in Spain and 1 to 3 in Italy, relative to WW funds. The described representation applies for Portugal likewise, even though in lesser extent, while in Greece performance persistence is still evident, but slightly stronger on the negative side. Positive performance persistence is also existent and second in importance.

Overall, the main finding that holds is that the fund sample shows evidence of persistence driven by 'hot hands'. The difference between the portfolios of winners over successive periods and those of the losers (LL) over two successive periods is not negligible. Summing up, at a 6 month horizon, for the whole sample period, we find a significantly positive spread of winners over losers with the exception of the Greek market, a fact that could be attributed to the crisis periods where some funds belonging to specific banking/financial groups could be sustaining larger losses than the average fund. Funds documented with persistence in performance are mainly driven by 'hot hands', rather than 'cold hands', indicating that funds that outperform mean returns in one period are most likely the ones to perform well in the next as well. Underperforming ones are also likely to continue doing so. This is important especially in light of the fact that we examine fixed income funds were prospective returns are in any case rather small. Investors should therefore avoid these funds. Fixed income funds are also considered of minimum or zero risk. The current financial crisis, striking primarily fixed income organized funds, shows how false this widespread notion could be. It should also be noted that outperformance relative to mean returns is asymmetrical. Some funds referred as winners in one period could have outperformed market returns relative to another, where this overperformance might be marginal. This affirmation does certainly not lessen the need for a fund of fund manager or individual large caliber investor to seek for the best performers. Reported results on performance persistence are statistically robust as confirmed by both the Brown and Goetzmann and the Kahn and Rudd tests performed for our data set as outlined in Table 5. The reported results depicted as averages of the per country reported results are statistically significant at the 5% significance level.

INSERT TABLE 5

Our data set does not address the survivorship bias issue, well documented in the literature, which should be considered in case of further in-depth analysis on the referred markets. Many non surviving funds have been removed from the lists of offered funds to investors because of

bad performance, but we should bear in mind that many others may have merged or taken up by other funds, while also we have those that were born after the initiation of our data set and may exist until today, which have also been removed from the present analysis. For example in the oligopolistic Greek market a number of mergers took place in the banking/financial system that influenced part of our sample, the mutual fund market having shrunk at least as far as the number of available funds is concerned. In this context many funds that existed for a particular period may not exist in the next, as a result of mergers with other funds (Dritsakis et al., 2006).

The data set spanning sever years and utilizing weekly data incorporates the pre 2008 crisis period, as well as the pre and part of the current debt crisis period that initiated towards the end of 2009. Unreported empirical data depict not significant difference in performance persistence measurement before and during the 2008 crisis. Initial data regarding the debt crisis show negative performance persistence becomes even stronger in 2009-2010 which could be attributed to the large exposure of some funds to Greek debt. Results for Portugal, Spain and Italy have only captured the initial phases of the ongoing crisis, thus definite conclusions on the impact of the debt crisis on performance persistence remains to be investigated by future research.

Practical inferences from academic scrutiny requires the application of derived findings to real life applicable problems. In this perspective, as outlined in Section 3, we test for the possibility to achieve above average returns when employing available funds to top performers as indicated by performance persistence testing. In achieving that, we use as benchmarks per country bond indices, to capture the possibility of ex ante excess returns arising from the best three winner funds in consecutive periods. Empirical results support our hypothesis that such a phenomenon could be verifiable. As shown in Table 6, a positive alpha is observable for all four south European countries. A statistically significant average alpha of approximately 0.5% is undeniable an attractive prospect for fund managers striving for few basis points that will distinguish their managing abilities from those of their peers. Greece appears to have the highest alpha, with 0.65% outperformance for the whole sample, with Portugal being last with 0.32%. Italy has the highest observable 6-monthly alpha of 1.32%, but this was only observed for one examination period. When dividing the sample in subperiods no significant deductions can be made other than the fact that top performing funds in each country consistently outperform the passive benchmark. Negative alphas are very scarce in model 3.6 results but some marginal observations are captured from the regression analysis as also depicted in Table 6 from the negative minimum alphas reported for Spain, Portugal and Greece.

INSERT TABLE 6

The analysis above is in line with Agudo and Marzal (2004), who having substantiated the existence of performance persistence in investment funds, confirm the possibility to create simple and functional systematic investment strategies allowing the decision-maker, asset manager or investor, to attain higher returns than those that could be achieved via random investments.

5. CONCLUDING REMARKS

Among the fundamental goals of every institutional investor is appropriate asset allocation, effective diversification, and increased fund selection ability. From an investor perspective these goals remain equally as important whether an investor is in a stage of asset accumulation or withdrawal. The present work attempts to partly cater the needs of both. We test for performance persistence in a sample of fixed income funds domiciled in Portugal, Spain, Italy and Greece. Our performance measurement and ranking methodology is derived from the original Sharpe

ratio as recent literature shows its superiority relative to alternative suggested measures. This analysis is of increased importance in light of the fact that our data set included all the southern eurozone countries currently confronting different phases of the debt crisis. The target funds invest in fixed income, hence bearing the brunt of the crisis and suffering from reduction in returns or losses as in the case of Greece. The data spanning though the period 01/01/2004-31/12/2010 provides useful inferences as to how the 2008 crisis influenced the ability of fund managers to beat mean returns, evidence which can be extrapolated to the current crisis and provide useful information to fund of fund managers and practitioners focusing their research in the various attributes of mutual fund management.

The Greek sample, representing the only country from our sample that already since 2009 had started suffering from the current crisis, offers some initial hints of how the crisis affects performance persistence. Results show that performance persistence is marginally impacted. On average results indicate statistically significant evidence of positive performance persistence with the exception of Greece where 'cold hands' are observed, a fact that can be interpreted as funds ability to continue outperforming mean returns primarily on the positive side and to some extent on the negative side as well.

Following the preceding analysis, we utilize the derived information in order to test for the possibility to have achieved superior market returns in fixed income by continuously rebalancing a diversified portfolio, based on the gathered 6-monthly information. Regression analysis, individually run for each of the four countries under examination, shows that realizing superior returns than passive benchmarks on an ex ante basis is possible by investing on 6-monthly periods on the three best winners per period. Following this rationale a generalized statement leads us into believing that an investor could use past performance persistence data for different portfolios to exploit opportunities on this basis.

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APPENDIX

Table 1. Performance persistence results Greece

Subperiod	WW	WL	LW	LL
01/01/2004-31/12/2004	5	3	1	5
01/07/2004-30/06/2005	4	2	2	6
01/01/2005-31/12/2005	5	1	4	4
01/07/2005-30/06/2006	4	5	3	2
01/01/2006-31/12/2006	2	5	3	4
01/07/2006-30/06/2007	4	1	4	5
01/01/2007-31/12/2007	5	3	2	4
01/07/2007-30/06/2008	3	4	4	3
01/01/2008-31/12/2008	6	1	2	5
01/07/2008-30/06/2009	5	3	2	4
01/01/2009-31/12/2009	3	4	3	4
01/07/2009-30/06/2010	2	3	3	5
01/01/2010-31/12/2010	3	2	7	2
TOTAL FUNDS	51	37	40	53

Note: The Table reports the number of funds found to be winners in 6-monthly consecutive periods (WW), those that had losses or below average profits in two successive periods (LL), those becoming losers from winners (WL) and losers turned into winners (LW). Performance measurement and ensuing ranking method is the traditional Sharpe ratio.

Table 2. Performance persistence results Spain

Subperiod	WW	WL	LW	LL
01/01/2004-31/12/2004	60	4	2	23
01/07/2004-30/06/2005	58	4	5	22
01/01/2005-31/12/2005	57	6	6	20
01/07/2005-30/06/2006	61	2	3	23
01/01/2006-31/12/2006	56	8	5	20

01/07/2006-30/06/2007	47	14	6	22
01/01/2007-31/12/2007	47	6	4	32
01/07/2007-30/06/2008	45	6	9	29
01/01/2008-31/12/2008	47	7	6	29
01/07/2008-30/06/2009	48	5	19	17
01/01/2009-31/12/2009	65	2	17	5
01/07/2009-30/06/2010	66	16	1	6
01/01/2010-31/12/2010	47	20	9	13
TOTAL FUNDS	704	100	92	261

Note: The Table reports the number of funds found to be winners in 6-monthly consecutive periods (WW), those that had losses or below average profits in two successive periods (LL), those becoming losers from winners (WL) and losers turned into winners (LW). Performance measurement and ensuing ranking method is the traditional Sharpe ratio.

Table 3. Performance persistence results Italy

Subperiod	WW	WL	LW	LL
01/01/2004-31/12/2004	36	20	4	22
01/07/2004-30/06/2005	37	3	18	24
01/01/2005-31/12/2005	49	6	3	24
01/07/2005-30/06/2006	45	7	8	22
01/01/2006-31/12/2006	42	11	7	22
01/07/2006-30/06/2007	45	4	11	22
01/01/2007-31/12/2007	44	12	10	16
01/07/2007-30/06/2008	41	13	7	21
01/01/2008-31/12/2008	37	11	9	25
01/07/2008-30/06/2009	17	29	24	12
01/01/2009-31/12/2009	25	16	13	28
01/07/2009-30/06/2010	12	26	19	25
01/01/2010-31/12/2010	15	16	17	34
TOTAL FUNDS	445	174	150	297

Note: The Table reports the number of funds found to be winners in 6-monthly consecutive periods (WW), those that had losses or below average profits in two successive periods (LL), those becoming losers from winners (WL) and losers turned into winners (LW). Performance measurement and ensuing ranking method is the traditional Sharpe ratio.

Table 4. Performance persistence results Portugal

Subperiod	WW	WL	LW	LL
01/01/2004-31/12/2004	5	2	1	3
01/07/2004-30/06/2005	3	2	1	5
01/01/2005-31/12/2005	2	3	4	2
01/07/2005-30/06/2006	5	2	2	2
01/01/2006-31/12/2006	4	2	3	2
01/07/2006-30/06/2007	4	2	3	2
01/01/2007-31/12/2007	3	2	3	3
01/07/2007-30/06/2008	4	1	2	4
01/01/2008-31/12/2008	1	5	2	3
01/07/2008-30/06/2009	4	1	2	4
01/01/2009-31/12/2009	3	2	3	3
01/07/2009-30/06/2010	2	3	4	2
01/01/2010-31/12/2010	2	4	3	2
TOTAL FUNDS	42	31	33	37

Note: Table reports the number of funds found to be winners in 6-monthly consecutive periods (WW), those that had losses or below average profits in two successive periods (LL), those becoming losers from winners (WL) and losers turned into winners (LW). Performance measurement and ensuing ranking method is the traditional Sharpe ratio.

Table 5. Statistical tests for performance persistence

Subperiod	Brown & Goetzmann Z	Kahn & Rudd X^2
Jan.04-Jun.04	1.369	1.811
Jul.04-Dec.04	1.437	2.014
Jan.05-Jun.05	1.521	1.894
Jul.05-Dec.05	1.434	2.300
Jan.06-Jun.06	1.436	2.381
Jul.06-Dec.06	1.253	1.755
Jan.07-Jun.07	1.295	1.455
Jul.07-Dec.07	1.405	1.518
Jan.08-Jun.08	1.320	1.249
Jul.08-Dec.08	1.415	1.329
Jan.09-Jun.09	0.413	0.891

Jul.09-Dec.09	0.733	1.925
Jan.10-Jun.10	0.140	2.007
Jul.10-Dec.10	0.337	0.895
AVERAGE	1.108	1.673

Note: Table reports Brown and Goetzmann and Kahn and Rudd statistical tests to control for the accuracy of the derived results from the performance persistence analysis. Results are reported collectively by calculating simple averages for individual results calculated separately for all four countries included in our data set. Results are statistically significant at the 1% significance level.

Table 6. Summary ex ante investment strategy results collectively for Italy, Spain, Portugal and Greece for the period 2004-2010

	Alpha (α)	Beta (β)	Min α	Max α	Q1 α	Q2 α	Q3 α	Adjusted R^2
Italy	0.0059*	0.5532	0.0001	0.0132	0.0023	0.0035	0.0089	0.6745
Spain	0.0047**	0.6259	-0.0007	0.0114	0.0056	0.0074	0.0028	0.7247
Portugal	0.0032**	0.6289	-0.0024	0.0098	0.0015	0.0056	0.0029	0.7879
Greece	0.0065***	0.8127	-0.0033	0.0118	0.0045	0.0027	0.0069	0.7082

Note: Following the Treynor-Mazuy quadratic regression model as outlined in equation 3.6, the table reports excess returns on an ex ante basis. Portfolios appearing as dependent variables are country portfolios containing the top performers per period, per market and their returns are regressed relative to benchmark returns in the individual market. Data period is split into three parts and correspondingly results are reported for each, while minimum and maximum alphas are also provided. Coefficient beta (β), measures the systematic risk measure, and R^2 results column quotes the adjusted R^2 results.
*** Significant at 0.01; ** Significant at 0.05; * Significant at 0.10