Journal of Regional & Socio-Economic Issues
Volume 9, Issue 1, January 2019
ISSN 2049-1409

Table of Contents

Indexed by Copernicus Index, DOAJ (Director of Open Access Journal), EBSCO, Cabell's Index
The journal is catalogued in the following catalogues: ROAD: Directory of Open Access Scholarly Resources, OCLC WorldCat, EconBiz - ECONIS, CITEFACTOR, OpenAccess

JOURNAL OF REGIONAL SOCIO-ECONOMIC ISSUES (JRSEI)

Volume 9, Issue 1, January 2019

Journal of Regional & Socio-Economic Issues (Print) ISSN 2049-1395

Journal of Regional & Socio-Economic Issues (Online) ISSN 2049-1409

Indexed by Copernicus Index, DOAJ (Director of Open Access Journal), EBSCO, Cabell's Index

The journal is catalogued in the following catalogues: ROAD: Directory of Open Access Scholarly Resources, OCLC WorldCat, EconBiz - ECONIS, CITEFACTOR, OpenAccess

JOURNAL OF REGIONAL SOCIO-ECONOMIC ISSUES (JRSEI)

ISSN No. 2049-1409

Aims of the Journal: Journal of Regional Socio-Economic Issues (JRSEI) is an international multidisciplinary refereed journal the purpose of which is to present papers manuscripts linked to all aspects of regional socio-economic and business and related issues. The views expressed in this journal are the personal views of the authors and do not necessarily reflect the views of JRSEI journal. The journal invites contributions from both academic and industry scholars. Electronic submissions are highly encouraged (mail to: **gkorres@geo.aegean.gr**).

Indexed by Copernicus Index, DOAJ (Director of Open Access Journal), EBSCO, Cabell's Index
International Institute of Organized Research (I2OR) database
The journal is catalogued in the following catalogues: ROAD: Directory of Open Access Scholarly Resources, OCLC WorldCat, EconBiz - ECONIS, CITEFACTOR, OpenAccess

Table of Contents

Quantifying Financial Efficiency through Data Envelopment Analysis

Abstract:
The issue of estimating technical efficiency in financial institutions is thought to be of particular research interest because empirical evidence shows that even though European Union financial institutions are widely analysed with respect to performance, yet little attention has been paid to the estimation of technical efficiency. The basic aim of this paper is the estimation of technical efficiency in financial institutions regarding technical efficiency attainment levels, considering a panel data model for inefficiency effects in production frontiers, providing translog effects, as well as industry effects, applying the deterministic nonparametric approach Data Envelopment Analysis (DEA). Technical efficiency is determined using Data Envelopment Analysis (DEA) considering both input and output orientation measures, under Constant Returns to Scale (CRS) and Variable Returns to Scale (VRS) in both input and output orientation.

Key words: Technical efficiency, Transcendental Logarithmic Production Function, Data Envelopment Analysis (DEA)

Aikaterini Kokkinou[1]

[1] Corresponding Address: Dr. Aikaterini Kokkinou, Associate Professor, Higher Military Academy of Greece, Athens, E-mail: aikaterinikokkinou@gmail.com

1. Introduction

Data Envelopment Analysis (DEA) is a mathematical programming approach for the construction of production frontiers and the measurement of efficiency relative to the constructed frontiers. The basic idea of this approach consists of enveloping the data (the observed input-output combinations) in order to obtain an approximation of the production frontier (best-practice frontier) and using this to identify the contribution of technological change, technological catch-up, and inputs accumulation to productivity growth.

In DEA the inefficiency is defined as the distance from the frontier of a convex envelope of the data; therefore, due to the convexity assumption, a company might be compared to an unobservable and fictitious linear combination of efficient observations (Coelli et al., 2005). Thus, the efficiency score is the point on the frontier characterized by the level of inputs that should be reached to be efficient (Simar and Wilson, 1998, 2007). DEA efficiency score for a specific productive unit is not defined by an absolute standard, but it is defined relative to the other units in the specific data set under consideration (Charnes, Cooper, Lewin & Seiford 1994, Cooper, Seiford & Tone 2000, Cooper, Seiford & Zhu 2004).

The analysis assumes that there is a frontier technology that can be described by a piecewise linear hull that envelopes the observed outcomes. Some (efficient) observations will be on the frontier while other (inefficient) individuals will be inside. The technique produces a deterministic frontier that is generated by the observed data, so by construction, some individuals are efficient (Färe, Grosskopf and Lovell, 1985). Explaining the course of technical efficiency and determining factors which might affect it, have been for a long time, and continue to be, one of the most important topics of economic literature.

2. Data Envelopment Frontiers

DEA is used to obtain efficiency measures based on the aggregated, or 'virtual', inputs and outputs. As described in McMillan and Chan (2006), let there be *n* producers using varying amounts of inputs to produce outputs. There are *s* inputs *xi* (*i* = 1, …, *s*) and *m* outputs *yr* (*r* = 1, …, *m*). For each producer, such as producer $_j$ (*j* = 1, …, *k*, …, *n*), the problem is to:

$$\max_{u,v} h_j = \frac{\sum_r u_{rj} y_{rj}}{\sum_i v_{ij} x_{ij}} \qquad (1)$$

subject to

$$\frac{\sum_r u_{rj} y_{rj}}{\sum_i v_{ij} x_{ij}} \leq 1 \quad for \quad j = 1,\ldots,n \qquad (2)$$

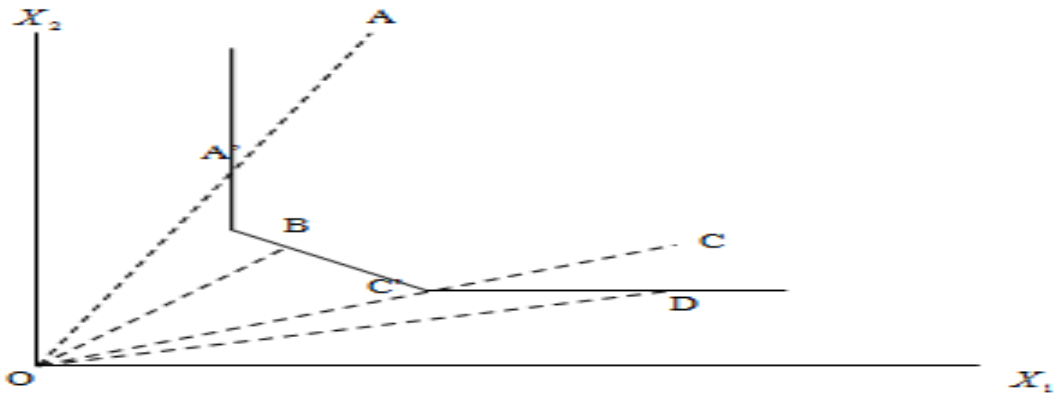
$$u_r, v_i \geq 0$$

where u_{rj} is the weight assigned each unit of output *r* from producer $_j$ and v_{ij} is the weight assigned each unit of input *i* used by producer$_j$. That is, solutions are sought to maximize the ratio of weighted output to weighted input for each producer (the ratio of virtual output to virtual input). By normalization, the efficiency scores range from zero to one. The same weights (virtual multipliers) that maximize h_j for producer $_j$ are applied to the

inputs and outputs of all producers in the solution to the problem for producer *j*. This solution process is repeated for each producer. Hence, because the weights can vary for each solution, the efficiency scores determined are those most favourable to each producer.

DEA compares the relative efficiency among industries. Since efficiency evaluation in DEA is based on the concept of Pareto optima, there may be more than one industry judged as efficient. In DEA, efficiency is computed on the basis of the envelope or efficient frontier, formed by all values near the original point *0*:

Figure 1. DEA efficiency values



Source: Chen (2011)

As far as the DEA characteristics are concerned, DEA can be specified as either an output-maximizing problem or an input-minimizing problem. Input models measure efficiency in terms of the potential (proportional) reduction in input use while output models measure efficiency in term of the potential (proportional) output increase. While the efficient and inefficient units do not change, the efficiency scores can differ between the two orientations[2]:

Table 1. The basic DEA models

Orientation	Constant Returns to Scale	Variable Returns to Scale
Input Oriented	$\min \theta, v\lambda\theta$ $s.t. - yi + Y\lambda \geq 0$ $\theta xi - X\lambda, v \geq 0$ $\lambda \geq 0$	$\min \theta\lambda, \theta$ $s.t. - yi + Y\lambda \geq 0$ $\theta xi - X\lambda \geq 0,$ $N_1'\lambda = 1$ $\lambda \geq 0$
Output Oriented	$\max \phi\lambda, \phi$ $s.t. - \phi yi + Y\lambda \geq 0$ $xi - X\lambda, v \geq 0,$ $\lambda \geq 0$	$\max \phi\lambda, \phi$ $s.t. - \phi yi + Y\lambda \geq 0$ $xi - X\lambda \geq 0,$ $N_1'\lambda = 1$ $\lambda \geq 0$

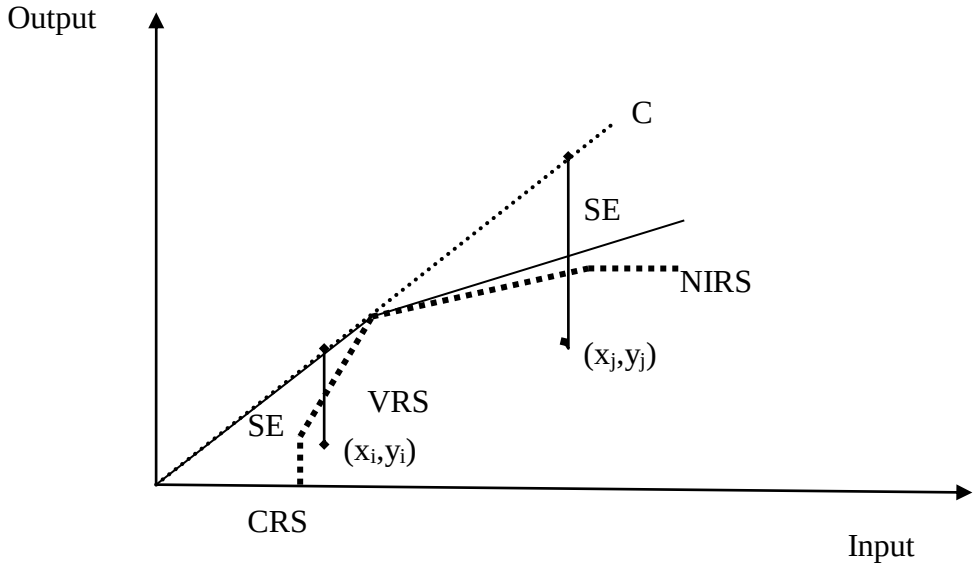
Source: Own elaboration

[2] McMillan and Datta (1998) comparisons of input-oriented and output-oriented DEA analyses suggested that the results were not sensitive to orientation.

The input based measure considers how inputs may be reduced relative to a desired output level. The output-based measure indicates how output could be expanded given the input levels. There is also a non-orienting DEA measure in which the frontier output and various concepts of technical and economic efficiency may be determined without being conditional on input or output levels being held constant. The two principal model options are:

1. Standard CRS and VRS DEA model which involve the calculation of technical and scale efficiencies (where applicable)
2. Panel data DEA model which refers to calculating indices of TFP change: technological change, technical efficiency change, and scale efficiency change (Färe, Grosskopf, Norris and Zhang, 1994).

Figure 2. Output – oriented technical and scale efficiency



Notes: CRS: Constant returns to scale
NIRS: Nonincreasing returns to scale
VRS: Variable returns to scale
SE: Scale efficiency
Source: Own elaboration

DEA is based on either constant returns to scale (CRS), also called CCR for Charnes, Cooper, and Rhodes (1978), or variable returns to scale (VRS), also called BCC for Banker, Charnes, and Cooper (1984). Charnes, Cooper and Rhodes (1978) proposed a model which had an input orientation and assumed CRS. Banker, Charnes and Cooper proposed a VRS model. In each case a linear programming problem is solved to envelop the data in a convex area bounded by straight lines. Under CRS, only as many DMUs as outputs can be efficient. Under VRS, many DMUs can be efficient. Within the VRS assumption we can distinguish between decreasing returns to scale (DRS), increasing returns to scale (IRS), non-increasing returns to scale (NIRS), and non-decreasing returns to scale (NDRS), modifying the restrictions in the linear optimization problem (see Cooper et al., 2006, for a summary of

assumptions). All calculations can also be done using an output-orientation (Simar and Wilson, 2007).

Under VRS, scale efficiency refers to operating at the scale of operation, or linear sum of outputs, which maximizes the ratio the linear sum of outputs to the linear sum of inputs. An economically efficient business is both technically efficient and scale efficient. Under CRS, output-oriented technical efficiency and input-oriented technical efficiency are the same, but under VRS, they are different, because the efficient frontier is not just one line (or hyperplane) emanating from the origin.

The above figure presents hypothetical one-input one-output production processes with three different technologies: Constant returns to scale (CRS), Variable returns to scale (VRS) and Nonincreasing returns to scale (NIRS). The vertical distance from an observation (either (x_i, y_i) or (x_j, y_j) to the CRS/VRS/NIRS best-practice frontier stands for output-oriented technical efficiency under CRS/VRS/NIRS assumptions, respectively. Scale efficiency in DEA is calculated as in Banker et al. (1984): $TE(CRS)/TE(VRS)$.

3. DEA Analytical tool

Data Envelopment Analysis (DEA) is a benchmarking tool originally developed by Chames, Cooper and Rhodes (1978) to evaluate nonprofit and public sector organizations. DEA is a specific methodology for analysis of the relative efficiency for multiple inputs and outputs by evaluation of all decision-making units (DMUs) and measurement of their performance in respect to the best practice banks, which determine the so-called efficient frontier. The most important advantage of DEA is that it does not require in advance assumptions about the production function's analytical form. DEA also has some disadvantages. First, it is sensitive to extreme observations, and second, it does not decompose the financial institutions deviation from the efficient production frontier into inefficiency and random error components (Qamruzzaman and Jianguo, 016).

Efficiency in DEA is generally defined as the weighted sum of outputs divided by the weighted sum of inputs. The set of weights for a DMU is computed in DEA with the objective to give the highest possible relative efficiency score for the DMU, while keeping the efficiency scores of other DMUs in the range of 0 to 1 under the same set of weights.

Efficient DMUs have the score of 1; the other DMUs which score less than 1 are considered as inefficient. Graphically, efficiency is obtained from the ratio between the distance from the original point to the relative point of the envelope and the distance from the original point to the observation point (optimal value=1).

The data set used in the empirical model estimation is panel data. Unlike time series data, in which one individual is observed over time, or cross – section data, in which multiple individuals are observed for one point in time, panel data models can control for both variation across time periods and individuals, or cross – sections, simultaneously (Frees, 2004, Hsiao, 2003).

An important advantage of using panel data in an empirical study is that effects of differences across individuals (individual effects) can be distinguished from effects changing over time within individuals. Although time-invariant and individual-specific effects are often unobservable, they frequently account for an important share of the heterogeneity in data. We will focus on static panel data models, in which the dependent variable does not exhibit temporal autocorrelation. The translog stochastic frontier function is estimated with the maximum likelihood estimation (MLE) technique, which is the preferred estimation technique whenever possible (Coelli, Rao and Battese 1998)[3]. The model estimates time –

[3] According to Battese and Coelli (1995), the explanatory variables can include intercept terms or any variables in both the frontier and the model for the inefficiency effects, provided the inefficiency effects are stochastic.

varying technical efficiencies, (incorporating 'learning – by doing' behaviour), considering industry-specific fixed effects. According to Coelli et al. (2005) it is convenient for estimation purposes, a problem with assuming uit are independently distributed. However, for many industries the independence assumption is unrealistic – all other things being equal, it is expected that efficient firms to remain reasonably efficient from period to period and it is suggested that inefficient firms improve their efficiency levels over time.

The type of efficiency we estimate using the production frontier is technical efficiency, characterized by the relationship between observed production and some ideal or potential production, based upon deviations of observed output from the best production or efficient production frontier. We also consider that technological progress is assumed to push the frontier of potential production upwards, while efficiency change will change the capability of productive units to improve production with available inputs and technology (Batesse and Coelli, 1992, 1995).

The variable returns model of Data Envelopment Analysis (DEA) proposes a slack-based DEA. By using slack-based efficiency measure, we obtain different frontier levels and more appropriate performance benchmarks for inefficient industries (Kokkinou, 2010b). First, we estimate the technical efficiency levels by country and industry under two different assumptions regarding the returns to scale, that is why we estimate technical efficiency under constant returns to scale and variable returns to scale. The production assumptions in DEA are that all actual observed inputs and outputs of any industries are feasible for all industries. as are linear combinations of observed inputs and outputs. The estimation is input-oriented, meaning that efficiency is relative to the amount of input needed. as opposed to being output-oriented, meaning that efficiency is relative to the amount of output that could be produced. Each industry is evaluated by itself.

4. DEA in quantifying financial efficiency

Financial system consists of financial markets, banks, non-bank financial institutions, leasing institutions, putting significant contribution in economic growth process and drawing considerable attention among investors, researchers and regulatory authority due prime sources of fund mobilization from deficit units to surplus units in the economy. Financial institutions are integrated component in the financial system, so there is need to perform efficiently.

Financial efficiency is very important and crucial issue in the modern era of privatization, competition, liberalization, change in legislative environment and institutional rules. In addition, technological changes and knowledge, transferred normally with the increase in foreign ownership, altered significantly the operational environment for the banking institutions and the technology of banks production, which in its turn changed the bank efficiency (Qamruzzaman and Jianguo, 2016).

Camanho and Dyson (2005) eenhanced cost efficiency measurement methods to account for different scenarios relating to input price information in banking industry. These consist of situations where prices are known exactly at each decision making unit (DMU) and situations with incomplete price information.

The assessments under price uncertainty are based on extensions to the Data Envelopment Analysis (DEA) model that incorporate weight restrictions of the form of input cone assurance regions. Huang and Wang (2002) estimated economic efficiency and economies of scale, using panel data of 22 Taiwanese commercial banks over the period 1982-97, employing a wide range of parametric and non–parametric cost frontiers' efficiency estimation methods to estimate economic efficiency and economies of scale, using the same panel data of 22 Taiwanese commercial banks over the period 1982–97.

According to their empirical implementation, the two methodologies yield similar average efficiency estimates, yet they come to very dissimilar results pertaining to the efficiency rankings, the stability of measured efficiency over time, the consistency between frontier efficiency and conventional performance measures, and the estimates of scale economies. Thus, the choice of an estimation approach can result in very different conclusions and policy implications regarding cost efficiencies and cost economies. These findings suggest that making policy decisions and evaluations relies on multiple techniques and specifications.

Silva Portela and Thanassoulis (2005) using parametric and non-parametric methods, have been focusing mainly on profit efficiency and to identify the sources of any shortfall in profitability (technical and/or allocative inefficiency). The method is applied to a set of Portuguese bank branches first assuming long run and then a short run profit maximisation objective. In the long run most of the scope for profit improvement of bank branches is by becoming more allocatively efficient. In the short run most of profit gain can be realized through higher technical efficiency.

Wheelock and Wilson (2000) use alternative measures of productive efficiency to proxy management quality in individual U.S. banks, and find that inefficiency increases the risk of failure while reducing the probability of a bank's being acquired. Becchetti and Sierra (2003) investigated the determinants of bankruptcy in three representative unbalanced samples of Italian firms for the periods 1989–91, 1992–94 and 1995–97. Two important results are that: (i) the degree of relative firm inefficiency measured as the distance from the efficient frontier has significant explanatory power in predicting bankruptcy (ii) qualitative regressors such as customers' concentration and strength and proximity of competitors have significant predictive power.

The system of innovation approach lays emphasis on the interactive process in which enterprises in interaction with each other and supported by institutions and organisations – such as industry associations, R&D, innovation and productivity centres, standard setting bodies, university and vocational training centres, information gathering and analysis services and banking and other financing mechanisms – play a key role in bringing new products, new processes and new forms of organisation into economic use.

As listed in Qamruzzaman and Jianguo (2016), quantifying financial efficiency and performance using Data envelopment analysis has been widel analysed by Nenovsky et al(2008) , Noreen(2014), Barbullushi (2016), Ahmad et al (2015), Eken &Kale, (2011), Micajkov & Klimentin(2013),Yang (2009) &Paradi et al.,(2015), Eriki &Osagie (2014), Singh & Kumar (2014), Kumar & Shree (2015), Nitol (2010), Tahir et al., (2009), as well as Haron (2008), who apply SFA to assess technical efficiency of Commercial Banks, Staub et al., (2009) on Brazelian Banking industry, Hassan et al., (2011) , Kutlar et al., (2015) on Turkish Banking Syestem, Liu & Li (2012), Xiping &Yuesheng (2010), Kai Ji et al., (2012) & Sok-Gee(2011) on Chinese listed commercial Banks, Benites et al., (2010) assess efficiency level on banks in Brazilian market.

Moreover, researchers consider both non-parametic and parametic methods for efficiency analysis like Herrmann et al., (2006) who study on German universal banks and analyze their level of efficiency.

Apart from DEA application on financial institutions, several researchers go for application in other sectors as well, Adeyinka(2015) on European Financial Cooperative Sector, Tahir &Tahrim (2013) on Microfinance Institutions in ASEAN, Peggy & Review (2005) and Basso & Funari (2010) on funds in Germany (Qamruzzaman and Jianguo, 2016).

5. Concluding Remarks

The issue of estimating technical efficiency in financial institutions level is thought to be of particular research interest because empirical evidence shows that even financial industries are widely analyzed with respect to performance, yet little attention has been paid to the estimation of technical efficiency. Nowadays, the role of financial industries to the economy is even more important taking into consideration the slowdown in the world economy, and the effects on the business environment created by the financial crisis. Thus, financial industries have a very important role in creating opportunities making an important contribution to economic growth and development. For this reason, it is of great importance, on the one hand to analyze their efficiency level and potential, and in addition, to analyze the factors which determine their efficiency potential.

The main recommendations revolve around the key areas innovation and research and strengthening networks and clusters; responsible use of natural resources; and the need for open world markets with fair competition. Clustering, collaboration and the formation of strategic alliances are becoming increasingly important. Continuous R&D and innovation efforts are essential elements into guaranteeing competitiveness. Strong emphasis needs to be placed upon the management of the interfaces between R&D policy and other policy realms competition policy, intellectual property rights, standardization, education and training, environmental policy, labour market, employment and financial policy, to facilitate the creation of a sustainable industry environment, along with fiscal instruments and incentives.

Finally, technical progress is another major determinant as new technologies allow the automation of production processes that have led to many new and improved products. allow for better and closer links between firms. and can help improve information flows and organization of production. At the same time, technical progress can be embodied in new equipment and trained workers can only be fully productive if they have the appropriate equipment with which to work.

However, it is difficult to predict which industries will be the most productive in the future, as technology and innovation trends are inherently difficult to forecast. For now, a productive use of a larger input from skilled employment and the exploitation of ICT investments appear the most successful policy avenues for efficiency enhancement.

Moreover, efficiency and policy planning is a major matter which due to the wide interpretations and implications should have a clear mix of principles and priorities, mainly focusing on the effectiveness of the related policies. Infrastructure, innovation and investments should be among the main goals.

6. References

Banker, R. D., Charnes, A. & Cooper, W. W. (1984) Some models for estimating technical and scale inefficiencies in data envelopment analysis, *Management Science*, 30: 1078 - 1092.

Basso, S. F. (2010). Measuring the performance of ethical mutual funds: a DEA approach. University of Venice.

Batesse, G. E. and Coelli, T. J. (1995) A Model For Technical Inefficiency Effects In A Stochastic Frontier Production Function For Panel Data, *Empirical Economics*, 20:325-332.

Battese, G.E. and Coelli, T.J. (1992) Frontier Production Functions, Technical Efficiency and Panel Data: With Application to Paddy Farmers in India, *Journal of Productivity Analysis*, vol. 3: 153-169.

Becchetti, L., Londono Bedoya, D.A. and Paganetto, L. (2003) ICT Investment, Productivity and Efficiency: Evidence at producer level using a Stochastic Frontier Approach, *Journal of Productivity Analysis*, 20: 143 – 167.

Charnes, A., Cooper, W. W., Lewin, A. Y. & Seiford, L. M. (1994), *Data Envelopment Analysis: Theory, Methodology and Application*, Kluwer Academic, Boston.

Charnes, A., Cooper, W. W. & Rhodes, E. (1978) Measuring the efficiency of decision making units, *European Journal of Operational Research*, 2: 429 - 444.

Chen, I-F. (2011) A Two- Stage Cardholder Behavioural Scoring Model Using Artificial Neural Networks and Data Envelopment Analysis, *International Journal of Advancements in Computing Technology*, Vol. 3, No. 2: 87-94.

Coelli, T.J., Rao, D. S. P., O'Donnell, C.J., Battese, G.E. (2005) *An Introduction to Efficiency and Productivity Analysis*, 2nd Edition, Springer.

Coelli, T., Rao, D. S. P. & Battese, G. (1998) *An Introduction to Efficiency and Productivity Analysis*, Boston, MA, Kluwer.

Cooper. W.W, Seiford. L.M.. and Tone. K. (2006) *Introduction to Data Envelopment Analysis and its uses*. Springer. New York.

Cooper, W.W., Seiford, L.M. and Tone, K. (2000) *Data Envelopment Analysis: A Comprehensive Text with Models, Applications, References and DEA-Solver Software*, Kluwer Academic Publishers, Boston.

Cooper, W.W., Seiford, L.M. and Zhu, J. (2004) Data Envelopement Analysis: Models and Interpretations, Chapter 1, 1-39, *in* W.W. Cooper, L.M. Seiford and J. Zhu, eds, *Handbook on Data Envelopment Analysis*, Kluwer Academic Publisher, Boston.

EU KLEMS data base (www.euklems.net)

Färe, R., Grosskopf, S. and Lovell, C. A. K. (1985) *The Measurement of Efficiency of Production*. Boston: Kluwer-Nijhoff, Boston. .

Färe, R., Grosskopf, S. Norris, M. and Zhang, Z. (1994) Productivity Growth, Technical Progress, and Efficiency Change in Industrialized Countries. *The American Economic Review*. 84 (1): 66-83.

Frees, E. (2004) *Longitudinal and panel data*, Cambridge: Cambridge University Press.

Haron, I. M. (2008). Technical efficiency of the Malaysian commercial banks: a stochastic frontier approach. *Banks and Bank Systems*, Pp. 65-72.

Hassan Shirvani, S. T. (2011). A new approach to data envelopment analysis with an application to bank efficiency in Turkey. *Banks and Bank Systems*, Pp.5-11.

Heinz Herrmann, T. L.-H. (2006). *The cost efficiency of German banks: a comparison of SFA and DEA.* Germany: Deutsche Bundesbank.

Hsiao, C. *(*2003) *Analysis of Panel Data*, 2nd edition. Cambridge, University Press.

Izah Mohd Tahir, N. M. (2009). Evaluating Efficiency of Malaysian Banks Using Data Envelopment Analysis. *International Journal of Business and Management*, Pp.96-105.

Joseph C. Paradi, E. M. (2015). Evaluating Canadian Bank Branch Operational Efficiency from Staff Allocation: A DEA Approach. *Management and Organizational Studies*, Pp.52-65.

Jondrow, J., Lovell, C. A. K., Materov, I. and Schmidt, P. (1982) On the Estimation of Technical Inefficiency in the Stochastic Frontier Production Model, *Journal of Econometrics* 19:2/3: 233-38.

Kokkinou A. (2010a) Estimating Technical Inefficiency: An Empirical Approach to E.U. Industries, *Regional Science Inquiry Journal*, Vol. II (2), 2010, pp 95-104.

Kokkinou A. (2010b) A study in theory and models of Data Envelopment Analysis, *The Journal of World Economic Review*, Vol. 5, No. 1, pp. 1 -12.

Kumar, S. S. (2015). Performance Efficiency of Selected Private Sector Banks in India Using Data Envelopment Analysis. *International Journal of Innovative Research & Development*, Pp. 10-25.

Liu, Y. L. (2012). Research Based on Data Envelopment Analysis on Chinese Listed Commercial Banks Efficiency. *International Journal of Accounting and Financial Management*, Pp.77-82.

Lung-Tan Lu1, S.-K. L.-h. (2014). Application of Malmquist Indexes, Empirical Model and Data Envelopment Analysis: A Measure of Performance and Efficiency of Commercial Banks in Taiwan. *British Journal of Economics, Management & Trade*, Pp. 341-348.

McMillan, M. L. and Datta, A. (1998) The relative efficiencies of Canadian universities: a DEA perspective, *Canadian Public Policy,* 24(4): 485–511.

McMillan, M. L. and Chan, W. H. (2006) University Efficiency: A Comparison and Consolidation of Results from Stochastic and Non-stochastic Methods, *Education Economics*, Vol. 14, No. 1: 1–30.

Singh, N. K. (2014). Efficiency Analysis of Banks using DEA: A Review. *International Journal of Advance Research and Innovation*, Pp.120-126.

Simar, L. and Wilson, P. (2007) Estimation and inference in two-stage, semi-parametric models of production processes, *Journal of Econometrics*, vol. 136(1): 31-64.

Nenovsky, P. C. (2008) *Efficiency of the Bulgarian Banking System: Traditional Approach and Data Envelopment Analysis*. Agency for Economic Analysis and Forecasting.

Nitol, M. (2010). Efficiency in the Romanian Banking System: An Application of Data Envelopment Analysis. *Euporean Journal*, Pp.1-15.

Simar, L., and P. Wilson (1998) Sensitivity Analysis of Efficiency Scores: How to Bootstrap in Nonparametric Frontier Models, *Management Science*, 44: 49–61.

Timmer, M.P., O'Mahony, M. and van Ark, B. (2008) T*he EU KLEMS Growth and Productivity Accounts: An Overview*, University of Groningen & University of Birmingham.

Yang, Z. (2009). *Bank Branch Operating Efficiency: A DEA Approach*. Proceedings of the International MultiConference of Engineers and Computer Scientists, Pp.1-6.

Qamruzzaman, Md & Jianguo, WEI. (2016). An Assessment of Financial Efficiency using Data Evolvement Analysis (DEA)-Multistage Approach: A Case Study of Banks in Bangladesh. IOSR *Journal of Economics and Finance*. 7. 96-103.

Yuesheng, W. X. (2010). Banking Efficiency in China: Application of DEA and Tobit Analysis. *China Business Review*, Pp. 12-25.

Productivity Enhancement in Europe: A Management Approach

Abstract:
This paper focuses on reviewing European productivity enhancement, through a management approach, as well as explaining producer heterogeneity along with the relationships with productive efficiency level. This paper also provides an overview of the specific European Union policies implemented, incorporating productive efficiency attainment, and also, highlighting, the connections between management policies and productive efficiency attainment.

Key words: Productivity, Productive Efficiency, Efficiency, Management

Charalambos Louca[1]

[1] Associate Professor Dr. Charalambos Louca, American College, Nicosia, Cyprus. Email: charalambos.louca@ac.ac.cy

1. Introduction

Productivity growth and enhancement constitutes an important element for modelling productive capacity. As Lovell (1993) states, productivity of a firm or industry depends on differences in production technology and differences in the efficiency of the production process, as well as on differences in the environment where production occurs. In neoclassical and New Growth economic studies, productivity change is exclusively allocated to shifts in product ion technology. However, through the evolution of productivity and managerial economics, not only productivity, but also productive efficiency was put under extensive research (Kumbhakar and Lovell, 2000).

This paper examines the implication of the interrelationship and the complementarities between these factors and estimates their contribution to productivity enhancement and that a framework more reliant upon efficiency has become an important policy objective in all European countries to promote productivity and competitiveness.

2. Productivity enhancement

Within economic growth process, therefore, efficiency of resources productivity becomes a critical element in economic growth, through utilising available resources more productively. Economic growth has been defined as the process of a progressive and sustainable increase in the production of goods and services with the aim of making available a progressively diversified basket of consumption goods to population. While output expansion based on increased use of resources is feasible, it is not sustainable, since this process is often being limited by the scarcity of productive resources.

This scarcity of resources, which includes physical, financial and human resources, has been recognised as a limiting factor on the process of economic growth. The element which could enhance sustainability is productivity growth. Productivity growth is the basis of efficient economic growth, since it implies ability to obtain a given amount of good or service by using a lesser amount of input. Therefore, efficiency or productivity of resources becomes a critical factor in economic growth for ensuring sustainable increase in the production of goods and services (Delmas and Yesim, 2005 and Edvardsen, et al. 2006).

Finally, technical progress is another major determinant as new technologies allow the automation of production processes that have led to many new and improved products, allow for better and closer links between firms, and may improve information flows and organization of production.

At the same time, technical progress may be embodied in new equipment and trained workers can only be fully productive if they have the appropriate equipment with which to work. Increases in physical capital are clearly necessary as there are spillovers from capital investment to productivity growth.

Thus, it is not appropriate to consider physical capital, human capital and technology as separate factors since their contributions are closely linked. It is the combination of these three factors and the way in which they are organized and managed within the industry that will determine the extent of productivity growth. For sustained output growth, it is also important that a balance between the three main factors be maintained (Korres, et al., 2011).

As productive efficiency enhancement becomes an increasingly important issue, production must draw on a wide range of production ideas, component technologies and complementary capabilities. Growth and competitiveness become contingent on the ability of firms to compose, establish and maintain external interfaces, to choose the right mode of governance (Fey and Birkinshaw, 2005) and to link these effectively to internal knowledge accumulation and capability development.

The potential for technical efficiency enhancement is considered to a large extent to depend on the EU's capability to transform the economy towards one that makes more productive use of its resources. Much will depend on the capacity of markets to facilitate the reallocation of resources to industries that show rapid productivity growth. However, it is difficult to predict which industries will be the most productive in the future, as technology and innovation trends are inherently difficult to forecast. For now, a productive use of a larger input from skilled employment and the exploitation of ICT investments in manufacturing industries appear the most successful policy avenues for a European productivity revival[1].

3. Productivity enhancement and management in Europe

Globalization and worldwide competition has shifted the comparative advantage of corporations and economies towards the factor of knowledge and innovation, where entrepreneurship based on the technical efficiency enhancement plays a rather important role, as far as the growth, productivity and competitiveness enhancement are concerned. In order to promote innovation activities and technological opportunities entrepreneurship enhancement seems to have a significant importance not only to business success, but also to the long run performance of the economy.

Under this perspective, growth policies should focus on creating favourable environment for the co-operation between firms and institutions that support the development and exploitation of knowledge and innovation and technical efficiency. Furthermore, policies should promote the entrepreneurial relations between firms and institutions, fostering the development and dissemination of the expertise, the mobility of human and physical capital and the enhancement of the relationships between business and research entities. Specifically, they should encourage actions such as, promoting innovation, technology transfer and interactions between firms and higher education and research institutes, networking and industrial co-operation and support for research and technology supply infrastructure (Fey and Birkinshaw, 2005 and Hammond, et al. 2002).

In particular, they can improve collective processes of learning and the creation, transfer and diffusion of knowledge and transfer, which are critical for innovation. Such cooperation and the networks that are formed help to translate knowledge into efficiency opportunities. Such actions should extend to all the policy areas relevant for economic, scientific and social development and should ideally establish a long-term policy horizon.

This, however, needs to happen not just in central parts where productivity and employment are highest and innovative capacity most developed but throughout the Union. Countries and regions need assistance in overcoming their structural deficiencies and in developing their comparative advantages. Promoting technical and productive efficiency into the European Union has resulted in a growing challenge for policymakers. Productive disparities and inequalities are an increasing issue for the European Union to consolidate, so have to adapt the policy agenda considering industrial and innovation policy in order to enhance technical and productive efficiency capabilities (Carrington, et al. 2002 and Coelli, et al. 2005).

---

[1] This topic of regional divergence and convergence has been broadly examined in: Kokkinou A. (2006b) *Innovation and Productivity: A story of convergence and divergence process in E.U. countries*, 46th European Congress of the Regional Science Association, Volos, Greece, in: Korres, G.M., Tsobanoglou, G.O. and Kokkinou A. (2006) *Technological and Industrial Policies in Europe. Lessons for Asia in Measuring the Effects on Growth and Sustainability*, Congress on Social, Political and Economic Transition of the Turkic Republics of Caucasus and Central Asia in the 21st Century, Kocaeli University, Turkey., and Kokkinou A. (2006a) *Productivity, Innovation and Regional Growth*, 10th International Conference of the Economic Society of Thessaloniki "The Challenges of a Wider European Union", Thessaloniki, Greece.

Since early, European Union has identified the following key areas where the competitiveness of the EU economy could be further strengthened in order to make significant progress towards the Europe 2020 goals (European Commission, 2011):

- facilitating structural changes in the economy, in order to move towards more innovative and knowledge-based sectors that have a higher productivity growth and which have suffered less from global competition;
- enabling innovation in industries, in particular by pooling scarce resources, by reducing the fragmentation of innovation support systems and by increasing the market focus of research projects;
- promoting sustainability and resource efficiency, in particular by promoting innovation and the use of cleaner technologies, by ensuring fair and undistorted pricing of energy and by upgrading and interconnecting energy distribution networks;
- improving the business environment, in particular by reducing the administrative burden on businesses and by promoting competition among service providers that use broadband, energy and transport infrastructure;
- benefiting from the single market, by supporting innovative services and by fully implementing the Single Market Regulation, in particular the Services Directive;
- supporting small and medium-sized enterprises (SMEs), in particular by favouring access to finance, by facilitating internationalisation and access to markets.

Enterprise resource management policies are no longer exclusively in the hands of national authorities: increasingly, national initiatives are supplemented by the activities of the European Union. Research, technology and innovation policies of European countries clearly reflected the profiles of their national (and regional) 'innovation systems', understood as the various institutions, corporate actors and processes contributing to industrial and societal innovation. The spectrum of implemented instruments stretches from public funding of research institutions over various forms of financial incentives to the conducting of research and experimental development in public or industrial research labs, up to the design of an innovation-oriented infrastructure, including the institutions and mechanisms of technology transfer.

The key elements for the sustainable development policy concern the efficient use of resources encouraging the development of new productive technologies, extending the use of productivity and efficiency enhancement schemes and encouraging both innovative and productive activities. Within this context, the main role of European Union is to provide the appropriate framework conditions and to make the European Union an attractive place for industrial development and employment creation.

Additional priorities like intensifying the cooperation between research, universities and universities, promoting 'clustering' and other forms of cooperation among enterprises and other organisations involved in the innovation process and encouraging the start-up of technology- based companies were added to the national innovation policy (Nilsson, 2004).

Furthermore, encouraging investments in intangible assets and human capital is crucial, in order to maximize the efficiency of the current technology and its effects. Furthermore, supporting entrepreneurship and developing industrial sectors is an objective that goes beyond the limits of the industrial policy, by joining actions of the educational policies, internal market, financial services and tax policy (Nica and Cuza, 2010).

Certain fields require specific intervention, in order to improve the internal market, such as the financial or services markets, where the technical barriers and the legislative differences limit the free trade, in order to improve the economic environment, with special attention in areas which present the fastest technological progress. However, the development objectives set at European level cannot be reached without a tight interconnection of the

industrial policy measures with those of some complementary policies, such as the commercial policy, the single market policy, transport and energy policies, research and development policies, competition policy, regional and macroeconomic policies (Nica and Cuza, 2010).

Moreover, today, the competitiveness of European industry crucially depends on the quality and efficiency of the energy, transport and communication infrastructure services, with the upgrading and modernisation of these networks being rather essential. Transport networks need to be improved to overcome any related obstacles and improve cross-border connections. These improvements will require massive investments and the development of innovative financing solutions.

This implies that policies should concentrate on areas in which there is expansion and therefore good prospects for growth, community businesses are supposed to become more competitive, and scientific and technological progress is expected to offer a medium- or long-term potential for dissemination and exploitation (Kuhlmann, 2001).

An open, efficient and competitive business environment is a crucial catalyst for growth in a global context. Rising to these challenges can improve the competitiveness of European industries, and the Commission aims to help the member states to use their limited resources efficiently in order to increase the global competitiveness of their industries. Addressing these challenges will improve the growth prospects of industries. A competitive industry can lower costs and prices, create new products and improve quality, contributing thus decisively to wealth creation and productivity growth throughout the economy.

4. Concluding Remarks

As expressed above, transition towards a sustainable, resource efficient economy is essential for maintaining the long-term competitiveness of European industries. Overall, European member states have made significant progress in defining and implementing consistent national legislative frameworks for stimulating efficiency.

The quality and availability of infrastructure (energy, transport, and broadband) make an important contribution to an efficiency promoting environment. Industrial sectors need a modern public administration, able to deliver efficient and high-quality public services. Coordinating clusters and networks improve industrial competitiveness and innovation by bringing together resources and expertise, and promoting cooperation among businesses, public authorities and universities. EU industrial and innovation policies should aim to overcome existing market failures and funding gaps, especially to supply the bridge between productive efficiency and productivity enhancement. At the national level, governments could set up agencies funded by public bonds with the mission to provide venture capital, investment credits and R&D support to new activities in the above fields.

Within this domain, regulatory reform is seen to affect innovation indirectly through affecting the funds available for investment and market size and structure, and directly through its impact upon the promotion of productivity.

5. References

Arocena, P. and C. Waddams P. (2003) Generating Efficiency: Economic and Environmental Regulation of Public and Private Electricity Generators in Spain, *International Journal of Industrial Organization* 20:1: 41-69.

Carrington, R., T. Coelli and E. Groom (2002) International Benchmarking for Monopoly Price Regulation: The Case of Australian Gas Distribution, *Journal of Regulatory Economics* 21:2: 191-216.

Coelli, T.J., Rao, D.S.P., O'Donnell, C.J., Battese, G.E. (2005) *An Introduction to Efficiency*

and Productivity Analysis, 2nd Edition, Springer

Delmas, M. and Yesim Tokat, Y. (2005) Deregulation, governance structures, and efficiency: the U.S. electric utility sector, *Strategic Management Journal*, Volume 26, Issue 5: 441–460.

Edvardsen, D. F., Førsund, F. R., Hansen, W., Kittelsen, S. A. C. and Neurauter, T. (2006) Productivity and Deregulation of Norwegian Electricity Distribution Utilities, in T. J. Coelli and D. Lawrence, eds., *Performance Measurement and Regulation of Network Utilities*. Cheltenham, UK: Edward Elgar.

Fey, C. F. and Birkinshaw, J. (2005) External sources of knowledge and performance in R& D organizations. *Journal of Management*, 31(4): 597-615.

Hammond, C. J., G. Johnes and T. Robinson (2002) Productive efficiency Under Alternative Regulatory Regimes: Evidence from the Inter-War British Gas Industry, *Journal of Regulatory Economics* 22:3: 251-270.

Hjalmarsson, L. and Veiderpass, L. (1992) Productivity in Swedish electricity retail distribution, *Scandinavian Journal of Economics*, 94, supplement: 193-205.Hawdon, D. (2003) Efficiency, Performance and Regulation of the International Gas Industry--- A Bootstrap Approach, *Energy Policy* 31: 1167-78.

Kokkinou A. (2006a) *Productivity, Innovation and Regional Growth*, 10th International Conference of the Economic Society of Thessaloniki "The Challenges of a Wider European Union", Thessaloniki, Greece.

Kokkinou A. (2006b) *Innovation and Productivity: A story of convergence and divergence process in E.U. countries*, 46th European Congress of the Regional Science Association, Volos, Greece.

Korres, G.M., Tsobanoglou, G.O. and Kokkinou A. (2006) *Technological and Industrial Policies in Europe. Lessons for Asia in Measuring the Effects on Growth and Sustainability*, Congress on Social, Political and Economic Transition of the Turkic Republics of Caucasus and Central Asia in the 21st Century, Kocaeli University, Turkey., and

Korres, G. M., Tsobanoglou, G. O. and Kokkinou, A. (2011) Innovation Geography and Regional Growth in European Union, *SAGE Open* 2011, DOI: 10.1177/2158244011413142, the online version of this article can be found at: http://sgo.sagepub.com/content/early/2011/06/15/2158244011413142

Nica, P. and Cuza, A. I. (2010) *Industrial Policy in the European Union*, CES Working Papers, II, (2), 2010: 22.

Nilsson, J. E. (2004) *Innovation Policy as an Alternative to Institutional Changes*, Hagbarth Publications, Bollschweil.

The Eurozone Financial Crisis: Lessons and Prospects

Abstract:
Economic policy affects directly the socio-economic performance, along with economic growth and competitiveness process. There is a huge literature regarding the tools of economic policy, namely public fiscal policy and monetary policy as the determinant factors for economic growth and competitiveness process. Today, a decade since the establishment of European Monetary Union and European Central Bank, the member states of Eurozone are facing a multi-faced deep economic crisis, with high public debt and public deficits for most of the Eurozone member states. This paper aims to analyze the economic policy and to present the effects for public debt and public deficit, in a benchmarking study for Eurozone member states. It also attempts to estimate and present the implications for socio-economic growth. Furthermore, it discusses the limits and the prospects regarding the convergence and cohesion of member states within the Eurozone.

Key-Words: Public Debt, Public Deficit, Convergence, Public Fiscal Policy, Monetary Policy, Cohesion, Growth, Eurozone

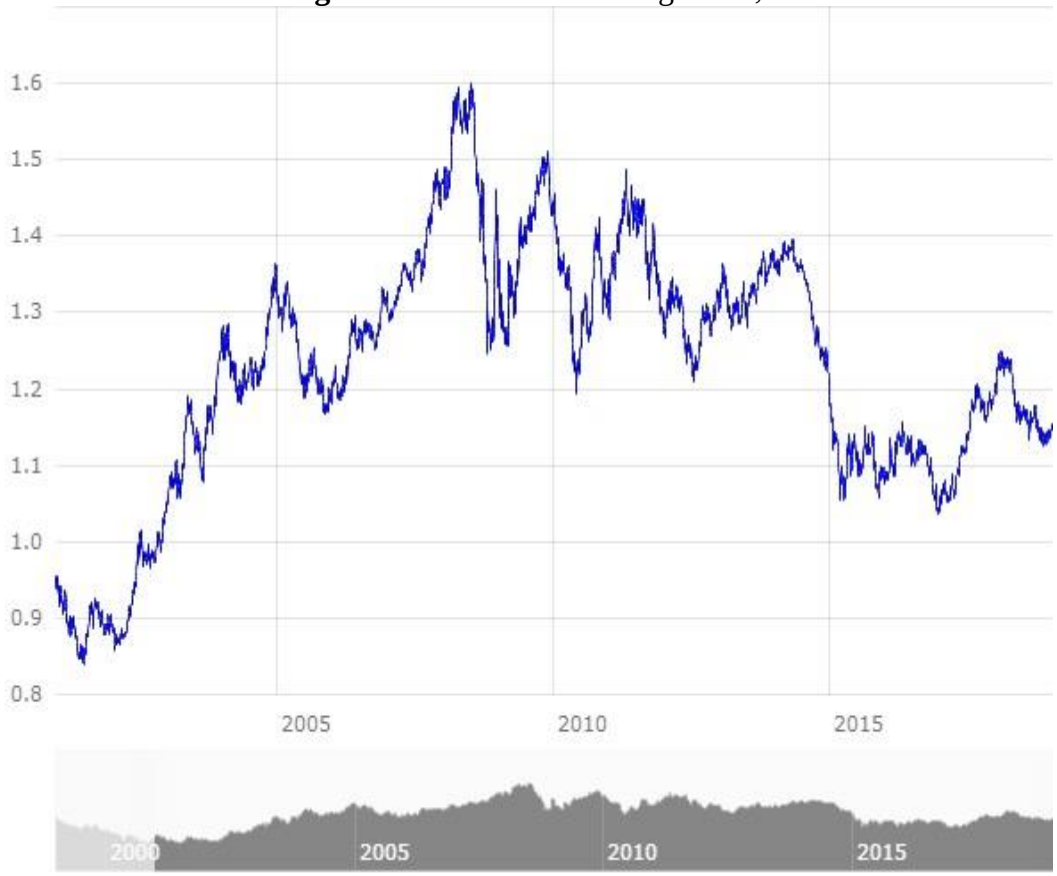
George M. Korres[1], Aikaterini Kokkinou[2], Maria Michailidis[3], Charalambos Louca[4] and Efstratios Papanis[5]

[1] Corresponding-Address: Professor Dr. George M. Korres, Visiting Professor at the University of Nicosia, School of Business, Nicosia, Cyprus and also Professor University of the Aegean, Department of Geography, Lesvos, Greece. Email: gkorres@geo.aegean.gr
[2] Corresponding-Address: Associate Professor Dr. Aikaterini Kokkinou, Hellenic Army Academy, Athens, Greece. Email: aikaterinikokkinou@gmail.com;
[3] Corresponding-Address: Professor Dr. Maria Michailidis, University of Nicosia, School of Business, Nicosia, Cyprus, Email: michailidis.m@unic.ac.cy
[4] Corresponding-Address: Associate Professor Dr. Charalambos Louca, American College, Nicosia, Cyprus. Email: charalambos.louca@ac.ac.cy
[5] Corresponding-Address:Assistant Professor Dr Efstratios Papanis, University of the Aegean, Department of Sociology, Lesvos, Greece. Email: e.papanis@soc.aegean.gr; Email: efstratios@papanis.me

1. Introduction

Ten years after European Monetary Union, the entry of Euro currency and the establishment of the European Central Bank, most of the European member states face an intense financial crisis featuring high public deficits and public debts, with Greece being today the most severely affected European Union economy. Since January 2001 until January 2010, Euro has appreciated by 65% against the US Dollar and by 47% against the Chinese Yuan, mostly undermining the international competitiveness of Greek exports. The following Figure 1 illustrates the USD/EUR Exchange Rate since Greece's Entry into the Eurozone, 2001-2018:

Figure 1. USD/EUR Exchange Rate, 2001-2018



Following four years of recession and stagnation for the most of the Eurozone members states, not with high unemployment rates, high inequalities, increasing poverty rates, but also with the lowest figures of public and private investment and declining economic growth rates, the main question today for Eurozone is whether there is any solution or way out from the European financial crisis?

Historically, European Union was structured according to the common-vision of solidarity, convergence and cohesion of European member states. The establishment of the European Central Bank with the common currency (Euro) was the first step toward the European economic integration. The ECB chose to act and announced a number of policy changes, the most important and remarkable of which was its commitment to purchase government securities outright in the secondary markets - an unprecedented departure both from its past practice and from its prior view of how an independent central bank ought to behave. Under its newly-created "Securities Markets Programme", the ECB can purchase any private and public securities outright in secondary markets. The European Financial Stability Facility (EFSF) constitutes an important step towards the creation of a "minimal fiscal

Europe" necessary for the survival and prosperity of the Eurozone for both political and economic reasons.

Eurozone has a single currency, but however, they don't have a single or at least very closely coordinated fiscal policy, running the risk of having part of the territory go into one direction and other part of the territory go into another direction. And that's exactly what happened. The Eurozone countries are especially vulnerable because they are tied into a monetary framework that places priority on monetary control and low inflation, which leads in a great number of irregularities as indicated also by the economies ranking (Table 1 and Figure 2):

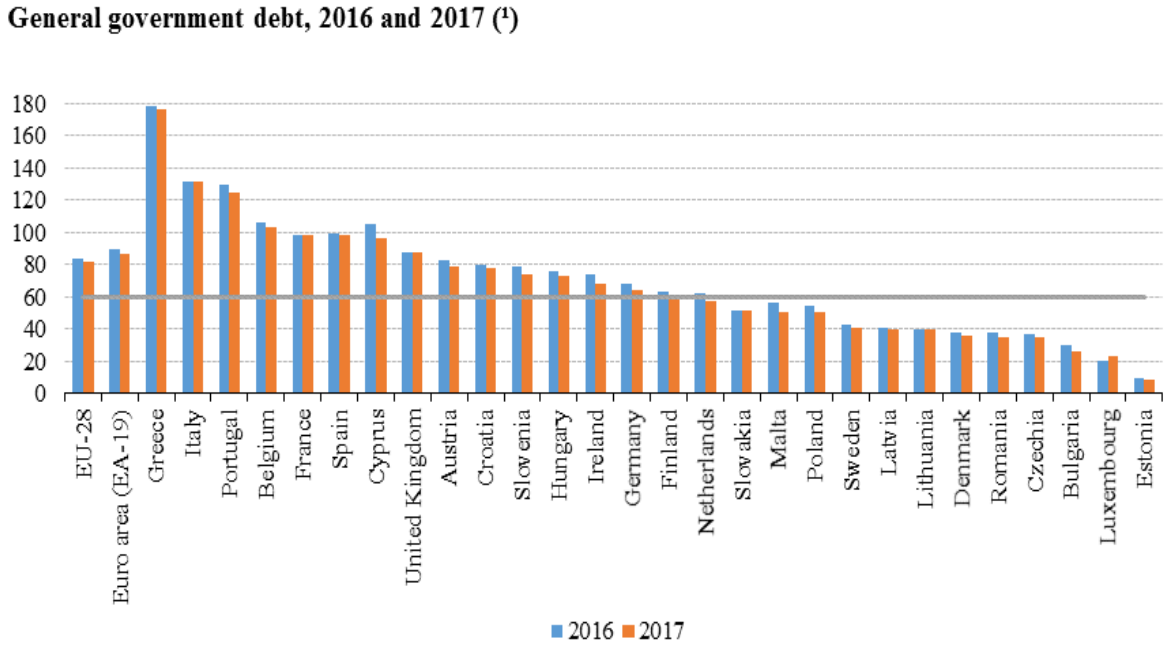
Table 1: Public balance, 2016 and 2017

(Net borrowing or lending of the general government sector, % of GDP)

	2016	2017
EU-28	-1.6	-1.0
EA-19	-1.6	-1.0
Malta	0.9	3.5
Cyprus	0.3	1.8
Sweden	1.1	1.6
Czechia	0.7	1.5
Luxembourg	1.6	1.4
Netherlands	0.0	1.2
Bulgaria	0.2	1.1
Denmark	-0.4	1.1
Germany	0.9	1.0
Croatia	-0.9	0.9
Greece	0.5	0.8
Lithuania	0.3	0.5
Slovenia	-1.9	0.1
Ireland	-0.5	-0.2
Estonia	-0.3	-0.4
Latvia	0.1	-0.6
Finland	-1.7	-0.7
Slovakia	-2.2	-0.8
Austria	-1.6	-0.8
Belgium	-2.4	-0.9
Poland	-2.2	-1.4
United Kingdom	-2.9	-1.8
Hungary	-1.6	-2.2
Italy	-2.5	-2.4
France	-3.5	-2.7
Romania	-2.9	-2.9
Portugal	-2.0	-3.0
Spain	-4.5	-3.1

Source: Eurostat Database

Figure 2: Government Debt, 2016 and 2017



Source: Eurostat Database

Eurozone member states can be explained through the following twin deficits: firstly the gap between saving and investment and secondly between the tax revenues and government expenditures.

An additional burden was the so-called "demonstration effect", that means the over-consumption from imported non-durable goods.

In order to avoid default, three member states (Greece, Ireland, and Portugal) have needed bailouts from the European Union and the International Monetary Fund, and more might be necessary, with governments undertaking specific sets of reforms to balance the budget and return the country to financial solvency, in order to avoid default. Seven European countries have changed leadership because of the crisis, and one, Greece, reneged on $133 billion in debts. One of the main defaults for South West European Areas is the mismanagement and the devaluation of human capital and the so-called of "human-drain" that implies more negative effects on growth process.

2. The Greek case of the Financial Crisis

With the largest public debt and one of the largest budget deficits in the Eurozone, Greece is at the centre of the crisis.

Greece has been the notable example of an industrialized country that has faced difficulties in the markets because of rising debt levels. Greece is a developed country, with the 22nd highest standard of living in the world and the economy of Greece is the twenty-seventh largest economy in the world by nominal gross domestic product (GDP) and the thirty-third largest by purchasing power parity (International Monetary Fund, 2008). Its GDP per capita is the 25th highest in the world, while its GDP PPP per capita is also the 25th.

The public sector accounts for about 40% of GDP. The service sector contributes 75.8% of the total GDP, industry 20.8% and agriculture 3.4%. Greece's main industries are

tourism, shipping, industrial products, food and tobacco processing, textiles, chemicals, metal products, mining and petroleum. The Greek maritime fleet is the largest in the world, at approximately 18% of the world's maritime fleet, giving Greece a political advantage. Today, shipping is one of the country's most important industries. It accounts for 4.5% of GDP, employs about 160,000 people (4% of the workforce), and represents 1/3 of the country's trade deficit. The Greek-owned maritime fleet is today the largest in the world, with 3,079 vessels accounting for 18% of the world's fleet capacity (making it the largest of any other country) with a total dwt of 141,931 thousand.

The second most important industry of Greece is tourism. Greece attracts more than 16 million tourists each year, thus contributing 15% to the nation's Gross Domestic Product. The number of jobs directly or indirectly related to the tourism sector represent around 17% of the country's total employment.

Although remaining above the euro area average, economic growth turned negative in 2009 for the first time since 1993. By the end of 2009, as a result of a combination of international financial crisis and uncontrolled spending prior to the October 2009 national elections, the Greek economy faced its most severe crisis after 1993, with the second highest budget deficit (after Ireland) as well as the second highest debt (after Italy) to GDP ratio in the EU.

The 2009 budget deficit stood at 13.6% of GDP. This, and rising debt levels (115% of GDP in 2009) led to rising borrowing costs, resulting in a severe economic crisis. Greece has been accused of trying to cover up the extent of its massive budget deficit in the wake of the global financial crisis. This resulted from the massive revision of the 2009 budget deficit forecast by the new Socialist government elected in October 2009, from "6-8%" (estimated by the previous government) to 12.7% (later revised to 13.6%). This revision has seriously undermined Greece's credibility leading to higher borrowing costs for Greece, following years of unrestrained spending, cheap lending and failure to implement financial reforms left Greece badly exposed when the global economic downturn struck. This whisked away a curtain of partly fiddled statistics to reveal debt levels and deficits that exceeded limits set by the eurozone.

In 2004, Eurostat revealed that the budgetary statistics on the basis of which Greece joined the European monetary union (budget deficit was one of four key criteria for entry), had been massively under-reported (mostly by not recording a large share of military expenses). However, even according to the revised budget deficit numbers calculated according to the methodology in force at the time of Greece's application for entry into the Eurozone, the criteria for entry had been met.

In fact, the Greek economy was one of the fastest growing in the Eurozone during the 2000s; from 2000 to 2007 it grew at an annual rate of 4.2% as foreign capital flooded the country. A strong economy and falling bond yields allowed the government of Greece to run large structural deficits. Large public deficits are one of the features that have marked the Greek social model since the restoration of democracy in 1974.

After the removal of the right leaning military junta, the government wanted to bring disenfrachised left leaning portions of the population into the economic mainstream. In order to do so, successive Greek governments have, among other things, run large deficits to finance public sector jobs, pensions, and other social benefits. Since 1993 debt to GDP has remained above 100% (Tables 2). After the introduction of the euro, Greece was initially able to borrow due the lower interest rates government bonds could command and currency devaluation helped finance the borrowing.

Table 2: Public balance and general government debt, 2014-2017 (as % of GDP)

	Public balance (net borrowing / lending of consolidated general government sector)				General government debt (general government consolidated gross debt)			
	2014	2015	2016	2017	2014	2015	2016	2017
EU-28	-2.9	-2.3	-1.6	-1.0	86.4	84.4	83.3	81.6
Euro area (EA-19)	-2.5	-2.0	-1.6	-1.0	91.8	89.9	89.1	86.8
Belgium	-3.1	-2.5	-2.4	-0.9	107.6	106.5	106.1	103.4
Bulgaria	-5.4	-1.7	0.2	1.1	27.1	26.2	29.6	25.6
Czechia	-2.1	-0.6	0.7	1.5	42.2	40.0	36.8	34.7
Denmark	1.1	-1.5	-0.4	1.1	44.3	39.9	37.9	36.1
Germany	0.6	0.8	0.9	1.0	74.5	70.8	67.9	63.9
Estonia	0.7	0.1	-0.3	-0.4	10.5	9.9	9.2	8.7
Ireland	-3.6	-1.9	-0.5	-0.2	104.1	76.8	73.4	68.4
Greece	-3.6	-5.6	0.5	0.8	178.9	175.9	178.5	176.1
Spain	-6.0	-5.3	-4.5	-3.1	100.4	99.3	99.0	98.1
France	-3.9	-3.6	-3.5	-2.7	94.9	95.6	98.2	98.5
Croatia	-5.1	-3.4	-0.9	0.9	84.0	83.7	80.2	77.5
Italy	-3.0	-2.6	-2.5	-2.4	131.8	131.6	131.4	131.2
Cyprus	-9.0	-1.3	0.3	1.8	108.0	108.0	105.5	96.1
Latvia	-1.5	-1.4	0.1	-0.6	40.9	36.8	40.3	40.0
Lithuania	-0.6	-0.3	0.3	0.5	40.5	42.6	39.9	39.4
Luxembourg	1.3	1.3	1.6	1.4	22.7	22.2	20.7	23.0
Hungary	-2.6	-1.9	-1.6	-2.2	76.6	76.6	75.9	73.3
Malta	-1.7	-1.0	0.9	3.5	63.7	58.6	56.3	50.9
Netherlands	-2.2	-2.0	0.0	1.2	67.9	64.6	61.9	57.0
Austria	-2.7	-1.0	-1.6	-0.8	84.0	84.8	83.0	78.3
Poland	-3.7	-2.7	-2.2	-1.4	50.4	51.3	54.2	50.6
Portugal	-7.2	-4.4	-2.0	-3.0	130.6	128.8	129.2	124.8
Romania	-1.3	-0.7	-2.9	-2.9	39.2	37.8	37.3	35.1
Slovenia	-5.5	-2.8	-1.9	0.1	80.4	82.6	78.7	74.1
Slovakia	-2.7	-2.6	-2.2	-0.8	53.5	52.2	51.8	50.9
Finland	-3.2	-2.8	-1.7	-0.7	60.2	63.6	63.0	61.3
Sweden	-1.6	0.2	1.1	1.6	45.5	44.2	42.4	40.8
United Kingdom	-5.4	-4.2	-2.9	-1.8	87.0	87.9	87.9	87.4

Source: Eurostat Database

The global financial crisis that began in 2008 had a particularly large effect on Greece. Two of the country's largest industries, tourism and shipping, and both were badly affected by the downturn with revenues falling 15% in 2009.

In 2009, the government revised its deficit from an estimated 6% (8% if a special tax for building irregularities were not to be applied) to 12.7%. In May 2010, the Greek government deficit was estimated to be 13.6% which is one of the highest in the world relative to GDP. Greek government debt was estimated at €216 billion in January 2010. Accumulated government debt is forecast, according to some estimates, to hit 120% of GDP

in 2010. The Greek government bond market is reliant on foreign investors, with some estimates suggesting that up to 70% of Greek government bonds are held externally.

Greece's credit rating -the assessment of its ability to repay its debts- has been downgraded to the lowest in the eurozone, meaning it will likely be viewed as a financial black hole by foreign investors. This leaves the country struggling to pay its bills as interest rates on existing debts rise.

Figure 3. Main Indicators

Figure 3(a): Greek GDP and Unemployment Rate

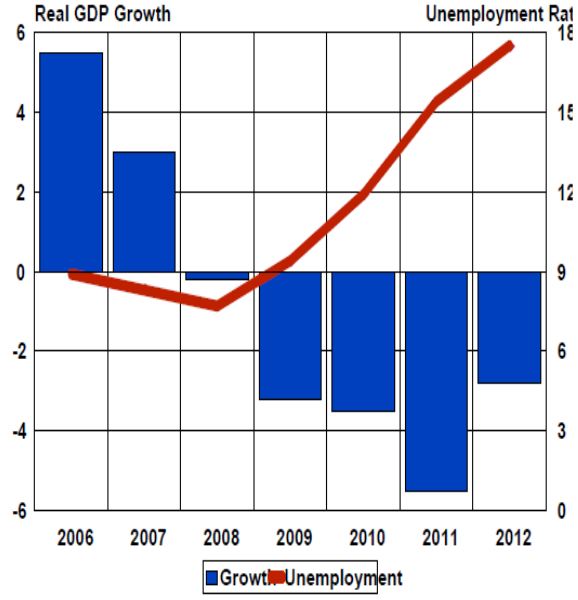


Figure 3(b): Greek Budget Deficit, 1970-2011

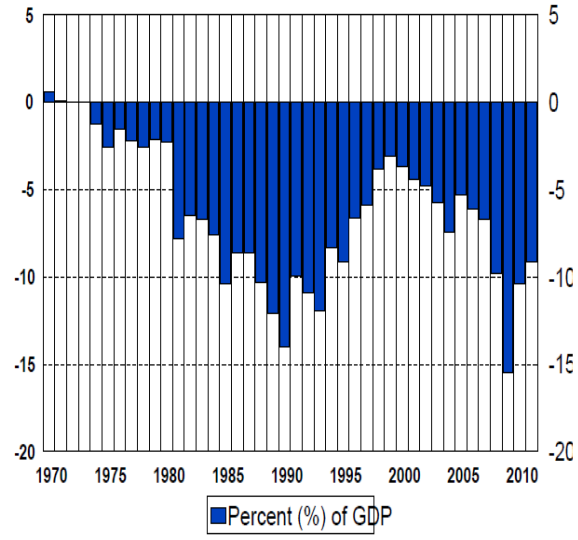


Figure3(c): International Competitiveness Index, 2011-12

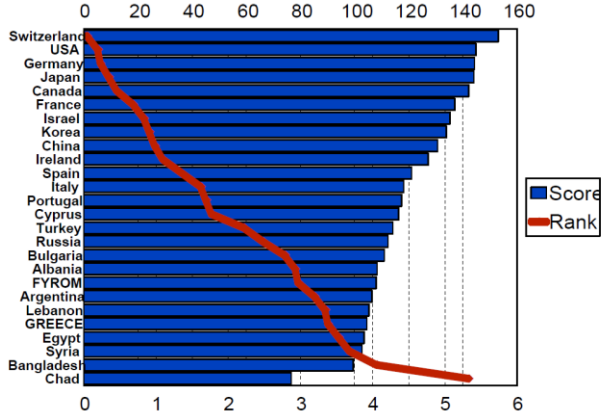
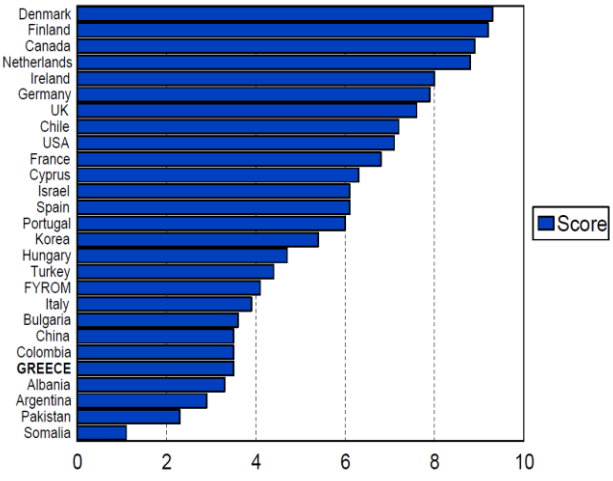


Figure 3(d): Corruption Index, 2010



Source: OECD Database, IMF, Figures, WEO-Database

Yields on Greek government two-year bonds rose to 15.3% following the downgrading. Standard & Poor's estimates that in the event of default investors would lose 30–50% of their money. Stock markets worldwide declined in response to this announcement. Following downgradings by Fitch, Moody's and S&P, Greek bond yields rose in 2010, both in absolute terms and relative to German government bonds. Yields have risen, particularly in the wake of successive ratings downgrading.

On May 2010, the European Central Bank suspended its minimum threshold for Greek debt "until further notice", meaning the bonds will remain eligible as collateral even

with junk status. The decision will guarantee Greek banks' access to cheap central bank funding, and analysts said it should also help increase Greek bonds' attractiveness to investors. The Greek parliament passed the Economy Protection Bill, expected to save €4.8 billion through a number of measures including public sector wage reductions.

Then, a loan agreement was reached between Greece, the other Eurozone countries, and the International Monetary Fund. The deal consisted of an immediate €45 billion in loans to be provided in 2010, with more funds available later. A total of €110 billion has been agreed. The interest for the Eurozone loans is 5%, considered to be a rather high level for any bailout loan. The government of Greece agreed to impose another round of austerity measures.

Moreover, Greek economy also faces significant problems, including rising unemployment levels, inefficient bureaucracy, tax evasion and high levels of political and economic corruption and low global competitiveness relative to its EU partners (Figure 3):

In early 2010, fears of a sovereign debt crisis, the 2010 Euro Crisis, developed concerning some European nations, including European Union members Greece, Spain, and Portugal. This led to a crisis of confidence as well as the widening of bond yield spreads and risk insurance on credit default swaps between these countries and other EU members, most importantly Germany. Concern about rising government deficits and debt levels across the globe together with a wave of downgrading of European government debt has created alarm in financial markets. The debt crisis has been mostly centred on recent events in Greece, where there is concern about the rising cost of financing government debt. On 9 May 2010, Europe's Finance Ministers approved a comprehensive rescue package worth almost a trillion dollars aimed at ensuring financial stability across Europe by creating the European Financial Stability Facility

3. Eurozone Financial Crisis corrective measures

Without a bailout agreement, there was a possibility that Greece would have been forced to default on some of its debt. The premiums on Greek debt had risen to a level that reflected a high chance of a default or restructuring. Analysts gave a 25% to 90% chance of a default or restructuring. A default would most likely have taken the form of a restructuring where Greece would pay creditors only a portion of what they were owed, perhaps 50 or 25 percent. This would effectively remove Greece from the euro, as it would no longer have collateral with the European Central Bank. It would also destabilise the Euro Interbank Offered Rate, which is backed by government securities.

Because Greece is a member of the eurozone, it cannot unilaterally stimulate its economy with monetary policy. The overall effect of a probable Greek default would itself be small for the other European economies. Greece represents only 2.5% of the eurozone economy. The more severe danger is that a default by Greece will cause investors to lose faith in other Eurozone countries. This concern is focused on Portugal and Ireland, all of whom have high debt and deficit issues. Italy also has a high debt, but its budget position is better than the European average, and it is not considered amongst the countries most at risk. Spain has a comparatively low debt amongst advanced economies, at only 53% of GDP in 2010, more than 20 points less than Germany, France or the US, and more than 60 points less than Italy, Ireland or Greece, and it doesn't face a risk of default. Spain and Italy are far larger and more central economies than Greece, both countries have most of their debt controlled internally, and are in a better fiscal situation than Greece and Portugal, making a default unlikely unless the situation gets far more severe.

The crisis is seen as a justification for imposing fiscal austerity on Greece in exchange for European funding which would lower borrowing costs for the Greek government. The negative impact of tighter fiscal policy could offset the positive impact of lower borrowing costs and social disruption could have a significantly negative impact on investment and growth in the longer term.

One of the central concerns prior to the bailout was that the crisis could spread beyond Greece. The crisis has reduced confidence in other European economies. In 2010, the 27 member states of the European Union agree to create the European Financial Stability Facility (EFSF), a legal instrument aiming at preserving financial stability in Europe by providing financial assistance to eurozone states in difficulty.

In order to reach these goals the Facility is devised in the form of a special purpose vehicle (SPV) that will sell bonds and use the money it raises to make loans up to a maximum of € 440 billion to eurozone nations in need. The bonds will be backed by guarantees given by the European Commission representing the whole EU, the eurozone member states, and the IMF. The new entity will sell debt only after an aid request is made by a country.

The EFSF will be combined to a € 60 billion loan coming from the European financial stabilisation mechanism (reliant on guarantees given by the European Commission using the EU budget as collateral) and to a € 250 billion loan backed by the IMF in order to obtain a financial safety net up to € 750 billions. The agreement allows the European Central Bank to start buying government debt which is expected to reduce bond yields. Subsequently, the member banks of the European System of Central Banks started buying government debt. After initially falling to a four-year low early in the week following the announcement of the EU guarantee packages, the euro rose as hedge funds and other short-term traders unwound short positions and carry trades in the currency.

On 23 April 2010, the Greek government requested that the EU/IMF bailout package (made of relatively high-interest loans) be activated. The IMF has said it was "prepared to move expeditiously on this request". On 27 April 2010, the Greek debt rating was decreased to BB+ (a 'junk' status) by Standard & Poor's amidst fears of default by the Greek government. The yield of the Greek two-year bond reached 15.3% in the secondary market. Standard & Poor's estimates that in the event of default investors would lose 30–50% of their money. Stock markets worldwide and the Euro currency declined in response to this announcement.

Predictably, quite the opposite and there have been warnings of resistance from various sectors of society. Workers nationwide have staged strikes closing airports, government offices, courts and schools, expected to continue.

4. Concluding Remarks and Policy implications

Greece is already in major breach of eurozone rules on deficit management and with the financial markets betting the country will default on its debts, this reflects badly on the credibility of the euro. There are also fears that financial doubts will infect other nations at the low end of Europe's economic scale. If Europe needs to resort to rescue packages involving bodies such as the International Monetary Fund, this would further damage the euro's reputation and could lead to a substantial fall against other key currencies.

Today, ten European member states are in a recession with the main problems being the increasing public fiscal deficit and public debt. Government (or public) debt grows when the government has a budget deficit and it stops growing when it balances its budget. When a country runs into a sovereign debt crisis interest rates rise, capital flows stop and the country is put into a severe period of economic contraction and fall in living standards. The inflation unleashed by the printing of money reduces the real value of the bonds held by debt holders

who are its own citizens and thus the government lessens the burden of its debts. Inflation shifts the burden of debt from the state to its citizens and represents the ultimate form of taxation. When a sovereign debtor is unable to meet its obligations it can resort to currency depreciation. This works when a country is utilizing a flexible currency regime whereby it allows the value of its currency to be determined by demand and supply in the foreign exchange market.

Within this framework, member states with huge public deficit and public debt have only two alternatives: either to reduce the expenses or to increase the revenues. Fiscal strategy is aiming to increase taxes or to cut the public spending. An alternative strategy is to increase the revenues from monetary issuance by the central bank. The rational strategy in order to reduce the debt-GDP ratio, nominal GDP must grow faster than the government debt. For this to happen, the economy must experience economic growth in output (real GDP), rise in prices (inflation) or both. What it's really needed is to increase the public and private investment, so to be able to move up and to succeed the rapid growth rates. Low interest rates also help in that they contain the interest cost of servicing the country's debt and help balance the budget sooner: *Debt-GDP Ratio = Government Debt / Nominal GDP.*

The European economic policy was the main engine pursuing economic growth, competitiveness, convergence and consequently fostering social cohesion in European members of Eurozone. European Central Bank was in charge mainly with the implementation of monetary policy and the equilibrium between the money demand and the money supply. However, the public fiscal policy was remaining at the national control for member states and as a consequence there was a clear unbalanced between public deficit and public debt for member states. The Eurozone is facing a serious sovereign debt crisis. Several Eurozone member states have high, potentially unsustainable levels of public debt. In light of the large debt loads advanced economies will have to undertake a series of fiscal consolidation measures to reduce government spending and increase taxes which will lower the growth rate of these economies for a number of years to come. Debt levels and deficits that exceeded limits set by the Eurozone were revealed and exposed.

However, the Eurozone is facing a harder battle in the fight against its debt crisis, as economic growth seems to stall in the face of budget tightening. Uncertainty is abundant for European markets. The Eurozone is seen as lacking unified political leadership. Confidence in European leaders and the ECB seems to be on a declining trend. The debate for a new scenario for Eurozone financial crisis could be based on a fundamental step towards a fiscal union has increased, (the so-called Eurobonds). Eurobonds point out that the public finances of the Eurozone, compare favorably with other big economies such as the US, whose government is currently able to borrow at record low yields. Thus, the currency area would be able to benefit from low borrowing costs, helped by the liquidity advantage of creating what would become a vast government bond market. Nonetheless, critics argue that creating Eurobonds would weaken budget discipline, reducing the incentive for weaker states to get their finances in order.

European leaders will have two choices, either to take a big step towards fiscal union, or a break-up of single currency. However, moving towards a fiscal union seems unlikely with Germany and France strongly opposed to such suggestions. The problem with the idea of countries leaving the euro is that there is no exit mechanism and increases the cost if a member states was to exit the single currency.

What is really needed is a concrete economic policy based in a long-term-planning, so to avoid the so-called "myopia-phenomenon", and also a more concrete policy from European Central Bank with orientation to growth and development. The failure of European Central Bank to "push" and create the economic growth in South West European States

(SWES, namely Greece, Italy, Spain and Portugal) have implied seriously problems and doubts for the future of Eurozone.

Crisis is a time for action, preceded by careful analysis. The future European policy against the public debt and public deficit must oriented toward economic growth and the use of the triangle of human capital, local resources, innovation. Human capital is the key as a core policy for growth process. Innovation as a driver of growth and competitiveness, cohesion and economic growth. All stakeholders must be involved in both processes, so consensus and commitment be assured.

Competitiveness and productivity its closely related with human capital development and growth process. The economic policy aiming solely to reduce the public expenses and to minimize the public and social policies may also be misleading and lead to shirking growth and moreover to increase the social inequalities and social explosions. The resolution of this situation will most likely involve a combination of fiscal and monetary policies with a more active role of European Central Bank. However, the political economy of fiscal tightening is already quite complex and fraught in South West European States and the current fragile consensus for fiscal consolidation is highly unlikely to survive until 2013 and beyond.

5. References

Blackstone, B., Lauricella, T. and Shah, N. (2010). "Global Markets Shudder: Doubts About U.S. Economy and a Debt Crunch in Europe Jolt Hopes for a Recovery". *The Wall Street Journal*. http://online.wsj.com/article/SB10001424052748704041504575045743430262982.html.

Eurostat Databases

Floudas, D. A. (2010) "The Greek Financial Crisis 2010: Chimerae and Pandaemonium". Hughes Hall Seminar Series, March 2010: University of Cambridge. http://www.talks.cam.ac.uk/talk/index/23660.

Lauricella, T. (2010) "Investors Desert Greek Bond Market – WSJ.com". *The Wall Street Journal*. http://online.wsj.com/article/SB10001424052748704133804575198390974245622.html.

Gros,D. (2010) "The Euro Can Survive a Greek Default – WSJ.com". *The Wall Street Journal*. 29 APRIL 2010. http://online.wsj.com/article/SB10001424052748704423504575212282125560338.html?mod=WSJ_Opinion_LEFTTopOpinion.

Pirounakis G. N.(1997) *Greek Economy: Past, Present and Future,* Macmillan Press, London.

Tsakalotos E. (1991) *Alternative economic strategies- the case of Greece,* Aldershot, Hampshire: Avebury.

Tsouganatos G.A.(1992) *The development of the Greek economy, 1950-1991,* Greenwood Press Inc., USA

Visitor-oriented strategic museum management for small regional museums. The Greek case of the Ethnological Museum of Thrace

Abstract:
Rabid financial, technological, social and political developments have greatly influenced the role and function of nonprofit organizations, especially Museums. Museums, as bodies of culture, aim at cultural contribution-enabling access to cultural heritage, promoting broad cultural participation and providing informal education- while trying to find the appropriate means to adjust themselves to the new environment. Thus, the new competitive conditions require management techniques which allow museums to be able not only to survive but also to go ahead.

The present study focuses on a small regional private museum in Greece, a country which has been suffering the most due to economic crisis, and examines the way that this nonprofit organization has managed the new situation through adopting strategic managerial methods.

Key words: nonprofit organization, museum, strategic management, visitor-oriented strategy

Goulaptsi Ioanna[1] **and Tsourvakas George**[2]

1 Ioanna Goulaptsi, Aristotle University of Thessaloniki, ioannagoulaptsi@jour.auth.gr. She is a PhD Candidate in Cultural Management at Aristotle University of Thessaloniki, School of Economic and Political Studies, Department of Journalism & Mass Communications. She is currently Scientific Consultant of the Mayor of Alexandroupoli, Greece on cultural and communication issues. Her main research

2 George Tsourvakas, Aristotle University of Thessaloniki, gtsourv@jour.auth.gr. He is a Professor of Cultural Management and Cultural Economics at Aristotle University of Thessaloniki, School of Economic and Political Studies, Department of Journalism and Mass Communications.

1. Introduction

It is a fact that consumption, competitiveness, technology and constant development are characteristics of the current era where everything changes with a pace that overwhelms the imagination. Current literature suggests that these characteristics influence the sustainability of companies as well as cultural organizations (Gilmore & Rentschler, 2002; Peacock, 2008; Pop & Borza, 2015). Both for-profit and non-profit organizations are continuously called upon to respond to new circumstances building upon tangible and intangible sources by applying efficient and effective management. Especially cultural organizations are proposed to develop a market-oriented culture as to achieve not only a growth in resources and higher levels of customer satisfaction, but also a growth in reputation among peers (Gainer & Padanyi, 2001; Yucelt, 2008; McNichol, 2005; Tobelem, 2007; Kotler, 2007).

It might be questioned whether art missions and management techniques can be compatible, as art is connected with creative freedom, individuality and creative chaos while management involves effectiveness, productivity and financial success (Mpitsani, 2004). However, these spheres can co-exist if cultural management is understood as a process, which aims at the successful creation and implementation of a project, having ensured the required means and resources for the accomplishment of its goals, while specific persons are in place to put forward specific goals that could be accomplished in a specific time-frame (Peacock, 2008; Kovach, 2009).

In this paper we argue that this compatibility between mission and management strategy is necessary in a period of economic crisis, therefore in the following sections we analyze the relevant theories, present our methodology, outline our chosen case study, and finally conclude with a discussion of our findings.

2. Museum: a cultural organization in boom or in crisis?

According to the International Council of Museums (ICOM) "A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment" (http://icom.museum/the-vision/museum-definition/15/09/2017). ICOM's museum definition provides a framework that many museums in the world, if not all, relate to. However, revising it is one of the biggest challenges of the museum community. According to Jette Sandhal, Chair of the Committee for Museum Definition, Prospects and Potentials (MDPP) "*The importance of museum definition is that it functions as a shared framework for museums across the world-which is itself quite miraculous*. *The museum definition thus seems to need to be historicized, contextualized, de-naturalized and de-colonialized*". This is why ICOM created in 2017 the MDPP –to explore the diversity of museums, bring experts together, address social trends and advise ICOM on a possible revision (https://www.youtube.com/watch?v=e6eROC9Lk0A&feature=youtube/15/09/2018).

In the last decades the role of museums in modern society has been redefined. Since the beginning of the 20th century the traditional definition has been replaced by the principles of "New Museology", which aim to propose new forms of communication and new types of expression, marked by a focus on people (people/visitor-oriented approach) and the way they experience a visit in a museum rather than the exhibits and the collections (McCall & Gray, 2014; McLean, 2006; Camarero et al., 2007). The object itself is no longer at the centre of attention. These new priorities change the character of the museum itself and call for the use of new media and technologies as well cultural management techniques (McCall & Gray, 2013, Gilmore & Rentschler, 2002; Reussner, 2010).

It is now obvious that an interactive relationship is being developed between museums and visitors. People have the potential to explore the collections and be inspired by them instead of passively accepting the messages set forth by the institution's managers and

curators (Soren, 2009; Brida et al., 2016). Moreover, modern museums are open and accessible to multiple categories of visitors such as families, pupils, students, tourists, disabled, elderly and people of different nationalities or religions (McNichol, 2005).

Looking specifically at Greece, there are numerous big and small museums operating within the country (http://odysseus.culture.gr/h/1/gh10.jsp-10/09/2018). Since the 1970s, there has been a major increase in the number of museums, which, however, has not been accompanied by asimilar increase in the number of visitors. This has created the current situation which is characterized by competitiveness, uncertainty and reduced financial sources, and makes urgent the need of adopting the right management and marketing techniques in order for museums to be able not only to survive, but also to claim their own market share (Cole, 2008; Dolnicar & Lazarevski, 2009, Kotler & Kotler, 2000).

In short, museums have to follow a visitor-oriented policy aiming at attracting a variety of visitors as well as the development of museum services that are appropriate to diverse museum audiences; they need to maintain their old visitors and attract new ones. The belief that a visit to a museum is synonymous with a boring school activity or an activity for the elderly must be overcome. Museums should identify the needs, desires and wishes of both their current and potential visitors and should also convince them that a single visit to the museum is never enough (Burton & Scott, 2003). Thus, it is necessary to foster commitment from their visitors so that their visits will be longer and more frequent (Bradburne, 2007).

In order to achieve these goals, it is crucial that appropriate management techniques be adopted in cultural organizations, to help them define and accomplish their goals. This will include completing necessary planning; parceling their project into specific tasks and duties; identifying staffing issues and finding capable senior staff (leading); and applying the required processes of evaluation and controlling aiming at the improvement of its function (Griffin, 1988; Bradburne, 2007; Kovach, 2009). Reussner (2003) suggests a visitor-oriented strategic museum management including goal-development, strategic analysis, strategic orientation, strategic planning, implementation and strategic control.

3. The role of managing museums

According to Kovach (1989) the most vital element in strategic management is mission. This expresses the reason for an organization's existence, its identity and beliefs. Generally speaking, museums' mission is concerned with the curatorship, preservation and display of their collections, as well as their educational role in society (Kotler & Kotler, 1998, McNichol, 2005). It may be argued that museum's mission is never completed because its services are constantly evolving as a result of new additions to their collection as well as new means of technology and communication (Peacock, 2008). Indeed, museums are in a state of continuous change because of the new methods of preservation and presentation of the exhibits, new attitudes concerning learning and education, and the contribution of new technology to collections. For all of the above reasons, integrating managerial knowledge and practice in museums is crucial. These practices will furthermore contribute to the museum's ability to respond to internal and external changes.

According to Kotler & Kotler (1998) institutional goals should be specific, realistic and clear; they should be in accordance with museum's identity and character and should take into consideration museum's strengths and weaknesses, public's expectations and the competitive environment. Goals can be categorized in three categories: a) those concerning the increase of visitors, members, subscribers, donations and sponsorship, b) those aiming at the improvement of services, products and programs and c) those concerning organization, planning and competitiveness. It is important to recognize that specific goals for individual museums can differ quite widely. One museum may aim at increasing the number of its

visitors and consequently their income while another museum may focus on increasing the number of its exhibits, etc.

McLean (1997) believes that one of the most important goals for a museum is the increase of its visitors, as they play a vital role in its survival. Furthermore, exhibitions are created for the public and if the museum is not open to them, it has no reason for existence. Kotler and Kotler (2000) suggest three strategies for increasing the number of visitors and improving the experience of visiting a museum. These are the enrichment of exhibits, the improvement of products and services, and the creation of comfortable and accessible facilities.It is important to remember that visitors divide their time in a museum between its exhibitions, the café or restaurant, and the shop.

Managers should take into consideration the expectations and experiences of their visitors (Sheng &Chen, 2011; Yucelt, 2001; Albrecht et al., 2016; Soren, 2009; Brida et al., 2016; Chiappa et al., 2014). In order to do this, it is important to conduct visitor research, as each visitor is unique. While one person may be looking to satisfy their pride in their national heritage or history, another might be interested in increasing their knowledge in a certain area, and yet another may see a visit to the museum as simply a break from their daily routine. For some, simple things such as parking, accessibility, cleanliness and friendly staff play a major role in choosing a museum for a visit.

It is possible to identify three overall strategies which can be effective in attracting new visitors and maintaining the old ones. The first strategic category is united by a goal of transforming visitors into users, allowing individuals to have an active role in the storytelling of the exhibition (Goulding, 2000; Bradburne, 2001). Some methods for achieving this aim include hosting temporary exhibitions, having an organized shop, restaurant or café, and organizing social events such as book presentations or concerts. The second strategy relates to the relationship between the museum and the local society; it focuses on educational programs for pupils and adults, workshops for kids, adults and elderly people. Its main goal is the emergence of local history and traditions (Baniotopoulou, 2000; Bradburne, 2007). Finally, the third strategy focuses on marketing as a tool to attract as many new visitors as possible and transform the museum into a popular leisure destination, appealing enough to compete with similar such destinations such as cinemas, restaurants, malls etc., without losing of course their initial identity (Tobelem, 2007, McNichol, 2005; Kotler, 2007; Robbins & Robbins, 1981; Mclean, 2006).

Museum staff, which consists of managers, curators, conservators, educators, administrative officers, technicians and guards, play a major role in the implementation of all the required strategies so as the organization achieve its goals. Therefore, it is of crucial importance museum managers to be capable to communicate efficiently any proposed change or new method and develop a pleasant and cooperative climate among employees (Kitchen & Daly, 2002; Higgs & Rowland, 2005; Fuchs & Prouska, 2014; Jung, 2016; Bluhm, 2016)

Museum managers should be the ones responsible for defining their goals and planning the strategy for their implementation. Any plans should be clear, in written form and long-term and should be communicated appropriately to the staff. Managers should also evaluate the strengths and weakness (internal environment) as well as the opportunities and threats (external environment) and use this information to determine the most effective and efficient methods for achieving their goals. (Kotler et al, 2008; Abraham et al., 1999).

Managers should also support the employees' participation in this process by creating a relationship of strong communication and trust and giving them rewards and motivations (Tsourvakas, 2012; Fuchs & Prouska, 2014; Knudsen, 2016). Communication and cooperation between managers, employees and volunteers is very crucial and reflects the internal managerial performance to the external managerial performance through the offered services regarding education, communication and accessibility (Gilmore & Rentschler, 2002; Jung, 2016).

4. Methodology

The present research examines how a small private museum in Northern Greece managed to handle the economic crisis adopting some necessary changes and applying the appropriate managerial techniques and methods. This museum was chosen because of its importance for its position in the border and multicultural area of Thrace, a region which still stays behind in development in spite of its age-old culture and history. Therefore, a boost in the field of culture is considered very important; to promote and strengthen the economic and touristic development as well as to maintain the historic continuity.

The Ethnological Museum of Thrace is a small, regional museum which faces some difficulties regarding funding and staff. However, this museum should find the way to survive in order to develop. According to studies, organizations that adopted managerial techniques managed to be more effective towards other organizations but also towards their past (Tlili, 2012; Burton & Scott, 2003, Peacock, 2008; Kovach, 2009; Pop & Borza, 2015). So, it would be very useful for other museums of similar characteristics to examine the management methods that were applied in order the museum to deal with the current circumstances.

The study is based in qualitative descriptive research. Data were collected via participant and direct observations, interviews and examinations of records in the period 2013-2017. Some data were also collected from the official site and museum's page in social media. A depth interview with the founder and President of the Museum was taken in September 2017 while there was a constant communication and discussion with the employees during all these years of the research.

The chosen method was theory-building research, which might start from a strictly descriptive aim of discovering and describing concepts that might later become relevant for a theory. Often the objective of the study is to build and describe a typology of a phenomenon of interest in order to get more insight into how the phenomenon looks in different situations, but without an attempt to explain the occurrence of specific types or to find or explain effects. Research is building and testing statements by analyzing evidence drawn from observation. (Dul & Hak, 2008).

5. The Ethnological Museum of Thrace

The Ethnological Museum of Thrace was founded in October 2002 in Alexandroupolis – the capital city of the Prefecture of Evros in North-East Greece, which borders with Turkey and Bulgaria- to conserve the historical memory in the wider area of Thrace. It was created within a distinctive historical and social context. The region is at the crossroads of roads leading to Bulgaria and Turkey and is mainly inhabited by Greek refugees from Eastern Thrace who fled to Greece in the ethic turmoil of the 19th-20th centuries. There are also important populations of native Greek Muslims, Roma and Pomaks. In Thrace, multiculturalism results to a singular cultural richness. Furthermore, due to the rural character of the region, its intangible heritage has been preserved almost unchanged until recently. This social environment underlines its uniqueness of its mission to safeguard these multicultural memories, traditions and practices.

The Museum is a self-funded organization and has been operating in a leased, stone-built neoclassical building that dates since 1899. It is a livable place where anyone can meet the Thracian customs and culture while it combines tradition with the concerns of modern society. Its mission is the study, presentation and promotion of Thracian culture. Its goal is to make its place a crossing point for redefinition of the tradition.

Its permanent exhibition consists of objects of tangible Thracian civilization, a rare archive of photographs, videos and a library. There are more than 500 exhibits through which the visitor can realize how Thracian life style looked like from the beginning of the 17th century till the 20th century. The objects are exhibited in the first floor of 161,4 square

meters, in the basement of 130,5 square meters and in a nearby small house of 35 square meters. In the roofed inner yard there is a shop and a cafe (http://emthrace.org/en/museum/10/07/2018).

The place is small but pleasant. In accordance with the principles of "New Museology" it is open to public and takes cares for every part of society (McCall & Gray, 2013). It is accessible to the disabled, there are sufficient signs, brochures -translated in English, Bulgarian, Turkish and Russian-, big screens, photographs and every exhibit is accompanied by a short text that gives the required information.

Guide tour concerning the time axis described through the exhibits is being done through a video-tour; maps, photographs, digital films and some additional historic material are available to visitors. There is also a database created from data coming from the archive of the Refugee Rehabilitation Commission 1928 and the digital maps of Northern and East Thrace of 1920. Through this database the names of 18.000 refugee farmers who established in Prefectures of Evros in 1922 are connected with their ancestral residents, contributing to their connection with their roots and creating strong bonds with their past and even stronger emotions and experiences (Camarero et al., 2009).

Having realized the challenges and changes of 21st century, the museum has managed to deal with the new technologies (Peacock, 2008; Burton & Scott, 2003). The objects are simply exhibited in the space but all the new technological and digital means, by which they are surrounded, make the visit a unique experience. In each place there is a screen in which digital films related to the exhibits are being projected. Visitors are being transported to another era characterized by a different life style. In addition, the photographs, the maps and the building itself, which seems untouchable through time, create a unique scenery of a strange but so attractive age, turning the visit into a unique experience (Fray, 1998; Burton & Scott, 2003; Bradburne, 2007)

6. The Ethnological Museum of Thrace towards the Greek economic crisis

The Ethnological Museum of Thrace is a Non-Profit Civil Partnership, run by a 5members administrative council. Mrs Aggeliki Giannakidou is the Chair of Board and founder of the museum, a woman with 30 years experience in research and study of Thracian civilization.

The museum is making a great effort according to principles and values of New Museology. The Museum's aim is to preserve and promote what is most authentic, most original in Thrace: the self-expression of the ethnic groups who made their home in the area. The ethnological and historical exhibits of the Museum, which have been collected with great effort over a long period of time, preserve local history and tradition as part of a force that not only looks back to the past but also helps shape the future. The Ethnological Museum of Thrace was founded with the purpose of preserving historical memory in the wider region of Thrace (http://emthrace.org/en/museum/20/09/2017).

Due to its size and the limited number of its permanent staff, there is not the typical structure similar to that of other museums with specific departments, tasks and responsibilities. However, the ambitious and change-oriented Chair of Board and its workaholic employees are constantly aware of any developments and ready to apply any required changes. Thus, its structure makes decision making more flexible and faster (McNichol, 2005, Camarero et al., 2011)). There are frequent meetings for new actions and plans; every goal is defined and communicated appropriately to the involved ones (Gil et al., 2005; Kitchen & Daly, 2002; Liu, 2012) and a worth trusting relationship has been established (Fuchs &Prouska, 2014). The museum follows a goal-development strategy, through which preliminary goals are laid down and formulated in a more concrete way. A strategic analysis consisting of an organizational analysis to identify strengths and weakness of the museum, and an environmental analysis to learn about the threats and opportunities in the museum context, comprise part of its strategy including strategic orientation, strategic

planning, which produces strategies that are designed to achieve the previously defined major goals, implementation and strategic control.

The current unstable economic situation has made museum re-define its goal, try new activities and find out more new ways in order to attract more visitors and maintain the old ones. Its main goal is to create a permanent relationship with the visitor and make them a user (Tobelem, 2007; Kotler; 2007). For the above reasons there is an annual renewal of the offered educational programs and workshops addressed to all ages, while seminars, speeches and presentations have been hosted all year round. This makes the visitor willing to repeat their visit to Museum and each time to have a different experience (Brida et al., 2016). Through the years the museum has invested in its relationship with the local communities, which is now based on mutual appreciation and trust. It should benoted that the museum's marketing strategy benefits directly the local cooperatives and providers by buying and promoting their products worldwide and thus contributing to their sustainability. The Ethnological Museum of Thrace is one of the few Greek museums that have achieved safeguarding the heritage of the past and proposes a vision for a sustainable future for the local people.

Being a self-funded organization, knows the cost of its operation and controls its financial data. Having obtained a better insight into marketing theory, the museum has developed a market-oriented strategy that focuses on appealing to new visitors according to their needs, wants and expectations, members, sponsors and donors (Sheng & Chen, 2012; Pope et al., 2009, Camarero& Garrido, 2011). Moreover, recognizing the specific multicultural heritage of the region as its comparative advantage, the museum has planned a tailor-made branding and marketing strategy with the goal to achieve financial sustainability. The Ethnological Museum of Thrace has innovated in fully developing the potential of knowledge, practices, and skills of the local populations. In this framework, the museum is collaborating with the catering of the Aegean Airlines and supplies its first-class passengers worldwide with Thracian delicacies. It is also making its way into the fashion industry and creates contemporary clothing using traditional weaving techniques and designs from the museum's collection.

Because brand recognition is essential to marketing a product, the museum pays attention in creating a superb relationship between its name and the personality that goes with it. Through surveys, assessment forms and the guest book, explores how the visitor views the organization's history, origins, association, and communication of what makes it unique. Along with segmented target audiences develops a strategic plan in order to implement its positioning.

It is also open to collaborations; so far has cooperated with other bigger museums, such as the Benaki Museum in Athens, universities (Democritus University of Thrace, University of Adrianople and University of Plovdiv), local authorities (Administrative Region of Eastern Macedonia and Thrace and Municipality of Alexandroupolis), airlines (Aegean Airlines) and Alexandroupolis International Airport where hung posters illustrate the old city and the history of Alexandroupolis.

In spite of its size, the few years of its operation and the limited number of its staff the Museum has managed to produce remarkable and very considerable work that made it popular and attractive to other organizations or people who want to present their work. Indicative of this is the continuous increased number of the educational programs and the pupils that attend them, the workshops and the various indoors and outdoors organized activities (Table 1).

Year	Educational Programs	Participants	Workshops	Activities (seminars, book presentations, concerts etc)
2012-2013	72	1491	7	28
2013-2014	88	1825	8	43
2014-2015	126	2864	10	48
2015-2016	125	2679	11	51

7. Adopting innovative ideas

The Museum has been organizing a variety of activities among which educational programs for pupils and adults, workshops for children, teenagers and adults, comic workshop for children and teenagers, drama workshop and embroidery workshop especially for elderly women. There are also educational programs adjusted to the needs and abilities of disabled people, programs for children and adults of different religion and programs addressed to foreign students or adults. At times temporary photographs or jewelry exhibitions are hosted in the Museum while concerts, recitals and book presentations are often organized. Moreover, museum's purpose is to be a place for research and study. Thus, seminars and lectures are also being organized. In addition, the Museum is not reluctant to go out of its space. Therefore, it has organized outer activities, such as cooking in the streets, photograph shooting or street fashion-parade. There is also a museum suitcase containing educational material about Thracian diet and culture, which travels around Greece.

The Museum uses new technology to improve its services and projects its content (videos), communicate and create a close relationship with its audience (digital visit, e-shop, and social media), produce cultural goods such as documentaries and films while promotes itself via advertisement on media, hotels, airport and social media (facebook page: *Ethnological Museum of Thrace*). This fun page numbers more than 6,000 followers, developing an interactive relationship.

The Museum has also a cozy café where the visitor can find and taste local handmade products and a picturesque shop where traditional techniques meet modern aesthetic in objects that indicate the place and the local history. Through the shop local craftsmen and the museum itself are being supported promoting the cultural entrepreneurship, while the Thracian culture is being preserved and promoted.

8. Conclusion

It is obvious that the Ethnological Museum of Thrace cannot be compared with other bigger museums in Greece or Europe as it is a small regional museum dealing with restrictions in public funding. Our conclusions are related to specific issues such as its administration, organization, management, communication and innovation.

The Museum applies visitor-oriented strategic management in line with cultural policy guidelines, as there is a specific mission and each year puts forward clear and realistic goals trying to attract new visitors together with maintaining its financial viability, without compromising its obligations to society. In order to achieve these goals, it implements a goal-development policy including strategic analysis, strategic orientation, strategic planning, implementation and strategic control.

Thus, it takes advantages of its strengths, such as its brand name, the permanent exhibition, its popular educational programs and actions, its flexible structure and its open character and tries to deal with its weaknesses, which are the limited number of staff and the restrained public funding. The Ethnological Museum of Thrace also knows to recognize the opportunities in the wider political, social and economic environment, including the increasing number of tourists coming mainly from Russia, Turkey and Bulgaria, the new

means of technology and information and the fact that more people are interested in arts and culture.

The Museum has already adopted the principles of New Museology and acts according to Cultural Management methods. It has managed to create a recognizable brand name producing remarkable work. Due to its status and its size it has the potential to be flexible and adjust itself to new conditions. It is open to new ideas and does not hesitate to make any changes when there is a need. Museums's President and its employees are positive to changes and they are constantly aware of new developments. They do not stay inactive when something new happens in the general economic or political situation. Through creativity, imagination and pure communication they are continuously trying to face reality and overcome any obstacles.

The Museum is a visitor-oriented and not an exhibit-oriented one. Its aim is to turn the visitor into a participator and partner in the process that focuses on memory, history and place. It has already applied strategic movements in order to attract new audience, through interactive educational programs, temporary exhibitions, the high quality of services and goods, and through its relationship with local communities. It has also tried to approach local society through multicultural educational programs while its work has drowned local authorities' interest and contribution.

The Chair of Board has a significant role in administration, organization, controlling and evaluation. Following a transactional leadership style, she is in constant communication and cooperation with the other members of Board, the permanent staff and the external contractors as well as the volunteers and the local society. Her education, her passion and her experience are mainly the reasons why she is applying an effective administration through cooperation, teamwork, continuous improvement, strategy, controlling and visitor's satisfaction following the management methods. The employment of specialized permanent or temporary staff, the distribution of competences and the evaluation are factors that make the museum competitive and recognizable.

Museum's openness to public and different population or social groups was succeeded through innovative actions, interactive programs, social media and advertisement in central points, such as the airport and top hotels. Strategic management is a useful tool for the museum, as it sets the goals which will partially complete its never-ending mission. Through strategic management a specific direction is defined and all the planned actions and decisions lead to this one.

The Ethnological Museum of Thrace has managed to remain vital despite the economic crisis and the unstable external political environment adopting gradually new ways of thinking and new attitudes that make it capable to feel any possible opportunities and protect itself from any risks. Its members are in a constant awareness trying to understand the developments, feel the general change and capture frontier ideas. Its strategy contributes to creating a positive illustration and strengthening its brand name and status. Thus, a dynamic and creative work is being produced which can attract more sponsors, donors, volunteers and museum's members.

Moreover, the existence of an effective strategy is related to an increasing public trust as the number of visitors is continuously increased. Strategic management is a competitive advantage for the museum. It strengthens communication, cooperation, enthusiasm, common effort and ensures partnership, cohesion and positive attitude. It supports decision making and facilitate goals to be achieved.

The relationship between the Museum and its audience is also very interesting. There is a great effort to attract more visitors through innovative educational programs, workshops or entertaining activities. New technologies and social media are also in use to make this relationship closer and turn it to a commitment transforming the visitor to user.

As a conclusion we can suggest that Ethnological Museum of Thrace has managed through visitor-oriented strategic management, knowledge, awareness, cooperation and innovation to be a livable organization, a place of research and spiritual creativeness. It follows and applies all modern methods and principles of New Museology and cultural management; it is flexible and is concerned in a real cooperation among museum, school and local society.

The present research focused on a small regional museum, which have managed to be innovative and deal with the economic crisis applying management methods. However, there is still the need other museums especially of the public sector to be examined, where their structure is not so flexible and to find out if strategic management is being applied. In addition, more research is needed for other cultural, art and nonprofit organizations in order the need and importance of visitor-oriented strategic management to be understood.

9. References

Baniotopoulou Evdoxia. "Art for whose shake? Modern Art Museums and their role in transforming societies: the case of Guggenheim Bilbao", *Journal of Conversation and Museum Studies*, 7, November 2001, pp. 1-15.

Bluhm Andreas. "Managing change at the Groninger Museum", *Museum Management and Curatorship*, 31, 2, February 2016, pp. 96-101.

Bourantas, Dimitrios. *Management: Theory, Modern Practices* (Greek), Mpenou, Athens, 2001

Bradburne James M. "A New Strategic Approach to the Museum and its Relationship to Society", *Museum Management and Curatorship*, 19, 1, May 2007, pp.75-84.

Brida Juan Gabriel, Meleddu Marta & Pulina, Manuela. "Understanding museum visitors' experience: a comparative study", *Journal of Culture Heritage Management and Sustainable Development*, 6, 1, May 2016, pp. 47-71.

Bullock Justin B., Wenger Jeffrey B. & Wilkins Vicky M. "Attitudes About Hard Work: A Global Perspective on the Beliefs of Government Employees", *International Public Management Journal*, 17, 1, February 2014, pp. 25-44.

Burton Christine & Scott Carol. "Museums: Challenges for the 21st Century", *International Journal of Arts Management*, 5, 2, January 2003, pp. 56-68.

Camarero Carmen & Garrido Ma Jose. "Improving Museum's Performance through Custodial, Sales and Customer Orientations", *Nonprofit and Voluntary Sector Quarterly*, 38, 5, October 2009, pp. 846-868.

Camarero Carmen, Garrido Ma Jose & Vicente Eva. "How cultural organizations' size and funding influence innovation and performance: the case of museums", *Journal of Cultural Economic*, 35,4, November 2011, pp. 247-266.

Camarero Carmen & Garrido Ma Jose. "Incentives, organizational identification, and relationship quality among members of fine arts museums", *Journal of Service Management*, 22, 2, 2011, pp. 266-287.

Camarero Carmen & Garrido Ma Jose 2012. "Fostering Innovation in Cultural Contexts: Market Orientation, Service Orientation, and Innovations in Museums", *Journal of Service Management*, 15, 1, September 2011, pp. 39-58.

Chiappa Giacomo, Andreu Luisa & Gallarza Martina G. "Emotions and visitors' satisfaction at a museum", *International Journal of Culture, Tourism and Hospitality Research*, 8, 4, 2014, pp. 420-431.

Dolnicar Sara & Lazarevski Katie. "Marketing in non-profit organizations: an international perspective", *International Marketing Review*, 26, 3, 2009, p.p. 275-291.

Dul Jan. & Hak Tony. *Case Study Methodology in Business Research*, 1st ed., Boston, Elsevier, 2008.

Fuchs Sebastian & Prouska Rea."Creating Positive Employee Change Evaluation: The Role of Different Levels of Organizational Support and Change Participation", *Journal of Change Management*, 14, 3, September 2014, pp. 361-383.

Gainer Brenda & Padanyi Paulette. "Applying the marketing concept to cultural organizations: An empirical study of the relationship between market orientation and performance", *Journal of Nonprofit & Public Sector Marketing*, 21, 2, May 2002, pp. 184-201.

Gallagher Kevin & Weinberg Charles. B. "Coping with Success: New Challenges for Nonprofit Marketing", *Sloan Management Review*, 33, 1, 1991, pp. 27-42.

Gilmore Audrey & Rentschler Ruth."Changes in museum management. A custodial or marketing emphasis?", *Journal of Management Development*, 21, 10, 2002, pp. 745-760.

Goulding Christina."The museum environment and the visitor experience", *European Journal of Marketing*, 34, 3, April 2000, pp. 261-278.

Jones Michelle & Harris Alma. "Principals leading successful organizational change", *Journal of Organizational Change Management*, 27, 3, 2014, pp. 473 – 485.

Kawashima Nobuko. "Knowing the Public. A Review of Museum Marketing Literature and Research", *Museum Management and Curatorship*, 17, 1, May 2007, pp. 21-39.

Kotler Neil & Kotler Philip. *Museum Strategy and Marketing*, Josey- Bass, 1998.

Kotler Neil & Kotler Philip."Creating new visitors and achieving economic survival in the era of museum marketing", *Museology Notebooks* (Greek) 5, 2008, pp. 21-32.

Kotler Neil & Kotler Philip. "Can Museums be All Things to All People?: Missions, Goals, and Marketing's Role", *Museum Management and Curatorship*, 18, 3, September 2000, pp. 271-287.

Kovach Carol."Strategic Management for museums", *International Journal of Museum Management and Curatorship*, 8, 2, June 1989, pp. 137-148.

Lindqvist Katja. 2012. "Museum finances: challenges beyond economic crises", *Museum Management and Curatorship*, 27, 1, February 2012, pp. 1-15.

MacLean Fiona. *Marketing the Museum*, Routledge, London, 1997.

MacLean Donald & MacIntosh Robert. "Strategic change as creative action", *International Change of Strategic Change Management*, 4, 1, January 2012, pp. 80-97.

McCall Vikki & Gray Clive."Museums and the 'new museology': Theory, practice and organizational change", *Museum Management and Curatorship*, 29, 1, 2014, pp. 19-35.

McNichol Theresa. "Creative Marketing strategies in small museums: up close and innovative", *International Journal of Nonprofit Voluntary Sector Marketing*, 10, 4, November 2005, pp. 39-247.

Mpitsani Evgenia."*Cultural Management and Regional Development*". Planning Cultural Policy and Cultural Product, Dionikos, Athens, 2004

Peacock Darren."Making Ways for Change: Museums, Disruptive Technologies and Organizational Change", *Museum Management and Curatorship*, 23, 4, May 2008, pp. 333-351.

Pope Jennifer A., Isely Elaine Sterret & Asamoa-Tutu Fidel. "Developing a Marketing Strategy for Nonprofit Organizations: An Exploratory Study", *Journal of Nonprofit & Public Sector Marketing*, 21, 2, May 2009, pp. 184-201.

Rentschler Ruth. "Museum Marketing: no longer a dirty word". In Rentschler, Ruth and Hede, Anne-Marie (ed), *Museum marketing: competing in the global marketplace*, Elsevier, Amsterdam, Netherlands, 2007, pp. 12-18.

Reussner Eva M. "Strategic Management for visitor-oriented museums", *International Journal of Cultural Policy*, 9, 1, June 2010, pp. 95-108

Tlili Anwar. "Managing performance in publicly funded museums in England: effects, resistances and revisions", *International Journal of Heritage Studies*, 20, 2, February 2014, pp. 157-180.

Tobelem Jean Michel. "The Marketing Approach in Museums', *Museum Management and Curatorship*, 16, 4, July 2007, pp. 337-354.

Todnem Rune By."Organizational change management: A critical review", *Journal of Change Management*, 5, 4, February 2007, pp. 369-380.

Tsourvakas George. *Management of Communicative and Cultural Organizations* (Greek), 1st ed., UNIVERSITY STUDIO PRESS, Athens, 2012.

Yucelt Ugur. "Marketing Museums: An Empirical Investigation among Museum Visitors", *Journal of Nonprofit & Public Sector Marketing*, 8, 3, October 2008, pp. 3-13.

Sites:

1. http://odysseus.culture.gr/h/1/gh10.jsp-10/09/2017
2. http://emthrace.org/en/museum/10/07/2017
3. http://icom.museum/the-vision/museum-definition/15/0/2018

Traditional Settlements in Greece. The Case of the Regional Unit of Ioannina Law

Abstract

The study of traditional settlements is unique in its own, as it consists of the traditional settlements' dual dependence, both from their past and from their present. Similar cases deserve the attention of communities because of the importance of their historical presence over time and their continuity and survival in the present as living organisms.

The study is expected to investigate questions related to the socio-economic and characteristics of traditional settlements, which will enable us to look at the trends that have developed over time. We will also explore the mechanisms through which the viability of traditional settlements is achieved during the transition from the traditional regime to modern reality.

The present work will record their evolution over time from the 1940s until present day. It will draw attention to the spatial planning policy of the modern Hellenic State with regards to the design and development of settlements, as well as the legal framework for the protection of the traditional settlements.

In particular, the research focuses on the area of the Prefecture of Ioannina. The geomorphological characteristics of the traditional settlements will be examined, in relation to their socio-economic structure, in order to draw conclusions about their viability over time as living organisms.

Keywords: Traditional Settlements, Spatial Planning, Zagori, Monuments, Urban Geography.

Anastasios Giotis[1]

[1] Corresponding-Address: Anastasios Giotis PHD Candidate, Ms GIS, Aegean University, Department of Geography, email: agiotis@geo.aegean.gr

1. Introduction

Settlements are the cell through which contemporary cities have developed both at a socio-economic level and in relation to urban space. The purpose of this article is to study a particular category of settlements that have been characterized as Traditional Settlements.

Traditional settlements are the settlements that have managed to largely preserve their shape and local characteristics over time. These Traditional Settlements are considered to be monuments of particular cultural heritage and constitute the nucleus from which the cities developed and evolved in both social and economic terms.

Preserving the traditional character of some of them is a matter of major importance and concerns the whole of society, not just the regions themselves.

The great diversity of the buildings and their rich Greek architectural heritage are revealed in most of the traditional settlements. Having recognized the importance of the traditional settlements, the state has established corresponding conditions and restriction terms of construction, depending on each settlement.

Firstly, this research will emphasize on spatial planning and the policies implemented by the Hellenic state regarding the settlements. The legal framework governing this type of settlements will then be examined. The research will also lay emphasis on the mechanisms through which the viability of the traditional settlements is achieved during the transition from the traditional regime to the modern reality. The research will focus on the area of the prefecture of Ioannina (from the early 1940s until present day). The geomorphological characteristics of the traditional settlements will be studied in relation to their social and economic structure so as to highlight their uniqueness and importance.

2. Framework for the Protection of Traditional Settlements

In our country, securing the character of traditional settlements tracks back to the early 1950s. This was the time when the first law of the Hellenic state was passed, a law relating to the protection of the cultural value of settlements. The law stressed the protection of a special category of buildings and works of art.

The legislative protection of traditional settlements is first established in 1973 with the General Construction Regulations. In 1975 the revised Constitution of Greece followed. According to its Article 24 (-para.6-), "Monuments, traditional areas and traditional elements are protected by the State." Then, with the addition of legislative regulations (e.g. the General Building Regulations of 1985), construction was further restricted in the specific settlements. Three revisions of the Constitution followed in 1986 (March 12), 2001 (April 6) and 2008 (May 27). They are characterized by a rewording of the basic provisions concerning the protection of natural, man-made and cultural environments, as well as those relating to spatial planning and urban planning (Sidiropoulos and Giotis, 2011).

In addition, the Council of State plays a major role in the protection of the traditional settlements, not only with the exercise of its cancellation power, but also during the process of elaborating Presidential Decrees. Based on its responsibilities, the Council of State has established, tried and tested Principles and Positions which aim at defending the architectural and cultural form of the traditional settlements. It also assumed the role of guardian of traditional settlements with a relevant case law developed to resolve disputes between administration and administrators.

The case law relates to two issues. The first concerns the content and scope of the protection provided by the current institutional framework. The second highlights the constitutional “conflict” of this protection with other constitutional rights, such the right of ownership (Article 17 of the Constitution) and economic freedom (Article five of the Constitution). However, the aforementioned limitations are not unconstitutional, since the concept of protecting the cultural environment also incorporates traditional settlements (Sidiropoulos and Giotis, 2012).

At an international level, after the end of the World War II, governments value the importance of protecting cultural heritage (due to the major disasters that have occurred in monuments). This tendency has resulted in immediate and coordinated actions by international intergovernmental bodies in order to deal with possible risks.

At a global level, UNESCO is the organization that has undertaken the difficult task of protecting cultural heritage, while the Council of Europe and the European Union have undertaken this task at a European level. In 1954, under the guidance of UNESCO, the Hague Convention was signed, dealing with the "Protection of Cultural Property in the Event of Armed Conflict". It was later voted by the Greek Parliament in 1981. In 1992, the Greek Parliament ratified the Convention of Granada into law. Its aim was to preserve and promote the ideals and the principles of Architectural Heritage (monuments, architectural ensembles, places). Finally, the Greek Government ratified the European Landscape Convention, under the Law no. 3827/2010 (Giotis, 2018).

In view of the above, the protection of traditional settlements is a primary objective for the State, in order to preserve their unique features over time. The aim of the legislator is to preserve the rich cultural heritage and to highlight the historical elements (architectural monuments and landscapes) of each region.

3. Settlements within the sphere of spatial planning

The research has examined the policies followed by the Greek state regarding settlements, based on the political and social conditions prevailing in Greece and in the wider region. The research then focused on the trends dominated at a European level in relation to the way of design, creation and development of settlements.

In Europe, since the late 19th century, housing development projects have been developed while also taking into account other factors, such as agricultural production, industrialization of the areas and population growth in relation to urbanization. A large part of the settlements was designed primarily to house residents who were occupied as workers in areas of rural and industrial development. With regards to rural settlements, the element of detached houses dominates, while in the center is dominated by simple uses, such as recreation and administration as the work was outside the boundaries of the settlement. Instead, urban settlements display multi-storey complexes and functions such as work, commerce, administration and care (Theodoraki-Patsi, 2003).

A basic element of study is also the idea of Garden City, which was developed by Howard in 1898. Garden City was an intermediate state between a small traditional city and the community in nature. It was a residential model of structured buildings in the developing countries of Europe as well as in America. It is important to stress the fact that much of the settlements designed and developed in the UK later became extensions of metropolitan areas and they are not used today for the purpose for which they were originally designed. These settlements surround the urban centers with their small size and the natural environment being characteristic features of them. This type of settlement was mainly used in England and was a model for the English Urbanism until the World War II. The original design is based on the idea of an Anglo-American rural settlement with a circular or square green grass area for animal grazing, which in some cases was also the original core of urban development during the trade and industrial revolution period (Kafkoula, 2007).

In Greece, the events of the Asia Minor Catastrophe that led to the "greater movement of populations in history" resulted in the design and construction of the rural space again after 1923. In fact, the refugee issue of this period caused economic upheavals, which Greece had to face at a time of grave economic conditions. The problems raised were housing, reception and settlement infrastructure, public health and the professional rehabilitation of refugees. The above planning was carried out by grouping all rural houses, which were mainly detached

houses, into settlements built in the lowlands and at a distance of between four to six km (Theodoraki-Patsi, 2003).

The way in which rural settlements were distributed until the beginning of the 20th century related to the morphology of each region. With the end of World War I and the events that followed the Asia Minor Catastrophe, approximately 2000 new agrarian settlements were created in Greece, the majority of which were in Northern Greece (1700). The settlements followed the systematic organization of agricultural production. Geometric mapping (lots and roads) took into account the mechanization and irrigation of agriculture (systematic plan).

After the end of World War II, rural settlements were studied and designed based on the Marshall Plan. These settlements were established in new locations, thus replacing the old ones that were destroyed. In the 60s and 70s, the large migratory flows and urbanization lead to the desertion of a large part of the settlements. In the early 1990s, the return of expatriates from the former Soviet Union and the first migratory flows from former Actually Existing Socialism countries (e.g. Albania, former Yugoslavia, etc.) brought back life to the deserted settlements.

Most of the rural settlements were developed in the plains and in the hilly areas around them. A network of technical and hydraulic projects which supported agriculture was created around them. The residences of the settlements are single-storey or two-storey houses, while the location of the church, the school and any warehouses is conspicuous (Kosmaki, 1991).

In relation to the image of the settlements, the latter shows alternations from region to region. The settlements built up to the late 19th century (located in mountainous and semi-mountainous areas) resemble a "spider web". The houses are built in the center of the settlement always having a yard. Then scattered dwellings follow within the limits of the center, within a radius of not more than 500 meters. The settlements created after the Asia Minor Catastrophe are found in lowland areas, being designed in a rectangular grid with an organized structure. During World War II, several settlements were destroyed or abandoned, while others moved from the mountain to lowland areas. The result is the construction of new settlements with a green belt being designed between them and the road that is passing by them.

4. Field Research Methodology

The research part of the present work concerns the traditional settlements in the prefecture of Ioannina as well as in the area of Zagorohoria, where most of them are located. In our research, apart from theoretical approaches to the issue, either primary sizes or indices (population change per decade, sectoral employment, and unemployment) are depicted in digital thematic maps (using a Geographic Database). These maps depict the social and economic conditions that have prevailed over the last seventy years in the region.

The information used relates to statistical data from the population censuses from year 1940 to year 2001 at the settlement level, year 2001 and yaer 2011 financial data, year 2011 age distribution of the population, average altitude of the settlements and their characterization as plain, semi-mountainous and mountainous areas and the record of the uses in the buildings. These data come from the Greek Statistical Authority.

A scale of 1:50,000 was used for the geographical representation of all the above elements, which contains the boundaries of the prefecture and its municipalities, the location of the settlements, the basic and the secondary road network and the separation of Zagori into three regions (Eastern, Central and West).

In relation to the problems that have arisen in the course of the survey, it should be stressed that the results of the last population census (2001-2011), which took place in March 2011 at the settlement level, were available to the public at early 2016. Moreover, during the censuses that took place between 1940 and 1991, the information related to economic data was not collected at the settlement level (for city complexes only). As a result, there is a great

difficulty in extracting timeless and safe conclusions about unemployment, employment in the primary, secondary and tertiary sectors, the level of education during the aforementioned periods.

It is noteworthy that many of the settlements which appear in the research during the years 1940, 1951 and 1961 do not exist today, either because they have merged with other settlements and have been renamed or are now part of a city, or are no longer habitable. Consequently, there are difficulties in finding and distributing the statistical data and re-establishing the geographic information needed to study the time course of the settlements.

It should also be noted that statistical data concerning the city departments have been used throughout our research in the same way. Classifications of traditional settlements have taken into account the population distributions for the city segments as there are no separate data for their individual parts. For the city of Ioannina (capital of the prefecture), all statistical data have been taken into account, although a small part of it has been classified as traditional.

5. The Geography of Traditional Settlements

The total number of active settlements classified as traditional is 974, accounting for about 9.7% of the country's settlements, according to data from the Ministry of Energy and Climate Change, Ministry of the Interior and the Ministry of Culture and Sports.

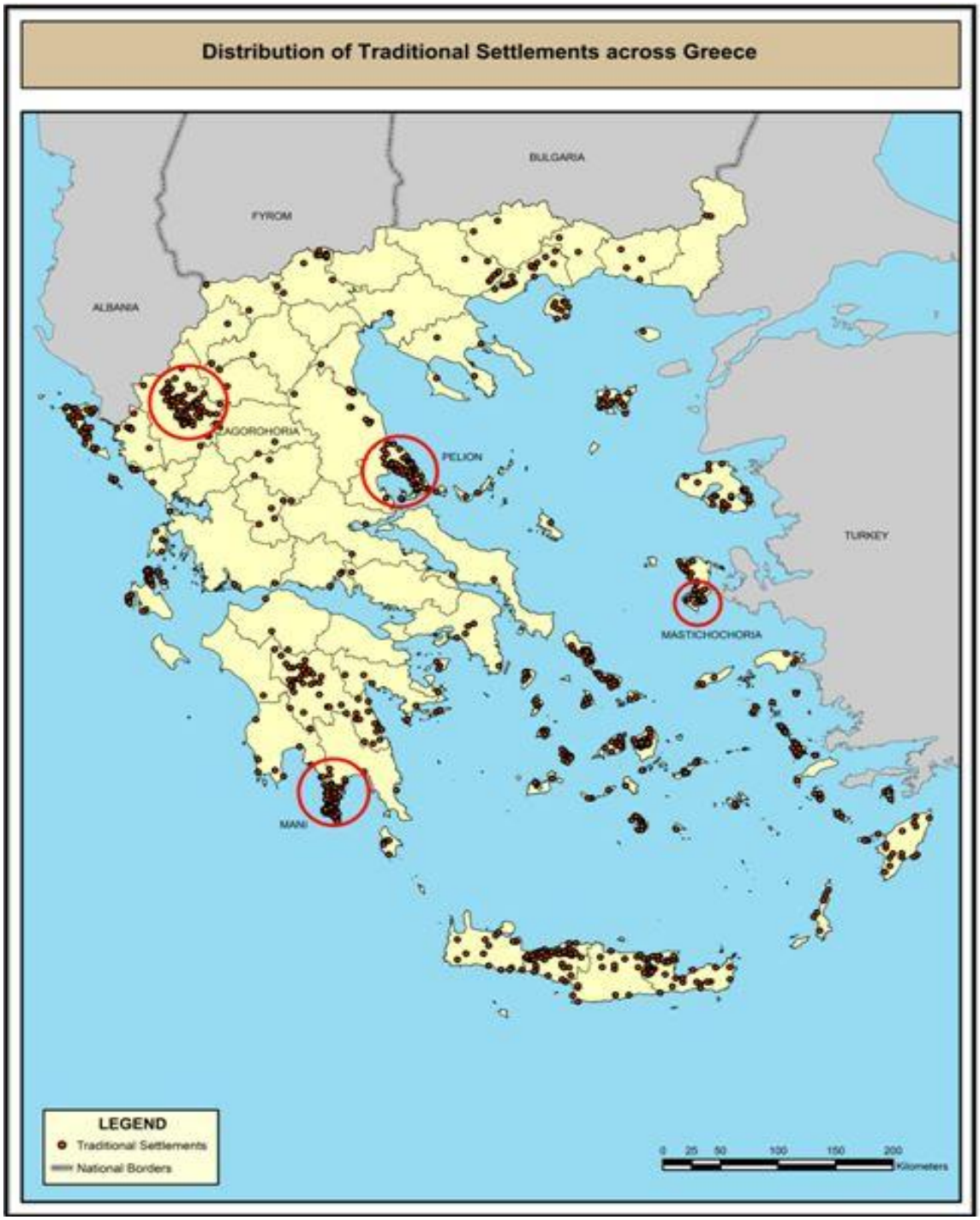
Traditional settlements have been recorded in 46 of the 51 prefectures (not in the prefectures of Corinth, Zakynthos, Arta, Imathia and Kilkis). Most of them are found in the Prefecture of Cyclades (173), followed by the counties of Lakonia (111), Rethymnon (72), Ioannina (69), Magnisia (67) and Dodecanese (62). Twenty-nine counties each have fewer than ten settlements.

Based on the statistics analysis, basic conclusions were drawn with regards to the geographical distribution of the particular category of settlements. Initially, the Cyclades and Dodecanese counties show the highest percentage (24%) in traditional settlements. The main element of these two prefectures is that they consist of a large number of islands (they exhibit different characteristics from each other that make them unique), thus resulting in their fragmentation. The island regions occupy 58% of all traditional settlements, compared to 42% in the mainland.

The emergence of a greater percentage of traditional communities in the island regions compared to the mainland is mainly due to the fact that in most islands, elements and architectural features from several different cultures have been assimilated (because of the long history of trade relations and conquests). Such multiculturalism seen on the islands is a blending of different streams, with special characteristics giving most villages a separate image to be protected in order to preserve and promote each settlement’s traditional, different and unique elements.

It must be noted that 73% of the traditional settlements are located in mountainous and semi-mountainous areas according to the official designation given by the Hellenic Statistical Authority for each settlement.

Peloponnese holds a percentage of 18%. In the prefectures of Lakonia and Arcadia, 160 settlements have been classified by the state as traditional. 9% of the country's traditional settlements are located in the Ionian Islands. The economic relations, mainly through trade, that developed with various regions of Italy (Venice, Syracus etc.) resulted in the transfer of architectural and cultural elements from these areas, which were assimilated by local population and have not changed until today (see Corfu and Kefalonia).



Similarly, the islands of the North Aegean (Mytilini, Samos, Limnos and Chios) account for 8% of the traditional settlements. This percentage may even have been higher if there was no major damage to settlements by earthquakes (1867 and 1899 in Mytilene and Chios in 1881), resulting in the relocation of residents to safer areas. Consequently, the conditions created in the above mentioned areas, and their desertification, contributed to the failure to protect and develop the particular elements that characterize each settlement.

6. The spatial planning of traditional settlements

6.1. The population

In relation to population measurements, the settlements (up to 2000 inhabitants) are distinguished, according to the legislation, to Small (up to 200 inhabitants), Moderate (from

200 to 1000 inhabitants), Large (from 1000 to 2000 inhabitants) Dynamic (agglomerations with a population of 200 or more people, over 10 years during which the population is more than 10%) and in Stable (settlements that are not dynamic). During data processing, as traditional settlements with a population of more than 2,000 inhabitants appeared, we have created another category, that of "Very Large" settlements.

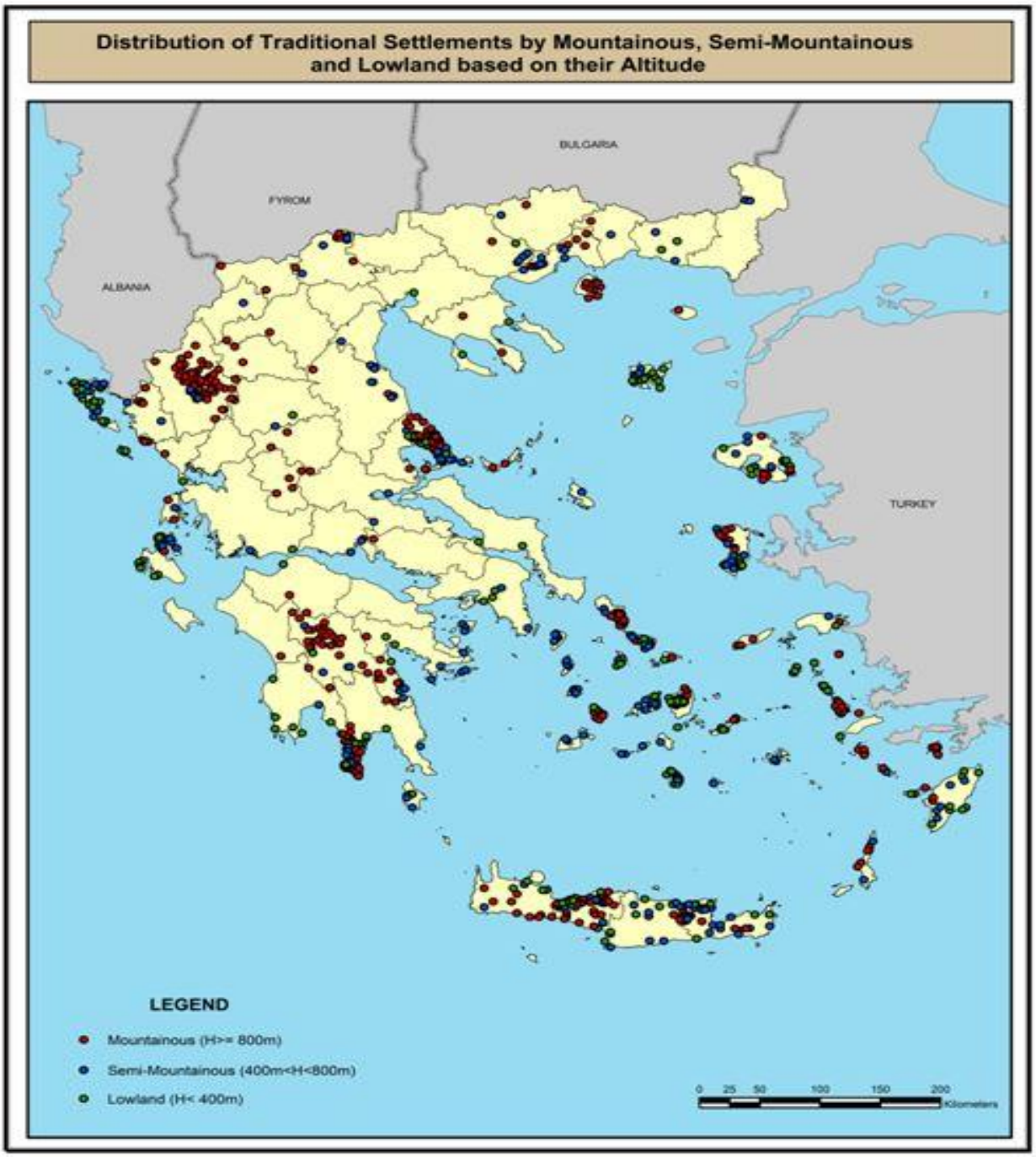
We drew conclusions based on a time period from 1940 to 2011. In the first decade (from 1940 to 1951) the dynamic traditional settlements are 72 and account for 7.4% of the settlements in question. They appear in the prefectures of Heraklion, Ioannina, Cyclades, Magnesia and Rethymnon. Their small percentage accounts for the fact that many Greek areas have suffered numerous disasters due to World War II and the Greek Civil War, resulting in the evacuation and desertification of areas. During the next decade (1951-1961) there is no change in the total number of dynamic settlements. There are internal changes in the number of settlements per county, with an increase in the prefectures of Ioannina, Magnesia and Dodecanese and a decrease in the prefecture of Cyclades. Between 1961 and 1971, the number of dynamic settlements declined significantly to 3.8% (37 out of 974). It is the period of great migration flows, which prevails almost in the whole of Greece, with the inhabitants migrating either abroad or into the big cities.

The data between 1971 and 1981 show a significant increase in the number of dynamic settlements by 11% (104 out of 974), mainly on island or coastal prefectures (Corfu, Cyclades, Dodecanese, Magnesia) that traditionally keep the population flows through tourism. Over the next two decades (from 1981 to 2001), the number of dynamic settlements continues to grow to 136 and 204 respectively. It is the time that Greece is funded with community funds to mainly aid mainly the primary sector with the aim of keeping the population in the areas they are dealing with. At the same time, the tourism sector, offering employment to workers and promoting the further development of agritourism in mountainous areas of particular natural beauty.

Finally, during the last census decade (2001-2011), the number of dynamic traditional settlements returned to the levels during 1971-1981, i.e. 111, showing a decrease of 48%. The country is in a difficult economic situation as the agricultural sector is shrinking and a large percentage of residents are trying to find jobs in the nearest city to secure a livelihood. Tourist traffic and the workforce are decreasing and no new investments are made. The preservation of the traditional dwellings concerns only what is absolutely necessary, and few are the ones that invest money in their rehabilitation.

6.2.Altimetry

The next criterion used for the spatial classification of traditional settlements is the altitude of each and their categorization is distinguished in mountainous, semi mountainous and lowland areas. Based on the characterization of each traditional settlement by the Hellenic Statistical Authority, the number of lowland areas is 271; there are 304 semi-mountainous areas and 399 mountainous ones.



By initially examining the traditional lowland settlements in the first decade of the survey (1940-1951), 26 of them are characterized as dynamic. In the next decade they are reduced to 23, then in the decade 1961-1971 they are further reduced to 15, while in the decade 1971-1981 they tripled their number at 42. In the next two decades (1981-1991 and 1991-2001) their number continued to increase to 58 and 79 respectively. In the decade 2001-2011, the number of dynamic settlements declined to the level of the 1981-91 decade, that is,

40. In comparison to the number of semi-mountainous dynamic settlements, they have the same image as the lowland settlements throughout the research period.

Regarding the mountainous dynamic traditional settlements, between the years 1961 and 1971, the smallest number of them, eight, appears to be confirmed by the previous conclusions for this decade. This number depicts the massive migration phenomenon both abroad and in the major cities of the country, as the capitals of the prefectures displayed rapid residential and industrial development. 62 of the most dynamic settlements appear between 1991 and 2001. During the decades 1991-1981 and 2001-2011, there existed the same number of settlements, 34 and 32 respectively.

Number of Traditional Settlements Based on their Altitude	**Years**							
Lowland	**1940**	**1951**	**1961**	**1971**	**1981**	**1991**	**2001**	**2011**
Small	95	94	102	114	116	110	104	109
Moderate	110	108	103	97	96	100	99	93
Large	21	24	23	16	14	16	20	16
Very Large	31	31	29	30	31	31	34	39
Semi - Mountainous	**1940**	**1951**	**1961**	**1971**	**1981**	**1991**	**2001**	**2011**
Small	112	118	127	143	143	148	147	150
Moderate	124	121	120	116	115	114	115	112
Large	35	38	34	24	23	20	20	20
Very Large	33	27	23	21	23	22	22	22
Mountainous	**1940**	**1951**	**1961**	**1971**	**1981**	**1991**	**2001**	**2011**
Small	147	172	192	235	294	252	244	271
Moderate	185	174	162	129	124	119	126	102
Large	50	35	28	19	9	12	11	10
Very Large	14	15	14	13	14	13	15	13

Regarding the mountainous traditional settlements, the image depicted shows that small settlements are dominant. They were 147 in 1940; they rose to 174 and 192 in 1951 and 1961 respectively, reaching 271 in 2011. That is, their number in 2011 has increased by 35% compared to the number of settlements in 1940 (see table). These are facts that confirm what has actually happened; the inhabitants fled from the mountainous small settlements. The above can be seen in the gradual decrease of the number of moderate mountainous settlements (indicatively from 185) in 1940, 129 in 1971 and 102 in 2011) and large settlements (from 50 in 1940 to 19 in 1971 and finally ten in 2011).

7. The data

7.1. Changes in the prefecture of Ioannina

Part of this study concerns the traditional settlements in the prefecture of Ioannina. There are 69 settlements in the prefecture which are defined as traditional, 46 of which (67%) are located in the geographical region of Zagori, while the rest are either in the perimeter of the

city of Ioannina or the western slopes of the Pindus mountain range. The area of the Prefecture of Ioannina and of Epirus in general was considered to be a barren, remote and indifferent mountain range until five years ago. This perception is rooted in relatively recent historical events and specific political and administrative developments that shaped the developmental model of modern Greece.

The prefecture of Ioannina was productive as it communicated with neighboring and remote geographic regions, with a flourishing trading economy. During the past decades, the mountain was perceived as a "barren" and therefore "unfriendly" area for a productive man, that also identified the rural with the geographical and thus condemned the mountainous regions to decline (Nitsiakos, 1998). The natural geographic area of the prefecture is organized in settlements, with the city of Ioannina being the center.

Studies of population censuses from 1940 until today reveal that during the first decade (1940-51) there was a decrease in the population, mainly due to the fact that the region was a field of fighting conflicts both during the Greek-Italian war and during the Civil War. The period that followed from 1951 to 1961 shows a marginal increase in the population. Due to the large migration flows prevailing in almost all of Greece, the population is significantly reduced by 13% in the next decade. This is followed by an increase of 9.5% and 7.5% respectively over the next two decades, mainly due to the role that the city of Ioannina has played both in Epirus and in the wider region of southwest Greece. In the following decade (1991-2001) the population of the prefecture has also risen by 10% and the last decade has reduced by 1%.

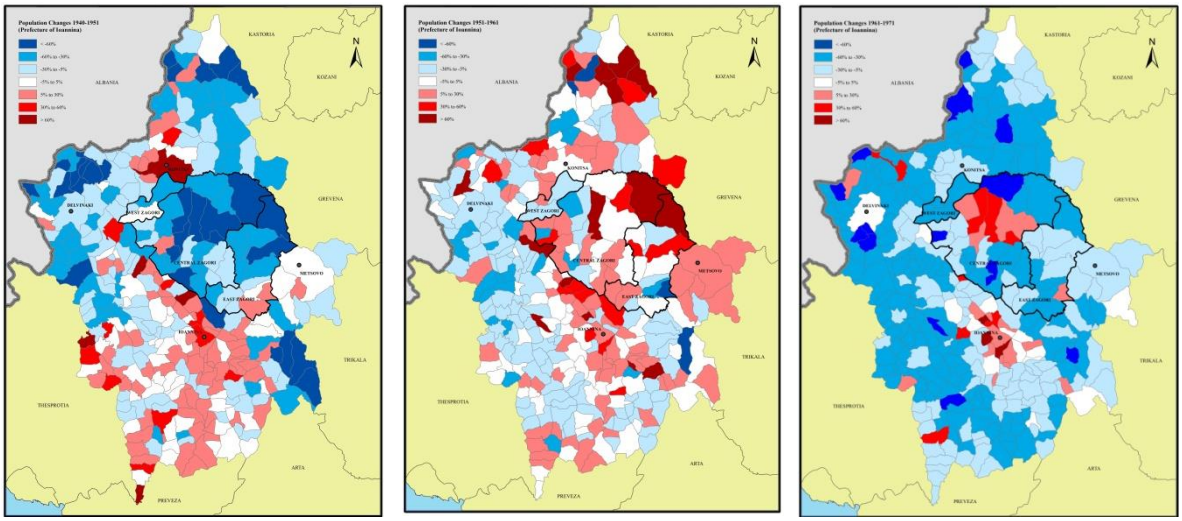
Years	**1940**	**1951**	**1961**	**1971**	**1981**	**1991**	**2001**	**2011**
Prefecture of Ioannina	162.150	153.464	155.174	134.372	147.084	158.193	170.239	168.299
Ioannina City	21.877	32.315	34.997	40.120	44.829	56.699	61.629	64.458

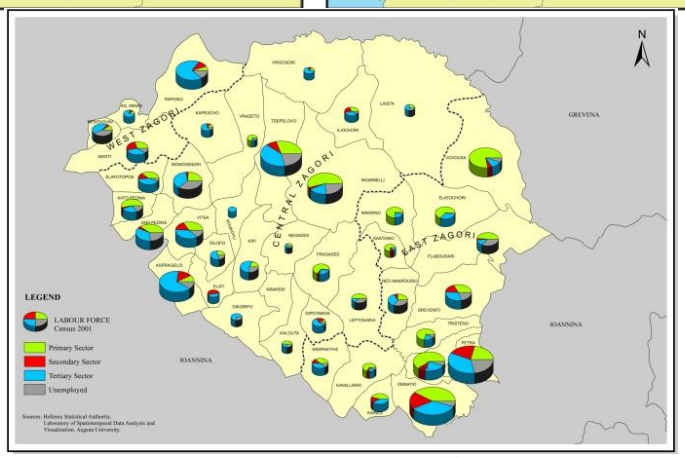
In relation to employment, we see a very different picture compared to the other prefectures of Greece. The most dominant sectors are those of construction, public works and the public sector. Construction is the main area of investment in the migration flows in 1961-71, creating a large stock of employees. The county has the lowest concentration of workers employed in agriculture, as opposed to the corresponding index in the sector of services which is one of the highest in the country.

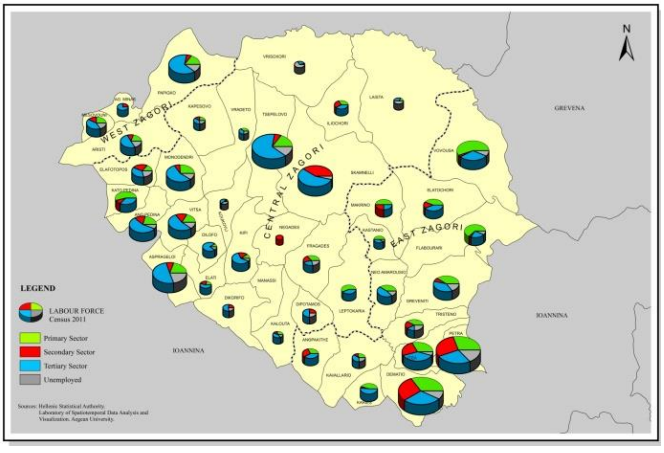
7.2. Changes in Zagorochoria

Zagori is geographically divided into three sections: Eastern, Western, and Central. Eastern Zagori is located northeast of the city of Ioannina in a marvelous natural environment where 16 small traditional settlements emerge. Central Zagori is located between the Vikos–Aoös National Park and Pindus National Park (Sikas, 2007). It includes 22 traditional settlements, while Western Zagori includes eihgt settlements. The table below describes the number of residents in each of the above areas. According to the 2011 census data, the inhabitants of Zagori were 3,767, i.e. 2,173 fewer than those in the 2001 census (5,940).

Years	**1940**	**1951**	**1961**	**1971**	**1981**	**1991**	**2001**	**2011**
West Zagori / Population	1230	945	841	524	569	520	690	496
Central Zagori / Population	7480	3667	4720	3601	2798	2477	2761	1741
East Zagori / Population	5198	3612	3582	2571	2659	2504	2489	1530


Population Changes 1940-1951
Population Changes 1951-1961
Population Changes 1961-1971
Population Changes 1971-1981
Population Changes 1981-1991
Population Changes 1991-2001
Population Changes 2001-2011
KASTORIA
KOZANI
GREVENA
METSOVO
TRIKALA
THESPROTIA
ARTA
PREVEZA
ALBANIA
N


WEST ZAGORI
CENTRAL ZAGORI
EAST ZAGORI
GREVENA
IOANNINA
LEGEND
LABOUR FORCE
Census 2001
Primary Sector
Secondary Sector
Tertiary Sector
Unemployed
N


WEST ZAGORI
CENTRAL ZAGORI
EAST ZAGORI
GREVENA
IOANNINA
LEGEND
LABOUR FORCE
Census 2011
Primary Sector
Secondary Sector
Tertiary Sector
Unemployed
N

Over the course of the study, most of the residents lived in Central Zagori, followed by Eastern Zagori and lastly by Western Zagori. Based on the capacity of traditional settlements, we can assume that the decades from 1940 to 1971 were marked by stagnation. From 1991 to 2001, five traditional settlements in the area are dynamic (Asprangeli, Megalo Papigo, Mikro Papigo, Petra, Skamnelli, Tsepelos) and 41 are stagnant. During the last decade (2011-2001), all traditional settlements are stagnant. It should be stressed that in the beginning of 2001, the tourist sector in the area grew significantly with the creation of a large number of hotel units and lodgings, but towards the end of 2009, when the first signs of the Greek economic recession appeared, the touristic appeal for the region of Zagori declined.

In relation to their size, the traditional settlements in Zagori are divided into two categories: Small and Moderate. In 1940, there were 25 Moderate Settlements in a total of 46. Their number declined during the next decades and according to the 1991 census, they are reduced to four. In 2001, there were seven Moderate Settlements, an increase which can be explained by the population growth in all of the settlements in the region (by 8%, a percentage equivalent to the population growth in the prefecture). The population change in all three subdivisions (western, eastern, central) of Zagori has a positive sign. Apart from the fact that the city of Ioannina is a pole of attraction at that time, there is also the great migration flows (legal and illegal) from various regions of the neighboring country of Albania that overwhelms the prefecture. Part of the migrant populations remain in the area and are employed in the reconstruction and maintenance of a large number of traditional buildings. In 2011, their number is reduced to two, (Megalo Papigo and Tsepelovo). Moreover, the number of inhabitants living in traditional settlements in 2011 is the smallest in 50 years, indicating the gradual abandonment of the settlements of Zagori (Sidiropoulos and Giotis, 2012).

With regards to employment in the region, the primary sector (livestock farming and agriculture) dominates in Eastern Zagori in 2001, while in Central and Western Zagori the provision of services relate to tourism (tertiary sector). Unemployment rates are at a low level. Based on the 2011 census data, the number of employees is significantly reduced in the primary sector, while the corresponding number in the tertiary sector continues to grow. Unemployment declines further in 2001, while the secondary sector remains stable. The above results are mainly due to the fact that during the decade 2001-2010, a large number of hotel units and lodgings were established, triggering a shift of the workforce from one sector the other. Furthermore, in western Zagori we see that only one person is typically employed in each family. In Eastern Zagori, most families have no member that are employed, while at least one in Central Zagori the majority of settlements have families at least one person employed (Giotis,2018).

8. Conclusions

This article initially recorded the framework for the protection of cultural heritage at a national and international level and made a detailed description of the current legal framework concerning the protection of traditional settlements. The trends prevailing at the international level were also described. Moreover, the study recorded the way in which the settlements were created and developed, as well as the policies followed by the Greek state during the 20th century. The methodology of the work followed and the problems which arose during the survey were recorded. The geographic and spatial data of the traditional settlements were analyzed along with the socio-economic conditions prevailing in the traditional settlements of Zagori over the last seventy years. The main conclusions that emerged from the theoretical framework of the creation and development of settlements—as well as the research carried out—are the following:

1. The protection of traditional settlements is an objective of primary importance for the State, in order to preserve their uniqueness over time.

2. At the end of the 19th century, a large part of the European settlements was designed primarily to house residents who worked as workers in rural and industrial development areas.
3. At the beginning of the 20th century, due to national reassignments (Asia Minor Catastrophe), a large number of Greek rural settlements were created in lowland areas.
4. In the 1960s and 1970s, the large migration flows to foreign countries and the movement of inhabitants to major cities led to the desertion of a large part of the settlements.
5. Problems occurred during data entry, as several of the settlements which appeared from 1940 to 1961 are not present today, either because they have merged with other settlements or cities, they have been renamed or they no longer exist.
6. The number of small settlements from 1940 to 1971 is constantly increasing, and since 1971, their number shows minor fluctuations.
7. The prefecture of Ioannina, with the exception during the decades 1940-1951 and 1961-1971, shows growing population trends. In contrast to the city of Ioannina, population changes are positive during all the decades examined, encompassing some of the residents who left the mountainous settlements.
8. In the area of Zagorohoria, the population appears to be weak and small in number.
9. In Zagorohoria, the residents are predominantly employed in the tertiary sector, not allowing the community to cater for all its needs, while employment in the primary sector decreases dramatically.
10. Gradual population deprivation and the minimization of economic activity drastically reduced the development of the settlements. However, it also left their architectural heritage almost intact, the latter being the major reason for their present re-emergence through tourism.

The general findings create a wider concern regarding all traditional settlements, in terms of their sustainability over time and their further economic development. It seems that particular attention should be paid to a project that will use the traditional architectural richness of each region, while also taking into account the current economic situation. The aim should be for the settlement to be a monument of cultural heritage and at the same time to function according to the requirements of the present society.

9. References

Bunce, M.,(1984). Rural settlement in an urban world, Journal of Historical Geography, No 10, Issue 1, pp 115.

Giotis, A., (2011). Small Settlements in Greece, 9th Conference of the Greek Section of the European Regional Science Association in Athens, Greece (ERSA-GR), Athens 6-7/05.

Giotis, A., (2018). Zagori Traditional Settlements, 1940 to Date, 11th International Coference of the Hellenic Geographical Society (ICHGS - 2018), Athens 12-15/04.

Fotheringham, S., Brunsdon, C., Charlton, M., (2002). Quantitative Geography, Perspectives on Spatial Data Analysis, London: SAGE Ltd.

Kafkoula, K., (2007). The Garden City Adventure, Thessaloniki: University Studio Press.

Karaman T. Z., (2009). Participation to the public life and becoming organized at local level in Romani settlements in Izmir, Land Use Policy, No 26, pp 308–321.

Kazimierz D., (2004), IGU commission on National Settlement Systems, GeoJournal, pp 591-593.

Kosmaki, P., (1991). Designed Settlements in Athens in the Interwar period, Athens: Doctoral Thesis, School of Architecture, National Technical University of Athens.

Longley, A., Goodchild, F., Maguire, J., Rhind, W., (1999). Geographical Information Systems and Science, John Wiley & Sons Ltd.

Lagopoulos A., (1986). Social Formation and Settlement Network in Greece, Geoforum, Vol. 17, No. 1, pp. 39-56.

Marjanne Sevenant , Marc Antrop, (2007). Settlement models, land use and visibility in rural landscapes: Two case studies in Greece, Landscape and Urban Planning, Volume 80, Pages 362–374.

Nitsiakos, V (1998). Prefecture of Ioannina: Modern Cultural Geography, Ioannina: Prefectural Authority of Ioannina, pp 19-24.

Sidiropoulos, G., Giotis, A., (2012). Traditional Settlements in Greece. The Case of Zagori, 10th Conference of the Greek Section of the European Regional Science Association in Thessaloniki 1-2/06.

Sikas, V., (2007). Zagorohoria. The Treasure Behind The Mountain, Athens: Chimarros.

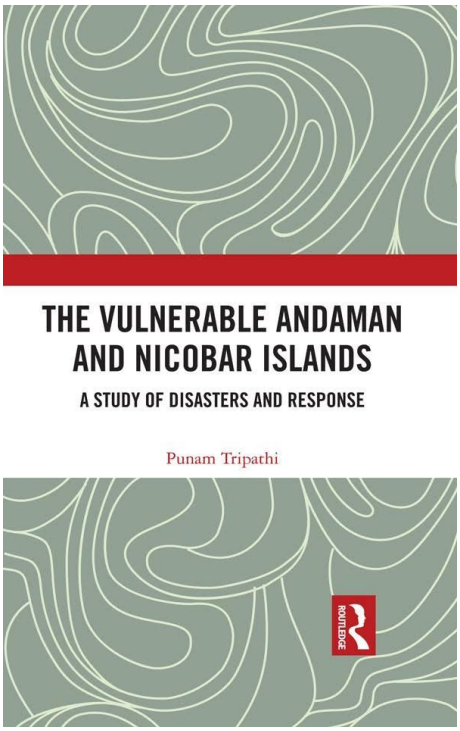
Planel-Marchand, A., (1981). La protection des sites, Paris: PUF.

Rapoport Amos, (1983). Environmental quality, metropolitan areas and traditional settlements, Habitat International, No 7, pp 37-63.

Theodoraki – Patsi, J., Theodoraki, A.M., (2003). Roof Pattern as a Characteristic Architectural Element for Urban – Rural Classification of Greek Settlements, 2nd FIG Regional Conference, Morroco, 2-5/12.

Vissilia, A.M. (2009). Evaluation of a sustainable Greek vernacular settlement and its landscape: Architectural typology and building physics, Building and Environment, No 44, Issue 6, pp 1095-1106.

Book Reviews
Book Presentations



Tripathi, P. (2018) The Vulnerable Andaman and Nicobar Islands. A study of disaster and response. New York: Routledge

Reviewed by Vasilis Gavalas[1].

The "Vulnerable Andaman and Nicobar Islands" is a book about the sustainability of small island communities. It consists of eleven chapters and 325 pages. It includes 63 tables and 58 figures, most of which are maps prepared by the author. Although printed in black and white, the maps are fairly clear and depict accurately the study phenomena. Having checked the book for content mistakes, the only one I could find was a mis-calculation regarding the tribal population of Sentinelese in 2001. The 39 Sentinelese recorded in the 2001 census of India made up 0.13% of the tribal population of the islands and not 0.48%, as the author has calculated in table 1.1 (p. 5). This triviality put aside, the book is well-written in a manner that suits not only the academics but also the general audience.

By studying the disasters that hit the Andaman and Nicobar islands from the mid-eighteenth century until nowadays, the author establishes that no disaster is caused by the nature alone. It is vulnerability triggered by human acts and omissions that is the root cause of the disaster. That being said, the book is also a narrative of the history of the colonization and "civilization" of these islands seen by the point of view of a geographer and anthropologist.

The vulnerability of the Andaman islands started when the British founded a penal colony over there in 1858. The first colonizers of the islands, apart from the British

[1] Vasilis Gavalas is an assistant professor at the Department of Geography, University of the Aegean. Email: bgav@geo.aegean.gr

administrators, were the rebels of the 1857 "mutiny" in India, a revolt which in modern-day India is known as the "First war of Independence". The presence of the penal colony in Port Blair (the main port of the islands) meant deforestation and rampant attacks on the settlements of the tribal Andamanese. The sporadic retaliation of the violence by the tribal Andamanese led the British administration to the creation of the "Andaman Homes", an institution which decomposed the traditional hunter-gathering Andamanese society. Thus, the tribal Andamanese were exposed to diseases unknown to them, like syphilis, ophthalmia, measles, mumps, Russian influenza, and gonorrhea. As a result, 90% of them died of these epidemics, mainly of syphilis. The population of the tribal Andamanese reduced, from an estimated average of 7.000 in 1858 to roughly 1.000 in 1900. The first disaster had taken place. On the other hand, the population of the penal colony grew from 254 in 1858 to more than 20.000 in 1941, as more "convicts", administrators and labourers kept coming from mainland India.

South to the Andaman islands, there lie the Nicobar islands, a smaller archipelago with more dispersed islands. Even though the British set up a penal colony there in 1866, the interaction of the tribal Nicobarese with the British and the convicts was limited because the Nicobarese were not forced into "Homes" and thus the structure of their society remained unaffected. Therefore, the Nicobarese were not afflicted by the epidemics. Nevertheless, Nicobar islands, with a tribal population more than 10.000, could not avoid the next disaster which came with the Second World War. In 1942 Japan took over the Andaman and Nikobar islands. The British had evacuated the islands before the Japanese occupation and the islands remained isolated from mainland India, with no food supplies brought to them by the British as they were enemy territory. Since the Andaman and Nikobar islands had stop being self-sufficient, famine and death inflicted upon them from 1942 to 1945. Air raids to the occupied Car Nicobar islands killed tribal population along with Japanese soldiers and any cargo ship with food and supplies was sunk by the allies. The second disaster had taken place.

A third disaster stroke the islands with the independence and partition of India in 1947. "Partition refugees" mainly from East Bengal (present day Bangladesh) were settled in the Andaman and Nicobar islands under a resettlement scheme by the Indian government. The successive resettlement schemes brought to the islands more than 300.000 people by the 2000s, a formidable number which exceeded the carrying capacity of the islands. The tribal population was confined to "protected" areas, while the largest part of the islands was opened for the non-tribal population. Another disaster, third in succession had taken place.

The last disaster that is described in the book is the tsunami that blew the islands, along with all areas in Indian ocean, in December of 2004. The author dedicates more than half of the book to the tsunami and its effects, as well as to the response of the local population and the Indian government. The disproportionate big part that the tsunami occupies in the book compared to the rest of the disasters is justified by the fact that the author contacted a fieldwork on the islands, including the Car Nicobar island, where a special permit is required to visit the tribal population. An analytical account of the damage caused by the tsunami in human lives and in economic distraction is given. An analytical account of the response in terms of humanitarian aid, compensation, damages and allotment to new houses from 2004 to 2011 is also given.

All disasters portrayed in the book illuminate one basic parameter: throughout their history the Andaman and Nicobar islands were rendered vulnerable by non-islanders. As the author puts it: "Be it the epidemics, World War II or the Tsunami – or be it in the nineteenth, twenty of twenty first century- in each and every disaster the vulnerable population was affected and killed. […] The islanders were treated as passive victims and relief was given to them after the disaster" (p.306), as a charity, not with an eye to consolidate them into a more robust economic structure. Thus, the tribal populations were neither left undisturbed to practice their traditional way of life, nor were they assimilated into the development process. They remain vulnerable and dependent on external aid, waiting for the next disaster to come.

Journal of Regional & Socio-Economic Issues

Call for Papers

Journal of Regional & Socio -Economic Issues (Print) ISSN 2049 -1395

Journal of Regional & Socio -Economic Issues (Online) ISSN 2049 -1409

The Journal of Regional Socio -Economics Issues (JRSEI, *indexed by Copernicus Index, DOAJ (Director of Opesn Access Journal), EBSCO & Cambell Index*) is scheduled to be published three times a year. Articles are now welcome for the forthcoming issue of this journal (JRSEI). The benefits of publishing in the Journal of Regional Socio -Economics Issues (JRSE I) include:

1. Fast publication times: your paper will appear online as soon as it is ready, in advance of print version
2. Excellent editorial standards
3. Free color electronic version
4. Free on -line access to every issu e of the journal
5. Rigorous, fast and constructive peer review process
6. The journal will be indexed in scientific databases.
7. All abstracts and full text are available free on -line to all main universities/institutions worldwide, ensurin g promotion to the widest possible audience.

For full paper submission guidelines, please visit the webpage:
www.jrsei.yolasite.com/
For further inquiry, please contact:
Professor Dr. George M. Korres, JRSEI Managing and Chief Editor
Professor, University of the Aegean, Department of Geography, Email:
gkorres@geo.aegean.gr

Journal of Regional & Socio-Economic Issues (JRSEI)

Instructions to Authors

Journal of Regional & Socio-Economic Issues (Print) ISSN 2049-1395

Journal of Regional & Socio-Economic Issues (Online) ISSN 2049-1409

Aims of the Journal:
Journal of Regional Socio-Economic Issues (JRSEI) is an international multidisciplinary refereed journal the purpose of which is to present manuscripts that are linked to all aspects of regional socio-economic and all related issues. The journal indexed by Copernicus Index, DOAJ (Director of Open Access Journal), EBSCO & Cabell's Index and welcomes all points of view and perspectives and encourages original research or applied study in any of the areas listed above. The views expressed in this journal are the personal views of the authors and do not necessarily reflect the views of JRSEI journal. The journal invites contributions from both academic and industry scholars. If you have any questions about the journal, please contact the chief editor. Electronic submissions are highly encouraged (mail to: **gkorres@geo.aegean.gr**).

Review Process:

Each suitable article is blind-reviewed by two members of the editorial review board. A recommendation is then made by the Editor-in-Chief. The final decision is made by the Editor-in-Chief. If a revision is recommended, the revised paper is sent for a final approval to the Chief-Editor.

Instructions to Authors:

In order for a paper to be submitted to the Journal for publication, the following should be taken into consideration:

1. All papers must be in English.
2. Papers for publication should be sent both in electronic format (MS Word and MS Excel for charts) to the Chief Editor (mail to: **gkorres@geo.aegean.gr**).
3. The Editor takes for granted that:

- the submitted paper contains original, unpublished work that is not under consideration for publication elsewhere;
- authors have secured any kind of permission necessary for the publication from all potential co-authors, along with having agreed the order of names for publication;
- authors hold the copyright, have secured permission for the potential reproduction of original or derived material and are ready to transfer copyright of the submitted paper to the publisher, upon acceptance for publication.

4. The cover page should include the name of the author and coauthors, their affiliations, and the JEL category under which the paper primarily belongs. The cover page is the only page of the manuscript on which the names and affiliations of the authors and coauthors should be listed.
5. Submission of manuscripts in electronic form: Authors must submit electronic manuscripts. The submission should only contain the file(s) of the papers submitted for publication, in MS Word and MS Excel for charts. If more than one file, a compressed file (.zip) should be submitted instead.

6. Formatting requirements: Everything should be double-spaced (main text, footnotes, bibliography, etc.)
7. Footnotes should be as few and as short as possible (preferably devoid of tables or formulae), marked in the manuscript by superscripts in Arabic figures.
8. Formulae should be numbered by consecutive, Arabic figures (such as (1), (2), etc.), placed on the right-hand side of the page.
9. Tables and Figures should be numbered consecutively in Arabic figures and have a heading and a title.
10. References are citations of literature referred to in the text and should not appear as footnotes. Abbreviations are only accepted in the authors' first names. Place all references, alphabetized by author's last name (with last name first), on **separate pages** in a section titled "References" at the end of the paper. Indent the second and subsequent lines of each reference.

Journals

Include all authors, article title, full title of journal, volume number, issue number, month, year, and full page numbers. Example:

Michael Mahmood. "A Multilevel Government Model of Deficits and Inflation," *Economic Journal***,** 24, 2, June 2010, pp. 18-30.

Books

Include name of author, full title of book, edition, city and state (or country) of publisher, name of publisher, and year of publication. Example:

Shapiro, John. *Macroeconomics*, 4th ed., New York, NY: Harcourt Brace Jovanovich, 2009.

Use the following style when an author's work appears in a publication edited by another:

George Summers, "Public Policy Implications of Declining Old-Age Mortality," in Gary ed., *Health and Income*, Washington, DC: The Brookings Institution, 1987, pp. 19-58.

Public Documents

Include the department or agency responsible for the document, title, any further description such as number in a series, city and state (or country) of publication, publisher, and date of publication. Example:

World Bank. *Educational Attainment of Workers*, Special Labor Force Report 186, Washington, 2010.