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"The Application of the Knowledge-Based Model of Growth in Greece. The Case of Inefficient National Research Policy."

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Abstract

Economic growth is positively affected by physical capital accumulation, but returns of scale are diminishing, explaining the reason why heavy machinery and physical infrastructure contribute to growth only in the short-run. Current process of technology dematerialisation has enforced the importance of human resources' skills in modern economies and productive process. Amongst others, emphasis laid on knowledge as a key productive factor represents the shift from the traditional industrial era to the current one that may be characterised as knowledge-intensive, as nowadays comparative advantages are highly dependent on knowledge accumulation, new technologies, as well as production's and demand's technological modernization, affecting productivity growth and material welfare in a positive way.

International bodies, like OECD and the World Bank, as well as supranational and national entities have laid emphasis on research, technological development and innovation, in order to achieve better economic performance and growth potentials. European Commission had recognised already in the mid-1980s the significance of technological progress on economic growth, job creation, social progress and environmental protection, considering it to be a strategic factor for European economy's ability to enforce its competitiveness and achieve sustainable growth rates. Moreover, E.U.'s competitiveness gap in knowledge-intensive sectors -when compared with United States and Japan- supported further the need of an upgraded European research policy, preparing actually the Lisbon Strategy agreement of 2000, as well as the allocation of European budget's resources towards research through Framework Programme 6 (1998-2002) and F.P.7 (2007-2013).

On the contrary in the greek case, state intervention in research, technology and innovation that would have aimed at enforcing knowledge-intensive performance and application in Greece, had not served strategic, long-term goals, even as part of industrial policy. In addition, apart from knowledge production and technology development, it is also important to stimulate technology diffusion throughout the economic and social fabric. Even this procedure is still inadequate in the greek case, since the interest of society and private sector in research and knowledge-intensive production is missing, a phenomenon that affects knowledge production in a negative way, being unable to mobilise critical mass for researchers and research services. These trends were considered to be serious differentiations between the greek practice and that of other E.U. member states that intended to increase their productivity and competitive advantage and abilities via investments in well-educated human capital, raised productivity rates, products' quality and new technology's integration in productive procedure.

The present paper analyses the application of the knowledge-based model of growth in Greece, focusing on national research policy's structure and failures, intending to explain its inefficiencies. The interest of this work lies at the fact of diminishing growth performance in Greece –beyond recession due to financial crisis- that implies the limits of current growth model. For this reason, the three sources of research action (curiosity-driven research from scientists' side, demand-pull research from private/productive sector and research on behalf of public sector, favouring social well-being) will be examined.

1. Introduction

Knowledge and technological development play a crucial role in economic and productive activities, as contemporary comparative advantages are highly dependent on knowledge accumulation and new technologies. Thus, this paper focuses on the importance of research in contemporary political agenda and the role that the relative public policy plays, admitting that research is the main source of technological development. Therefore, it should be clear that present analysis will concern all kinds of research activities and not only the so-called "useful" research. Actually, as Vernardakis (2006) claims, technological sectors that are developed in a rash way depend strongly on applied scientific fields and research, which are also based on "basic" science, and at the end of the day, public funding for basic research is not easy and probably not proper to be evaluated only in terms of measurable economic benefits.

As terms like research, technology and innovation are nowadays commonly used, not necessarily in an accurate way, it is useful -as an introduction- to define them, in order to avoid misunderstandings or even false conclusions that come about in everyday activity and political discourse. Thus, *knowledge* is partially a non-excludable, localised, often cumulative, "sticky" and tacit good (Foray 2006), while it is basically a non-rival resource in its use, since if someone has it, this will not dissuade someone else from having or using it. On first sight, knowledge has high social return -definitely higher than the private one- while Kourtesis (2003) mentions that knowledge production creates positive externalities and social increasing returns, under the precondition that it is not only the producer of this new knowledge, who has the ability and the right to use it.

On the other hand, *research* is actually an autotelic activity, where knowledge is produced and aims to respond to issues and questions that are raised by scientific community or to challenges that contemporary society faces. Amongst others, the practical contribution of research deals also with the diffusion of its results into economy and production, affecting economic growth (Caloghirou 2008b). Research can be either public or private, depending on its funding sources and performer. The different types of research are determined by their scopes and goals. Broadly, research can be characterised as basic (when it aims to produce codified theories and models that explain or predict scientific reality) or applied (when the goal is to develop and bring to society knowledge that facilitates the resolution of practical problems and to market new products with profitable results). The former can be distinguished between directed and undirected research (Foray 2006), where directed or oriented basic research deals more with entrepreneurial activities, while undirected or fundamental basic research activities represent the so-called "blue sky" research effort. Furthermore, economic benefits from basic research are substantial, but hard to quantify, as Salter and Martin (2001) conclude. Nevertheless, there is evidence that connections between industrial innovation and basic research are close enough especially in some scientific and industrial sectors, despite the fact that there is no linear relationship between basic research, applied research and innovative activity (Smith 1994).

Research is partially also related to technological development, but *technology* is more practical and closed, it produces artefacts, aiming at practical utility and it is mostly followed by secrecy and patent protection (Metcalfe 1997). Technology preexisted science, but both are partially interdependent parts of knowledge that exists and is produced. Technological inventions may be the beginning for new scientific developments, therefore technology is not only to serve and follow science, but also vice versa (Vernardakis 2006). Moreover, technology may be served by already existent scientific knowledge, and not obligatorily by the most developed and modern one, at the same time that strong scientific

basis increases significantly the efforts and potentials for technological development. Dasgupta and David (1994) relate science and research with the world of academic science, whereas technology is combined with industrial and military research, as well as with developmental activities. As a result, science community is relative to enrichment of the existent stock of public knowledge, while technology community's goal is to enhance rent potentials from the possession of private knowledge, for instance through rights of use.

Finally, *innovation* may be relative to social, economic and technical evolutions and it is nowadays identified with planned process, which has high predictability of results and goals. Innovations exploit actually changes, so their scope has to do with systematic examination of changes that offer probably entrepreneurial opportunities (Drucker 1999). According to Pilat (2003), a particular characteristic of innovation is that the source of innovation is not definitely R&D activities, as innovations that are currently carried out in production and economy are considered to be non-technological ones. As Drucker (1999) claims, knowledge-based innovations do not depend only on scientific knowledge, but on combination of different kinds of knowledge. Moreover, innovations are able to create new industrial sectors and probable monopolistic circumstances that will probably enhance competitiveness and the potential for economic growth. Actually, close to the Schumpeterian idea about innovation lies also the aspect that competition in micro-economic terms depends on the ability of firms to behave differently, as no source of difference is more significant than new products and new production means (Metcalfe 1997). Therefore, Morgan (1997) mentions that capitalism should be regarded as an economic system, driven by technical and organisational innovation, where firms grow when they innovate and shrink if their competitors innovate faster than they do (Klette and Kortum 2004).

Nevertheless, it should not be concluded that public intervention is necessary to lay emphasis on applied and directed research instead of funding basic research programmes with unknown purposes und commercially uncertain results. In Vernardakis' (2006) words, since applied research is a rather expensive activity, being able to lead to significant economic benefits for private actors, there is the danger that preference for industrial research may determine and finally constrain scientific developments, as a probable funding cut off in basic research would erode innovation and growth basis over the long term. Therefore, it is crucial to find and reach '*a sort of optimal balance between short-term and long-term objectives, building good trade-offs between the promotion of cost-effective methods and the freedom to experiment, and creating appropriate conditions for the effective management of research activities for today, tomorrow, and beyond*' (Foray, 2006:54).

The next section will present the importance of research in theory of economic growth and in current political world at national and supranational level, focusing on consensus that is built internationally about the need to lay emphasis and invest more in research and knowledge. Section 3 examines greek research system, presenting its main characteristics, as an introduction for section 4 that deals with the analysis of the main components of the national system of innovation in Greece, explaining the reasons for national research policy's absence.

2. The Importance of Research in Economic and Political Terms.

According to "New Growth Theory", intangible investment in knowledge accumulation is more decisive for growth than physical capital investment (Romer 1986, Grossman and Helpman 1991). Having that as a theoretical background, OECD, the World Bank, supranational and national entities have laid emphasis on research, education and innovation, namely on the "knowledge triangle" (Mitsos 2007a). European Union has upgraded research

policy among its public actions, raising significantly resources for research through Framework Programmes, which became one of the most important E.U. financing means, while political emphasis on knowledge and research was expressed by Heads of States through the Lisbon Strategy Agreement in 2000 that intended to transform European economy into the most competitive knowledge based economy in the world by 2010.

2.1 Research, the Knowledge-Based Economy and Growth

The starting point of the neoclassical model of economic growth is considered to be Solow's article, published in 1956. Nevertheless, it was F. Ramsey that had expressed the contemporary neoclassical model in mathematical terms, already in 1928, although his contribution was recognised only after the analysis of Solow had been published (Kollintzas 1999). According to it, if there is no increase of total exogenous productivity, stemming from technological progress, economy will reach a point, where no economic growth is to be attained. Put it in other words, in order to preserve positive GDP growth rate in the long-run, permanent technological evolution should be achieved, in order to be integrated in new products, markets or productive procedures, since such a phenomenon enhances aggregate productivity rate. Nevertheless, neoclassical model does not explain sufficiently different levels of economic growth of the very same country in different periods of time, or the fact that there is no trend for economic convergence between developed and developing countries, although the neoclassical theory foresees that. In addition, Abramowitz or Solow residual is considered to be a weakness of neoclassical model, because when growth is attributed to capital and labour in neoclassical terms, there will be a significant proportion of economic growth that remains without explanation, being finally attributed to exogenous technological development. Therefore, the need emerged for a new theoretical pattern that would be able to integrate these phenomena in its analysis. In this context new growth theory emerged, considering technology –amongst others- as an endogenous parameter of economic system and growth procedure. Moreover, according to new theories of economic growth, divergence in rates of economic growth remains, due to the fact that human and physical capital do not face decreasing returns, due to economies of scales or increased productivity rates that are attributed to technological development, removing actually the reasoning for the neoclassical economic convergence (Vernardakis 2006). On the whole, endogenous economic growth models represent the idea that the rate of economic growth is based in the long-run on the distribution and use of existent resources, namely it is dependent on endogenous parameters and economic preferences, rather than on exogenous factors, implying that if technologies and preferences differ among countries, then the level of economic growth will be probably different, too.

There is variety of endogenous economic growth models, laying emphasis on different factors that affect growth performance of an economy, but the most influencing models had been those dealing with research, technology and knowledge. The economist that presented first such an idea had been Romer in his first endogenous model of 1986. Another model is that of Lucas, which was presented in 1988, supporting that the source of externality that leads to economic growth is the average level of human capital that is used in production (Kollintzas 1999). The so far indirect reference to technology's role in new models of economic growth becomes direct in Romer's article "Endogenous Technological Change" that was published in 1990. According to this model, the degree of technological evolution and the rate of economic growth depend on human capital's allocation between consumption products', capital goods' and blueprints' production. It is at this point that public policy is critical in means of industrial policy, since market structure provides insufficient amount of

human capital for new technologies' production, among others due to its uncertain nature, reducing simultaneously economy's growth potential.

In practice, public policies that used to enforce various productive sectors' competitiveness via subsidies, tariffs and export supports in the 1980s had faded due to deregulation of international markets and liberalisation of international trade. Since then, new technologies' embedment in productive procedure has been presented globally as a mean of enhancing competitiveness of national production, while many economists agree that technical progress and technology dissemination, which lead to enhanced total factor productivity, constitute the ultimate source of sustainable economic growth (Quah 2002). On the other hand, Smith (2002) argues that knowledge is even more important in current productive procedure and economy, since knowledge-intensive services hold a respectively large part of total productive output in contemporary economies, while according to Vernardakis (2006), human resources turned out to be more significant for economic growth, as developed economies have become more knowledge-intensive. Thus, productivity depends progressively more on workforce's knowledge and skills, which is actually the determinative factor for new technologies' use and diffusion; a sequence that contributes further to increased productivity and economic growth, even more than physical capital and equipment do. Lundvall (1994) has the same attitude, supporting that modern capitalism has reached a point that knowledge is strategic resource and learning the most important process. The same aspects are also to be found in greek literature, like in Giannitsis (1993), who supports that new comparative advantages within productive procedures are highly dependent on knowledge accumulation, new technologies, as well as production's and demand's technological modernisation.

Furthermore, technological progress causes shifts in structure of industrial activity, giving firms the opportunity to overcome existent constraints, which were related to available inputs and current productive procedures, while it changes trade patterns as well, since knowledge and technology-intensive products' share has grown faster than other product segments[1]. In addition, information and communication technologies (ICT) have enabled business' mobility, reducing (economic) distance (OECD 2006) and spread knowledge and high-tech products' diffusion change economy's characteristics as far as goods' and services' nature is concerned, as they become more like knowledge (Lundvall and Johnson 1994, Quah 2002).

2.2 The International Consensus on the Importance of Research Today.

Discussion about the need for raised competitiveness of national economies so as to enforce growth potential has been dominant in western economies since the 1980s, while increasing emphasis on research and knowledge-intensive production and economy was promoted in the 1990s, being the key-evolution towards these goals. Thus, research's, technological development's and innovation's economic significance and the need to apply relevant policies was presented by international political and economic bodies, by supranational and national entities, as well as by local authorities, namely at various levels of governance, raising the need to take measures of policy that would favour generation of research and technology, in order to achieve better economic performance and growth. These trends and the necessity to control public expenditure affected public research policy in developed countries, directing it towards more effective -in economic terms- orientation and affecting respectively science and technology policies that was targeted mostly at direct economic results (Smith 1994).

[1] The share of high tech exports in world exports rose from 8 percent in 1976 to 23 percent in 2000, while exports of information and communication technology products showed the highest annual growth rate among all products in 1985-2000 (UNCTAD 2002b).

As Lundvall and Archibugi (2001) mention, there is agreement that knowledge is at the core of economic welfare and development and so nations, regions and firms try to generate and apply knowledge, following the proposals of international bodies, like OECD that supported firmly the move towards a knowledge-based economy. Moreover, the rapid formation and growth of information and communication technologies (ICT) that enabled cheap and fast information access over long distances via international electronic networking and the increasing recognition of the role of knowledge in economic growth from economists, policy-makers and business people has lead mainly OECD and the World Bank to link the concept of knowledge-based economy to a structural transformation of the advanced industrial economies (Caloghirou et. al 2006). More particularly, the term "knowledge economy" was introduced by P. Drucker in 1969 in his book "The Age of Discontinuity – Guidelines to our Changing Society", trying to express the transformation from the traditional industrial society and economy to the modern era, where production, diffusion and dissemination of knowledge become the core of social, economic and productive actions. Nevertheless, this term has been widely accepted and spread since the mid-1990s, namely at the time that OECD and E.U. introduce it, parallel with the concept of "life-long learning" (Tsaousis 2007). On this way, the importance of knowledge -actually the production and exploitation of it- is also introduced in political discourse, policy proposals and declarations that deal with economic efficiency, economic growth, competitiveness and the effort to gain comparative advantages within the frames of modern international division of labour.

On the other hand, the ability for state intervention regarding industrial policy was limited, due to European competition laws, and so technology had turned up to be one of few fields in the 1980s that E.U. member states were able to act, aiming at strengthening competitiveness of national economies and production (Giannitsis 1993), at the same time that there has been a narrow range of action for fiscal and especially monetary policy in the post-Economic and Monetary Union period. In addition, E.U., the U.S.A. and Japan are the most significant producers of research and technological development globally, spending annually together about 80 percent of global expenditure for research. However, E.U.'s comparative competitiveness had been deteriorated in last decades, so the need to lay emphasis on research and technology at E.U.-level emerged in a more urgent way, as the existing productivity gap between the U.S. and E.U. was not narrowing.

The importance of taking political action to establish a genuine European Technology Community was stressed already in the 1980s, so as to enforce European industry and avoid research duplication across Europe, mentioning only a few of relevant issues and so European Commission recognised at that time the role and significance of technological progress on economic growth, job creation, social progress and environmental protection, considering it to be a strategic factor for European economy, so as to be able to regain its competitiveness and achieve sustainable growth rates. From the 1990s and on, louder calls for more R&D investment emerged, although this aspect contradicts the concept, according to which economic context and cycles affect the general attitude for negotiations on common policies at E.U.-level in a negative way[2]. As Christodoulakis (2003) mentions, the need for finding new sources of growth emerged decisively at that time, so as to support European social and economic model in a proper way, trying to enhance also employment, growth and regional development. These aspects are also to be found by and large in the early-2000s, at the time that the independent group of experts headed by Andre Sapir presented relevant measures that would boost E.U.'s economic and growth performance, the agreement for the Lisbon Strategy was signed in 2000, E.U. funding for research actions increased

[2] W. Wallace (2005) mentions that in periods of slow growth or recession governments find it harder to make concessions with the prospect of longer terms gains. On the contrary, when economic confidence is enhanced by faster growth, political willingness towards E.U. rise as well.

significantly[3], as Commission proposed and implemented new programmes, taking more ambitious actions, exploiting the political and economic momentum that favoured research activities that were also enforced in member states (Kourtesis 2003) and the 3 percent target was agreed during the Barcelona European Council of 2002, aiming at directing member states' resources equal to 3% of their GDP towards research and technology by 2010, the two thirds of which should come from private sector. As H. Wallace (2005) mentions, there had been two areas of spending that have increased in recent years in E.U.; promotion of innovation, research and development and Justice and Home Affairs policies. Thus, in contemporary –pre-financial crisis- economic context, which is identified with sluggish economic growth in Eurozone, rather sound macroeconomic performance and tentative entrepreneurial efficiency, decisions for economic growth in E.U. follow the general trend, namely emphasis on knowledge and research, enforcing the existent world-wide consensus for global economy's growth potentials, reflecting simultaneously the role that knowledge and research play foremost in present political discourse and agenda, although Lisbon Strategy is hardly something more than just a political declaration, being quite close to OECD's reports, directions and proposals for political action, without any direct practical value, as it is not binding for member states (Pilat 2003, H.Wallace 2005, Mitsos 2008).

3. The Greek Case in Research.

In the following sections, analysis will be focused on the greek case, examining the application of the knowledge-based model of growth in Greece through the implementation of the respective national policy. The basic point of this section is to present the evolution of the national research policy in Greece, the way that research system is structured, as well as the major components of the greek system of innovation, taking into consideration the range that European research policy has influenced the greek one.

3.1 Research Policy in Greece.

Already in the 1980s and as a result of trade liberalisation that coerced enterprises into facing global competition, the main goal of industrial policy had been internationally new technology's spreading and integration in productive procedure, so as to strengthen competitiveness of production and economy through structural changes (UNCTAD 2002a). Actually, it was the President of the European Commission, Jacques Delors, who had stated during a presentation to the Council of Europe, in June 1993 that the roots of economic depression and high unemployment in E.U. were to be sought in European lack of competitiveness towards the United States and Japan and that the solution should be sought in enhancing investment in technological infrastructure and high technology (Krugman 1994). However, state intervention of that time in Greece used not to follow and serve strategic, long-term goals in issues relevant to developmental and industrial policy, as growth strategy was mainly identified with subsidies for various industrial sectors. According to Giannitsis (1993), the objective of these policy means was either to reduce cost or to enhance profits for industrial enterprises, as a way of protection against competition from abroad, trying to face negative consequences that international trade had on national production. So, public intervention was directed at no means towards factors that would enhance national production's competitive advantages and create a sound basis for its future competitive

[3] E.U. funding for research was 14.960 million € in the period 1998-2002 (5th Framework Programme), increased to 19.113 million € for the period 2002-2006 (F.P.6) and reached more than 53.500 million € in the period 2007-2013 (F.P.7).

capability, such as well-educated human capital, raised productivity rates, enhanced products' quality and new technology's integration in productive procedure. Put it in other words, greek public policy for industrial development laid emphasis on its growth rates, preferring short- and mid-term goals rather than long-term and more sustainable ones, although what was needed was actually means of policy towards industrial and productive structural change.

Deniozos (1993) presents greek technology policy until the early 1990s, laying emphasis on the connection between research results and production and characterises it as rather inexistent since the 1970s. On the other hand, public administration that was responsible for technology and research seemed to be sluggish in the early-1980s, although Ministry for National Research and Technology was established in 1982[4] and regional academic and research institutes were founded, raising research funding as well. The result was that academia was the one and almost unique actor that took advantage of the relatively higher public expenditure for research, since industry did not seem to be interested in this kind of actions. Moreover, the lack of a strategic planning regarding research policy-making was clear, as the greek RTD ministry was active only for two and a half years, becoming a General Secretariat (General Secretariat for Research and Technology - G.S.R.T.) under the Ministry of Industry in 1985, although according to Kourtesis (2003), this political initiative intended to bring research closer to industry and innovation. Thus, motives were given to support private investments in applied research and new technology production, such as the first programme for industrial research (Π.Α.Β.Ε.) that was a significant intervention towards technological modernisaton, although this action did not finally manage to alter traditional productive patterns (Deniozos 1993).

In the 1990s Community Support Frameworks and emphasis on regional policy dominated in the national strategic planning, affecting greek research effort, too, as it was financed partially by Structural Funds, although intervention's goals was not to support research overall –which was actually the case of F.P.s- but to enforce research that was carried out in greek regions. Thus, a significant part of greek research policy has been expressed through operational programmes of sequent Community Support Frameworks, such as the O.P. for Research and Technology I (ΕΠΕΤ Ι) 1986-1993 as part of the 1st C.S.F., the O.P. for Research and Technology II (ΕΠΕΤ ΙΙ) 1994-9 within the frames of the 2nd C.S.F. and Axis 4 "Technological Innovation and Research" of Operational Programme "Competitiveness" (ΕΠΑΝ, 2000-6), as well as Action Line 3 "The Digital Economy and Employment" of Information Society Operational Programme (ΚτΠ) that were both included in the 3rd C.S.F. (Kourtesis 2003). Some of these programmes and actions intended to enforce national research structures, while most of activities aimed at strengthening weak private performance and industrial participation in national research effort, and so respective national research and innovation actions –that have been mostly financed by E.U. funding- have actually laid emphasis on small manufacturing sector, leaving behind large agriculture and service sectors, although only a minor part of the C.S.F. has been allocated towards R&D activities (Doukidis and Smithson 1995). The mix of regional and research policy took also place through higher regional universities' general budgets and through establishment of regional research institutes and universities since the late-1980s, but as Tsipouri (1989) and Deniozos (1993) claim, research activities and expenditure had been ineffective, due to unreliable administrative mechanism and the fact that governmental action was taken without any strategic planning, implying that two out of four major actors in the national system of innovation (government and bureaucracy) had been inefficient.

In current decade, the tendency to mix regional with research policy was altered by the greek government in the 2000-2006 period, when it decided to lay emphasis on those

[4] The foundation of this ministry follows the discussion that has taken place in Europe already since the 1970s about the way that industrial, science and technology policy should be managed in the most effective way.

research activities that favour applied research, trying to enforce private sector's innovative and research performance, having nevertheless mediocre if not scarce results (Kourtesis 2003). From 2007 and on, a strategic plan for R&D is implemented within the frames of National Strategy Reference Programme 2007-2013, through thematic and regional Operational Programmes (Erawatch 2009). According to Tsipouri (1989), although political world had recognised the relation between research, technology and economic growth as a priority in terms of political discourse, it has not managed to create the appropriate network and mechanism, so as to change productive patterns in Greece and mobilise production through new knowledge supply. Actually, the most interesting and indicative for research reality in Greece is that this comment refers actually to the late 1980s, but it can be definitely applied to the present decade and research conditions as well.

As far as research expenditure in Greece is concerned, it is diachronically the lowest in E.U.-15 and among the lowest in E.U.-27, being actually 22nd in the relevant sorting in 2007 (table 1), in front of Bulgaria, Romania, Cyprus, Slovakia and Poland and falling constantly behind the E.U.-15 or E.U.-27 average. The value of this comparison lies on the fact that R&D expenditure in Greece is close only to new member states that joined E.U. during the enlargements of 2004 and 2007, as well as on member states' commitment to increase R&D funding to 3% of GDP by 2010, according to the decision of Barcelona Council in 2002. Hence, it is indicative for local research conditions and context that investment towards research were decreased in Greece after Barcelona Council (Mitsos 2007b).

Table 1: Total National R&D Expenditure (as % of GDP)

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
EU-27	1,80	1,75	1,78	1,79	1,84	1,85	1,86	1,87	1,86	1,82	1,82	1,84	1,83	:
EU-15	1,85	1,80	1,83	1,84	1,89	1,91	1,92	1,93	1,92	1,89	1,89	1,91	1,91	:
Belgium	1,67	1,77	1,83	1,86	1,94	1,97	2,08	1,94	1,88	1,87	1,84	1,88	1,87	:
Bulgaria	0,62	0,52	0,51	0,57	0,57	0,52	0,47	0,49	0,50	0,50	0,49	0,48	0,48	:
Czech Republic	0,95	0,97	1,08	1,15	1,14	1,21	1,20	1,20	1,25	1,25	1,41	1,55	1,54	:
Denmark	1,82	1,84	1,92	2,04	2,18	2,24	2,39	2,51	2,58	2,48	2,45	2,46	2,54	:
Germany	2,19	2,19	2,24	2,27	2,40	2,45	2,46	2,49	2,52	2,49	2,48	2,54	2,53	:
Estonia	:	:	:	0,57	0,69	0,61	0,71	0,72	0,77	0,86	0,94	1,15	1,14	1,19
Ireland	1,26	1,30	1,27	1,24	1,18	1,12	1,10	1,10	1,17	1,24	1,25	1,30	1,31	1,36
Greece	**0,43**	**:**	**0,45**	**:**	**0,60**	**:**	**0,58**	**:**	**0,57**	**0,55**	**0,58**	**0,57**	**0,57**	**:**
Spain	0,79	0,81	0,80	0,87	0,86	0,91	0,91	0,99	1,05	1,06	1,12	1,20	1,22	:
France	2,29	2,27	2,19	2,14	2,16	2,15	2,20	2,23	2,17	2,15	2,10	2,10	2,08	:
Italy	0,97	0,99	1,03	1,05	1,02	1,05	1,09	1,13	1,11	1,10	1,09	1,14	:	:
Cyprus	:	:	:	0,22	0,23	0,24	0,25	0,30	0,35	0,37	0,40	0,43	0,45	:
Latvia	0,47	0,42	0,38	0,40	0,36	0,44	0,41	0,42	0,38	0,42	0,56	0,70	0,63	:
Lithuania	0,44	0,50	0,54	0,55	0,50	0,59	0,67	0,66	0,67	0,75	0,75	0,79	0,82	:
Luxembourg	:	:	:	:	:	1,65	:	:	1,65	1,63	1,56	1,66	1,63	:
Hungary	0,73	0,65	0,72	0,68	0,69	0,78	0,92	1,00	0,93	0,88	0,94	1,00	0,97	:
Malta	:	:	:	:	:	:	:	0,26	0,26	0,53	0,60	0,64	0,60	:
Netherlands	1,97	1,98	1,99	1,90	1,96	1,82	1,80	1,72	1,76	1,78	1,72	1,71	1,70	:
Austria	1,55	1,60	1,70	1,78	1,90	1,94	2,07	2,14	2,26	2,26	2,44	2,46	2,56	2,64
Poland	0,63	0,65	0,65	0,67	0,69	0,64	0,62	0,56	0,54	0,56	0,57	0,56	:	:
Portugal	0,54	0,57	0,59	0,65	0,71	0,76	0,80	0,76	0,74	0,77	0,81	1,00	1,18	:
Romania	:	:	:	0,49	0,40	0,37	0,39	0,38	0,39	0,39	0,41	0,45	0,54	:

Slovenia	1,55	1,31	1,29	1,36	1,39	1,39	1,50	1,47	1,27	1,40	1,44	1,56	1,53	:
Slovakia	0,92	0,91	1,08	0,78	0,66	0,65	0,63	0,57	0,57	0,51	0,51	0,49	0,46	:
Finland	2,26	2,52	2,70	2,86	3,16	3,34	3,30	3,36	3,43	3,45	3,48	3,45	3,47	3,38
Sweden	3,26	:	3,48	:	3,61	:	4,17	:	3,85	3,62	3,80	3,74	3,63	:
United Kingdom	1,91	1,83	1,77	1,76	1,82	1,81	1,79	1,79	1,75	1,69	1,73	1,76	:	:

Source: Eurostat.

3.2 The Greek Research System.

The major parameters that determine the greek research system are public sector, private sector and E.U. actions. So, their role is presented in this part, apposing data that have to do with their actions, performance and role. This analysis attempts to extract some basic characteristics of research reality in Greece, which will contribute to understanding current condition, the evolution and the perspectives of greek research.

Before presenting the basic actors of the greek research system, it is useful to mention that apart from low spending on research, the system faces structural difficulties, since research financing in Greece depends excessively on E.U. funds and research projects (Community Structural Funds and Framework Programmes) (Skagiannis 1998, Erawatch 2009). Furthermore, research actions are concentrated in regions of Attiki, Central Macedonia, Crete and Western Greece, where the largest greek universities lay, since these regions attract the majority of research funds, coming from national sources or abroad.

3.2.1 The Basic Funders of the Greek Research System.

The basic research funder in Greece is state, covering almost half of the expenditure, private sector is the second larger financing source for greek research and resources from abroad, namely E.U. funds come third, slightly lower than private sector's participation. It is interesting that there are two groupings among E.U.-15 member states to discern, regarding division of research expenditure between private and public sector. Thus, in the first group is Greece, Portugal and marginally Italy, where state is the major funder of national research (European Commission 2005), while the second group includes the rest E.U.-15 member states, where private sector spends the majority of total national research expenditure (between sixty-five and seventy-five percent), as it is shown in tables 2a, 2b and 2c. The dominance of public sector and the limited role of private sector in gross expenditure on R&D (GERD) is actually one of the main characteristics of the greek research system (Erawatch 2009).

Table 2a-c: Gross Domestic Expenditure on R&D by Source of Funds (as % of GERD)

table 2a **Government Sector**

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
EU-27	39,00	38,50	36,80	35,90	34,50	34,30	33,90	34,30	35,10	35,00	34,20	:	:	:
EU-15	38,80	38,30	36,60	35,60	34,20	33,90	33,60	33,90	34,70	34,60	33,80	:	:	:
Belgium	23,10	23,00	22,20	23,80	23,50	22,90	22,00	23,20	23,50	24,40	24,70	:	:	:
Denmark	39,60	35,70	36,10	:	31,20	:	28,20	:	27,10	:	27,60	:	:	:
Germany	37,90	38,10	35,90	34,80	32,10	31,40	31,40	31,60	31,20	30,50	28,40	27,80	:	:
Ireland	22,50	24,20	24,30	23,10	21,90	23,40	25,60	27,50	29,80	31,10	32,00	30,10	:	:
Greece	**54,00**	**:**	**54,50**	**:**	**48,90**	**:**	**46,60**	**:**	**46,40**	**:**	**46,80**	**:**	**:**	**:**
Spain	43,60	43,90	43,60	38,70	40,80	38,60	39,90	39,10	40,10	41,00	43,00	42,50	:	:
France	41,90	41,50	38,80	37,30	36,90	38,70	36,90	38,30	39,00	38,70	38,60	38,40	:	:

Italy	53,00	50,80	:	:	:	:	:	:	:	:	50,70	48,30	:	:
Luxembourg	:	:	:	:	:	7,70	:	:	11,20	:	16,60	:	:	:
Netherlands	42,20	41,50	39,10	37,90	35,70	34,20	35,80	37,10	36,20	:	:	:	:	:
Austria	46,90	43,20	41,00	37,80	38,90	38,00	38,30	33,60	34,40	32,60	36,20	32,30	35,60	35,50
Portugal	65,30	66,90	68,20	69,10	69,70	64,80	61,00	60,50	60,10	57,50	55,20	:	:	:
Finland	35,10	:	30,90	30,00	29,20	26,20	25,50	26,10	25,70	26,30	25,70	25,10	24,10	:
Sweden	28,20	:	25,80	:	26,10	:	22,30	:	24,30	:	23,20	:	:	:
United Kingdom	32,80	31,50	30,70	30,60	29,20	30,20	28,90	28,90	31,70	32,90	32,70	31,90	:	:

table 2b **Business Enterprise Sector**

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
EU-27	53,00	53,00	54,20	54,80	56,10	56,30	55,90	54,60	54,20	54,40	54,50	:	:	:
EU-15	53,10	53,10	54,40	55,00	56,30	56,60	56,20	54,90	54,50	54,70	54,80	:	:	:
Belgium	67,10	67,60	67,60	65,70	66,20	62,40	63,40	59,40	60,30	60,20	59,70	:	:	:
Denmark	45,20	50,50	53,40	:	59,00	:	61,40	:	59,90	:	59,50	:	:	:
Germany	60,00	59,60	61,30	62,40	65,40	66,00	65,70	65,50	66,30	66,60	67,60	68,10	:	:
Ireland	67,40	66,80	67,30	65,40	64,40	65,80	66,70	63,40	60,30	58,60	57,40	59,30	:	:
Greece	**25,50**	**:**	**21,60**	**:**	**24,20**	**:**	**33,00**	**:**	**28,20**	**:**	**31,10**	**:**	**:**	**:**
Spain	44,50	45,50	44,70	49,80	48,90	49,70	47,20	48,90	48,40	48,00	46,30	47,10	:	:
France	48,30	48,50	51,60	53,50	54,10	52,50	54,20	52,10	50,80	50,70	51,90	52,40	:	:
Italy	41,70	43,00	:	:	:	:	:	:	:	:	39,70	40,40	:	:
Luxembourg	:	:	:	:	:	90,70	:	:	80,40	:	79,70	:	:	:
Netherlands	46,00	48,50	45,60	48,60	49,70	51,40	51,90	50,00	51,10	:	:	:	:	:
Austria	45,70	44,70	43,30	41,70	41,10	41,80	41,80	44,60	45,10	47,20	45,70	48,40	47,70	48,60
Portugal	19,50	20,50	21,20	21,30	21,30	27,00	31,50	31,60	31,70	34,20	36,30	:	:	:
Finland	59,50	:	62,90	63,90	66,90	70,20	70,80	69,50	70,00	69,30	66,90	66,60	68,20	:
Sweden	65,80	:	67,70	:	67,20	:	71,70	:	65,10	:	65,70	:	:	:
United Kingdom	48,20	47,60	49,90	47,60	48,50	48,30	45,50	43,50	42,20	44,10	42,10	45,20	:	:

table 2c **Abroad**

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
EU-27	6,30	6,80	7,00	7,30	7,20	7,30	8,00	8,90	8,60	8,40	9,00	:	:	:
EU-15	6,40	6,80	7,10	7,40	7,30	7,30	8,10	8,90	8,60	8,40	9,00	:	:	:
Belgium	7,50	6,70	6,80	7,70	7,30	12,20	12,10	14,30	12,90	12,30	12,40	:	:	:
Denmark	11,00	9,20	6,40	:	5,40	:	7,80	:	10,30	:	10,10	:	:	:
Germany	1,80	2,00	2,40	2,50	2,10	2,10	2,50	2,40	2,30	2,50	3,70	3,80	:	:
Ireland	8,50	7,50	6,70	9,80	12,00	8,90	6,00	7,10	8,30	8,60	8,60	8,90	:	:
Greece	**18,00**	**:**	**22,30**	**:**	**24,50**	**:**	**18,40**	**:**	**21,60**	**:**	**19,00**	**:**	**:**	**:**
Spain	6,70	5,60	6,70	6,70	5,60	4,90	7,70	6,80	5,70	6,20	5,70	5,90	:	:
France	8,00	8,30	7,90	7,40	7,00	7,20	7,20	8,00	8,40	8,80	7,50	7,00	:	:
Italy	5,30	6,20	:	:	:	:	:	:	:	:	8,00	8,30	:	:
Luxembourg	:	:	:	:	:	1,60	:	:	8,30	:	3,60	:	:	:
Netherlands	9,30	7,60	12,80	10,50	11,20	11,60	11,00	11,60	11,30	:	:	:	:	:
Austria	7,00	11,70	15,30	20,10	19,60	19,90	19,70	21,40	20,00	19,40	17,70	18,40	16,30	15,50
Portugal	11,90	8,70	6,10	5,70	5,30	5,20	5,10	5,00	5,00	4,80	4,70	:	:	:
Finland	4,50	:	5,30	5,10	3,00	2,70	2,50	3,10	3,10	3,20	6,30	7,10	6,50	:

Sweden	3,40	:	3,50	:	3,60	:	3,40	:	7,30	:	7,70	:	:	:
United Kingdom	14,50	16,30	14,60	16,90	17,30	16,00	19,70	21,50	20,30	17,10	19,30	17,00	:	:

Source: Eurostat

3.2.1.1 The Dominance of Public Sector...

Research core in Greece consists of research and technological bodies that are under the supervision of the General Secretariat for Research and Technology, technological parks and universities. As far as national funds for research are concerned, GSRT finances about 35 percent of total state expenditure, including all relevant research institutes' operational cost. However, the most significant research funder is Ministry of Education and Religious Affairs, whose financing reaches 55 percent of total public expenditure, the vast majority of which - about 90 percent- is directed to research through general universities' budgets, while the rest of about 8 to 9 percent of total public expenditure comes from Ministry for Rural Development and Food that finances National Agricultural Research Foundation (N.AG.RE.F.). It should be clear here that Ministry of Education does not finance directly research projects, as research funding for universities is indirect and institutional, having to do with relevant activities of universities' personnel that are included in their every-day work, being actually part of academic staff's salaries. Therefore, this segment of research funding is calculated as a portion of universities' regular budget and public investment programs that are disposed to universities and so changes in this expenditure are indirect, rather typical and not substantial, since they may concern a change either in relevant research allowance or in the number of teaching and research staff that is employed in universities (G.S.R.T. 2001), revealing only in an indirect way research activities that are carried out in greek universities. In addition, Ministry of Education has neither collaborated so far with GSRT in research projects, nor has it participated during preparation of research and technology policy or strategic planning, although this ministry is expected to take the lead in this kind of actions (Maravegias 2008).

3.2.1.2 ...The Scarce Research Initiative from the Side of Private Sector and....

Greek production depends structurally until now on technology and know how transfer from abroad and not on domestically produced knowledge, while the largest part of greek export is characterised as low- or medium-technology intensive (Tsakanikas 2008). Nevertheless, exchanges look like shifting in dynamic terms –in a rather sluggish way in comparison to other E.U. member states- from products of low-technology to those of medium- or high technology during this decade. At the same time competitiveness of greek production deteriorates overall, but it is slightly improved as far as medium- and high-technology production is concerned, although Greece has still a weak export presence (Giannitsis 2008). This may be also explained by the absence of a large high-tech firm that would operate in the country, raising probably demand and supply for this kind of services and production, since as Narula and Zanfei (2005) support the importance of R&D activities of foreign affiliates has grown in most host economies since the 1990s. Actually, strategic assets are gathered in many cases, where a major firm or other relevant sound enterprises are settled, as they attract investments. However, this is not the case of Greece that does not seem to participate in the so-called international value chains (Lyberaki 2008), since it is not a technologically advanced location, able to attract such investments, since high-tech production is rather weak, without having a dominant knowledge-intensive productive sector or comparative international advantage. In terms of market structure, Lyberaki (2008) lays emphasis also on

the fact that policy measures that aimed at strengthening greek production had not secured competitive conditions within product and labour market and had not contributed to export orientation.

On the other hand, until late 1990s about one third of greek participation in European projects concerned greek firms, the vast majority of which -about seventy five percent- are actually small and medium sized enterprises (SMEs). From these European funds, almost half of them are absorbed in ICT sector, while the participation of consultative and industrial companies is lower, being though quite significant as well. However, it is indicative of national production's structural weaknesses that only about ten percent of all greek companies that participated in F.P.5 took part repeatedly in European projects, representing at that time thirty five percent of total participations and fifty percent of total absorbed funds (Kourtesis, 2003). The absolute majority though of all firms that participated in European research programmes, namely sixty percent, did it only once.

Furthermore, the non-systematic and organised activation of interest groups (or even their absence) representing private sector or particular productive branches within the greek research system -as it happens in most western economies, where various productive sectors aim at presenting their special interests, in order to increase their research capacity and indirectly their competitiveness- is also indicative of the knowledge-intensive weakness of national production. This phenomenon can be explained and reveals also greek firms' dominant perception towards long-term strategic planning, while the relevant inertia of private sector is a result of country's productive structure that falls short of modern productive and technological evolutions (as it is shown in terms of exports and employment in tables 3 and 4), since it is based mainly on the so-called traditional productive paradigm of low- or medium-technology intensity that has low value added in international production and economy.

Table 3: Export of High-tech Products (as % of Total Export)

	1999	2000	2001	2002	2003	2004	2005	2006
EU-27	20.41	21.39	21.23	18.89	18.57	18.49	18.74	16.65
Belgium	7.85	8.69	8.98	7.49	7.42	7.12	7.05	6.64
Bulgaria	1.71	1.64	1.77	2.56	2.91	2.54	2.91	3.34
Czech Republic	7.85	7.78	9.1	12.32	12.37	13.66	11.67	12.74
Denmark	13.88	14.43	13.99	15.02	13.45	13.32	14.86	12.75
Germany	14.19	16.08	15.8	15.15	14.76	15.36	14.79	14.06
Estonia	10.13	25.12	17.1	9.84	9.38	10.04	10.28	7.99
Ireland	39.4	40.54	40.8	35.35	29.91	29.08	29.54	29.01
Greece	**5.47**	**7.46**	**6.19**	**6.56**	**7.52**	**7.12**	**5.95**	**5.71**
Spain	5.94	6.37	6.11	5.71	5.91	5.7	5.65	4.92
France	23.96	25.47	25.6	21.88	20.74	20.07	19.07	17.88
Italy	7.51	8.53	8.58	8.21	7.1	7.08	6.94	6.35
Cyprus	4.01	3.04	3.99	3.46	4.2	15.89	31.56	21.35
Latvia	2.33	2.25	2.24	2.27	2.75	3.21	3.21	4.2
Lithuania	2.06	2.55	2.92	2.44	3.02	2.72	3.2	4.65
Luxembourg	15.07	20.56	27.91	24.71	29.63	29.46	37.99	40.66
Hungary	19.45	23.11	20.61	21.45	22.33	21.92	19.69	20.32
Malta	55.7	64.4	58.13	56.53	55.49	54.95	48.25	54.61
Netherlands	21.86	22.82	22.28	18.74	18.81	19.1	20.25	18.27
Austria	11.89	14.05	14.66	15.74	15.33	14.76	12.81	11.17
Poland	2.26	2.84	2.71	2.45	2.71	2.73	3.2	3.11
Portugal	4.37	5.57	6.94	6.36	7.48	7.49	6.85	6.99
Romania	2.81	4.63	4.97	3.09	3.31	3.08	3.11	3.85
Slovenia	3.75	4.46	4.83	4.86	5.8	5.2	4.26	4.66

Slovakia	3.5	2.87	3.17	2.63	3.43	4.68	6.4	5.43
Finland	20.69	23.48	21.14	20.9	20.58	17.77	21.34	18.12
Sweden	17.83	18.71	14.23	13.71	13.12	14.14	14.23	13.39
United Kingdom	27.35	28.9	29.8	28.64	24.43	22.8	22.14	26.48

Source: Eurostat

Table 4: Employment in Medium- and High-Technology Intensive Sectors (as % of Total Employment)

	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
EU-27	:	7.40	7.36	7.23	6.95	6.76	6.59	6.60
Belgium	7.22	7.09	6.90	6.60	6.41	6.40	6.52	6.33
Bulgaria	:	5.61	5.51	5.33	4.67	4.62	4.91	4.90
Czech Republic	8.81	8.97	9.18	8.95	8.72	9.02	9.52	10.39
Denmark	6.39	6.44	7.00	6.31	6.12	5.97	6.10	6.01
Germany	10.88	11.19	11.22	11.37	11.05	11.24	10.50	10.72
Estonia	3.94	4.25	4.88	3.41	3.35	5.12	4.16	3.75
Ireland	7.30	6.94	7.29	6.83	6.29	6.51	6.02	5.66
Greece	**2.13**	**2.13**	**2.18**	**2.21**	**2.04**	**2.23**	**2.19**	**2.27**
Spain	5.45	5.37	5.48	5.30	5.06	4.86	4.67	4.48
France	7.24	7.23	7.16	6.82	6.38	6.38	6.31	5.93
Italy	7.63	7.63	7.43	7.37	7.43	7.47	7.51	7.59
Cyprus	1.07	1.17	1.03	1.12	1.25	1.18	1.27	1.03
Latvia	0.93	0.64	1.72	1.97	1.85	1.42	1.70	1.73
Lithuania	3.80	3.22	3.10	2.64	3.03	2.80	2.72	2.48
Luxembourg	1.80	2.03	1.19	1.22	1.41	1.21	1.38	1.26
Hungary	8.39	8.07	8.73	8.47	8.27	8.31	8.34	8.46
Malta	:	8.62	8.03	8.17	6.15	7.66	6.76	6.55
Netherlands	4.67	4.45	4.29	4.07	4.04	3.57	3.29	3.13
Austria	6.63	6.77	6.48	6.58	6.20	6.25	6.29	6.96
Poland	:	:	:	:	:	4.91	4.90	5.13
Portugal	3.65	3.67	3.61	3.33	3.22	3.57	3.29	3.33
Romania	5.98	5.12	5.05	5.62	5.32	5.69	5.13	5.45
Slovenia	8.39	8.69	8.78	9.27	8.97	8.44	9.63	8.67
Slovakia	6.61	6.87	6.75	8.20	8.00	8.58	9.31	9.56
Finland	7.23	7.23	7.44	7.38	6.85	6.79	6.76	6.81
Sweden	8.26	7.90	7.72	7.27	7.03	7.07	6.51	6.33
United Kingdom	7.58	7.30	7.11	6.65	6.24	5.68	5.61	5.53

Source: Eurostat

3.2.1.3 … The Decisive Role of E.U.'s Research Actions.

As mentioned above, the greek distinctiveness -beyond the way that research funds are shared between public and private sector- lies also at the range that research system depends financially on E.U.'s research initiatives and policies, which may be seen through the rates of research that is performed either in public or higher education sector -that are the most significant research performers- and funded from abroad, especially when compared to other member states (tables 5 and 6). In addition, it should be mentioned that although in most cases

research funds from abroad are identified with investments that foreign firms carry out in those countries, the source of these funds is almost exclusively E.U. funding in the greek case, as R&D expenditure of foreign affiliates as a percentage of total GERD is low in Greece (UNCTAD 2002b). Therefore, it is important to present E.U. as a funder of research that is carried out in Greece, although its role is not limited to the financing level, but extends to institutional, regulatory issues, as well as to the kind of research that is performed in Greece, issues that will be analysed in sections 3.2.3 and 4.2.

Table 5: % of R&D Performed by Higher Education Sector and Funded from Abroad

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	3,21	3,61	3,99	4,44	4,09	4,23	4,28	4,55	4,39	4,84	5,03	:	:
EU-15	3,21	3,61	3,98	4,45	4,09	4,23	4,27	4,54	4,36	4,81	4,99	:	:
Germany	1,06	1,46	1,70	2,03	1,72	2,43	2,28	2,44	2,18	3,18	3,70	4,20	:
Ireland	24,04	21,29	20,31	19,57	17,60	15,92	12,24	9,43	8,80	8,23	7,45	7,19	:
Greece	**17,00**	**:**	**19,47**	**:**	**22,79**	**:**	**20,39**	**:**	**21,14**	**:**	**21,27**	**:**	**:**
Spain	7,04	5,69	6,32	9,09	5,84	4,59	6,86	7,62	5,39	7,08	5,35	4,99	:
France	1,57	2,46	2,21	2,85	2,57	2,07	2,33	2,67	2,42	2,39	2,32	2,84	:
Portugal	7,65	5,12	3,24	3,30	3,35	4,55	5,55	4,75	3,97	3,82	3,67	:	:
Slovenia	3,06	5,28	12,56	6,29	6,80	6,05	8,92	5,86	6,34	6,71	8,32	9,76	11,64
Finland	2,93	:	5,83	5,21	5,68	6,00	6,64	8,09	8,27	7,88	8,47	8,89	9,05
Sweden	2,59	:	4,15	:	4,60	:	5,04	:	5,36	:	6,13	6,79	:
United Kingdom	7,65	8,10	8,57	9,04	7,98	7,74	7,33	7,54	7,62	7,75	7,73	8,30	:

Source: Eurostat

Table 6: Percentage of R&D Performed by Government and Funded from Abroad

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	3,42	3,65	3,90	4,34	4,41	4,62	5,34	5,06	5,50	6,23	6,71	:	:
EU-15	3,42	3,68	3,90	4,39	4,45	4,66	5,37	5,00	5,48	6,24	6,74	:	:
Germany	1,26	1,64	1,68	1,84	2,20	2,05	2,92	2,21	2,06	2,89	5,96	5,93	:
Ireland	6,03	5,84	4,93	6,32	3,56	2,82	1,92	1,92	1,41	2,31	2,73	8,53	6,59
Greece	**20,71**	**:**	**27,74**	**:**	**33,11**	**:**	**28,81**	**:**	**26,55**	**:**	**30,55**	**:**	**:**
Spain	7,03	6,46	8,74	10,24	8,43	9,42	9,25	8,69	8,16	7,82	6,37	6,13	:
France	4,35	4,05	4,46	5,07	4,77	5,80	6,96	5,28	7,49	8,60	7,17	5,24	:
Portugal	8,30	7,24	6,29	4,48	3,37	3,61	3,85	3,89	3,94	5,17	6,37	:	:
Slovenia	3,13	1,61	4,73	3,62	2,72	3,72	4,52	5,88	7,62	6,73	6,66	7,89	9,06
Finland	3,13	:	5,76	7,53	7,31	7,72	7,49	8,21	9,58	9,57	9,31	9,70	9,39
Sweden	2,58	:	2,40	:	3,77	:	3,42	:	2,37	:	2,31	:	:
United Kingdom	3,32	3,41	3,41	3,70	3,56	2,50	2,84	3,49	3,04	3,20	3,45	4,11	:

Source: Eurostat

The funding contribution of E.U. to the greek research system is observable, since there are substantially no alternative funding sources for research, proving in this way the

narrowness of the national system of innovation, as well as its limits. On the basis of greek researchers' participation in E.U.'s projects during F.P.5 and F.P.6 Greece has absorbed over 3 percent of F.P.'s expenditure, while it took part in over 4 percent of total number of projects, a strain that is indicative of research conditions in Greece, especially when compared to national respective data, such as national expenditure for research -being equal to 0,5 percent of member states' total expenditure in R&D- and the number of greek researchers that reaches only 0,3 percent of the total number of researchers in E.U. Consequently according to Kourtesis (2003) and Mitsos (2007b), Greece has been the country that had benefited most until the early 2000s –in comparison to the rest member states of E.U.-15- from E.U. research projects[5]. Actually, benefits from F.P. become even more impressive for Greece if they are measured per capita or per researcher, since there is the combination of few researchers that produce research of high quality (Mitsos 2007b). Moreover, the effect of E.U. research actions on the greek system has also qualitative aspects, since European research programmes give greek researchers the ability to remain connected to international scientific evolutions through research collaborations, at the same time that E.U. resources support universities and public research institutes through the provision of relevant necessary infrastructure and provide greek researchers with more occupation opportunities (Tsipouri 1989, Kourtesis 2003).

However, dependence on F.P. and respective resources is not significant for all member states, especially for those that invest high expenditure on research, having simultaneously important research tradition, as in the greek case. Partially this can be explained by the fact that the greek research system was developed at the time that F.P.s had been launched and scarce national research funding, especially since industrial demand for research is minor (Maravegias 2006). Thus, F.P.s have been identified with funder and market for greek researchers, making greek science policy priorities to be adapted to the European ones, as setting priorities within a small scientific community with vested interests has always been difficult (Tsipouri and Xanthakis 1993). It is also important to mention that the substitution of national for E.U. priorities, and not the complementarity between them, is not the result of a European deliberate attempt to harmonise national science and technology policies, but the proof of inadequancies of greek research structures and means of policy.

Nevertheless according to Kourtesis (2003), European research programmes did not manage to affect significantly private sector's research effort overall. More specifically, their contribution to greek companies was limited to financial support and was expanded neither to new products' creation, nor to implementation of dynamic entrepreneurial practices, while collaboration between companies and academia remains minor, affecting knowledge diffusion in greek economy in a negative way. The reason for that is the attitude that most greek companies have towards research activities and funding. In spite of these, European funds' and programmes' repercussion on greek participating companies and their research effort has been influential (European Commission 2005), although researchers claim that greek companies participate in European and national research programmes, so as to receive financing, since they regard it as an additional financial support and not as a chance to carry out research, in order to exploit its results, new knowledge and technologies (Kourtesis 2003).

3.2.2 Research Performers

Research is carried out in Greece by those actors that finance it as well, and so the dominance of public sector in research funding that is presented in tables 2a-2c is repeated also in the

[5] Although large member states receive higher funds from European programmes and projects than other countries in abstract numbers, the former cohesion-member states of E.U.-15 come first in absorbing European resources, when national research financing is taken into account.

case of research performers, since the majority of national and European research projects takes place mainly in public research institutes and universities that are the most important research performers (tables 7a-7c). Research performance of private sector brings Greece only to the 25th place, in front of Bulgaria and Cyprus, although, the performance of greek universities seems to be much better, placing Greece 16th among E.U.-27 member states, still falling behind all other E.U.-15 member states, except Luxembourg. A main characteristic of the greek research system is also that it is rather unequal, as there are observed significant differences between institutes, departments and scientific areas in terms of research quality, since some results are unremarkable, while other groups are able to reach scientific excellence, competing successfully for funding at European level (Caloghirou 2008a, Maravegias 2008).

Table 7: % Total R&D Expenditure (GERD) by Sectors of Performance (as % of GERD)

table 7a Business Enterprise Sector

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	62,44	62,59	63,21	63,37	64,58	64,58	64,81	64,10	63,81	63,65	63,34	63,89	63,72
EU-15	62,64	62,81	63,43	63,63	64,86	65,19	65,18	64,58	64,21	64,03	63,77	64,32	64,23
Germany	66,28	66,10	67,45	67,94	69,77	70,33	69,87	69,24	69,73	69,79	69,34	69,89	69,95
Ireland	70,06	70,76	71,01	71,84	73,34	71,62	70,08	68,83	67,51	65,75	65,52	67,51	66,77
Greece	**29,48**	**:**	**25,55**	**:**	**28,48**	**:**	**32,66**	**:**	**32,06**	**31,07**	**30,98**	**30,04**	**26,94**
Spain	48,23	48,35	48,80	52,11	51,99	53,66	52,37	54,58	54,10	54,38	53,79	55,50	54,36
France	60,98	61,54	62,53	62,26	63,18	62,51	63,19	63,25	62,62	63,10	62,12	63,09	63,18
Portugal	20,92	21,78	22,46	22,59	22,68	27,80	31,81	32,48	33,15	36,03	38,47	46,46	51,46
Slovenia	46,59	50,65	53,04	52,04	54,97	56,32	57,78	59,68	63,92	66,98	58,83	60,23	61,27
Finland	63,22	66,17	65,98	67,16	68,16	70,91	71,10	69,87	70,49	70,12	70,83	71,30	72,30
Sweden	74,60	:	74,82	:	74,38	:	77,47	:	74,35	73,54	74,12	74,68	72,73
United Kingdom	64,96	64,85	65,20	65,57	66,76	64,96	65,50	64,85	63,71	62,56	61,39	61,65	:

table 7b Government Sector

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	16,46	16,05	15,14	15,11	14,33	13,74	13,20	13,06	13,15	13,36	13,65	13,20	13,27
EU-15	16,21	15,79	14,88	14,82	14,04	13,45	12,89	12,64	12,77	13,00	13,27	12,81	12,83
Germany	15,49	15,32	14,63	14,66	13,76	13,58	13,74	13,74	13,40	13,67	14,11	13,85	13,72
Ireland	8,97	8,39	7,58	7,20	5,98	8,13	8,10	8,73	7,78	7,52	7,39	6,49	6,80
Greece	**25,49**	**:**	**23,42**	**:**	**21,71**	**:**	**22,06**	**:**	**20,29**	**19,83**	**20,28**	**20,81**	**21,40**
Spain	18,62	18,30	17,37	16,27	16,88	15,82	15,88	15,40	15,36	15,96	17,04	16,68	18,03
France	20,99	20,27	18,67	18,64	18,14	17,32	16,52	16,53	16,68	16,98	17,77	16,50	16,51
Portugal	27,02	25,46	24,22	26,40	27,94	23,92	20,75	18,83	16,87	15,65	14,62	11,25	9,14
Slovenia	25,21	26,64	28,21	30,43	28,55	25,90	24,31	23,06	22,12	19,83	24,20	24,51	23,17
Finland	16,65	15,76	13,60	12,59	11,39	10,58	10,20	10,36	9,69	9,47	9,55	9,35	8,46
Sweden	3,68	:	3,54	:	3,33	:	2,84	:	3,49	3,11	4,72	4,48	6,08
United Kingdom	14,56	14,44	13,77	13,45	12,24	12,63	10,03	9,19	10,39	10,72	10,56	9,99	:

table 7c Higher Education Sector

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	20,42	20,67	20,95	20,80	20,36	20,61	21,22	21,96	22,78	22,13	22,06	22,01	22,12

EU-15	20,45	20,70	20,98	20,82	20,35	20,56	21,15	21,90	22,19	22,10	22,00	21,96	22,04
Germany	28,23	18,59	17,91	17,40	16,47	16,09	16,39	17,02	16,87	16,54	16,54	16,25	16,33
Ireland	20,44	20,02	20,68	20,96	20,68	20,25	21,83	22,45	24,71	26,73	27,09	25,99	26,39
Greece	**44,31**	**:**	**50,60**	**:**	**49,50**	**:**	**44,92**	**:**	**46,72**	**48,17**	**47,48**	**47,81**	**50,37**
Spain	32,02	32,26	32,73	30,51	30,12	29,62	30,92	29,78	30,34	29,53	29,03	27,64	27,46
France	16,71	16,84	17,41	17,61	17,16	18,75	18,90	18,66	19,36	18,63	18,83	19,20	19,17
Portugal	37,05	38,71	40,04	39,19	38,58	37,50	36,66	37,53	38,43	36,79	35,40	32,00	29,87
Slovenia	27,59	21,61	17,40	16,65	15,89	16,61	16,25	15,54	13,70	12,91	16,75	15,09	15,44
Finland	19,54	18,07	19,95	19,61	19,72	17,85	18,06	19,16	19,21	19,79	19,04	18,73	18,66
Sweden	21,57	:	21,56	:	22,18	:	19,60	:	21,76	22,95	20,86	20,63	21,07
United Kingdom	19,21	19,48	19,74	19,67	19,64	20,59	22,69	24,02	24,05	24,72	25,74	26,12	:

Source: Eurostat

The above mentioned is also reflected in terms of researchers' and R&D personnel's employment, where the total number of researchers as a percentage of total employment in Greece lies close to E.U.-27 average (1.27% in Greece, 1.3% in E.U.-27 in 2005) (table 8a), despite the fact that research employment is considerably low in private sector (0.27% of total employment in Greece, compared to 0.6% in E.U.-27) (table 8b). The situation is balanced due to research employment in public sector that is close to E.U.-27 average (table 8c), but mainly due to research employment in higher education sector that is significantly higher than the respective E.U.-27 average (table 8d).

Table 8: Researchers Employed by Sectors of Performance (as % of total employment)

table 8a **Total**

	1996	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
EU-27	:	:	:	:	1.24	1.25	1.28	1.28	1,30	1.31	1.35	1.37
EU-15	1,30	1.31	1.35	1.37	1.39	1,40	1.43	1.42	1.43	1.44	1.49	1.51
Denmark	:	1.87	:	1.92	1.98	2.09	2.17	2.11	2.28	2.33	2.34	:
Germany	:	:	:	:	:	:	:	1.67	:	1.63	:	:
Ireland	0.88	0.91	0.92	0.94	1.19	1.33	1.32	1.33	1.36	1.39	1.44	:
Greece	**:**	**1.01**	**:**	**1.25**	**:**	**1.22**	**:**	**1,20**	**:**	**1.27**	**:**	**:**
Spain	:	0.96	:	1.06	:	1.16	1.24	1.28	1.33	1.35	1.44	:
France	1.48	1.51	1.51	:	1.48	1,50	1.56	1.53	1.55	1.56	1.59	:
Netherlands	:	:	:	:	:	:	1,30	1.27	1.39	1.34	:	:
Portugal	0.54	0.58	0.65	0.72	0.73	0.74	0.77	0.81	0.81	0,80	:	:
Slovenia	1.36	1.21	1.23	1.29	1.27	1.26	1.28	0.99	1.01	1.24	1.32	:
Finland	:	2.23	2.42	2.62	2.66	2.68	2,80	2.88	2.96	2.95	3.02	:
Sweden	:	2.35	:	2.42	:	2.43	:	2.36	:	2,50	:	:
United Kingdom	:	:	:	:	:	:	:	:	:	:	:	:

table 8b **Business Enterprise Sector**

EU-27	:	:	:	:	0.54	0.54	0.55	0.55	0.56	0.56	0.59	0,60
EU-15	0,58	0,59	0,60	0,62	0,64	0,64	0,65	0,65	0,66	0,66	0.69	0,70
Denmark	:	0.94	1.02	1.04	1.12	1.19	1.33	1.25	1.39	1.36	1.38	:
Germany	:	0.83	:	0.86	:	0.86	:	0.84	:	0.83	:	:
Ireland	0.49	0.52	0.54	0.56	0.58	0.68	0.64	0.63	0.66	0.67	0,67	:
Greece	**0.12**	**0.13**	**:**	**0.19**	**0.25**	**0.29**	**0.28**	**0.26**	**:**	**0.27**	**:**	**:**
Spain	:	0.22	:	0.28	:	0,30	0,39	0.42	0.46	0.47	0.52	:
France	0.72	0.74	0.73	:	0.73	0,75	0.76	0.75	0.77	0.74	0.77	:
Netherlands	:	0.67	0.72	0.77	0.77	0.74	0.73	0.68	0,8	0.76	:	:

Portugal	0,07	0.08	0.09	0.11	0,12	0.13	0,15	0.18	0,18	0.17	:	:
Slovenia	0.46	0.47	0.49	0.52	0,50	0.51	0.55	0.45	0.46	0,50	0.55	:
Finland	1.06	1.17	1.29	1.42	1.47	1.46	1,50	1.54	1.57	1.56	1.57	:
Sweden	:	1.11	:	1.12	:	1.18	:	1.14	:	1,39	:	:
United Kingdom	:	:	:	:	:	:	:	:	:	0,50	0,50	:

table 8c **Government Sector**

EU-27	:	:	:	:	0,17	0,17	0,17	0,17	0,17	0,17	0,18	0,18
EU-15	0,19	0,18	0,18	0,18	0,17	0,17	0,17	0,17	0,17	0,17	0,18	0,18
Denmark	:	0.37	:	0.38	0.34	0.34	0,17	0.18	0.17	0.17	0.17	:
Germany	:	:	:	:	:	:	:	0.21	0.22	0.21	0.22	:
Ireland	0,08	0,07	0,07	0,06	0,10	0,11	0.09	0.09	0.08	0.06	0.06	0,06
Greece	**:**	**0.23**	**:**	**0.17**	**:**	**0.19**	**:**	**0.19**	**:**	**0.16**	**:**	**:**
Spain	:	0.16	:	0.17	0.17	0.18	0.17	0.18	0,20	0.21	0.22	:
France	0.26	0.21	0,20	:	0,20	0,19	0,19	0,19	0,19	0,20	0,21	:
Netherlands	0.24	0.24	0.24	0.23	0.17	0.17	0.17	0,19	0,18	0,17	:	:
Portugal	0,13	0.13	0,16	0.18	0,17	0.16	0,15	0.13	0,13	0.13	:	:
Slovenia	0.34	0.36	0.34	0.34	0.32	0,30	0.29	0.2	0,20	0.28	0,30	:
Finland	:	0.37	0.39	0.38	0.37	0.37	0.39	0.38	0.38	0.38	0.36	:
Sweden	:	0.12	:	0.11	:	0.12	:	0.12	:	0,12	:	:
United Kingdom	:	:	:	0.11	0.11	0,08	0.08	0.08	0.08	0.07	0,07	:

table 8d **Higher Education Sector**

EU-27	:	:	:	:	0,52	0,52	0,55	0,55	0,56	0,56	0,57	0,58
EU-15	0,52	0,53	0,56	0,56	0,57	0,58	0,59	0,59	0,59	0,60	0,61	0,62
Denmark	:	0.53	:	0,50	0.51	0.54	0,66	0.68	0,70	0.77	0.77	:
Germany	:	:	:	:	:	:	:	0.62	0.61	0.59	0.61	:
Ireland	0,29	0,30	0,30	0,31	0.52	0,54	0.59	0.61	0.62	0.66	0,70	:
Greece	**:**	**0.64**	**:**	**0.88**	**:**	**0.73**	**:**	**0.74**	**:**	**0.84**	**:**	**:**
Spain	:	0.57	:	0,60	0.65	0.67	0.67	0.68	0.67	0.67	0.69	:
France	0.47	0.54	0.55	:	0,52	0,53	0,57	0.56	0.57	0.58	0.58	:
Netherlands	:	:	:	:	:	:	0.39	0,40	0.41	0,41	:	:
Portugal	0,27	0.29	0,32	0.35	0,35	0.36	0,38	0.39	0,40	0.41	:	:
Slovenia	0.55	0.37	0.39	0.42	0.43	0.43	0.41	0.34	0.34	0.46	0.46	:
Finland	:	0.67	0.72	0.78	0.79	0.83	0.89	0.93	0.98	0.98	1.05	:
Sweden	:	1.12	:	1.18	:	1.13	:	1.09	:	0,98	:	:
United Kingdom	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat

3.2.3 Institutions

Technology is also determined by the existing institutional set-up, as many aspects of entrepreneurial and public research activities depend on institutional relationships between suppliers, customers, public agencies and research institutes, while a country's institutions express sets of habits, routines, rules, norms and laws that regulate respective relations and actions. Thus, law 1514 of 1985 that regulates research activities, recognises that science and technology are the keys for economic growth in Greece (Tsipouri 1989), while according to Kourtesis (2003) contemporary greek system of research and technology, which was set by and large in the 1980s has still many characteristics of that era and is based significantly on the institutional framework that was set then. However, present government has taken an initiative towards the strengthening of research activity in Greece, voting the Law for the Institutional Framework of Research and Technology in 2008 (Law 3653/2008) that aimed

mainly at regulating public research centres' operation (Maravegias 2008) and at introducing new institutions, such as National Council for Research and Technology and National Organisation for Research and Technology, which resemble actually to the European research practice, although new law's Europeanisation-driven dynamic was mitigated, as new Ministry for Research, Technology and Innovation, as well as National Programme for Research and Innovation that had been proposed during law's preparation phase, were finally not included in the final text. Nevertheless, it has to be noticed that this law has not been yet activated, since the necessary Presidential Decrees are missing (Caloghirou 2008a). The conclusion of the above mentioned may be that the greek national research system is institutionally rather obsolescent and has weaknesses that are intended to be faced by the relevant Europeanisation process via institutional borrowing and learning, according to Skagiannis (1998), although it seems that it takes place practically in an ineffective and sluggish way, being implemented so far not in practice, but in terms of political discourse.

An indication of research policy's Europeanisation in Greece –that will be further analysed in section 4.2- and whether or not it proceeds is the policy text that was presented by the greek government in September 2003, being actually the framework for a national action in the period 2004-2008, aiming at facilitating and achieving the goal of real economic convergence with E.U.-15 average. This Convergence Map was directly linked to Lisbon Strategy, as it would be actually the transfer of European actions regarding Lisbon Strategy into the greek political and economic context, being simultaneously an imminent sign of "downloading process" that takes place, when national public policies are europeanised. Connection to European decisions was so strong in this case that it was chosen to follow even the same methodology, quantifying the goals of national strategy –as in the case of Barcelona Council's decisions in 2002- which was an innovative move for greek public policy. Nevertheless, greek national strategy and its declarations have not managed to lead to concrete measures and policy actions and so the quantification of national goals and the assessment of nominal targets was proved to be an inexpensive and inessential –although impressive- political move, since no initiative was taken in practice to achieve them. Thus, the target of increasing national expenditure for research to 1,5 percent of GDP that was set then, has still not been achieved, being shifted to 2015. On this way though, it is possible to observe the process of europeanisation the other way around, as actions or inaction in national policies affect the respective European policies and so inertia is transmitted from national at European level regarding research policy and its efficiency, leaving goals unfulfilled at both political levels.

4. The Virtually Absent National Policy for Research in Greece.

Taking the swedish, finnish or even irish growth model into consideration, the role of state is crucial via public policy and knowledge intensive cluster-formation initiatives, as it contributes funds, organises training and provides infrastructure, while further strategic planning is also necessary beyond these factors. Deniozos (1993) believes that scandinavian methodology that deals with high educational standards, know-how diffusion, innovation's enforcement and enhanced research, so as to integrate international technology, develop new capabilities and support economy's competitiveness could be an interesting and useful example for Greece, although the simplistic approach of copying it and trying to implement it in different conditions elsewhere is definitely not enough. Moreover, initiatives and actions that had been borrowed by other E.U. member states and have been implemented for instance in Greece may lead to different results, as they finally turned out to be of different essence within different national frameworks. Therefore, Giannitsis (1993) suggests as far as research

and technology policy is concerned that it is of major importance to select the appropriate means of policy and integrate them successfully within productive and societal patterns of a country. However, relevant state intervention in Greece had not served long-term growth and competitiveness goals, even as part of industrial policy (Giannitsis 1993, European Trend Chart on Innovation 2005), and so the absence or inefficiency of this policy –actually the lack of a national strategy for research that would be followed by a programme of national funding, as well as the deficiency of policy measures that would support domestic knowledge intensive production and enhance the demand for it- is considered to be a significant differentiation between the greek practice and that of other E.U. member states and western economies.

Thus, the factors that have determined research context in Greece –with the apparent weaknesses and inefficiencies- will be analysed in this section under the aspect of national system of innovation, as well as the phenomenon of indirect but almost absolute determination of national research policy in Greece from European actions, following the discussion about Europeanisation of national public policy.

4.1 The Responsibility of the Major Components of the Greek System of Innovation.

National systems of innovation was introduced in the late 1980s by Bengt-Ake Lundvall and/or Christopher Freeman and is an analytical tool about knowledge, research and production that presents the way that knowledge is performed from research laboratory to production and markets in each country, depending on traditions and interconnections between companies, universities, research institutes, educational and funding systems. Put it in other way, this holistic approach deals with complicated feedback mechanisms and interactive relations that involve science, technology, learning, production, public policy and demand (Edquist 1997), as innovation stems from procedures that include new knowledge's production, diffusion and exploitation, construction of new products and managerial structures, including in this way all economy's institutions that have to do with research and learning, productive methods, marketing mechanisms, as well as funding. As a matter of fact, knowledge and technology are not developed apart and outside from economy, but they are strongly interconnected with economic, social and scientific developments. Thus, present analysis will be based on the assumption that the reasons for the absence of national research policy in Greece are to be sought in actions or failures of national innovation system's major components, namely government, business, scientific community and public administration (bureaucracy).

4.1.1 Governments' Unwillingness (or Putting the Blame on Public Sector)

Governments finance sectors like health, education, national security and public works. Research is also an activity that is to be financed by state, especially through public universities and research institutes, but research public policy is not regarded as a priority in public spending for any government -at least in the near past- as it is not a policy of first need for common welfare. Therefore and as a result of its nature, research policy is considered to be a rather luxurious public activity of high cost (Salter and Martin 2001). Nevertheless, due to modern economic evolutions and developed countries' sluggish growth Archibugi and Iammarino (1999) admit that governments seem to lay nowadays political emphasis on new technologies and the enforcement of research and innovation efforts, since these activities contribute to sustaining growth rates, enabling them to face current macroeconomic and demographic challenges. Thus, '*it is advantageous for a country to sell its own products in foreign markets and … the advantage becomes even greater if competitiveness is based on*

sophisticated technological knowledge rather than price. In fact, the former allows the application of profit margins which are difficult to sustain in areas in which technological barriers to entry are very low. Thus, the preoccupation of political advisors with providing support for industries exporting goods of high technological opportunity seems well-founded. It is certainly not by chance that governments provide support for the competitiveness of national firms by favouring their innovation programmes, so much so that technological policies are increasingly being merged with commercial policies' (Archibugi and Iammarino 1999: 328).

In Greece though, government's will to boost research and uplift it in political agenda has not been strong, since this has never been a political priority for them in practice, beyond various relevant declarations (Maravegias 2006). The impact of this is that although research policy is regarded to be important for strengthening economic growth and productive competitiveness, the relevant funding has been diachronically very low. Moreover, greek policy-makers' decisions disclose that there exist other social needs that should be covered before investing in research and innovation. Put it in other way, the perception according to which, research is a public good, but not of first need, such as education, health and national security, has been the settled way that greek governments have perceived research, although this aspect is not the prevailing one in modern western economies even under present circumstances, as some of them had already declared that they intend to face contemporary economic recession through investments of long-term character that would enforce human capital, namely education and research (Mitsos 2009). The range of emphasis that greek governments lay on research and the needs and deficiencies that greek society and economy do still face, are presented partially through the allocation of Community Support Framework's resources between different areas of public action. According to data of Ministry of Economy and Finance about the 3rd C.S.F. of 2000-2006 and as far as those Operational Programmes that included research funding and support actions are concerned, about 4,18% of Operational Programme Educational and Initial Vocational Training (which appropriated 8,56% of total Operational Programmes' resources) and 9,15% of Operational Programme Competitiveness (which appropriated 19,78% of total Operational Programmes' resources) had to do with research. On the whole, the share of total resources of 3rd C.S.F. that had been directed towards research –taking into account Regional Operational Programmes as well- was even smaller. The importance of this finding is great, as at that time momentum was favorable for research and its further funding and due to the fact that two other C.S.F. (1986-1993 and 1994-1999) had been preceded and exploited by greek governments, in order to cover needs in fields of public policy, such as education, health, infrastructure etc. Thus according to greek political practice so far, it is expected that significant funding will not be invested towards research, as long as primary social needs that have to do with main public goods, like education, health and welfare state are still not met, as these are sectors, where policy means and funding fall behind. Furthermore, the fact that greek governments do not include research in their political priorities is shown partially by the fact that actions for "building of European knowledge economy" had been only the fourth priority-issue in the general programme of the last Hellenic Presidency in 2003 that dealt with the so-called Lisbon process, just three years after Lisbon Strategy agreement and only one year after the decisions of Barcelona Council.

As mentioned above, western economies have targeted to research policy step up, as a mean to boost growth performance of the 1990s. On the other hand though, Greece has achieved in this period and especially in current decade high rates of economic growth due to the inflow of E.U. resources from Community Support Frameworks, the stable monetary context -being the result of the preparation for participation in Economic and Monetary Union- and the flourishing constructing sector at the time before 2004 Olympic Games

(Caloghirou 2008b). Hence, Nijkamp (2006) mentions that investment in public infrastructure contributes to long-run economic growth, although in the greek context (participation in Eurozone, low product competitiveness, high inflow of resources from abroad) economic growth does not seem to be sustainable, as it depends on a rather traditional and obsolete growth pattern of low technology. In addition according to Doukidis and Smithson (1995), a particular problem for the greek public action is the lack of coordination between technology policies and other public policies that deal with human capital, environment, urban planning and structural reforms in terms of production that would contribute to a more knowledge-intensive growth model.

At the same time though, investment flows to Nordic countries –especially Sweden and Finland- have expanded many-fold due to abolition of capital controls, changing also the structure of financial markets, corporate governance and firms' attitude to investment and risk-taking, in favour of new products. These evolutions have put these countries in a virtuous circle, as increasing foreign direct investment has proved to be the most important factor that helps technology transfer between countries and firms, while technology alliances between cooperating firms have also increased. In addition, education has also been developed, at the same time that the share of university graduates (overall educational attainment and the number of people that have diplomas in the sector of information technology, science and engineering) and –unlike Greece- spending in education are increased significantly, achieving also the highest R&D investment rates in the world and occupying globally the top places in technological innovation (Viren and Malkamaki 2002). On the whole, especially in the finnish case, the country got through a phase of constructive destruction after Soviet Union collapse, in which firms were obliged either to close or to adjust to new competitive conditions, almost without government support, as subsidies had been eliminated. Instead of that kind of action, policies tended to be geared towards investment in education, increase of R&D spending and support of partnerships between public and private sector, trying also to rise the supply of workers with information technology skills (OECD 1999).

On the contrary, Greece has based its growth potential on activities of low- and medium-technology (food industry, chemical industry, construction and public works, tourism, shipping and banking industry sectors), achieving significant growth performance. So, it can be assumed that another growth pattern was not sought in practice, as greek governments and regional authorities were more interested in participating and investing in planning and implementation of policies that would have more direct and visible impact, such as urban and rural development and building of infrastructures, at the same time that R&D initiatives and policies have not been a policy priority (Erawatch 2009). What is also interesting and indicative of the greek economic paradigm is that Greece's comparative rank in various fields among E.U.-27 member states reveals that its productive pattern has almost nothing to do with knowledge economy, as it is 14^{th} in terms of GDP, 11^{th} in labour productivity, 10^{th} as far as long-run rate of economic growth is concerned, but only 23^{rd} in terms of innovation (Komninos and Sefertzi 2008). However, a change regarding policies priorities cannot be excluded in the near future in spite of contemporary recession conditions, as the existent growth model is not sustainable within current productive and competitive framework and since Community Support Frameworks resources will decline after 2013 (Caloghirou 2008b). Therefore, emphasis should be laid on targeting the quality of growth and not just its rate, via structural investment in order to boost human capital, modern high-tech infrastructure and investment in environmental protection and energy (Begg 2009), although today there seem to be troubles and challenges regarding development in Greece, dealing amongst others with low quality of education system and underdevelopment of research and innovation (Katseli 2008).

4.1.2 The Inertia of Private Sector

Private sector is key-factor in national systems of innovation, as it creates demand for knowledge production, in order to become more competitive and gain comparative advantage and larger market share. Having that in mind, a major explanation for the rather poor emphasis that is laid on research in Greece, is private sector's low interest for this kind of activities, which is interpreted by the productive structure that falls short of the modern productive and technological evolutions, as it is still based mainly on traditional productive patterns, producing low knowledge and technology intensive goods of low value added. Although Doukidis and Smithson (1995) present the productive pattern of Greece in the mid-1990s, mentioning that it differs from that of most E.U.-15 member states, the context of production in Greece has not changed apparently, depending still on a small low-, medium- or high technology manufacturing sector and a large services sector, which is dominated by civil servants, as well as many self-employed, who work in low value added occupations, at the same time that small entrepreneurial family firms, which sell low-technology products in local markets dominate in manufacturing sector. These factors, as well as the fact that only a minor part of new entrepreneurial ventures have to do with the production and promotion of new products and services in market affect private sector's willingness to invest in research and knowledge-intensive activities, while it is crucial that greek enterprises have in practice a rather negative perception of research, which is shown clearly by the fact that they do not rely their value added in research activities, as table 9 indicates.

Table 9: Business Enterprise R&D Expenditure (BERD) as % of Value Added Industry

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	5,29	5,23	5,39	5,49	5,93	6,02	6,21	6,35	6,46	6,37	6,40	6,53	6,52
EU-15	5,47	5,43	5,60	5,71	6,17	6,29	6,51	6,67	6,80	6,73	6,80	6,96	6,98
Belgium	:	:	:	:	:	:	:	:	:	:	7,31	7,58	7,80
Czech Republic	:	:	:	:	:	:	:	:	:	:	3,22	3,56	3,34
Denmark	:	:	:	:	:	:	:	:	:	:	9,85	9,49	9,63
Germany	6,32	6,43	6,65	6,73	7,49	7,65	7,67	7,78	7,97	7,65	7,57	7,64	7,49
Ireland	3,03	3,27	3,06	2,82	2,71	2,67	2,60	2,54	3,00	3,39	3,70	4,19	4,15
Greece	**:**	**:**	**:**	**:**	**:**	**1,19**	**1,63**	**1,55**	**1,61**	**1,45**	**1,50**	**1,42**	**1,31**
Spain	1,90	1,95	1,93	2,30	2,32	2,57	2,60	3,04	3,31	3,48	3,71	4,22	4,23
France	:	:	:	:	8,50	8,45	9,00	9,47	9,47	9,80	9,67	10,22	10,43
Italy	:	:	:	:	:	:	:	:	:	:	2,93	3,00	2,99
Hungary	:	:	:	:	:	:	:	:	:	:	1,88	2,21	2,27
Netherlands	:	:	:	:	:	:	:	:	:	:	6,03	6,07	6,19
Austria	:	:	:	:	:	:	:	:	:	:	8,44	8,20	8,49
Portugal	0,59	0,64	0,69	0,79	0,89	1,21	1,50	1,48	1,50	1,74	2,04	3,09	3,93
Slovenia	2,85	2,64	2,68	2,71	3,02	3,08	3,39	3,50	3,22	3,78	3,53	3,96	4,06
Finland	5,78	7,06	7,54	7,82	8,98	9,65	9,64	9,85	10,43	10,65	11,16	10,75	10,97
Sweden	10,73	:	11,87	:	12,47	:	15,66	:	14,27	13,15	13,94	13,78	12,94
United Kingdom	5,36	5,18	5,20	5,53	6,15	6,05	6,37	6,77	6,94	6,79	6,90	7,01	:

Source: Eurostat

This is so, because they act having short sight view, trying for short-term benefits, at the same time that they do not seem to follow a strategic planning of long lasting character and they

find it difficult to collaborate with other components of national system of innovation due to lack of cooperative culture (Kastelli 2008). A proof for that is the range of collaboration between the main research performer in Greece, namely universities and private firms, as it is shown in table 10. Although it is close or even above the E.U.-27 average (there is observed a large divergence of trends in several member states), it is still considered to be low, since universities do have lion's share regarding research performance, differing significantly from conditions in other member states[6].

Table 10: Percentage of R&D Performed by Higher Education Sector and Funded by Business Enterprise Sector

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-27	5,95	6,11	6,29	6,53	6,67	6,52	6,64	6,41	6,36	6,28	6,28	:	:
EU-15	5,93	6,08	6,26	6,49	6,64	6,51	6,67	6,40	6,35	6,27	6,29	:	:
Belgium	:	:	:	:	:	:	:	:	:	:	10,86	:	:
Bulgaria	:	:	:	:	:	:	:	:	:	:	28,33	19,18	:
Czech Republic	:	:	:	:	:	:	:	:	:	:	0,84	0,69	0,73
Denmark	:	:	:	:	:	:	:	:	:	:	2,36	2,49	:
Germany	8,20	9,22	9,74	10,54	11,31	11,63	12,19	11,83	12,59	13,18	14,14	14,20	:
Estonia	:	:	:	:	:	:	:	:	:	:	5,22	4,98	5,58
Ireland	6,94	6,38	6,48	6,55	5,90	5,33	4,39	3,72	3,02	2,58	2,73	1,83	:
Greece	**5,56**	**:**	**5,56**	**:**	**4,99**	**:**	**6,85**	**:**	**7,52**	**:**	**8,91**	**:**	**:**
Spain	8,33	7,41	6,45	6,97	7,72	6,91	8,72	7,64	6,43	7,47	6,91	7,89	:
France	3,34	3,19	3,05	3,36	3,42	2,70	3,07	2,86	2,66	1,76	1,64	1,74	:
Italy	:	:	:	:	:	:	:	:	:	:	1,42	1,23	:
Cyprus	:	:	:	:	:	:	:	:	:	:	0,96	1,44	:
Latvia	:	:	:	:	:	:	:	:	:	:	15,39	13,33	3,11
Lithuania	:	:	:	:	:	:	:	:	:	:	3,82	3,80	3,80
Luxembourg	:	:	:	:	:	:	:	:	:	:	1,41	:	:
Hungary	:	:	:	:	:	:	:	:	:	:	11,79	12,98	13,70
Malta	:	:	:	:	:	:	:	:	:	:	0,10	0,00	0,00
Netherlands	:	:	:	:	:	:	:	:	:	:	:	:	:
Austria	:	:	:	:	:	:	:	:	:	:	:	5,04	:
Poland	:	:	:	:	:	:	:	:	:	:	5,40	5,40	:
Portugal	0,93	1,39	1,74	1,45	1,24	0,99	0,78	1,16	1,53	1,35	1,18	:	:
Romania	:	:	:	:	:	:	:	:	:	:	7,46	5,61	5,56
Slovenia	3,16	2,85	10,46	11,30	9,17	7,61	6,72	8,98	10,09	9,58	9,02	9,47	10,17
Slovakia	:	:	:	:	:	:	:	:	:	:	0,72	4,70	6,81
Finland	5,72	:	5,23	4,52	4,71	5,57	6,70	6,16	5,82	5,83	6,51	6,56	7,00
Sweden	4,55	:	4,63	:	3,99	:	5,49	:	5,30	:	5,08	5,05	:
United Kingdom	6,30	6,74	7,10	7,28	7,29	7,10	6,03	5,58	5,17	4,86	4,59	4,78	:

Source: Eurostat

[6] See table 7 of the present work.

All these are further affected by the fact that there are only few high-tech multinational enterprises operating in Greece and so the country falls also behind in knowledge-intensive subsidiaries that would benefit collaboration and networking among firms. According to Ioannidis (2008), entrepreneurship in Greece may be characterised as "shallow", because over half of total annual entrepreneurial initiatives are targeting final consumer and so this investment does not become part of a complete value chain, having in this way less structural effects on economy and economic growth. Moreover, there are difficulties in funding new entrepreneurial initiatives, as the vast majority of required funds come from entrepreneur's saving and his or her family, which is not considered to be a rational financing operation in a market economy, at the same time that the comparatively high fear of business or investment failure that Greeks feel is also critical in this discussion, as well as the lack of trust that is observed among firms and within the productive framework, contributing further to private sector's moderate competitiveness success, risk-taking and developmental potential (Lyberaki 2008). In addition as Doukidis and Smithson (1995) claim, the respective inertia of private sector regarding knowledge intensive activities has to do not only with firms' technological capacity -that is improved during the last decade- but also with their special management characteristics, since it seems that there is a distinctive organisational culture combined with particular management style and entrepreneurial values that is regarded to be centralised and family-owned, depending significantly on personal contacts rather than on formal business relationships. Furthermore, the orientation of business strategies to traditional economic activities has kept demand for knowledge and investments in R&D at very low levels (Erawatch 2009), at the same time that according to Papagiannakis (2008) private sector in Greece is not able to use the existent human capital and not willing to invest in knowledge and innovative procedures. The fact that groups of interest that express private sector are not activated towards the need to emphasise and support research carried out in Greece, so as to be able to be benefited from such a development is also indicative of the substantial absence of businesses' interest in research as an entrepreneurial activity and a field of public policy. Put it in other way, it is not to be seen in Greece what happens in other E.U. member states or even in E.U. and European Commission, where different industrial sectors and various firms aim at promoting their relevant interests, in order to enforce directly research activity in favour of their productive branch and indirectly their productive competitiveness (Maravegias 2008).

Nevertheless, according to Kastelli (2008), the characteristics of private sector may be seen as obstacles for greek production's competitiveness and rise of employment, even in the case that expenditures for research and technological development would increase, since under present productive and organisational circumstances –regarding research system- supportive actions for diffusion and exploitation of existent knowledge and technologies seem to be more useful in comparison to new knowledge production. On the other hand, this does not mean that a framework or strategy regarding national research projects and the increase of research funding would not be useful, while Tsakanikas (2008) wonders whether or not Greece should restrict its production to goods that just integrate knowledge that is produced elsewhere, without participating in knowledge production. Moreover, in order to be able to access and make effective use of internationally available codified knowledge, it is necessary to possess tacit knowledge and relevant skills (Caloghirou et. al 2006), which could be actually an extra problematic issue, due to the low quality of educational system in Greece –as PISA indicators show- since knowledge-intensive characteristics of contemporary economy and production cannot be fully exploited. However, what is clear in the case of Greece –in an indirect way, as it is presented in De Groot et. al (2006)- is that greek workers do not invest in training and schooling and that greek firms do not operate at the technological frontier as most

of E.U.-15 member states do, so Greece is able to improve its productivity by adapting further to existing technologies.

4.1.3 The Constraints of Scientific Community

Greece has not a long research tradition, which seems to be condemned to remain not significant, mainly due to the absence of a national research strategy. These conditions lead also to deficiency of consultation procedure that would aim at forming such a strategy, including and putting on respective priorities, in which scientific community would be expected to play a crucial role, although this is not or had never been in practice the case (Maravegias 2006).

Research groups do not seem to cooperate with one another and act fragmented or in isolation (Tsipouri 1989, Maravegias 2006), since there is not an overview on research centres that would be the result of a solid national policy for research. On the other hand, relationship between research, technology and economic evolution cannot be explained without social "embeddedness", since technology has also to do with socio-economic systems and relations, while adjustment to changing technologies should be part of a larger social contract (Underhill, 1997). Although substantive research is often produced in Greece, it is difficult to alter the embedded perception of society and state on research's importance in contemporary greek policy and economy due to the observed inability of the greek research system to diffuse research's results to economy and production. What is critical here in terms of output indicators, is that greek researchers perform well as far as publications is concerned[7], while patenting activity remains very low in comparison to E.U.-27 average that reveals the inefficient link between research community and productive sector (Erawatch 2009). However, the problematic relationship between the scientific community and society or economy does not stem just from the side of knowledge supply, but has also to do with the substantially inexistent domestic demand for research and new knowledge production, especially from the side of greek businesses that do not enforce their competitiveness through investments in knowledge and human capital, but through low production cost and illegitimate means, such as black market and tax evasion (Papagiannakis 2008). Thus, a large part of society and economy is not interested in research results, as potential domestic users and financiers of research are failing to be mobilised towards them, being unable to recognise its necessity and usefulness. Furthermore, scarce funding for research actions leads to small research results that do not convince society and politicians that knowledge and research are sectors and activities that deserve more funding and so on, forming on this way a vicious circle, whose start is traced back in the absence of a national research policy, the negligence of citizens, private sector and political world about research and the way it is carried out and of course the respective low national funding (Maravegias 2006).

On the other hand, the need for evaluation of research that is undertaken should be also underlined here –probably within the frames of a national planning or programme, being part of national policy- as well as the ability to finance research in competitive terms, aiming at serving scientific excellence (following the practice of European Research Council). Nevertheless, in order to implement these initiatives, governments should first invest in research and set up national research policy.

In addition, the role that greek universities have, as a place that fosters education, research and partially entrepreneurship has been put down, since peripheral universities were established and operate aiming at regional development not in a sustainable, productive, long-term and knowledge-intensive way, but through the rise of population in other areas beyond

[7] However, at the very same time the impact of this output is low, due to the fragmentation of this effort and the weak linkages with international frontier R&D.

Athens and Thessaloniki and the respective increase of demand that leads to higher income for local people. Thus, the benefits that universities had brought with in terms of economic growth did not prove to be significant, especially when compared to the cost of their operation for the whole society, due to structural weaknesses and their inability to boost and re-orient greek regions' productive patterns in a modern, knowledge-based way (Lamprianidis 1993).

4.1.4 The Ineffective Public Administration

As far as public administration and its role regarding research policy is concerned, Deniozos (1993) mentions that research activities and respective funding have been inefficient since the 1980s, due to the absence –amongst others- of a reliable administrative organisation and governmental strategic planning, while according to Giannitsis (1993) bureaucracy that is competent to deal with research policy in Greece supports actually the existent situation or inertia of *status quo*. In Pagoulatos' words (2003), it seems as if the state was developmental in its economic ideology, but less so in its administrative organisation and function. For instance, greek authorities implemented initiatives of minor importance towards the strengthening of linkages between private and public sector that are still weak, although this problem has been acknowledged in several studies, reflecting weaknesses and systemic failures related to both businesses and public research system (Erawatch 2009).

On the other hand, the fact that greek officials do not participate during the preparation of Commission's proposal towards forthcoming F.P.s is also indicative of public administration's sluggishness. On the contrary, their intervention takes place only in the second and more "formal" phase of discussion about F.P.'s acceptance between Council and E.P. (actually, most interventions come from greek government's representatives, some from greek scientific community and almost none from greek industry) (Kourtesis 2003). The explanation for that is that greek public sector does not have its own policy goals to fight for, regarding research priorities, but it adapts actually to respective decisions that are taken at E.U.-level (Tsipouri and Xanthakis 1993). Moreover as it was already mentioned, there is no concrete action of private, industrial interest groups towards research support and this is in accordance with G.S.R.T. officials' attitude, who would not only face this kind of pressures under different circumstances, but they would be also competent to mobilise them, although this is not the case in greek innovation system (Kourtesis 2003).

Nowadays everything seems to remain the same, although a new law for research and its institutional setting was voted in greek Parliament (Law for the Institutional Framework of Research and Technology, as mentioned in section 3.2.3). As Maravegias (2008) claims, this law deals primarily with issues that concern research institutes of G.S.R.T. and does not make Ministry of Education the main responsible body for research policy-making, while the consultation procedure that is presented about national policy's directions and priorities is characterised as confusing and complicated. Further drawbacks of the new law is the non-provision of the operational unification of research that is produced in universities and research institutes, the non-reference to the need of increasing funding for research activities, as well as the fact that it ignores the need for a long-term national research programme (Caloghirou 2008b).

4.2 The idea of Europeanisation of Greek Research Policy.

After this analysis, the basic point of this part is to examine the range that national policy is affected by the respective European one. Generally speaking, the influence of European research policy on the greek one has been great, as Greece does not seem to have a structured policy, regarding research. Thus, institutional settings that are implemented at E.U.-level are

transferred or "downloaded" on a free will basis to those member states that fall behind in respective fields of national public policy, as in the cases of regional and research policy (Muller 1994). Until now national research policies are independent from the European one, although some kind of convergence can be slightly observed between them. On the other hand as Bottazzi (2004) mentions, total resources of European Commission's F.P.6 (2002-2006) is equal only to five percent of total public spending on research in member states and so European research policy influences marginally the structure and direction of research in Europe. Under the same aspect, Kourtesis (2003) claims that European research funds may have only a secondary and supplementary role to existent national research programmes and finance, while Caracostas and Soete (1997) agree, although they observe that even though Community policy and measures influence only slightly national policy of the most advanced countries, their impact is rather perceptible in the "less favoured" member states, regarding research. According to them, this is so, as European programmes have mobilised these countries towards design and adoption of similar measures at national level, following the typical Europeanisation process.

In addition, one must have in mind that decisions on research at E.U.-level are not obligatory for member states, although there is unanimity about research's importance for economic growth potentials within contemporary political agenda, starting from OECD's argumentation and policy proposals. Actually, this is not the unique common point between OECD and E.U., since the way that policy action is taken at E.U.-level is also similar to that of OECD. Thus, Council's activities and decisions follow basically the open method of co-ordination (OMC) practice in research and technology issues that is borrowed from European employment strategy, constituting a non-binding form of policy action that is based on collective establishment of policy guidelines, targets and benchmarks, followed by periodic peer reviews. As H. Wallace (2005) mentions, the open method of co-ordination resembles the "OECD technique" that has provided a forum since the 1960s, where its members could appraise and compare each other's means of policy, developing in this way co-ordination in various subjects. According to her, it is this kind of action and co-ordination that intends to initiate a transition mechanism from national policy-making to a more central E.U.-based level, and as there is no strong European research policy yet, this way of political action can be regarded as a second-best practice. This may be so, since research's importance as a field of public policy is not that determinative to mobilise a process similar to that of Economic and Monetary Union, setting strict measures and preconditions for member states' performance and participation. The model that is preferred in this case is based more on voluntarism and political discourse, affecting E.U.'s democratic and credibility gap in a negative way, since national governments are completely responsible for the serious diversification between declaration -that is made at E.U.-level- and implementation -that is to be done at national level (Mitsos 2008). Thus, a Maastricht Treaty for research is not foreseen, as this area of public policy is regarded to be a sector of lower politics than monetary policy, although discussion about the need for a European policy has begun with Commission being the developer of networks of experts that favour this concept, in order to achieve not only multiplier effects combining E.U. and national resources, but also scientific critical mass that would allow E.U. to become a more attractive place for research actions (H. Wallace 2005). In addition, the open method of co-ordination is favoured under current conditions by the fact that although E.U.'s and member states' goal is to increase innovation rate, there are different institutional and structural factors that affect it, due to differences among member states' research systems, as well as significant divergence as far as their research performance is concerned (Ulph, 2003). In Rodrigues' (2003) words, there are different national practices and aspects regarding research and innovation in member states, so it may be assumed that the purpose is not to harmonise national systems, but to foster some

common objectives for policy action in this field. On this way though, member states are not obliged to take concrete action towards research enforcement and this may have negative consequences on those member states that do not combine discourse with political action.

Indicative of this is the fact that after the declaration of the Barcelona Council in 2002, some E.U.-15 member states have moved towards this direction, while others (amongst them, Greece as well) decreased the respective investment (Mitsos 2007b), remitting in practice the effect of Europeanisation, although initiatives and measures that are taken at national level are heavily influenced by respective evolutions at E.U.-level due to the substantially absent greek research policy. Thus, the effects that European policy has on the national one change the normal terms of discussion about Europeanisation, since in the greek case we do not have to do with convergence or shift of an existent policy towards an average European level, but with the indirect and almost absolute determination of a so far inexistent national policy from the evolutions in E.U., even in terms of political discourse and not policy measures.

5. Conclusions.

Since the 1980s consensus has been built about knowledge's value in the post-industrial era and the need to diffuse and exploit it in productive procedure, making research, technology and innovation of major importance not only for economic theory, but also for the political world at national and supranational level. Thus, as long as growth performance of western economies had been low, research and technology have become main fields of action for state that increased its respective investment, in order to achieve higher and sustainable rates of economic growth.

This trend has been expressed at national level in countries like the U.S.A., Japan, Sweden and Finland that finance intensively national research activities, at the same time that E.U. and OECD have also laid emphasis on their importance in terms of political discourse and policy proposals (as a matter of fact, E.U. has also increased significantly its funding towards research activities and projects via its Framework Programmes). On the contrary Greece does not follow these trends in practice and so greek research system lacks in financing, structural, institutional and organisational terms. One of its most obvious lacks is the absence of a national programme for research that would support and evaluate groups of researchers, as well as finance research projects in selected scientific fields for instance according to the needs and comparative advantages of greek society and economy. These gaps are filled by European funds of Framework Programmes, in which greek researchers have high participation rates and receive significant amount of resources, facing on this way –even partially- the impotence of nationally funded research.

The reasons for this situation may be sought among the activities and especially inertia of the major actors of the national system of innovation, namely public sector-governments, private sector-businesses, scientific community and public administration, as well as objective parameters of greek society and economy, such as the dominant productive pattern in Greece and the inefficiencies that do still exist in essential fields of public policy, like health, education and welfare state. Consequently, a vicious circle is mobilised, hindering research in Greece, since the scarce funding for research projects and the problematic organisation of research system lead to mediocre research results that enforce the feeling of society and political world that it is not worthy to invest in this kind of activities, since it does not serve directly the commonweal, strengthening further hysteresis on this field of public policy. Nevertheless, it is of major importance that embedding this perception about research and the consequent weak relationship between science and society determine the cognitive

level of society in a negative way, deteriorating also its growth potential. This fact is a structural weakness of greek society and economy, as the need to change Greece's productive pattern emerges, due to the fact that Community Support Frameworks' resources will be decreased significantly after 2013. Furthermore, under present recession conditions, the most usual view deals with the fact that since recession deteriorates public deficit, it is important to face it and so fields of public policy of long-term character, like education and research fall back within political agenda. But, this is not the appropriate way of action. U.S.A. and E.U. show the way towards this direction, choosing to keep their emphasis on investments of infrastructure that are expected to have the fairest and greatest result in the medium- and long-run, and of course such actions have to do par excellence with human capital, knowledge and its production.

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GREEK EXCHANGE RATE POLICIES FOR THE EMU. THE ECONOMY, THE PUBLIC AND THE EURO.

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Abstract

The aim of this paper is to examine the sudden and abrupt turn in the Greek public opinion towards the single currency after the accession of Greece in the EMU. The terms and method of accession are being examined along with the optimality of the process for the determination of the Greek Drachma to the Euro conversion rate, in order to determine whether these factors had any influence in the above effect. According to this paper's calculations, which employ the Lamfalussy rule and real economic data, the conversion rate by which the Greek economy entered the EMU was lower than the optimal rate, creating this way a virtual devaluation of the currency on accession. While this discrepancy provided the Greek economy with a short run competitiveness boost, its long run effects mainly consist of inflationary pressures affecting this way the public's opinion of the new currency.

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Acknowledgments

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Introduction

According to economic theory, the adoption of a new currency may yield instabilities in national economies by directly affecting competitiveness and employment. An overvalued conversion rate creates the risk of a depression, while a devalued one boosts competitiveness in the short run but creates inflationary pressures in the long run. In the case of the EMU, where both a new common currency and a common Central Bank were introduced, member states would not be able to respond effectively to the effects of a sub optimal conversion rate. The loss of monetary policy control meant that once the conversion rates were determined the member states would not be able to readjust their exchange rates; as a result the economies would be locked in with the effects of sub optimal conversion rates. The pressure for an efficient method for conversion rate determination was very strong; however, the debate that took place on this issue was very limited compared to its importance.

The example of Greece will be used by this study in order to examine whether the method used for the conversion rate determination was the optimal one. The debate that took place on the method that should be employed is going to be presented, along with the reasons why the method proposed by a study from the Centre of Economic and Policy Research was preferred. This examination of the Greek case is going to be based on the assumption that the Lamfalussy rule for conversion rate determination would have been able to produce conversion rates more representative of the economies as it was argued by many academics. The fact that the conversion rate by which Greece entered the EMU in 2001 was sub optimal relative to its Lamfalussy value will be presented and proven. By employing the Mundell-Fleming macroeconomic model, the effects that the Greek economy faced after joining the Monetary Union will be argued to be characteristic of a currency devaluation.

The second part of this study will focus on the ways by which the Greek exchange rate policy affected the trends of the public opinion for the single currency. Greece had one of the most positive public opinions in Europe for the single currency on the run up to EMU. However, in 2003 a sudden change in its trends turned it into one of the most negative opinions towards the Euro. The reasons behind this sudden change of mind will be studied. The importance of the external empowerment that the EMU project provided with the national governments will be stressed in distinguishing two different periods in the Greek public opinion. Moreover, the determinants of the Greek public opinion are going to be examined, while the effects of the sub optimal conversion rate on these determinants will be discussed.

By proving the existence of a link between the exchange rate policy of Greece, the suboptimal conversion rate and the public opinion for the Euro, this study tries to illustrate the importance of optimal conversion rates. The public opinion is becoming increasingly important in policy formation, and thus establishing a link between the two confirms that in the long run, short-sighted policies tend to have constraining effects for policy makers.
This is an original study as the question of whether the conversion rates used for the setting up of the EMU were optimal, has not been studied before. While many argued the importance of optimal conversion rates, no study exists questioning the optimality of the actual conversion rates used. The success of the EMU project has overshadowed any details, which however could have jeopardised the economic stability of the Union. This study, by arguing that the method used for the conversion rate determination was not optimal, should raise concerns in the EMU about the method which is going to be used for future entrants.

Conceptual Framework

3,a. The EMU, Conversion Rates and Exchange Rate Policies

While many political and economical arguments took place before the creation of the European Economic and Monetary Union, very few debates took place about the importance of an efficient method for determining the conversion rates of the national currencies to the Ecu. The lack of debates on this issue was even pointed out by the Economist magazine on the 11th of April 1998 which claimed that 'debate about its potential effects has been noticeable for its absence' (Bohn , 2003: 1). While the vast legislation contained impressive detail regarding the timing and method of introduction of the euro, it was largely silent on the crucial issue of the setting of irrevocably fixed euro conversion rates. The Maastricht treaty did not provide any substantial proposals for how the conversion rates would actually be determined. The only reference to a conversion process mentioned in the treaty was that,

> *'at the starting date of the third stage, the Council shall, acting with the unanimity of the member states without derogation, on a proposal from the Commission and after consulting the ECB, adopt the conversion rates at which their currencies shall be irrevocably fixed and at which irrevocably fixed rate the Ecu shall be substituted for these currencies'* (Maastricht Treaty, Article 109.1).

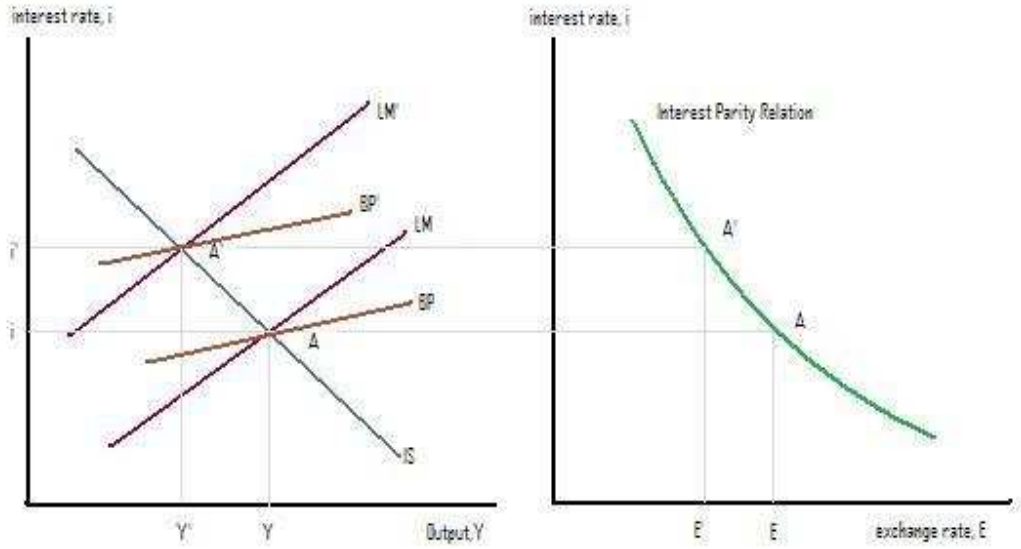
This created a very crucial gap in the blueprint of the EMU. Especially since the success of Monetary Unions, according to theory, dependents, to a large extent, on the efficiency of the conversion rates of the national currencies to the single currency unit. 'A jump in an exchange rate even as little as 5% or 10% could seriously change the competitiveness of the EMU economies and make the entry into EMU very unattractive' (Begg et al, 1997: 19). One could search the texts in vain in order to find a clear indication of the actual method that was going to be employed for the determination of the conversion rates of the currencies involved in the EMU. The most focus on the exchange rate policies that should be followed in the way to EMU, was given by one of the Maastricht criteria in the exchange rate criterion (Lipinska, 2008: 7), where in order to qualify for EMU entry, the Member States had to ensure that no currency devaluation would take place after the irrevocable fixing of their currencies, and for a time period of two years.
The pressure for a method that could determine representative conversion rates which would be economically viable in the long run was high. A conversion rate higher than the actual value of

the currency would provide greater purchasing power, but it would also make foreign imports cheaper. Competitiveness of the domestic suppliers would be reduced both domestically and internationally. On the other hand, in the case of lower conversion rate, the demand for domestic products would be stimulated by a cheaper currency, but domestic consumers would be worse off as their purchasing power would be reduced (Talani, 2004: 48).

> *'A real depreciation can encourage exports, switch expenditures away from imports into domestic goods, invigorate the tradable sectors of the economy, and boost aggregate output. But a real depreciation can also be contractionary, because real money balances shrink as the result of the higher price level'* (Frieden, 2008: 349).

These effects are clearly demonstrated by economic theory, and more specifically the Mundell-Fleming model. This is a macroeconomic model which links the monetarist economic equilibrium with the real viable equilibrium. The monetarist equilibrium is the balance between the supply and demand for money and is usually illustrated by the plotting of a line called the LM curve. The real variables equilibrium, is the balance between savings and investments which is usually plotted in the form of the IS curve. The external economic relations are also depicted in this model through the BP curve which demonstrates the Balance of Payments of the economy (Talani, 2004: 52). The Mundell-Fleming model can be easily linked with the exchange rate through the use of the Interest Parity Relation, and the Unemployment rate through the use of the Philips curve.

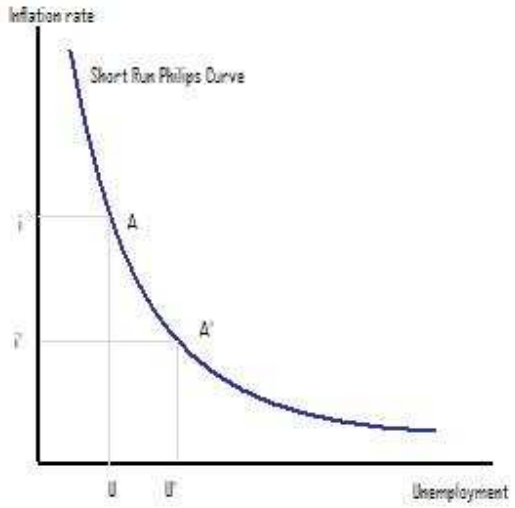
Graph 1: *The relation between the exchange rate, and output through the Mundell-Fleming model the Short Run Philips curve* (Blanchard, 2003: 425)



As Graph 1 illustrates, a change in the exchange rate (E-E') has direct effects in both interest rates (i-i') and output productivity (Y-Y') in the Mundell-Fleming model. An increase in the exchange rate, thus an appreciation of the price of the national currency will lead to loss of competitiveness of domestic producers. This will trigger a leftward shift of the LM curve as the output levels will be reduced, and so will the interest rates in order to fend off any inflationary pressures. The reduction in the interest rates will boost the inflation rate of the economy, which in turn will increase unemployment as illustrated in the Short Run Phillips Curve in Graph 2 (Blanchard, 2003: 425), and vice versa.

Consequently, policy makers face a trade off between being tempted to increase competitiveness of national producers or boosting domestic consumption. As Begg et al (1997: 24) argued in a

Graph 2: *The Short Run Philips Curve* (Blanchard, 2003: 425)



study performed for the Centre for Economic Policy Research, when a Monetary Union is set up with a single currency, the incentives for a devaluation of a currency prior to conversion are very high as they get automatically locked in by the conversion.

The most obvious temptation is to engineer a conventional monetary expansion that will boost aggregate demand and ameliorate any remaining fiscal difficulties. Such an expansion would be accompanied by a temporary exchange rate depreciation stimulation exports too. The incentives for such a depreciation will be even stronger if governments can expect that conversion rates picked at the start of EMU will simply validate the depreciation and allow their countries to enter EMU with a competitive advantage that would last until the output prices could finally adjust (Begg et al, 1997: 24). Nevertheless, while a sub optimal conversion of a currency might be beneficial for an economy in the short run; negative economic pressures will arise in the long run, as high Unemployment rates will result from this policy.

3,b. Conversion Rate Determination, the CERP Method

The CERP study argued that bilateral exchange rates should be set in advance as a way of avoiding the intervention of the market forces in the exchange rate determination process. It examined several of the proposed solutions for determining the irrevocable conversion rates, including floating bilateral rates, fixed Ecu exchange rates, the Lamfalussy rule and the Bartolini-Prati bands.

The authors rejected all of these solutions by stressing out their inefficiencies and instead proposed that the most efficient method was to set bilateral conversion rates in advance. They argued that the conversion rates should be calculated by using the existing central parities of the national currencies in the ERM. The central parity which would be agreed would summarize the exchange rate commitments, to which member states would be held as the transition expired. In the mean time, the national currencies would be allowed to fluctuate freely within the ERM of

extended bands (15% instead of 2.25%)[1]. However, these central parities would be calculated parities and not the result of market transactions, as the CERP paper argued the markets would not be able to produce efficient conversion rates. Following this method, the central rates were announced in mid-1998 (Preda: 16), and for most of the countries they were the final conversion rates. In the case of Greece as it will be discussed in the following chapters the central rate was revalued in 1999.

3,c. Conversion Rate Determination, the Lamfalussy Rule

This study will not question the reasoning behind the choice of the European Council to use the CERP proposed method instead of the other proposed methods. This is because the arguments put forward by both the CERP paper (Begg et al, 1997), and Paul De Grauwe against the use of those methods can persuade even their most passionate supporters that there were substantial risks associated with the use of them. Nevertheless, what this study will argue is that while the other proposed methods had flaws, so did the CERP method. Its biggest flaw is that one of the other proposed methods, the Lamfalussy rule was argued to produce conversion rates which would be more representative of the economies than those produced by this method. Fact that implies that while the risks associated with the Lamfalussy rule were credible, as it would be prone to speculative attacks (De Grauwe: 23), policy makers were fully aware of the fact that the CERP conversion rates would not be optimal. This generates the assumption that the CERP method was chosen as the least worst method, and not as the optimal method.

The Lamfalussy rule which was claimed to produce more efficient conversion rates, proposed to use the average of the market rates of each national currency over a three year period. Preferably, as Mr. Lamfalussy himself proposed, of the period 1996 to 1998 while its use should be announced on the 31st of December 1998 in order to reduce the risk of speculative attacks and politically driven devaluations (De Grauwe: 11). The advantage of this rule was that it would inverse the orthodox determination of exchange rates. *'While normally buy and sell decisions are based on expectations of future exchange rates, under the Lamfalussy rule, future exchange rates would be based on present and past buy and sell decisions'*(Temperton, 1997: 137). In other words, with time, markets would become increasingly more aware of the final conversion rates, as the average would also become increasingly harder to alter. Expectations would then be formed around the average of the exchange rates up to that point, and as a result the exchange rate would become increasingly more stable as the final day drew closer. The Lamfalussy rule does not necessarily exclude a politically inspired devaluation which could happen at any time, however policy makers would know that as this method uses an averaging mechanism, *'any attempt to achieve a good deal must come long before the launch of EMU membership. Also to have any effect, a late depreciation would have to be very large'* (Temperton, 1997: 137).

The fact that the Lamfalussy rule would have produced conversion rates more representatives of the actual values of the currencies has been argued by Paul Temperton. He uses Ireland as a case study to prove that while the outcomes of this rule would not be very different than the ones produced from the CERP method in countries where their currency traded close to the ERM central rates; the same was not the case for the rest. He argues that the Lamfalussy rule in the case of Ireland,

[1] Changed temporarily from 2.25% to 15% after the ERM crisis of 1992 but never changed back.

> *'would have given rise to less exchange rate movement and would result in a fixed rate which, while it would be lower than the rates prevailing in mid-1997, would be significantly above the existing ERM central rate and, would be more in keeping with the needs of the economy'*(Temperton, 1997: 144).

In addition to this study, Frank Bohn argued that members joining any monetary union are likely to experience considerable macroeconomic effects after their transition into a monetary union. He uses the Lamfalussy model to prove that:

'Weak currencies are undervalued because of depreciation expectations caused by historically low monetary stability. Forming or joining a monetary union eliminates these expectations. If conversion rates are determined by the market, they turn out to be close to purchasing power parities' (Bohn, 2003: 19).

Finally, even Paul De Grauwe, whose argument against the use of the Lamfalussy rule was one of the fiercest put forward, accepted that: *'The Lamfalussy rule is inheritably more credible than a fixed conversion rate because it permits drift in the exchange rate in response to changes in fundamental variables'* (De Grauwe: 23). Accepting those arguments, this study assumes that the conversion rates that would have been produced had the Lamfalussy rule been used are the most representative of the actual value of the national currencies. Therefore, in examining the case of Greece, the calculation of the conversion rate using the Lamfalussy rule will be used as a benchmark indicating the 'optimal' conversion rate which should have been used for the entry in the ERM.

3,d. The Public Opinion and Monetary Policy

The role and importance of the public opinion in policy making has been increasing along with educational standards and access to information. The office seeking instincts of political parties along with the fear of political cost associated with policies lacking the support of the public has led policy makers into taking under consideration the public opinion trends all the more often. This study will focus on the links between economic performance and the public opinion.

Figure 1: *Maslow's Hierarchy of Needs* (Union.umd.edu, 2008)

Policy making bodies are allowed to form their policies more freely when they have secured output legitimacy from the public than when they haven't. Inglehart in two of his papers argues that two developments in society have significant political and economic implications. The first change he identifies is an evaluative change where the public gradually shifts from materialist to post materialist values, or more clearly, 'from giving top priority to physical sustenance and safety toward heavier emphasis on belonging, self-expression, and the quality of life' (Inglehart, 1990: 66). Additionally he claims that a big part of the 'western publics' have grown up in economic security; Therefore, while they still care about physical security, it is not their priority (Inglehart, 1977: 5). Instead they value more post materialist ideas such as economic stability, belonging and human rights. A more cosmopolitan political identity is formed with time. This argument is also backed up by Marslow's hierarchy of needs (Liphart, 1990: 152), where

people's needs and interests develop with time. He claims that once people secure each of the five levels signified in the pyramid, their interests shift to the next one.

The second development identified in Inglehart's works is 'cognitive' (1977: 293-5). The meaning of this term is best explained as a 'process by which an individual comes to know and interpret his environment' (Theodorson, 1969: 56). His argument is that people realise that political and economic decisions affect them and their lives, thus they develop and interest and understanding of politics with time. Therefore, Inglehart identifies a '*development of the skills needed to manipulate political abstractions and thereby to coordinate activities that are remote in space and time'* (Inglehart, 1977: 259). As a result the work of Inglehart has provided us with evidence as individuals care more about post materialist values, and develop their understanding and involvement into politics, the same applies for the public opinion. That is that the public opinion gets increasingly influenced by post materialist values and develops the skills required for its understanding in order to have a greater say in it.

Several studies have tried to examine the exact extent at which economic performance affects the public opinion and political parties. Jonung and Wadensj (1979: 343-53) examined the effects of unemployment, inflation and income growth on the popularity of governments in Sweden during the period 1967 to 1978. They concluded that the performance of the first two indicators has direct effects on the popularity of governments. Although the growth of real income is positively related to the popularity of the governments, it is not as significant as the former two fundamental economic indicators. On a very similar study in terms of the topic and the sample used, Hibbs and Madsen (1981: 33-50) concluded that only the unemployment rate was significantly related to the public opinion for the governments' performance. This difference was attributed to the use of a different model.

Additionally, two studies on the impacts of economic concerns on the political behaviour in Norway, the first by Miller and Listhaug (2984: 301-19) and the second by S0ersen (1987: 301-21), argued that economic factors such as inflation and the unemployment rate have a direct impact on individuals' evaluations of the political parties. These studies were based on data collected in national election surveys in Norway. The latter was limited on the period 1963 to 1986. What is more, a study by Nannestad and Paldam (1993: 186-206) employed pooled cross data in order to examine the influence of the economic conditions on the popularity of the government amongst the Dutch electorate. They argued that while the correlation exists, it is much stronger for individual experiences of the economic conditions rather than actual awareness of the macroeconomic situation. Finally, Mikko Mattila (1996: 583-595) came to generalise the findings of these studies by arguing that economic performance in Scandinavian countries is significantly correlated to government popularity and election outcomes. The above studies provide us with enough evidence to establish a strong link between economic performance and public opinion trends. In periods of bad economic performance the public opinion will be negative, while in periods of good economic performance, the public opinion will be positive.

Case Study

4,a. The Case of Greece, Exchange Rate Policy and Accession

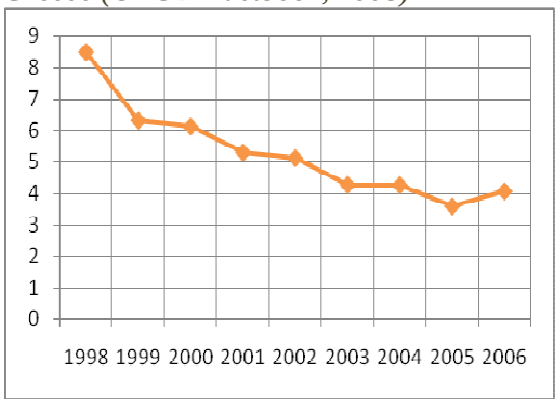
In order to demonstrate the links between the exchange rate policies for accession in the EMU and the public opinion, this study will examine closely the case of Greece. This is because Greece was very unique in its exchange rate policies prior to the accession to EMU. Initially Greece was not considered to be one of the countries that would join the monetary union in the first wave of 2001.

> *'Through 1994, the performance of the Greek economy was pretty dismal. Growth was almost flat, and inflation and the fiscal deficit as a percentage of GDP, were in the double-digit levels throughout the period. Other EU countries were moving forward in their quests to become members of EMU while Greece was falling farther and farther behind'* (Garganas, 2003).

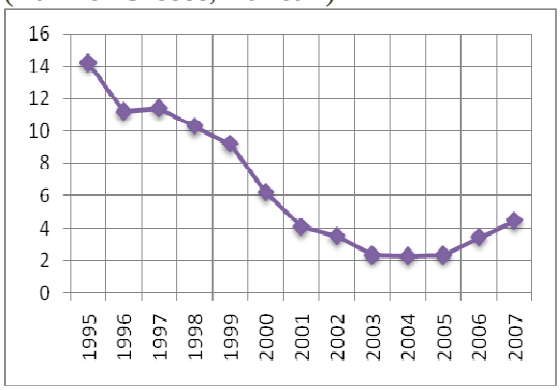
Nevertheless, Greece followed a non accommodative monetary policy named the 'Hard Drachma'[2] inaugurated since 1990.

This policy focused mainly on keeping the interest rates as high as possible, especially relative to its European partners (Garganas, 2008), in order to achieve a normalisation of the inflation rates which had reached over 20% during the previous decade. The 'Hard Drachma' policy is clearly depicted in Graphs 3 and 4, where one can see that the levels of the long term interest rates and one-year Treasury bills were at 8.48% and 10.3% respectively in 1998. At the same time, the long term interest rates set by the Deutsche BundesBank were at 4.6% and the ones set by the Bank of Italy were at 4.9%; the Euro average was at the level of 6% (OECD Economic Outlook 83). This policy, initiated by the Mitsotakis government of New Democracy of 1990, was revised by the PASOK (Pan-Hellenic Socialist Party) government of Papandreou of 1993 and was continued by the Simitis government of 1996 (Lazaretou, 2003: 31).

Graph 3: *Long Term Interest Rates for Greece (OECD Factbook, 2008)*



Graph 4: *Yield of one-year Treasury bills* (Bank of Greece, Bulletin)

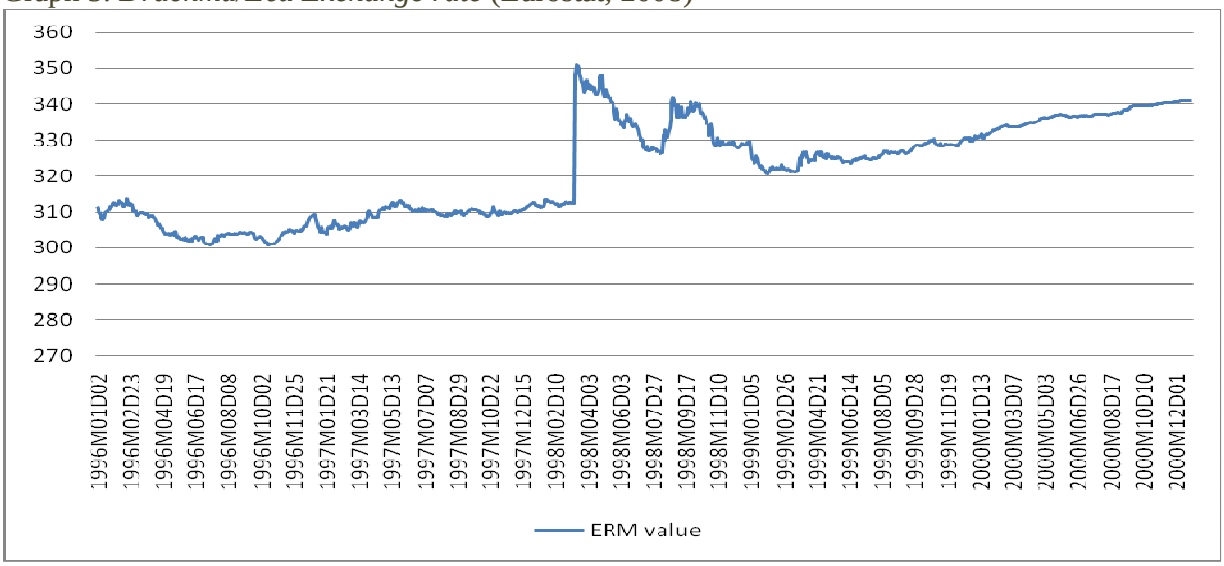


In 1997 the Central Bank of Greece was granted full independence from the government in an attempt to satisfy the Maastricht criterion and by 1998 *'there was a growing sense of attainability of the EMU nominal convergence targets'* (Pagoulatos, 2003: 129). However, while the domestic feeling was very positive; the same did not apply for the international communities. Even though Greece had already met the Budget deficit criterion, it was clear that the rest of the criteria would not be met on time. This international pessimism started changing rapidly after the 16th of March 1998 when the Greek

[2] Drachma being the name of the official national currency of Greece.

government took financial markets by surprise on Friday when it announced it had applied to immediately join the up to then 12-member ERM, following a day of speculation in which the drachma fell sharply against the ECU. Prime Minister Costas Simitis said in a televised address to the nation that the drachma devaluation and ERM entry were necessary for Greece's membership in the EMU, adding that he wanted Greece to enter the euro-zone in 2001 (Athens News Agency, 2008).

Graph 5: *Drachma/Ecu Exchange rate* (Eurostat, 2008)



The Greek Drachma had finally entered the ERM which would act as a very crucial test for the Greek economy and its ability to keep up with the international financial markets without suffering from potential asymmetries and financial crises (Simitis, 2004: 189). This devaluation assisted in the credibility levels of the new exchange rate arrangement, especially since a large financial crisis took place in Greece in 1997 (Stobbe et al, 2000: 64). At the same time, entry into the ERM demonstrated the credibility of the Greek attempt to enter the EMU on both financial markets and its European partners (Werner, 2008: 22).

The Drachma entered the ERM with a central rate of 357.109 Drachmas per ECU. This indicated a devaluation of 12.3% relative market price prevailing at the time. The magnitude of this devaluation is illustrated by Graph 5. Once the Drachma entered the ERM, a credibility bonus was experienced in the economy. *'Members whose ability to pass the test for EMU has been in doubt, are likely to face an mediate credibility bonus for a more disciplined monetary policy in the future. Such countries will experience a reduction in interest rates'* (Begg et al, 2997: 21).

The European partners wanted to make sure that they would not risk the credibility of the project by allowing Greece to participate. Especially since the financial crisis of 1992 had already harmed substantively the credibility of the project. Therefore, Greece's entry was not handled freely. In order to ensure that Greece wanted to make a credible commitment in participating in the monetary Union, they insisted on the devaluation of March 1998. This devaluation had a dual target; firstly it took under account the high inflationary past of Greece, while keeping in mind the inflationary pressures that Greece would face in the way to EMU.

Even though the 'Hard Drachma' policy had broken with the 1998 devaluation, the Central Bank of Greece tried to keep interest rates higher than its European partners for as long as possible, as they had to converge to the European ones and equalise on the day of the entrance in the EMU

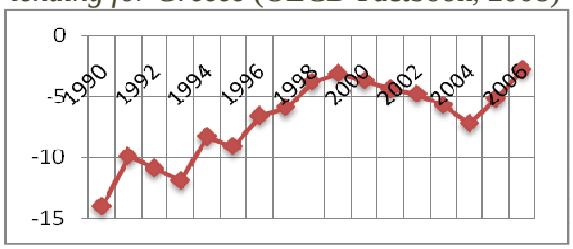
(Garganas, 2000). This policy along with the favourable international expectations which had started building up, led to Massive inflows of short term capital (Pagoulatos, 2000: 191-216). As Graph 6 illustrates, due to this capital inflow, the levels of net government lending and borrowing were reduced, reaching an all time low of -3.1%. The progress towards price stability was also very significant. This was a result of a tight monetary policy along with measures towards a fiscal contraction and the reduction of Unit Labour Costs by the signing of a wage agreement between the private sector Unions and the government (Garganas, 2000).

This social pact, even though it only covered the private sector, had a significant effect on the Labour Unit Costs as a whole. While in 1997 Labour Unit Costs reached 7.2% and 4.2% in 1998, in 1999 they were reduced to 1.7% (Grarganas, 2000) (Graph 8) which was significantly lower than the 2.6 inflation rate the same year (Graph 7). This was very important for the reduction of inflation as in 1997 and 1998 the inflation rate was lower than the Unit Labour Costs at 5.5% and 4.8% respectively.

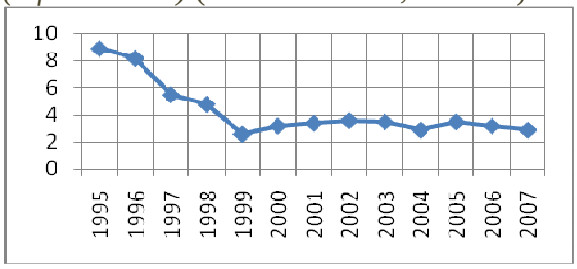
The good performance of the economy led to the market price of the drachma being appreciated relative to its central rate with the ECU in 1999. It now traded at about 7-8% higher that its central rate, which led the monetary committee of the European Union into revaluing the central rate into 340.75 Drachmas per ECU (Simitis, 2004: 193). This revaluation was very important for the Greek economy both for its time and magnitude.

Having devaluated the currency by 12.3% in 1998 the gains in competitiveness were obvious, but had this revaluation not taken place, the inflationary pressures created by a currency dropping by about 7-8% of its market value in order to reach the old central rate would be devastating. This way the Bank of Greece only had to engineer a depreciation of about 3% of the market value of the Drachma. The economic consequences of this devaluation were much

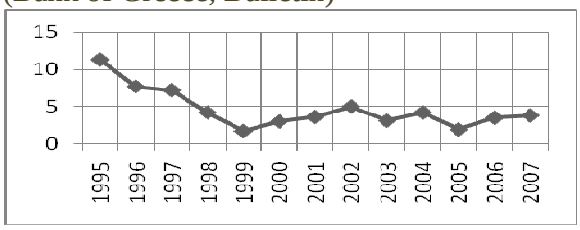
Graph 6: *Government net borrowing/net lending for Greece* (OECD Factbook, 2008)



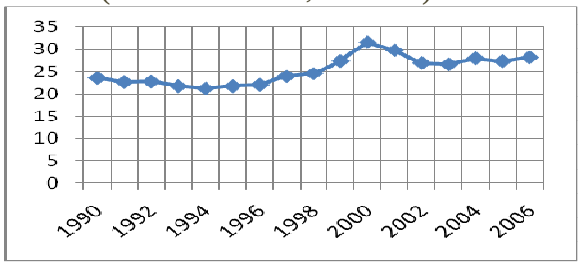
Graph 7: *Consumer Price Index for Greece (inflation rate)* (Bank of Greece, Bulletin)



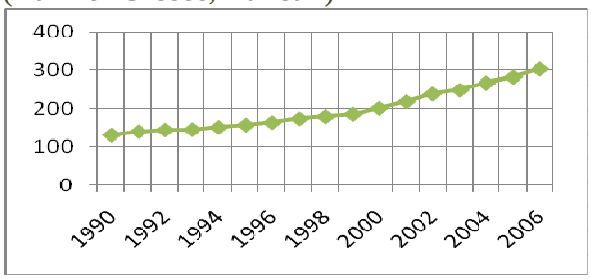
Graph 8: *Unit Labour Costs for Greece* (Bank of Greece, Bulletin)



Graph 9: *Trade in goods and services for Greece* (Bank of Greece, Bulletin)



Graph 10: *Gross Domestic Product for Greece* (Bank of Greece, Bulletin)



smaller than those which would have taken place had the central rate remained in its initial value. Moreover, the revalued central rate, by coming a year after the devaluation, managed to reduce to a large extent the negative effects associated with the devaluation while maintaining the initial boost of the economy (Stobbe et al, 2000: 65). This can be easily observed in Graph 9 where one can see that the Trade balance continued to grow until 2000, when in briefly drops, and settles at a level of about 27% which is 5 percentage points higher than the average of the 90's. What is more, Graph 10 illustrates that the appreciation of the central rate of the Drachma did not affect the accelerated growth rates of Greece. A kink in the plot of the growth levels of Greece can be observed in 2000 which remain intact up until 2006.

'*It is obvious that Greece has pursued an extremely skilful exchange rate policy in the past two years, placing it in the service of the inflation target and exploiting the scope given it by the Maastricht regulatory framework*' (Stobbe, 2000: 65).

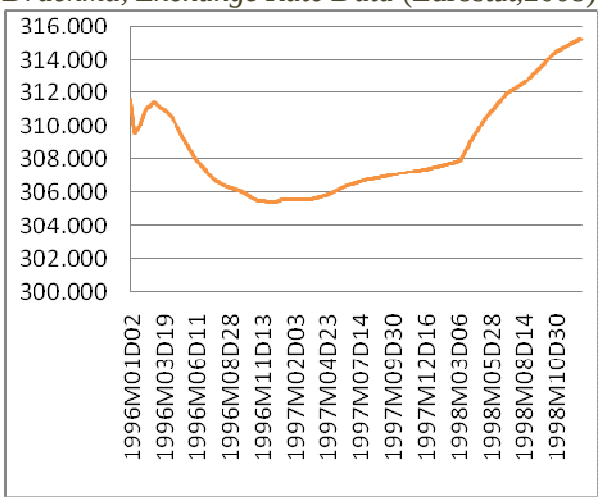
On the first of January 2001, the aim of Greece to become the 12th member of the EMU was achieved. Greece managed to achieve economic convergence against all odds, which established it as a member of the European 'fast track'. This was an opportunity, but also a challenge for Greece to manage to stay there and not get back to her usual habit of being in the sidelines of Europe.

Analysis

5,a. Greece, the Lamfalussy Rule and Pressures on the Economy

This study is going to focus on the relation between the exchange rate policies and their effects to the public opinion. The way that this is going to be approached is by using the example of the Greek exchange rate policy for accession to the EMU and its effect to the public opinion. As it was argued on the previous chapter, Greece followed a very unique and successful exchange rate policy in order to manage to qualify for accession (Stobbe, 2000: 65). Nevertheless, this chapter is going to argue that the conversion rate of 340.75 Drachmas per Ecu which was set following the CERP method was sub optimal. In other words, the conversion rate by which the Greek Drachmas were exchanged for the Euro on the introduction of the Monetary Union was not representative of the actual value of the Drachma.

Graph 11: *The Lamfalussy Value of The Greek Drachma, Exchange Rate Data* (Eurostat,2008)



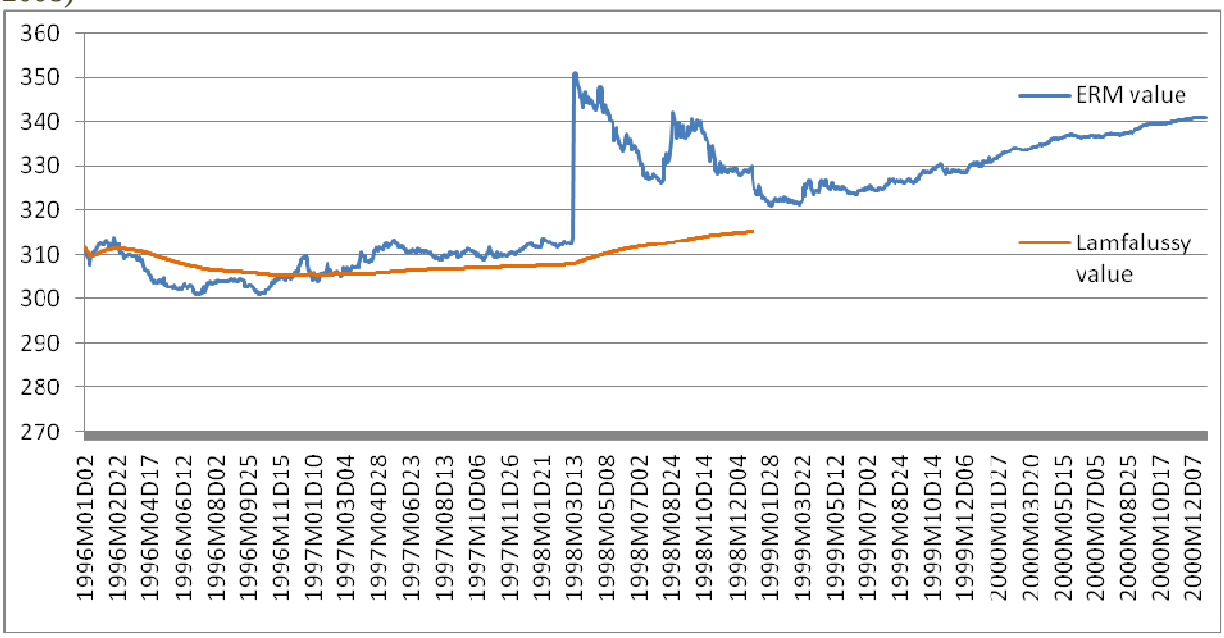
This is going to be established by a comparison of this conversion rate to a benchmark conversion rate. The benchmark conversion rate is going to be calculated using the Lamfalussy rule which as it was argued earlier, would produce conversion rates more representative of their actual value. Subsequently, with the help of the Mundell-Fleming model which was also presented earlier, the effects of this suboptimal conversion rate will be examined in the case of

Greece. By using the Lamfalussy rule as described in the books of David Begg et al (1997: 36), and Paul Temperton (1997: 137), the benchmark conversion rate was calculated by the use of the average of the daily spot exchange rates of the Greek Drachma to the Ecu for the period 2/01/1996 to 31/12/1998. Graph 11 plots the curve of the values that the Drachma would have followed had the Lamfalussy value been used.

Of course, had the Lamfalussy rule been used, different policies might have taken place, as the markets might have reacted differently. However this study will assume that even if different policies had been followed, the difference on the final conversion rate of the currency would not have been significant enough to jeopardise the findings of this study. This is because assuming that the Lamfalussy rule was followed in detail, the announcement of the rule would have taken place on the 31st of December 1998 in order to reduce the risk of speculative attacks and politically driven devaluations (De Grauwe: 11). This means that only the last year of the process of the conversion rate determination would have been affected. As a result, these policies would have to be of great magnitude in order to be able to affect significantly the average values which would have already being building up for two years.

Therefore, looking at Graph 11, the value by which the Greek Drachma would have entered the EMU had the Lamfalussy value been used is 315.24 Drachmas per Ecu. It is obvious that this conversion rate is significantly stronger than the 340.75 by which Greece actually entered the EMU.

Graph 12: *The ERM value of the Greek Drachma compared to the Lamfalussy value* (Eurostat, 2008)



Graph 12 provides us with a very clear comparison between the ERM value of the Greek Drachma and its Lamfalussy value. The benchmark conversion rate provide by the Lamfalussy rule is 8.09% stronger than the ERM value. Hence, the conversion rate produced by CERP method using the ERM, which was also the final conversion rate used in the creation of the EMU, in the case of Greece was 8.09% degrees depreciated relative to its optimal rate.

As this conversion rate locked at the day of the introduction of the single currency and the replacement of the Drachmas with Euros took place at this same rate, the Greek economy went

through a depreciation of its currency by 8.09%. This depreciation took place as David Begg et al argued on the CERP study (Begg et al, 1997: 24) because the conversion rates at the start of EMU simply validated any depreciation of the currency. For this reason, governments were tempted to depreciate their currencies in order to enter EMU with a competitive advantage that would last until the output prices could finally adjust.

Looking back to the Mundell-Fleming model, currency depreciations create certain pressures on the economy. As Graph 1 illustrated, depreciations affect directly both output productivity and the interest rates. A deprecation of the national currency leads to gains in competitiveness for domestic producers, which increases the trade balance in the short run. Additionally, this gain in competitiveness shifts the LM curve to the right which increases output productivity, in order to benefit from this competitive advantage. At the same time, the interest rates will drop in order to reduce the cost of money and boost investment. These effects should in return create inflationary pressures on the economy, and thus a reduction in unemployment according to the Phillips curve.

Therefore, assuming that the Greek conversion rate was depreciated by 8.09% relative to its optimal value, similar effects should be observed in the Greek economy on the introduction of the single currency. As Graph 9 illustrated, Greece indeed experienced a temporary increase in its trade balance during the four year period 1999-2002, peaking in 2000. Additionally an acceleration of the GDP is evident in Greece since 2000 as shown in Graph 10. These two facts prove that Greece experienced a gain in competitiveness relative to its European partners with the introduction of the Euro. This gain in competitiveness and increase of productivity was accompanied by a reduction of the interest rates. The downward path of both the long term interest rates and the one-year treasury bills up until 2005 is demonstrated in Graphs 3 and 4. This was especially important for the economy, because if interest rates of the same term did not equalise completely at the moment of transition into the currency union, riskless profit opportunities would exist infinitesimally short before Ts by buying Greek bonds and selling Euroland bonds (or vice versa). The only way to rule out these arbitrage transactions is to completely equalise interest rates (Atzoulatos et al: 16).

Up to this point, the effects experienced by the Greek economy on joining the EMU are in line with the assumptions made with the help of the Mundell-Fleming model. The same stands true for the Philips curve even though not so evidently in the case of the inflation rate. If one takes a closer look at the inflation rate of Greece during that period, a jump in the inflation rate is evident. While the CPI index was 2.6% in 1999, it steadily increased until it reached 3.6% in 2003 and has fluctuated around that value ever since. Therefore, even though not so clearly, Greece has experienced an increase in its inflation rate by 1% after joining the EMU. Things are much clearer in the Unemployment rate, as it has followed a declining path ever since 1999 reaching single Graph values.

Mr. Nikolas Garganas, former Governor of the Bank of Greece in an interview with the author (Garganas, Interview 2008), claimed that the credibility bonus that Greece faced in joining the Monetary Union had great effects in the Greek economy. He argued that it assisted the Bank of Greece in reducing the interest rates in order to reach the European levels without causing significant inflationary pressures in the economy.

5,b. The Public Opinion in Greece and Exchange Rate Policies

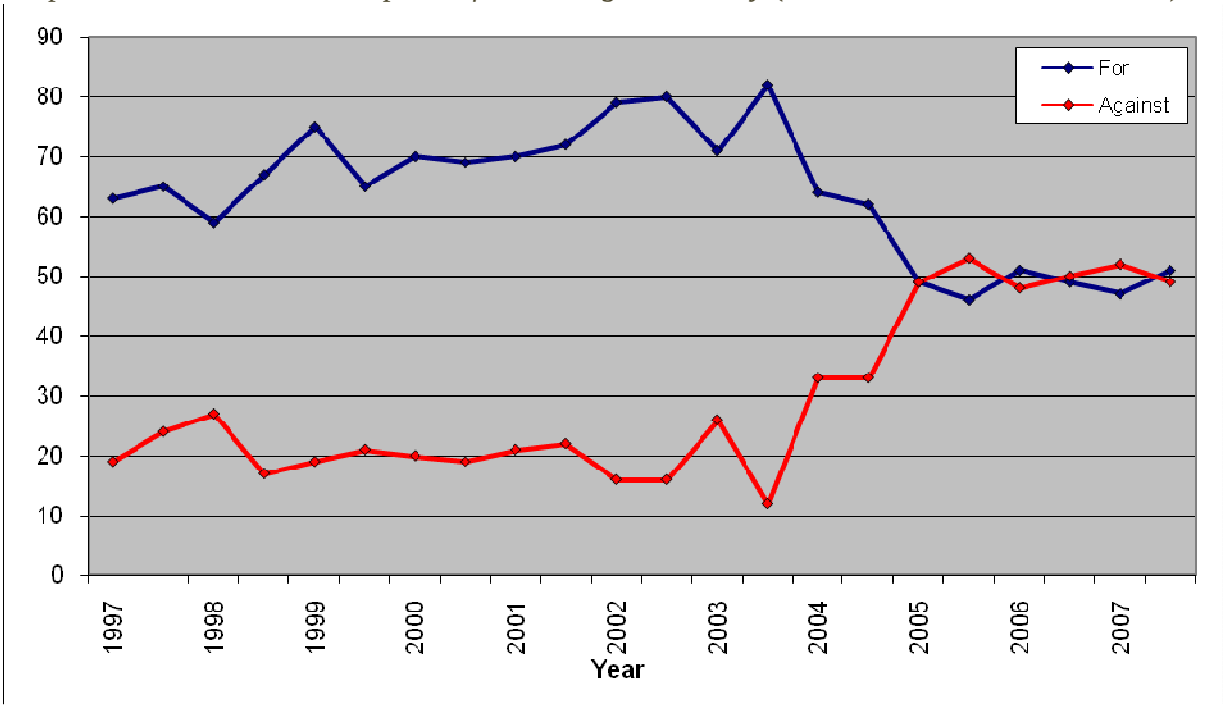
Dobratz (1993: 97-127) argued by employing data from the 80's that there was no link between the economic performance and the public opinion in Greece; this study will argue the opposite. Following the theory put forward by Inglehart and Marslow (Lijphart, 1999: 152) on the evolution of society and preferences, this study will prove that the Greek society has evolved since the 80's. This evolution has led to the public opinion trends being increasingly affected by the economic performance.

The 80's was a period where Greece was still trying to find its identity. Democracy was established in 1974 after the 'metapolitefsi' (Lazaretou, 2003: 42), while Greece managed to enter the then European Communities in 1981. 'Belonging to the West' (Economides, 2005: 473) benefited Greece in many dimensions. Nonetheless, since Greece did not receive any major economic funding at the time of its accession, it has been argued that Greece's major interest and gain from the membership in the European Communities at that point of time, was the security against the constant threat from Turkey (Featherstone et al, 1987: 237). People were still mainly interested mostly on the 'National Issues' (Economides, 2005: 482), including physical security and the establishment of democracy, while the economic performance was of secondary importance.

However fifteen years later, and after a long period of abysmal economic performance considering the European standards, corruption scandals (Featherstone at al, 2000: 396) and government instabilities, the Greek population believed that Mr. Simitis with his technocratic profile and a pro European reputation was the fittest person to lead them to a new era. Mr. Kostas Simitis became the Prime Minister of Greece in 1996 after Mr. Papandreou had to step down due to health issues and later won the elections. Accession in the EMU by 2001 became his priority target as a part of a 'modernisation' project (Simitis, 2004). Simitis and his government managed to persuade the Greek population that it was of great importance and benefit to them to assist in achieving this target. Failure to do so would mean that Greece would once again suffer from exclusion from the European core. 'The multiple changes that gradually took place over the period 1996-2003 along with the vast turn to a systematic approach of economic policies with macroeconomic targets, led the Greek society out of a rigid economy which was costly at many levels' (Giannitsis, 2005: 239).

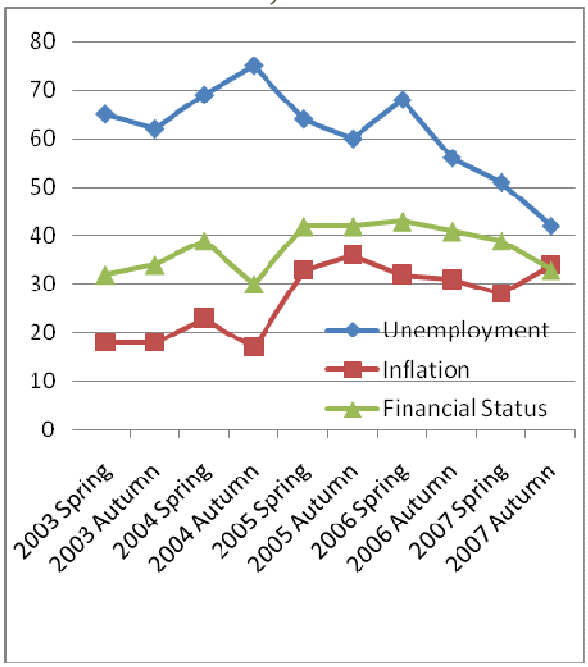
The EMU was a golden opportunity for Greece to modernise by taking advantage of the external empowerment (Pagoulatos. 2000: 191-216) provided by this project. The government was given the ability to use the EMU target as a 'vincholo esterno' (Dyson et al, 1999: 455) in order to legitimise the necessary unpopular policies to the markets and the public. What is more, for countries such as Greece where a high inflation tradition is in place, the time inconsistency theory (Chellini et al: 2) argues that reduction of inflation is only attainable through the credibility bonus gained by joining a monetary union of less inflationary countries.

Graph 13: *The Greek Public Opinion for the Single Currency* (Standard Eurobarometer 33-69)



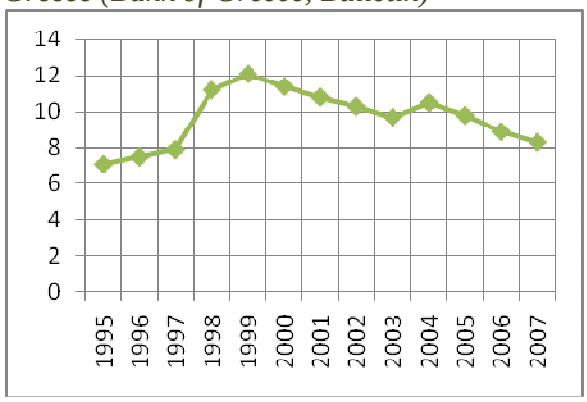
The EMU project enjoyed full recognition by the Greek public. In fact, the public opinion for the single currency in Greece was one of the highest in the EU from 1997 to 2003 reaching the levels of 82% in 2003 (Standard Eurobarometer 33-69). The majority of Greeks wanted their country to enter the EMU, which provided Greek policy makers with enough room to perform the necessary policies in order to achieve this. Extremely contractionary policies along with privatisations took place, which at any other point would have not been accepted by the Greek public. Even the opposition parties, with the exception of the Communist Party of Greece did not oppose the necessity of these strict policies in recognition of the importance of the target (Pagoulatos, 2003: 129). Therefore, it is a fair claim that the EMU project in the case of Greece enjoyed great levels of public acceptance, fact that empowered the government and provided it with greater freedom in the formation of its monetary policy.

Graph 14: *The Greek Public Opinion on the Biggest Problems Greece Faces* (Standard Eurobarometer 33-69)



However, before the ways in which the public opinion was affected by the exchange rate policies is examined, the determinants of the public opinion in Greece have to be discussed. As it is presented in Graph 14, the Greek public opinion in 2003 considered the unemployment rate as Greece's biggest problem. This trend has been steadily changing ever since, as the importance of the unemployment rate has declined by 23 degrees, while the importance of the inflation rate has increased by 16 degrees. This increase in the importance of the inflation rate on the Greek public opinion was initiated by the high dissatisfaction that was expressed for the rounding up of prices with the introduction of the Euro. However, instead of fading away as people adjusted to the new situation, this trend was maintained and the inflation rate has been increasingly important in the formation of the Greek public opinion. This leads us to the assumption that while the Greek public opinion was mainly influenced by the performance of the unemployment rate in 2003, it has been increasingly more influenced by the inflation rate performance later on.

Graph 15: *Registered Unemployment Rate for Greece (Bank of Greece, Bulletin)*



Looking at the public opinion towards the single currency since 1997 in Greece, one can observe an abrupt change in the trend pattern, as it turns from one of the most positive opinions, to one of the most negative. This change starts taking place in 2003. According to the theory and looking at Graph 14, the public opinion is influenced by economic performance, and most importantly by the unemployment rate, and increasingly by the inflation rate. During the 80's while the Greek economy was performing very badly, unemployment was never a problem. The extreme policies followed on the run up to EMU trying to reach the nominal criteria set by the Maastricht treaty let to an unprecedented for the Greek standards increase in the unemployment rates.

The recognition that the EMU project enjoyed made people accept the high unemployment rates as an unavoidable evil on the run up to EMU. People accepted to sacrifice their economical well being temporarily; expecting that they would be better off once the single currency was introduced. Therefore, the highly positive public opinion is consistent with the assumption of the study. The exchange rate policy was boosting the economy, while the high unemployment rate was the only negative outlier; however, as it was overlooked by the Greek public, it did not affect the highly positive public opinion.

After the introduction of the single currency, things changed. While the depreciation of the currency which was argued on the previous chapter boosted the economy, its effects were not big enough to satisfy the Greek public. According to Eurobarometer data, only 67% of the Greek population was satisfied with their daily life standards in 2006, Graph way below the 81% EU average (Standard Eurobarometer 65, 2008). These data are also consistent with the fact that the Labour Unit Costs (Graph 8) have not risen above the inflation rate since the introduction of the new currency.

While the economy was running in much better conditions than it was before the project started, people were not feeling any better off. The illusion that the economy was running in worst terms than before existed amongst the Greek population, in fact 76% of the Greek population in 2007 answered that the economic performance of their country has worsened (Standard Eurobarometer

68, 2008). The gains in competitiveness have been steadily reducing the unemployment rate in Greece; nevertheless, it was still higher than what the public expected.
As it is illustrated in Graph 14, the interest of people in the unemployment rate has been declining since 2003; instead, people are increasingly more interested in the inflation rate. An evolution of the determinants of the Greek public opinion is evident. While prior to 2003 the determinants were those of a classic high inflationary country, where the unemployment rate is the sole factor which concerns the public, after 2003 people start realising the importance of the inflation rate in their lives. The Greek society becomes more similar in its concerns with the rest of Europe.
Therefore, the hypothesis that a link exists between the exchange rate policy of Greece and the trends of the public opinion holds true, but in different ways for the period in the run up to EMU, and after the introduction of the single currency. In the period 1997-2003 one can clearly observe that the exchange rate policy was affected positively by the public opinion as any negative effects, in the terms of high unemployment rates, were accepted by the Greek population without any major reactions.
During the second period 2003-2007 while according to the hypothesis, the devaluation should have affected positively the public opinion by reducing the unemployment rates, the opposite effect takes place. The dissatisfaction of the public about the current economic conditions, as well as the evolution of the Greek public opinion, has caused this inversion in the relationship between the economic performance and the public opinion. Thus, instead of observing an increase in the positive opinion of Greece about the euro after the devalued conversion of the Drachma to the euro and a boosted economy, an increasingly negative opinion is observed.

Conclusions

The economic theory states that the method used for determining the conversion rates upon the creation of a Monetary Union is very important as the conversion rates can directly affect many sectors of the economies involved. This study examined the case of Greece and its entrance in the EMU. Its aims were to determine whether the conversion rate which was used for the Greek accession was representative of the economy; whether there is a link between economic performance and the public opinion in Greece, and in what ways did the accession process affect the public opinion. Three original conclusions are reached within this study.
In the first part, the fact that Greece entered the Monetary Union with a sub optimal conversion rate is presented. This argument was made by the calculation of a benchmark conversion rate, using the Lamfalussy rule which is a method deemed to produce conversion rates more representative of an economy than the CERP method which was actually used. The comparison of the benchmark conversion rate with the actual rate indicates that Greece entered the EMU with a devalued currency. In order to crosscheck this finding, the effects experienced by the Greek economy after the EMU accession were compared with the effects that the Mundell-Fleming model assumes in the case of currency devaluation. The fact that Greece entered the EMU with a devalued currency is confirmed.
This study has argued that the method used for determining conversion rates in the EMU has not been always optimal. The case of Greece clearly demonstrates that a country can manipulate its exchange rate in order to take advantage of its entrance in the EMU with a competitive

advantage. These findings should alert countries planning to enter the EMU, as well as members of the EMU that might lose in competitiveness if new members take advantage of this weakness in the conversion rate determination method applied till now.
On the second part of the analysis, two more conclusions are reached. The first is that a link between the public opinion and the economic performance in Greece is evident. The high importance of the unemployment rate in the formation of the Greek public opinion trends illustrated by the Eurobarometer data in 2003, explains to a large extent the increasingly negative opinion towards the single currency. Moreover the fact that the Greek population feels worse off after the introduction of the single currency proves that the economic performance is a very important determinant in the shaping of the public opinion.
The second conclusion reached in this part, is that while the exchange rate policy for EMU accession provided Greece with a competitive advantage, the public opinion was not satisfied by the performance of the economy. According to the theory presented, the opinion of the Greek public should have steadily become more positive after the introduction of the Single Currency; instead, the opposite is observed.
This odd trend is explained by two facts, the first is that the Greek public wanted to express its dissatisfaction to what it felt was unfulfilled promises, more specifically an economic performance of lower standards than the high expectations which were built up in the pre EMU period. While the second, is the fact that the Greek public opinion is evolving and becoming more similar to those in the rest of Europe. This similarity comes in the terms of the determinants of the public opinion; for the last four years there is an obvious decrease in the importance of the unemployment rate in the public opinion formation, while at the same time there is a constant increase in the importance of the inflation rate. Therefore, while there is a clear link between the Greek public opinion and the economic performance, the still evolving Greek society and the high expectations that Greece had for the EMU project, did not allow for the positive economic effects of a currency devaluation to influence positively the public opinion.

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"Public utilities reform in Greece: Privatization, market liberalization and implications for citizens as consumers"

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ABSTRACT

Privatization and liberalization are the two complementary aspects of several reform projects in the field of public utilities. In Greece, since the middle 90's, the telecommunications sector has undergone radical changes, responding to the new requirements of a market-oriented model, gradually introducing the privatization of the Hellenic Telecommunications Organization (OTE) and the opening of the state monopoly. An often neglected aspect of the reform is the implications for citizens as consumers. More "choice", better quality and lower prices have been usually invoked as illustrations of the beneficial effects, under the general hypothesis of better performance. However, the "shift" is more intricate than the assumptions that a micro-economic perspective suggests. This paper argues that the "citizen/consumer empowerment" is not a self-evident proposition of privatization or liberalization policies. It also proposes that the concept of citizens as consumers implies a selective –thus restricted- approach of the eventual benefit. The aim of the paper is to highlight the constraints and the pre-conditions of the "empowerment" argument, as well as to reveal potential asymmetries in terms of cost/benefit allocation of the reform outcomes.

Key words: *Privatization, liberalization, public utilities reform, telecommunications sector, citizen/consumer empowerment.*

INTRODUCTION

Market liberalization and privatization of public utilities constitute two complementary aspects of a major reform effort in Greece. They correspond to a "modernization" and "Europeanization" project that includes the reversal of the traditionally heavy presence of the state in the economy in the field of Services of General Economic Interest (SGEI). Focal point and legitimizing argument of the corresponding initiatives is the improvement of the performance both at the macro-level (market competition) and the micro-level (privatized enterprises functions). Economic values, such as efficiency and effectiveness, lie at the core of the relevant discourse[1]. The suggested "paradigm shift" towards the free market promises to enhance performance not only from the aspect of the operational and the market/economy function but also in terms of final outputs for users, and further, higher user satisfaction.

The following analysis seeks to explore the validity of the '*better performance*' argument by looking into the case of telecommunications[2]. It aims to assess the effect as well as the relative significance of the two co-related policies (market liberalization – privatization of OTE[3]) from a citizens' point of view. The "*empowerment*" of the users is a crucial variable and a tenaciously invoked argument of the reform agenda. A starting point is that citizens as users occupy the weak side of the relation with telecommunications corporations. Though this seems to be accepted in the face of a state monopoly, it is not readily accepted when it comes to a liberalized market. A key research question refers thus to the potential benefit that privatization and market liberalization entails for the users of telecommunications services. The notion of 'benefit' is defined in an inclusive way, combining both micro-level criteria (such as service quality, price, responsiveness and choice) and macro-level concerns (such as public interest, equity, universality, transparency and economic and social cohesion).

The perspective we adopt aspires to shed light on a rather neglected aspect of the privatization and liberalization process, beyond – though not detached to- the usually employed indicators of economic performance. It is argued that the public utilities reform implies certain political and ideological shifts. What is at stake is the wider framework of the transformation pattern of the triangular relation *"state – (public or private) corporation– citizen as user or consumer"*. Under the pressures of new sociopolitical and economic priorities, the notion of public interest has been strongly contested and to a certain extent redefined through the European policy prism. This paper combines theoretical argumentation with available empirical data and focuses on *a*) the redefinition of the role of citizens as consumers with regard to new rights and possibilities and *b*) the evolution of (new) modes of protection and regulation that arise within the market-oriented model. Both imply a re-conceptualization and a re-

[1] The approach of the paper is not an economic one. The selective use of economic/managerial terms corresponds to the different concepts of performance. Epigrammatically we note that *effectiveness* refers to the extent to which objectives have been achieved, *efficiency* to the inputs/outputs relationship and *economy* to the minimization of the cost for given quality standards. This distinction is not always clear in the political science literature.

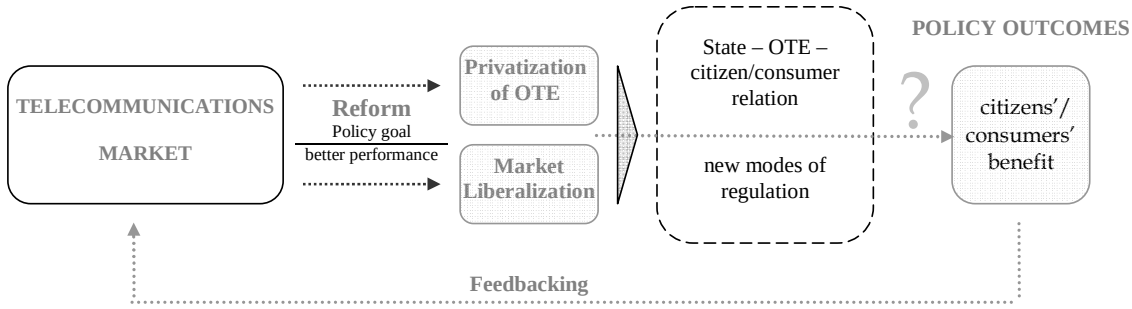
[2] What interests principally are the fixed phone services (basic services), and at a lower degree the mobile and internet services. The former refers to the previously monopolistic market that has been reformed on the hypothesis of better performance. It is thus a better measure to assess the impact of the privatization and liberalization on the users of these services.

[3] Hellenic Telecommunications Organization.

arrangement of the accountability and legitimization criteria within the state – OTE – citizens relation framework.

The paper is organized in two sections: First we outline the main features of the pre-privatization and pre-liberalization period. The emphasis is on the dysfunctional aspects of the triangular relation concerning the citizens' interest. The notion of the "*user*" is employed in order to highlight the specific characteristics of the later within the telecommunications domain. We next question the reaction of the reform project towards the detected problems. With reference to the citizens, a more consumerist model seems to gain ground. The promising rhetoric and the correspondence between anticipated and actual results are examined and evaluated both from a theoretical and practical point of view. The paper concludes with some thoughts on the allocation of potential costs and benefits in a "winners/losers" perspective. Certain assumptions of the new-institutional theory are employed as analytical tools, though not in an absolute way. Complementary methodological approaches and ad hoc readings help to further establish the arguments of the analysis.

Analysis Framework – Working Hypothesis



1. THE STARTING POINT: THE STATE INTERVENTION IN RETROSPECT

The debate on the scope and the limits of state interventionism is not a new one. Answer seems to be following a pendulum route across the political and economic conjuncture. In brief, the rationale of public action has been historically based on a twofold argument concerning the role of the state on one hand and that of the market on the other. From the point of view of the '*market failure*' argument, the intervention of the state has been perceived as the "alternative remedy", either to the incapability or to the unwillingness (lack of incentives) of the market mechanisms to undertake certain fundamental functions. From a parallel point of view, the state intervention responds to a call for positive action. Its basic mission is to ensure the provision of certain goods and services considered as vital for the well-being of the people. The notion of *public interest* resumes the logic and assures the legitimacy of public intervention. The justification basis comprises both hypotheses of ideological and sociopolitical nature (*public service theory*[4]) as well as arguments of economic origins (*welfare economics*[5] and *public interest theories*[6]).

[4] The theory of *public service* refers to a particular model concerning the role of the state and it has been inspired to a large extend from the French tradition (*service public*). According to its guiding principals,

Public networks industries were created and developed in line with these considerations and the particular requirements of the historical circumstances. The post-war "*Keynesian consensus*" depicted a model of state-economy relations where the interventionist and regulatory role of the former met the general approval. Public utilities (water, gas, electricity, communications, transportation, postal services) have been organized in vertically integrated national monopolies with specific characteristics[7]. The most striking one is the dual nature of the enterprises: on the one hand the '*public'* element (salient social-political mission) and on the other the '*entrepreneurial'* aspect (economic – commercial ends)[8]. The social welfare (public interest) goals reflect the wider socio-political character of public enterprises. Hence, a complementary term, that of "*political firms/enterprises*[9]", has been often employed.

The public network services in Greece were formed and developed during the post war period ("*developmental wave*[10]"). The large-scale industrial activities were vertically integrated in domestic monopolies under a tight regulatory regime of state control. Their mission was the provision of essential services, pursuing economic and social ends. Services were supplied on a non – competitive basis, while the pricing policy did not reflect the actual cost but it was generally formed through a mechanism of 'internal redistribution' among the users (*cross – subsidization*). Social and political concerns were a central feature the enterprises' action.

These were also the characteristics of the telecommunications market, since the Hellenic Telecommunications Organism (OTE) was founded as a state monopoly in 1949. The legal framework explicitly declared the social welfare character of OTE, a state-owned joint-stock company "*at the service of the public*"[11]. Given the two main types of reference, the Anglo-Saxon *public utilities* and the French *public service*[12], OTE could be classified somewhere in the middle of the spectrum between the two notions, perhaps closer to the public service model[13]. The nature of the property rights

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the state undertakes certain activities in order to assure the proper function of the economy in line with social and political priorities. Sociopolitical values (such as public interest, solidarity, social cohesion, accountability) and special principals (equity, mutability, continuity) shape its strongly ideological and symbolic basis and justify the legitimacy of the state action (Chevallier 1975, 2005). The scope of the former goes beyond the economic rationale (Spiliotopoulos 1985: 530).

[5] The assumptions of *Welfare Economics* technically justify the market failure and provide reasons for the state action (Stigler 1975 ; Sappington and Stiglitz 1987: 568-569 ; Stiglitz 1992: 106- 116, 231-238).

[6] *Public Interest Theories* focus mainly on the regulatory role of the state, proposing that the governments, as agents of the public, seek the maximization of social welfare. This goal is reflected on certain social welfare functions and concerns of equal redistribution (Vickers & Yarrow, 1988: 27-29). It evidently refers to a more indirect type of state intervention than the *public service* model. Its hypotheses are closely related to those of Welfare Economics and the Economic theory of Regulation (Stigler 1971).

[7] For an in-depth analysis of the characteristics of public enterprises in the initial phase of their existence, see "*Les Entreprises du Secteur Public dans le pays de la Communauté Européenne"*, Institute Européen d' Administration Public, Bruxelles 1985.

[8] The potential contradiction between the two missions is rather evident and the equilibrium of that mixed character is often difficult to discern. However, the particular hierarchization of the two elements could constitute a crucial indicator of the bilateral priorities, especially when the 'mix' change in favor of the latter, as it seems to be the case in the privatization.

[9] De Alessi 1980: 31-32 ; Papoulias 2007: 193, 199.

[10] Pagoulatos 2005: 359.

[11] Legislative decree 1049/1949, art.12 ; 165/1973.

[12] *See* Stoffaës 1995 ; Rouban 2000: 16-17.

[13] This classification can be justified with reference to the rhetoric and the content of legislative acts in the early years of OTE. However, it has been argued that, in general, the creation of the Greek public

(public ownership) in conjunction with the public interest mission implies certain particularities. A central feature refers to the relation between OTE and the citizens, which was largely subjected to the mediation of the political system.

Public interest and the citizens as "*users*"

The recognition of the special mission of public enterprises implies a differentiated approach than that of a commercial enterprise. The *public utility* concern has been explicitly expressed by the partial detachment from the rules of the market and the undertaking of these activities by the public sector. The nature of public utilities requires the (partial) "*de-commodification*" (Esping-Andersen 1990) of the services provided, on the basis of equal access and independently of free market forces. The public monopoly scheme and the direct state control (Spiliotopoulos 1985) assure the equal treatment in terms of quality, price and provision. Citizens' needs are conceived and met in a collective and homogenous way. The policy context practically corresponds to a redistribution model (Lowi 1964).

The concept of the public interest serves as the ideological and legitimizing cornerstone of state intervention. In fact, it implies a specific role for the state and a particular model of state – society relations. Public action is justified on the assumption of a benevolent state that strives for the public good (Chevallier 2000: 32). Public enterprises are the state's "*agents*" (Spiliotopoulos 1985: 538) and thus the government is "*indirectly responsible*" for their performance (Letwin 1988: 29). In this scheme, the state is the main decision-making actor and the 'intermediary' between enterprises and users. The submission of management to the state's control constitutes the connecting bond between the citizens and the public enterprise (Le Masne 2003: 13). As well, the citizens are far from a purely market-consumer model. The triangular relation integrates certain social and political features of a '*citizenship perspective*'[14], which could theoretically correspond to the model of "*user*" of public utilities[15].

That is in general the model of the *state – OTE – citizens* relation in the pre-privatization and pre-liberalization period. The public interest character of the Organization subjects the management to the direct or indirect government oversight[16] and to procedures of parliamentary control[17]. Under these circumstances, the *citizens-OTE* relation refers to a pattern of indirect communication mediated by the state. User representation is ensured through the trade unions the *Shareholders' Committee* and the "*socialization*" initiative. The latter aimed at a more direct control on behalf of society ("social control")[18].

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enterprises was mostly the result of circumstantial and incidental factors than the crystallization of a concrete ideology for the role of the state in the economy (comparable for example to that of the French model) (Teitgen-Colly 1985: 204-205).

[14] For the definitions and the particular context of the tree-fold categorization (civil, political, social rights), *see* Marshall 1992.

[15] In proportion to the notion of the "*user of public services*" (for a comprehensive analysis, *see* Spanou 2000: 376-442).

[16] Ensured typically by the Minister of Finance and the Minister of Communications and Transportations

[17] Indirectly (via the Minister), regularly via the Committee of Public Enterprises, Banks and Welfare Organisms and ad hoc via the process of parliamentary control.

[18] Law 1365/1983. According to the pre-electoral program of PASOK (1981), the socialization of the Greek public enterprises aimed at the strengthening of the public control and their democratic function as well as at the (re)orientation of the management towards the public utility mission (Teitgen-Colly 1985:

The *citizens - OTE - state* relation in question

With reference to the typology of Le Grand (1997), the nature of the relationship between the public enterprise and the users is theoretically similar to that of "*knights*" (a benevolent-altruistic state) and "*pawns*" (passive recipients). The latter have little chance to intervene directly in the decision-making processes. There is no "*exit*" possibilities and the main "*voice*" option (Hirchmann 1970) is the ballot option. As already mentioned, public interest is ideally expressed via the government programs, implying an indirect representation of the needs and wants of the citizens.

However, in practice, these assumptions do not seem to be always the case. The hypothesis of the public interest as a (quasi) self-evident feature of state's action has been strongly contested both in theory and in facts. The *public choice school* (Niskanen 1975 ; Mueller 1976 ; Buchanan and Tollison 1972) as well as the theories of *rent – seeking* (Krueger 1974 ; Tullock 1993 ; Tollison 1997) and rational *neo-institutionalism* (March & Olsen 1984 ; Hall and Taylor 1996 ; Peters 1999) suggest that there are no benevolent motives and that actors decide rather on the basis of self-interest evaluations. It is within this context that "*vote-maximizing legislators/politicians*" and "*utility/budget-maximizing bureaucrats*" (Niskanen 1975 ; Vickers and Right 1989: 6) disorientate public enterprises from their general interest mission. Principal-agent problems and transaction costs also arise when the delegation of an activity provokes asymmetries in terms of sources and information (Sappington and Stiglitz 1987 ; Vickers and Yarrow 1988: 7-11). The imperfections of the "*political control market*" and the electing-monitoring procedures create further problems of public control and representation (Yarrow 1986: 303 ; Vickers and Yarrow 1988: 31).

Along with these considerations, the risk of marginalization and degradation of citizen's interest is rather evident. In Greece, the public enterprises often deviated from the public interest mission. The emphasis was put on the fulfillment of particular interests from the point of view of (corrupt) government officials, manipulated and self-interest management members, powerful economic groups, trade unions and anyhow, not of the users' interest, that is to say the *general interest*. The constant and intense unofficial government interventions have led OTE as other public enterprises to a high degree of politicization[19]. In many cases particular interests, usually corresponding to well organized rent - seeking coalitions, acquired profit ("*rents"*) at the expense of public/collective interest (Pelagidis 2005). The motives and the priorities within this context were hardly in line with public service concerns. They have thus heavily twisted the grounds of the public interest mission and the legitimacy of the corresponding policies. In policy terms, it could be argued that in line with the typology of Lowi (1964), the "*redistributional*" character of public policy in the field of telecommunications tends to diverge into a rather "*distributional*" context. To put it

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210-211). The social 'stakeholders' were conceived in that case as the "*representatives of the users*" (*see*: OTE: Operational Plan 1996 – 2000, p.9). However, the new administrative and control mechanism (ASKE) encountered serious functional and political obstacles that gradually demoted its status (*see* Ministry of National Economy: *Conference on Socialization*, Athens 1987 and Anastopoulos 1987: 128-129 ; Papoulias 1994: 113-114).

[19] The high degree of politicization of the public organizations is a common theme in analyses of Greek public sector. See for example: Teitgen-Colly 1985: 218-228 ; Giannitsis 1994: 16-19 ; Lioukas and Papoulias 1995: 180-83 ; Sotiropoulos 2001 ; Tsoukas & Papoulias 2004: 84-86 ; Papoulias 2007: 66-67, 81-82 ; Mouzelis 2005 ; Spanou 2008: 156.

briefly, the function of the triangular relation does not correspond to a *citizens'-interest*-oriented scheme.

Secondly, the perverse function of the political control chain intensified the innate failures and the excesses of a monopolistic market and a large-scale bureaucratic organization. OTE was and still is an extremely powerful organization and one of the larger Greek enterprises. The structure of the telecommunications sector, organized on the basis of the ultimately dominant position of the public operator, further illustrate the power asymmetry. Lack of "*choice*" and "*exit*" possibilities, the users had no alternative and they were to a certain degree "*captured*" by the powerful enterprise. Besides, in terms of social participation, neither direct contact nor the '*socialization'* experiment managed to assure significant active involvement, efficient social control or wide representation on behalf of the users in the decision-making process ("*voice*"). The organization problems of the uncoordinated and dispersed group of consumers[20] further narrowed the possibilities of reaction or confrontation. In case of dispute the available options were limited to the "citizens' bureaus" and the civil courts[21].

The imbalanced relation is further evident with reference to the "introvert" function of the public operator. In the pre-privatization and pre-liberalization period, OTE appears quite "*unresponsive*" to the needs and expectations of the subscribers[22]. As other state-owned organizations, OTE could be characterized as a more or less close ("*self-referential*") system (Tsoukas and Papoulias 2004: 89-92), where there was very little concern or feedback about the satisfaction of the recipients for its outcomes[23]. The flexibility deficit partly explains the corresponding weaknesses. The terms and the conditions of provision are unilaterally defined and comprise a minimum set of rights and obligations of mostly procedural nature[24]. In fact, the decision-making scheme was far from any direct '*bottom-up'* participation, implying a quite passive/submissive role for the users. The discredit or absence of a customer-oriented policy could be additionally justified with reference to the (low/medium) quality of the services as well as on the perceptions of the users concerning the 'public image' of OTE[25]. It was thus time to re-structure the organism on a more socially and economically efficient base.

[20] For an in depth analysis of the determinants of collective action, *see* Olson, 1965. For the difficulties of collective representation of the users, *see also* Spanou, 2000: 431-441.
[21] Whatever the result, that kind of interaction usually referred to minor issues and *ad hoc* arrangements.
[22] The "*unresponsiveness*" constitutes a central feature of the criticism referred to the "old-style welfare bureaucracies" (Le Grand and Bartlett 1993: 15).
[23] Only in the early '90s certain initiatives showed a shift in that attitude: the Five-Year Development program (1994-1999) and the next period Operational Plan (1996-2000) included plans for the amelioration of service quality and the measurement of citizens' satisfaction via a system of performance indicators. Moreover, certain consumers' surveys concerning the quality of the telecommunication services are published in the early '90, which comprise a specific set of quality standards.
[24] Apart from the legislative framework, *see also* Lymperopoulos N. (1980), *Urban Telephony: Rights – Obligations, Subscriber – OTE, Procedures*, OTE-Athens.
[25] *See* OTE: Operational Plan 1996 – 2000, p.48-50.

2. THE 'PARADIGM SHIFT'

The apparent 'failure' (or anyhow 'optimum-deviation') of the public model to achieve the required results along with the effect of certain political, economic and technological evolutions have caused strong pressures for the reform of public enterprises. The escalating criticism had practically led to a radical revision of the role and the limits of state intervention. In the early '90s, the shift to the private market, which was already a reality in many other European countries, was considered more or less a one-way option[26]. Privatization, liberalization and de-regulation have become high-priorities on the policy agenda. A brief review of the facts is necessary in order to outline the main features of the reform. The focus is on the anticipated benefits for the users of the telecommunication services (and not on a general review of the eventual positive outcomes).

Pressures and constraints: an inevitable reform?

The pressures and the causes that lead governments to privatization or liberalization decisions do not correspond to an homogenous and coherent ensemble of determinants. An epigrammatic classification includes a great range of reasons and ambitions that vary across the ideological, social, political, economic, institutional, historical and technological spectrum. Concerning the privatization rationale, the need for better performance is the core-argument (Beesley and Littlechild 1986 ; Savas 1987 ; Letwin 1988: 32-34 ; Bishop and Thompson 1994). Ideological, economic, managerial, political and financial motives also have a role to play (Vickers and Wright 1989: 5-9 ; Pagoulatos 2005: 360-363). With reference to the abolition of state monopolies and the de-regulation pressures, globalization of the trade, technological changes, market evolution and external pressures[27] give reason for the complementary aspect of the reform. The anticipated positive effect of competition is also a central argument.

While apparently relative in context, the intensity and the influence of these factors are not of the same degree. Concerning for example the privatization decision, there was not any direct internal or external obligation. On the contrary, the liberalization of telecommunications market has been an evident and quite pressing feature of the European integration policy. However, it is interesting to note that in Greece an "inverse evolution" took place. The privatizing process of the Hellenic Telecommunications Organism was initiated before liberalizing the market[28]. Though the two programs cannot be regarded disjointedly, the implementation timing could imply an unspoken hierarchization of the corresponding policy priorities[29].

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[26] Hence the consensus of the two dominant political parties on the liberalization of the telecommunications market and the privatization of OTE (s*ee* Parliament Minutes ΟΗ/19.2.1996, Π/21.2.1996).

[27] See for instance the IMF reports, OECD recommendations, EU competition law and single market integration, *etc*.

[28] First public offer: 1996, market liberalization: 2001.

[29] It has been suggested that the EU liberalization agenda worked in fact as a legitimizing or great supporting factor for the associated privatization project (Featherstone 2005: 232 ; Pagoulatos 2005). Thus, the necessity of the later was not quite evident if dissociated from the European liberalization

Additionally to the *top-down* pressures and the varying objective and subjective motives of the governments, a wider claim for reform has been gradually emerged across the public sphere. From the citizens' point of view, the longstanding inefficiency of public sector had created a rather negative -or at least "*unflattering*" (Vickers and Wright 1989: 12)- public image of the state-owned industries. A *bottom – up* criticism of the public enterprises pointed out inefficacy questions and reproved their massive character. They were also accused of being unable to adapt and to respond to the needs of the users. New needs and new demands have led to the emergence of a new consumer attitude, more aware and demanding than the previous passive model (Stoffaës 1995: 14-15, 22, 134-138 ; Bauby 2002: 47 ; Baumstark 2002: 61)[30].

Rhetoric & anticipated outcomes

Both at a theoretical level and in the rhetoric of the reform agenda the '*citizen/consumer empowerment*' has been employed as a central argument. This goal was part of the wider claim for *better performance* that would result in multiple positive effects, among others in the higher profit of end-users. Consumer interest is thus one of the legitimating arguments of the corresponding policies. We next consider the liberalization and privatization rhetoric from that point of view. We should however bear in mind that the decisions might imply additional motives, often in direct contrast to the official argumentation[31].

a.) (neo)liberal and managerial ideas

Apart from the objective criteria, such as the decline of 'natural monopoly' elements and the effect of technological evolution, the '*less-state*' argumentation embodies strong theoretical and ideological propositions. In brief, the criticism of the (neo)liberal theory and the relative schools of economic thought[32] focus attention on the weakness or incapability of public sector to reach an efficient allocation level ("*failure of the state*"). From a complementary point of view, state intervention further distorts and hinders the efficient function of the market. By contrast, free market forces guarantee better allocation of resources and greater effectiveness, both at the benefit of the consumer.

The practical tools and methods of the private sector have also influenced the perspective on management. In fact, NPM and other managerial approaches, juxtapose an inverse logic to the procedural attitude of public services, suggesting results-orientation, customer-centered focus and entrepreneurial practices (Osborne and Gaebler 1992 ; Barzelay 2001). The ideas supporting the privatization rationale such as consumer's choice, contestability and transparency appear ostensibly similar (if not identical) with the basic NPM principals. The latter implies a directly opposite model to

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obligations. Still it cannot be denied that an indirect pressure has been more of less exerted to the direction of the ownership status (Parker, 1998: 43).

[30] *See also*: European Commission (1996), Communication from the Commission, Services of General Interest in Europe, Brussels, 11.9.1996, p.4.

[31] A main (but usually unspoken) reason for privatization is the "*fiscal stress*" of the governments (Levine and Fisher 1984: 179). Privatization is then incited by the motive of raising money and revenues that could be used for funding public expenditure as well to reduce the public deficit and the public depth (Yarrow 1986: 360-361 ; Vickers and Wright, 1989: 8).

[32] Classical political economy, neo-classic economics schools of thought, school of Chicago, *etc*.

the traditional bureaucratic doctrine (Hood 1991: 5). Within this context, privatization could also be seen as a part of a broader administrative reform project[33] (Spanou 2008), under the influence of managerial ideas and private management techniques. Questioning the role of the state embodies apparently not only technical but also further ideological and axiological judgments.

b.) The 'better performance' argument

Along with the theoretical-ideological considerations, further argumentation has been developed at a more technical, economic and empirical level. A crucial point calls into question the performance of public firms. The low performance of public sector organizations rests a core argument of the criticism referred to the state-owned enterprises (Heald and Steel 1982 ; Vickers and Wright 1989: 6 ; Bishop and Thompson 1994 ; Lioukas and Papoulias 1995: 174-5 ; Haritakis and Pitelis 1998 ; Parker 1998: 30-33 ; Joumard and Mylonas 1999). Structural restraints, inherent public organizations inefficiency, strong politicization, principal – agent problems, rent – seeking distortions, capture risks and the implications of the public choice theory have been typically employed in order to explain the failure of the model and subsequently to justify the supremacy of the market (Parker 1998: 30-33, 39). The particular interpretation of efficiency was oriented towards its most technical or economic features, filtered through the advantageous alternative of market allocative function[34]. Regarding the privatization rationale, a "*management modernization*" perspective proposed that Corporate Governance discipline and the shareholders' control would guarantee transparency and better performance (Bishop, Kay and Meyer 1994: 3). The reasoning is "*pragmatic*" (Pagoulatos 2005), while the political or ideological aspects have been generally smoothened[35].

c.) Implications for citizens as consumers

The eventual benefits of the reform refer at both liberalization and privatization effects. However, it is not feasible to utterly separate the impact of the two parameters and estimate the gravity of each one over the potential outcomes. Certain positive implications for citizens as consumers derive from the previous propositions, mostly with regard to the effect of competition.

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[33] And also as an integral part of the '*modernization'* project of prime Minister Simitis (Featherstone 2005).

[34] In line with the E.C. classification (Evaluation of the Performance of Network Industries PROVIDING SGEI, 2006 Report, Annex), we can distinguish four main types of 'efficiency' with regard to the anticipated gains: A higher level of *allocative efficiency*, that is to say cost and production rationalization ; more efficient (productive) use of the resources (*productive efficiency*) and cost – effectiveness (cost minimization – outcomes maximization) ; reduction of *x-inefficiency* ; development and innovation (*dynamic efficiency*). The market model thus suggests more efficient markets, better services, improved performance and higher productivity. These features are to a certain degree a reverse reading of the weaknesses of public enterprises.

[35] The approach that was chosen regarding the conceptualization of the project was not irrelevant to the potential reaction that privatization policies could provoke. Depriving the public sector from its political and social characteristics and emphasizing the economic functions of state-owned industries 'neutralizes' and thus facilitates the initiation of the privatization programs (Vickers and Wright, 1989: 14). See also the analysis of Feigenbaum & Henig on the relation between the "*pragmatic privatization*" and the "de-politicization" process (1994: 193-196).

Concerning the liberalization aspect, competition rules and market discipline make the firms more "sensitive" towards their customers. Under the free market pressures, competing providers are strongly motivated to become more efficient and to orient their action to the needs and the preferences of the customer (Beesley and Littlechild 1986: 38-41 ; Handler 1996: 79-80, 107 ; Cohen and Henry 1997: 10-11). The transformation of the monopolistic structures into competitive ones is expected to lead to high quality services in lower prices (Savas 1987: 4-10 ; Parker 1998: 39 ; Héritier 2001: 2-3). The opening up of the market would also increase consumer's choice, boost innovation and lead to a greater range of products and services[36] (OECD 2001: 10). Services differentiation means –among others- better response to the individual needs and preferences ("*responsiveness"* criterion).

Privatization process itself does not seem to entail significant direct results disjointed from the competitive environment. It has been argued that combined with an open market, privatization could empower consumers by enhancing their autonomy versus the enterprises, quite restricted within a relation of monopolistic nature (Handler 1996: 78-79). One could also support the view that on the antipode of the bureaucratic introversion and the often indifferent attitude of the public servants, a private firm seems to incorporate a different customer service spirit. However, this also depends on the structure of the market.

Apparently, the "*consumer's empowerment*" argumentation focuses on micro-level variables. An individualized approach of consumer's interest seems to be the central idea. The gradual personalization of the provided services illustrates the individualization tendency. As for the public interest concerns, the socio-political general interest goals are considered to be indirectly achieved in a competitive environment (Héritier 2001: 2-3). The crucial parameter is once again the competitive market and not the property status of the enterprises.

Policies Implemented: liberalization and (gradual) privatization of OTE

Both the liberalization and the privatization program took place on a basis of gradual implementation. The «incremental» character (Lindblom 1959) of the undertaken projects reflects explicit political choices. Additionally, it could be seen as a method to smoothen the strong opposition of a large part of the public or the latent undermining of the applied policies by the trade unions, vested interests and other public and private actors.

a.) market liberalization

The liberalization of the telecommunications sector had significant effects on the structural and functional parameters of both the network market and the incumbent operator. First, the passing from the monopoly scheme to the competitive market required the opening up of the market and the free access/entry of competitors. In the case of the Greek telecommunications market, the opening policy followed a gradual approach, prolonging up to 2001 the liberalization deadline for the full adoption of the European legislation[37]. Secondly, liberalization and its E.U. concept imposed the

[36] See also the introductory reports of the Greek laws and the E.U. documents.
[37] 96/19/EC. For the rest member-states this deadline had been already active since 1998.

transformation of the traditionally vertically integrated monopoly. The new scheme provided the structural separation between the competitive and the non-competitive segments[38]. OTE is the network administrator (*essential facility*) that enables network access to the other operators (*local loop unbundling services*). Lastly, the internal functional split of OTE (production – distribution) is expected to be announced soon by the national regulatory authority (EETT)[39].

Regarding the competition level, it is evident that the current situation is far from the ideal (though unrealistic) model of perfect competition. The limited number of private providers as well as the differentiated coverage range between those who built their own stable network and the network of OTE (to which have access the other operators) outlines the characteristics of a quasi-competitive market. The latter responds to a rather oligopolistic situation where while there are private operators, OTE (incumbent operator) remains the dominant player[40]. In order to make a brief assessment of the status and the 'competitiveness' of the market, we next compare the market shares and the corresponding market repartition (fix telephony). In line with the data of *Table 1,* we deduct that although the evolution of the market structure shows a gradual decrease of OTE share, we are far from a balanced (antagonistic) situation. The incumbent operator is still in a quite dominant position. However, the gradual but constant reduction of OTE's share shows that the market is gradually becoming more competitive.

Table 1
Evolution of the Greek Telecommunications Market Structure (1998 – 2007)

	Market Share (Incumbent firm)			
	Local calls	Long distance/ National calls	International calls	**Average Market Share**
1998	100%	100%	100%	**100%**
2001	100%	99,6%	98%	**99,2%**
2002	98,9%	95,9%	92,6%	**95,8%**
2003	86,85%	78,25%	70,6%	**78,57%**
2004	77,95%	69,25%	54,7%	**67,3%**
2005	74,05%	68,5%	50,5%	**64,35%**
2006	71,55%	67,45%	42,45%	**60,48%**
2007 (1sem.)	70,7%	64,3%	49,9%	**61,63%**

Source: E.C. 2001 and EETT 2007[41]

[38] For a categorization, *see* OECD 2001: 8-11.
[39] Personal interviews with OTE officials [March 2009]. See also Kathimerini, 20.4.09.
[40] Except for OTE, other private providers that have smaller market shares in the fix telephony market are: Hellas online, Forthnet, Tellas, On Telecoms (and NetOne), Vivodi, Teledome, TelePassport CytaHellas.
[41] Data: 1998-2001: E.C. (2001), *Annexes to the report on the functioning of product and capital markets: Market performance of network industries providing services of general interest: a first horizontal assessment*, Working document by the services of Commissioners Bolkestein and Solbes, Brussels, 7/12/2001, 2002-2007: EETT 2007: *Annual Report 2007 – Market Review*. It must be noted that for the period 2003-2004 the percentages are slightly different between the two sources.

b.) Gradual privatization of OTE

Among the different types of privatization[42], the approach followed in the case of OTE was the gradual privatization[43]. The process of (regular) public offerings through the Athens Stock Exchange took place for a short/middle term period and the state's share has progressively decreased (*see* Table 2). The plan of a strategic investor has led to the agreement with the German company 'Deutsche Telecom' (2008). At the moment the Greek State owns directly a 17.93% stake and indirectly (share of IKA and DEPA AE) 25% and one auction, equally to the share of Deutsche Telecom[44]. Concerning the necessity and the pace of the privatization procedure, it should be mentioned that these questions were at the discretion sphere of the Greek government[45].

Table 2
The privatization process of the Hellenic Telecommunications Organism (OTE)

	1996	1997	1998			1999	2000	2001	2002	2004	2005	2007	2008	2009
			(Jan.)	*(Jun.)*	*(Nov.)*									
Share of the Greek state*	92,4%	81,32%	75,13%	75,01%	65,1%	51,15%	52,44%	41,76%	33,76%	34,64%	35,63%	24,93%	21,93%	17,93%

* direct

Source: OTE, Investor Relations Department

The hypothesis of '*consumer empowerment*'

The hypothesis of "*consumer empowerment*" occupies a central place within the argumentation of the reform project. A complementary term that is often employed is "*consumer's sovereignty*". Both latently imply that the consumer was more or less a "weak actor". However, the relevant ambiguity and the theoretical origins of the term (notably 'implanted' from the private marketing practices), need further definition within the context of public utilities. It should be thus analyzed which particular characteristics (rights, possibilities, options, *etc*.) are being empowered and with reference to what model of *state – market – society* relations. As for the political and practical implications, a crucial dimension is the European concept of *Services of General Economic Interest* as well as the notion of *Universal Service*.

A new conceptualization of the public interest: the E.U. perspective

The Europeanization process imposes the adoption of common rules and harmonized market practices. While the initial basis of the E.U. project was the

[42] On the different methods and instruments of privatization *see:* Vickers and Wright 1989: 3-4 ; Savas 1992: 573-576 ; Domberger and Piggott 1994: 48-53. In particular, within the context of the Greek legislation, *see* previews law 2000/1991 (art.5).

[43] The adopted term was the 'de-nationalization' and the "*metochopoiisi*" (*μετοχοποίηση*) because of the unpopularity of the 'private' component, another feature of the symbolic use of words in policy-making.

[44] The current shareholder structure of the Organism is: Hellenic Republic: 25.0%, Deutsche Telekom: 25.0%, Greek Institutional Shareholders: 9.3%, International Institutional Shareholders: 33.1%, Rest Shareholders: 7.6% (*source*: OTE, June 2009).

[45] As it has been already said, the European Union apparently adopts a neutral position with regard to the legal status of the operators (public or private ownership). What matters most is the service provided and the provision terms, in line with the competitive rules.

economic cooperation, the expansion of the market approach in fields not "purely commercial" (public utilities) raised certain compatibility questions between the logic of the market and that of the public interest. The notion of *Services of General Economic Interest* (SGEI) reflects the need of a counterweight to the potential threats that free market entails for the rights of citizens as consumers. It also serves as a guarantee for the public interest[46]. Particularly for the telecommunications sector, the notion of *Universal Service* (US) outline precisely the relevant obligations. However, these conceptual schemes are not only practical devices but also ideological tools. They imply a new conceptualization of the public interest as well as a salient practical and theoretical re-interpretation of the deriving values and the characteristics of the recipients of SGEI[47].

Following a descending approach, the SGEI are part of the wider category of the Services of General Interest (SGI). The latter, as the term implies, is oriented towards the object of '*serving the public*' (in the interest of the public)[48]. The SGEI[49] constitute a differentiated sub-category, based on the (semi) commercial character of the relevant activities. The SGEI is a rather "*flexible concept*", in constant need of re-definition and re-adjustment ("*dynamic approach*")[50]. We can discern three main features:

a.) Micro – level concerns, with regard to the competitive market advantages and the direct consumer's interest (choice, price, improving the level of quality).

b.) Basic operating principals, related to public service obligations (continuity, equal access, universality, openness, adaptability, transparency).

c.) Macro-level considerations, such as the adaptability to the needs of the public in general, environmental protection, social and economic cohesion, land – use planning and territorial cohesion.

It is however up to the discretion of member-states to specify and to further define the criteria and the application methods in order to fulfill the mission of SGEI.

One level down, the term *Universal Service*[51] (US) refers to a minimum set of general interest requirements or a range of basic services. US and public service have some common features but do not exactly correspond to the same content[52]. In particular, concerning the telecommunications, the notion of the US defines the minimum public interest or public service obligations, taking into account the needs of

[46] See the E.U. documents (White and Green paper of SGEI, Directive US, Horizontal Evaluations, Communications of the Commissio on SGEI, *etc*.).

[47] A brief reading of the European documents and the Greel legislation shows the ambiguity of the selected terms: citizens-consumers and Europeans (Eurobaromètre 47, 1997), end-users (Directive 98/10/EC), users (Directive 2002/22/EC), consumers (Eurobarometer 58, 2002 ; Special Eurobarometer 219, 2004 ; Special Eurobarometer 252, 2006), users (Lisbon Treaty 2007), subscribers/users/consumers (law 3431/2006), consumers (ministerial act 488/82/2008 – Deontology Code), users/end-users (ministerial act 44035/1626 - Universal Service).

[48] Commission of the European Communities (1996), Communication from the Commission, Services of General Interest in Europe, Brussels, 11.9.1996.

[49] Lisbon Treaty, Protocol (No 26).

[50] Commission of the European Communities, 1996, *op.cit*: 7-8.

[51] 'universal service' means a defined minimum set of services of specified quality which is available to all users independent of their geographical location and, in the light of specific national conditions, at an affordable price (directive 98/10/EC).

[52] It is argued that the notion of the universal service is more restricted, imposing "*minimalistic*" obligations, compared to these of the public service (Chevallier 2000: 32-34, 2005: 99-101 ; Stoffaës 1995: 33 ; Bouquillion 2001).

the consumers that may not be satisfactory met by the market mechanisms[53]. The three main criteria are the *affordability* of the price, the *quality* and the terms of *access* (availability). Objectivity, transparency, non-discrimination and proportionality constitute in addition the four application principles. Concerning the Greek telecommunications market, the legislative framework adopts the principal guidelines of the Directive in a rather typical way[54]. As could one expect, OTE has been chosen to provide the services referring to the US obligations.

Summing up the short analysis of the E.U. perspective, a crucial remark is that, in line with the SGEI and the US, the notion of public interest has been re-conceptualized. The "mix" combines elements of the Anglo-Saxon *public utilities* (micro-economic interest), the more inclusive features of the French *public service*, as well as a newly inspired *public service* European dimension. The latter, implies a rather ambiguous combination of general interest goals and market values. In any case, the priority seems to be the competitive function. Certain exemptions from the rules of the Treaties (SGEI) as well as the special rights of the operators providing the universal service are defined in a quite strict way. The "asymmetric" concern of the E.U. policy priorities is also reflected in the absence of a concrete European legal frame on SGEI. Contrary to the obligatory and more precise character of the Directives, the SGEI White Paper and the Commission's Communications evoke ambiguous interpretations for their legal basis[55].

The citizens as consumers: of rights and possibilities

As it has already been argued, the reform has changed the users' conceptualization by initiating a more consumerist profile. The corresponding characteristics derive mainly from the market model and are quite similar to these of an economic actor. The criterion of "*individual utility maximization*" (Buchanan 1972: 16) largely forms the behavior and the decisions of the consumers. In Marshall's terminology, one would assume an empowerment of the individual/civil rights and a retreat of the social and political features of 'citizenship'. It should be noted however that the existence of a right itself does not assure automatically its practical enactment (Spanou 2005). Concerning particularly the often abstractive definition as well as the uncertain consolidation and protection guarantees, the ambiguity is obvious. That is the reason why we employee in parallel the term 'possibilities'[56].

Within the frame of the free market, new rights and new possibilities emerge. In line with previews remarks, the differentiation of telecommunication services according to consumer's needs implies more "*choice*". The individualization or personalization of the services is practically expressed via the different offers of the alternative providers

[53] *See* Directive 2002/22/EC ('*Universal Service Directive'*).

[54] Law 3431/2006 and ministerial act 44035/1626/2007. From the point of view of the opposition parties, the interpretation and the transfer of these principals provoked certain criticism, while characterized as a quite "*restricted approach*" of the European directions (*see* Parliament Minutes, ΞΔ΄ 17.1.2006: 3333-5, 3353, 3356).

[55] According to CEEP, the ambiguity of the legal status of the SGEI could even imply "*absence of legal certainty*" (*see* CEEP Newsflash, October 2006). See also Bauby 2002: 55 and the Opinion of the Committee of the Regions on the Communication from the Commission - Implementing the Community Lisbon program - Social services of general interest in the European Union (2007/C 57/08).

[56] We could also note that in economics terminology we usually talk of possibilities or opportunities, while within the frame of state action for (legally guaranteed) rights.

and the sets of programs that each company proposes. Regarding OTE, a great range of personalized services has been developed in order to respond to multiple customers' profiles[57]. In case of dissatisfaction, "*exit*" possibilities exist. Contrary to the paternalistic tendencies of which have been often accused the state monopolies, consumers have freedom to make individual decisions, to compare the alternative offers and to chose the one that fits best to their needs. Quality standards have been introduced in order to facilitate consumers' choice. The national regulators (EETT) inform the public about the available offers and the performance of each operator. Furthermore, consumers views should be taken into account when end-users' rights come into question[58]. Thus, "*voice*" options seem to correspond to a wider range of possibilities, though mostly of procedural nature[59].

Along with these options, there are specific rights and obligations included in the (national and European) legislative framework[60], in Codes, Charters and Regulations[61] and in the particular terms of the contracts between the consumers and the providers[62]. However, apart from the last case, it is often difficult to discern the legal status and the practical application of these rights. We lastly note the emergence of new rights that mostly derive from the technological evolution such as the right of privacy in communications and the protection of personal data. Though the present study does not treat these questions, it could be said, epigrammatically, that the guarantee of these rights calls again for state action in the telecommunications sector.

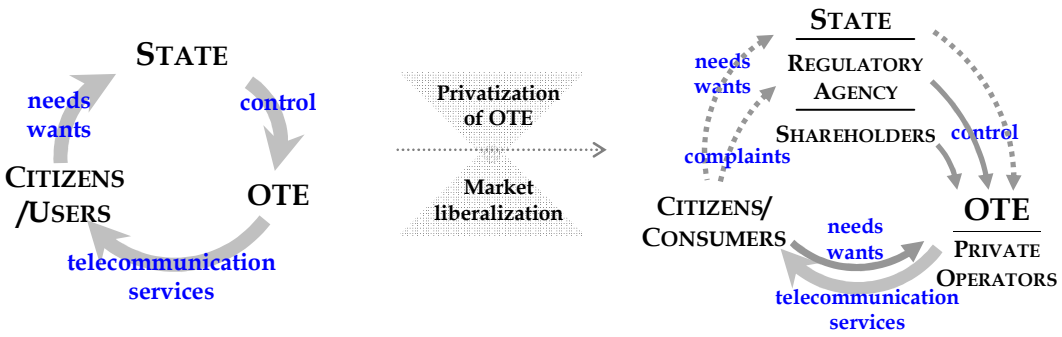
The transformation of the triangular relation

The gradual diminishment of state's share in OTE along with the restraint competition rules apparently detaches the state from the direct control of privatized corporations. Briefly, privatization and liberalization affects three main aspects: the management (henceforth chosen by the General Assembly of the stakeholders), the state subsidization terms (exceptionally allowed for the cost of the US) and the public control of both market and the firm (accountability). The scope for public intervention is quite restricted and the role of the state gradually diminishes. Parliamentary procedures and government-ministerial control within the context of "political enterprises" is not a feature compatible with open markets and private enterprise requirements. Besides, the Greek state can no longer directly intervene in OTE's decisions, as the latter is primarily accountable to its shareholders. It seems that politicization gives its place to a "*managerialization*" logic (Spanou 2003: 59-60). Regulatory agencies constitute a new pole of the triangular relation, to which the state has delegated a great range of regulatory functions. The state-mediating aspect of citizens/consumers – OTE relation grow weaker and more ambiguous.

[57] For instance the program OTE-choices (ΟΤΕΠΙΛΟΓΕΣ), OTE student pack, OTE pensioners +65 pack, OTE for business, CATEXOCHIN (Holidays line plan), OTE all in one, *etc.*
[58] See Directive 2002/22/EC (47-48).
[59] *See* next section. See also the analysis of Bouquillion (2001) with reference to the Universal Service.
[60] Directives 2002/21/EC, 2002/22/EC, ministerial act 255/83/2002 and 44035/1626/2007 (Universal Service), law 3431/2006.
[61] Ministerial act 488/82/2008 (Deontology Code)
[62] It must be noted that the general context of the telecommunications' contracts is defined by law (*see* art.56, law 3431/2006).

The structural features of the relation correspond to a more horizontal (*i.e.* less hierarchic) scheme, potentially closer to the "*policy networks*" example (Powell 1990 ; Thatcher 1995 ; Smith 1997). The state is one (still the more significant) actor among others while regulatory agencies partly fill the mediatory gap between the two parts (*see Scheme below*). This shift however implies significant qualitative changes in terms of political communication and raise questions of legitimacy, accountability and regulators' independence (Majone 1996, 1999, 2005 ; Thatcher and Sweet 2002). The vanishing intensity of the traditional political bonds is therefore quite evident.

A (simplified) model of the transformation of the triangular relation



However, it has been argued that privatization mostly alters (than diminishes) the scope and the way by which governments intervene in the economic field (Vickers and Wright 1989: 26-28 ; Lymberaki 1994a: 101-102). Diachronically developed and consolidated (official and unofficial) coalitions can be proved major obstacles for the reformers. A neo-institutional perspective[63] could further illuminate and explain that hypothesis, but inevitably surpasses the scope of the present analysis. What is important here is that the state -apparently disengaged from the control of OTE- as well as other institutional factors can unofficially influence the management. The apparent retreat of the state thus does not necessarily correspond to an abolition of government control (Spanou 2008: 157). It is however rather ambiguous if and how citizens can raise any claims for democratic accountability for that action[64]. There the role of the regulators is decisive in order to prevail the "implantation" of the distortions of the public regime to the new environment.

On the other hand, the weakening of the political bonds occurs in parallel with the strengthening of the direct relations between the citizens and OTE. In addition to the shift towards a 'customer-centered' approach[65], certain evolutions confirm this proposition. The *Consumers' Charters* (1996) initiate certain obligations for the

[63] Regarding mostly the *path-dependency* effect and the influence of the *Historical Institutionalism* (*see* March & Olsen 1984 ; Hall and Taylor 1996).

[64] An illustrative example of the ad hoc (and of ambiguous legitimacy) government intervention constitute the amendment that the Minister of Finance hasty initiated in view of the growing share of MIG at OTE in order to block the revendication of management rights from MIG (*see* art.11, law 3631/2008). There, "*public interest concerns*" justify the intervention of the Inter-Ministerial Denationalization Committee and the Minister of Finance as well as the prior approval of these organs for a series of important decisions. However, the legitimacy and the compatibility of that rule with the European legislation have been strongly contested.

[65] A central feature of the corporate plans since 1995 (see Annual Reports, Operational Plans, *etc.*).

enterprise and set specific compensation rules in case of noncompliance. For a range of (procedural and essential) issues OTE is thus directly accountable to the subscribers[66]. The shift '*closer to the customer*' is also reflected in the evolution of customers' services structures. The decentralization policy of the company (expansion of the OTEshops network) favors the direct access and the proximity to the customer. A reversal of the introvert function to a more extravert approach is rather evident.

Nevertheless, the transformation of the triangular relation entails further sociopolitical shifts. The emphasis on the individual nature of citizens as consumers apparently challenges the grounds of a more inclusive concept of the citizen (Levine and Fisher 1984 ; Barnes and Prior 1995 ; Chillon 2002 ; Clarke 2004 ; Spanou 2000: 491-513). The focus on the characteristics of the consumer could be interpreted as a broader priorities' displacement from the sphere of collective (public) interest to that of individual profit[67]. Privatization and liberalization logics adopt a rather asymmetrical view concerning the economic and the sociopolitical features of both the state and the citizens. The depoliticization of the corresponding relations implies the detachment of the two spheres and the reevaluation of state functions. In sum, that inner differentiation could correspond to what Le Manse calls the "*resynchronization*" of the social regulation from the economic regulation (2003: 9).

Market regulation and consumer protection

The hypothesis that telecommunications market reform entails certain benefits for the consumers is not a self-evident one. It should be further specified which particular factors lead to the anticipated results and under which preconditions. In fact, the key variable here is not liberalization or privatization *per se*, but the quality of regulation and effective competition (Beesley and Littlechild 1986 ; Yarrow 1986 ; Vickers and Yarrow, 1991 ; Bouquillion 2001 ; Birdsall and Nellis 2003: 1628-1629). Thus, the mechanisms that guarantee the competitive environment have a crucial role to play.

The independent regulatory authorities -in Greece the EETT[68]- are responsible for supervising and regulating the markets in a dual sense: assure the protection of the consumers on the one hand and guarantee the competition and the rights of the enterprises on the other[69]. Concerning the former, regulatory bodies constitute an "*out of court dispute resolution*" mechanism (art. 34, US Directive) that informs consumers about their rights and intervene in case of violation or non-respect. The consumers can submit complaints and express their point of view about the telecommunications

[66] It should be noted that at the moment the legal services of OTE regard that the enterprise as a private firm is not anymore obliged to follow the Charters' rules. In practice however, even when the Charter was typically active, the OTE Charter has included only a small number of cases, mostly of procedural nature. Besides, the terms were unilaterally defined by the enterprise and the compensations were rather symbolic.

[67] The *individualization* and *depoliticization* tendency is also reflected on the evolution of the legislative framework. While at the initial acts the emphasis was on the *public-interest* character of OTE , the recent regulations adopt a more individual targeting ('*customer – oriented'* approach) that converges to a more specialized/individualized conceptualization of the user. Besides, OTE is no longer officially characterized as a *public – interest* enterprise. The social welfare feature does not stand for a salient general orientation but corresponds to specific requirements more or less imposed by the universal service obligations.

[68] The National Regulatory Authority for the Electronic Communications and the Postal Services Markets.

[69] Two missions potentially conflictual in certain cases.

regulatory framework by participating in public consultations that EETT organizes. That possibility apparently implies a more active role for the consumers who can intervene in the decision-making process[70], and make known/communicate their views ("*voice*"). However, neither the view of the consumers nor the propositions of EETT are binding for the supervising Minister, who makes the final decisions.

Furthermore, it should be mentioned that the relations between the regulatory body and the regulated industries are characterized by constant disputes. The sanctions that EETT imposes on the operators are contested by the industries and in many cases are reduced to smaller sums by the Greek Courts. The minimization of the sanctions imposed by the EETT undermines the motives for compliance, while also discredits the role and the sovereignty of the regulatory authority. Concerning particularly the relation between EETT and OTE, the conflict is quite evident. Continuous disputes occur and nourish a state of tension between them[71]. However, one could argue that the above-described situation embodies at least one positive aspect, by reducing the '*capture'* risks (Stigler 1971 ; Wilson 1984). On the other hand, the relation of EETT with the government and the independency of the former constitute another sensitive question. In both cases the apparent tension or "imbalance" inevitably affects the regulatory efficiency in a rather negative way.

Along with the development of the regulatory agencies, other structures for the protection of consumers' rights have emerged[72]. Compared with the prior regime, the multiplication of the mediating bodies widens the frame of consumers' protection, at least in procedural terms[73]. Consumers can lodge their complaints and express their objections at multi-level out of court mechanisms. This possibility potentially implies an amelioration (though susceptible to further preconditions) of "*voice*" options. In any case, the general picture is that the new structures ensure a higher-quality level of protection, contrary to the restricted and less-transparent scheme of central control.

Empirical Documentation

We next test empirically the hypothesis of better response to the needs of the users and evaluate the status of the rights' protection. We employ two main indicators for the period 2000-2007[74]: *users' satisfaction* and *users' protection*. The following evaluations are of course susceptible to the statistical restraints and to the latent risk that entails the quantification of qualitative indicators. In terms of *overall users'*

[70] *See* Universal Service Directive (47), (48).

[71] *See* the official announcements of EETT and OTE. For instance, the high fines that EETT has imposed on OTE in Oct. 2008 (EETT Announcement: 3 Oct 2008) and the response of OTE (Press release: 6 Oct. 2008). The latter refers to a "*quite evident obstinacy of the Regulator towards OTE"*.

[72] The *Protection Committee of the Consumers of Public Enterprises and Organisms* (1994-2007), the *Consumers' Unions* and the *Committees of friendly resolution of consumers' disputes*, the *Greek Ombudsman*, the *Hellenic Consumer's Ombudsman*, the *General Secretary for Consumer Affairs* in the Ministry of Development and a great range of *civil organizations* and NGO's.

[73] Of course, citizens can still address their complaints directly to the service provider (customers' bureaus/complaints offices) and retain their right to proceed to the civil courts in case of dispute.

[74] A more complete comparison would include data for a longer period. However, the luck of homogenous statistical data for the pre – privatization and pre-liberalization period confine the available statistical field. We use data from the Eurobarometers 53/2000, 58/2002, 219/2005, 260/2007. We do not include the 1997 Survey because of the different methodology.

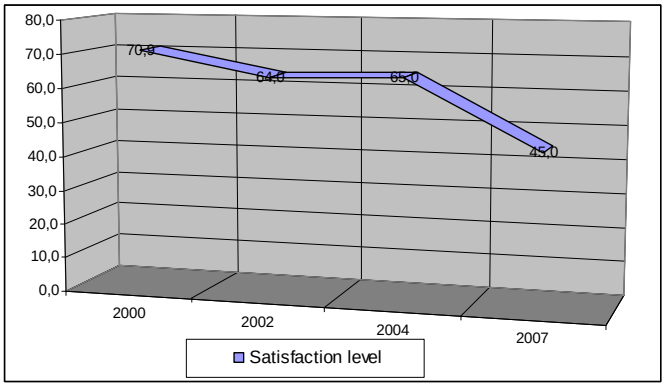
satisfaction[75] we note a constant deterioration concerning the citizens' views on fix telephony services (*see* Table 3 and Diagram below). In a parallel way, there is considerable dissatisfaction that has been proportionally increased.

Fix Telephony Services Satisfaction Level in Greece (2000 – 2007)

Table 3

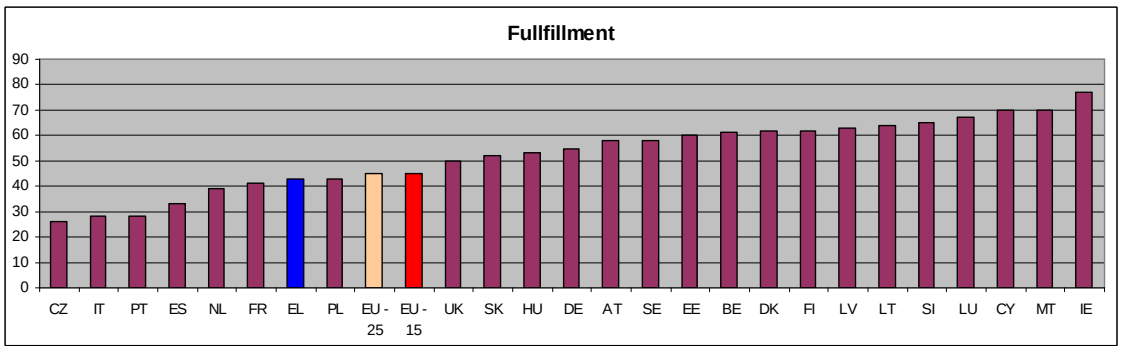
Fix Telephony Services Satisfaction Level in Greece	
2000	70,9%
2002	64,0%
2004	65,0%
2007	45,0%

Source: Eurobarometers 53, 58, 219, 260 I.P.S.O.S. 2007



Taking into account that member-states reform their national telecommunications monopolies in line with the common directions of the E.U. a general comparison can be made in terms of relative efficiency. In a cross – country perspective Greece is apparently below the average satisfaction European level (*see* Table below). The indices thus show a low "responsiveness" degree.

Overall Satisfaction Level E.U.-25 (2007)

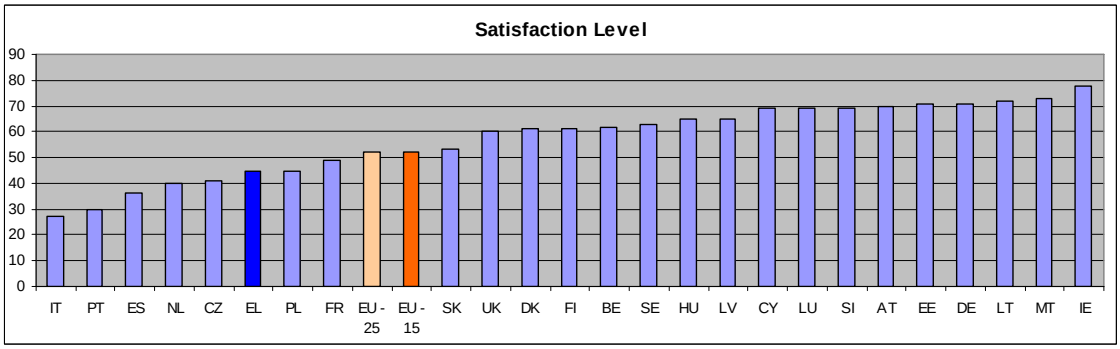


Source: IPSOS-INRA 2007[76]

[75] This includes the synthesis of the following indicators: access, price, quality, information, other contract indicators.

[76] Consumer Satisfaction Survey (final report), May 2007, for the European Commission, Health & Consumer Protection Directorate – General.

Overall Satisfaction Level E.U.-25 (2007)



Source: IPSOS-INRA 2007

From a complementary point of view, a crucial question is what happens when problems occur (*dispute resolution* and *problem settlement procedures*). The 2006-2007 indices[77] depict a rather moderate situation as for whether the complaints were dealt with well or badly (47% and 43% retrospectively). Concerning the context of the complaints, most consumers question the high charges at their bills (over-cost charges)[78]. Further obstacles of procedural nature often complicate the communication terms between the operators and the subscribers[79]. Overall, the empirical findings a low integration degree concerning the anticipated benefit in terms of users' satisfaction and protection.

3. BEYOND CITIZENS/USERS/CONSUMERS: A LOSERS - WINNERS PERSPECTIVE

Whatever the degree of convergence to the initial goals, we cannot deny that the telecommunications sector reform -to some extend- has worked for the benefit of the consumers. However, predicted or unexpected costs are not of minor significance. We cannot thus speak for a clear positive or negative outcome. In this regard, the distribution of gains and losses along with the particular "timing" of the anticipated effects could lead to secondary inequalities concerning the impact of the reform. The concentrated or diffused nature of costs and benefits (Wilson 1973: 331-337) further complicate these assessments. It could also imply a shift in the policy style (Lowi 1964), corresponding to a rather "*distributional*" (instead of "*regulatory*") paradigm (Pagoulatos 2000). Next, we try to assess the impact of the reform on citizens including mainly the direct effect (citizens as users/consumers). We then epigrammatically look at the indirect implications for the society as a whole and as a synthesis of different interest groups (citizens as taxpayers, employees, shareholders, suppliers, *etc*.). The aim is to detect the latent asymmetries in the allocation of the potential benefits, assuming that there is an overall gain.

[77] Eurobaromètre spécial 260 (2007).
[78] *See* the Greek Ombudsman's and the Hellenic Consumer's Ombudsman Annual Reports.
[79] Mostly with reference to the private operators, many subscribers find great difficulty in reaching their providers. The automation of customers' services (luck of personnel, call centers, pre-recorded "*press button*" replies, *etc*.) discredit the quality of communication and constitute a source of constant dissatisfaction.

At a macro-economic level, there have been concerns that privatization may deprive state agents from the self-interest rents but this could result to a simple transfer of that possibility to private interests (Parker 1998: 39-40). Beyond the axiomatically bounded practical value of perfect competition assumptions, actual and potential competition distortions illustrate the latent threats[80]. In theory and in the rhetoric of the reform the free market 'automatization' has been conceived in many cases as a self-evident assumption to the benefit of the consumers. In practice, imperfect competition and the actual oligopolistic scheme confine the validity of this hypothesis. The constant violations of competition rules by OTE and other operators stress the practical difficulties of maintaining a competitive environment. It thus reflects a market not fully benefited from the liberalization.

In cost/benefit allocation terms, regulation or competition distortions could lead to a "*two-tier users/consumers*" situation. In fact, "*cream-skimming*" effects are possible to occur if companies orient their action to the most profitable activities and exclude the non–profitable areas. That could also happen on the basis of big customers and households, to the detriment of the latter. To the degree that the quality of competition defines -in a proportional way- the benefits for the consumers, a poor and unstable competitive function apparently erodes the grounds of consumer's empowerment. In this case, the winners are the private operators and big (more powerful) customers.

A second-degree analysis could reveal further asymmetries concerning the distribution of the potential cost or benefit across different categories of end-users. For instance, the available data in terms of total household spending shows the (positive) direct price effect for both the low and the high-income households. The relative benefit on the income was greater for the former[81]. Differentiated redistribution effects could also arise among different types of services that a single fix-telephone consumer uses. Due to the adjustment of prices to the actual cost (abandon of cross-subsidizing practices), it is expected that the tariffs of long-distance calls will fall, while the charges of local calls will rise[82]. Thus, the impact, in terms of direct cost, is positive (beneficial) for the long-distance callers and negative (non-beneficial) for those who mostly make local calls. Additionally, multiple inner trade–offs at micro level could occur. Better prices are possible to have an inverse effect on the quality of the provided services[83] as well as on the quality of complaints' treatment.

Concerning the indirect impact of the reform, the privatization of a public enterprise implies wealth transfer from the citizens as taxpayers (in large owners of public enterprises) to the new shareholders. The size and the dispersion/concentration degree of the cost or the benefit of the two sides depend on the pricing of the assets ("*sale value*") (Yarrow 1986: 358 ; Beesley and Littlechild 1986: 37 ; Vickers and Yarrow, 1991: 120) and the future use of the raised revenues. Positive fiscal effects could occur via both the productive use of privatization revenues and the resources savings through the elimination of (tax financed) budget transfers to public enterprises (Beesley and

[80] Market concentrations, abuse of monopolistic or dominant position, unfair competition, illegal collusion, *etc*.

[81] E.C. (2007): *Evaluation of the Performance of Network Industries providing SGIE*, 2006 Report, Annexes: 40 – 41.

[82] *See* the E.C. *Evaluations of the Performance of Network Industries providing SGIE* (2004-2006). *See also* Birdsall and Nellis, 2003: 1623.

[83] *See* EC (2001), Annex to the report on the functioning of product and capital markets: *Market performance of network industries providing services of general interest: a first horizontal assessment*, Working document by the services of Commissioners Bolkestein and Solbes, Brussels, 7/12/2001, p.16.

Littlechild 1986: 38 – 39 ; Birdsall and Nellis 2003: 1626-1627). The inverse case apparently gives opposite results (dispersed cost for the citizens as taxpayers). In addition, during the initial phase of privatization, consulting/advisory firms, underwriters and "clever" market actors could draw significant short-term benefits under the particular circumstances (Yarrow 1986: 361-362 ; Papoulias 1991: 58).

Secondly, the citizens as employees (or potential employees) of the privatized enterprises are usually placed on the losers' side (Beesley and Littlechild 1986: 39 ; Lymberaki 1994b). Privatization changes the nature of the working relations according to the private model and eliminates certain privileges of the public sector labour relations. However, in the case of OTE that hypothesis is partially valid, as the 'old' employees have been benefited certain generous motives in order to smoothen their opposition to the privatization project ("*voluntary exit*" scheme). On the contrary, the new employees are submitted to a less privileged regime.

Apparently, an exhausting enumeration of the cases and the potential redistribution of cost and benefits is out of the scope and the aim of this study. Conjuncture has also a role to play. A complementary view reveals two related aspects: the *timing* and the *capacity* of consumers to drain the eventual benefit. As for the latter, it is not always evident that all consumers are equally qualified to get information, to evaluate the alternative options and to make the "rational" choice (Barnes and Prior 1995). The difficulty is higher in complex technology-based markets[84]. In this case, a crucial question is whether there is a guarantee for those who are not able to make the right choice and to benefit from the competitive market. This remark evokes also a wider concern about the way that the question of 'vulnerable customers[85]' is being infiltrated through the market mechanism. Secondly, regarding the *time* factor, it is expected that the effects of liberalization appear earlier for the incumbent firms and the employees, while the consumers reap the benefits in the short - middle term[86]. In the interim, eventual (relative) losses could occur for citizens as consumers.

As a final point, an apparently thorny –and not at all theoretical- issue is the ambiguous interplay between the logic of the market and that of the state action. Public and private sector serve *par excellence* contradictory goals and correspond to different accountability criteria[87]. The market shift could imply that the citizens are more benefited as consumers than as members of a socio-political community. The early concern of E.U. policies to ensure a balance between the market efficiency and general interest objectives[88] underline the potential asymmetry (Bauby 2002 ; Baumstark 2002 ; Chillon 2002). The motives of public and private action lead additionally to a quasi-paradox remark. While state action theoretically incorporates public interest concerns,

[84] It is worth mentioning however that the Greeks find the evaluation of the different offers an easy task, in comparison with the other members of the E.U. (*see* Eurobaromètre spécial 260, 2007).

[85] In a wider sense than that of '*disabled users and users with special needs*', defined within the framework of the Universal Service Directive or '*targeted social groups*' for which the Greek legislation provides special tariffs.

[86] See E.C. (2007): *Evaluation of the Performance of Network Industries providing SGIE*, 2006 Report, Annexes: 12.

[87] With reference to the notions of public service/public interest and the principals of the competitive market we trace the elements of two distinct logics reflecting partially different perceptions for the pursued ends as well as for the organizational structure of utilities (public monopoly – open market) (Chevallier, 2000: 25 – 26 ; 2005: 42, 123 ; Bouquillion 2001 ; Chillon 2002).

[88] *See* for instance: Commission of the European Communities (1996), *Communication from the Commission*, Services of General Interest in Europe, Brussels, 11.9.1996, p.5-6.

for the private agencies the eventual benefit for the consumer does not constitute a conscious objective by itself but a rather indirect effect of the market forces. The firm thus seeks to meet the needs of the users under the competitive pressures and not because the mission of 'serving the public' is a prerequisite of or stands for a concrete operational goal. Of course, one could argue that what is important finally is the result and not the procedural aspects of the eventual positive or negative effect. However, the former cannot be utterly dissociated from the mechanisms that generate the corresponding outcomes, implying different conceptualizations of the benefit.

CONCLUSION

This paper has attempted to make a first assessment of the telecommunications sector reform in Greece. Privatization and liberalization programs have been analyzed from a citizens/consumers' perspective, aiming to measure the eventual beneficial effects. The findings correspond to both positive and negative policy outcomes. A general remark is that the benefit for the citizens as consumers is oriented towards a more individualized approach in line with the micro-level criteria of an economic actor. An axiological shift concerning *public interest* conceptualizations is also evident. A second reading of the facts that took place revealed further asymmetries and multi-level differentiations in terms of cost/benefit allocation. Concerning the relative significance of the two variables (privatization of ownership and market liberalization), the key factor seems to be the competitive function and the role of regulation and not so the property status of the operator.

In any case, OTE no longer constitutes a public enterprise and the Greek telecommunications monopoly has been replaced by a dynamic open market in constant evolution. The public/private dichotomy thus does not correspond to a realistic argument. The theoretical schemes of "*user*" and "*consumer*" have also shown their limits as analytical tools. Given the failure of the state-owned monopolies, mixed and more complicated policy models seem to be henceforth the case. However, the quasi-contradictory logic of public and private interest creates multiple policy trade-offs and calls for new regulatory re-arrangements and consensus.

In the present transitional period, attention must be paid in order to avoid market distortions. With reference to Héritier's categorization (2001) this could correspond to a better balance between the "*market-making policy*" (*negative integration*) and the "*market-correcting policy*" (*positive integration*). Unregulated market mechanisms could lead to a new and even worse marginalization of the consumers. In this case the reform would imply nothing more than a simple transformation of the state – driven "*user's occupation*" to a market – driven "*consumer's manipulation*". This risk is not hypothetical. As it has been shown, the empowerment of the consumer is not a self-evident feature of the free market. While progress has been made, there is still much to do in order to reach the full benefits of the reform. In any case, both the state and the regulators have a key-role to play.

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