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The Infrastructures in Greece

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ABSTRACT/SUMMARY

This article deals with the development of infrastructure in Greece with special reference to the construction industry and the transport projects. The post liberation period of the modern Greek state is divided into 6 main periods, from 1832 until today. For each period, there is a brief account of the main infrastructure projects and their socio-economic context. It is argued that the development of the Greek economy was infrastructure biased as construction projects and the corresponding economic activity have for most periods been the stimulant of the economy. Especially the last 15 years during which Greece is heavily subsidized by EU, the Mega Transport Projects have marked the development of the country. The planning and administrative regime of major construction projects and MTPs has always been very centralized, dominated by a few key ministries (mainly MoEPPPW and MoEF) with negligible stakeholders' participation in planning. During the EU phase MTPs are decided in conjunction with the European Commission.

The whole of post WWII development in Greece was attempted to take place under the light of ten development plans that did not manage to become fully functional until the Community Support Frameworks came into the picture. The European Union triggered changes in legislation, institutional capacity, and assisted the introduction of PPPs and concession contracts which have started being the dominant practice for the development of road MTPs. The relevant legislative and institutional changes which are discussed in the article reflect the transition in the governance of MTPs especially for the period from the late eighties until now.

Two of today's major challenges are the environmental protection, and the pluralistic planning and more importantly the way that they could more effectively enter the prioritization, appraisal and evaluation agenda. Yet, a major challenge is the choice whether the country should insist in developing along the lines of infrastructure construction.

1. INTRODUCTION

Mega Transport Projects (MTPs) are part of construction infrastructure which comprises a significant part of modern economies. As MTPs comprise part of the country's infrastructure, especially in this later period, it is very suggestive to consider them in the context of the general infrastructure development. In addition, it is rational to agree that the concept of MTPs that changes across time. A small railway line in the 19th century (the today's equivalent of an extension of a single line) was a mega project for that time. Today, mega projects are of a much larger scale.

Infrastructure, in general, is a major part of fixed capital crystallised in tangible assets forming the material base of the general conditions of production and of the reproduction of the labour force.

The special gravity of construction infrastructure varies across countries, and depends a) upon the previous investment layers in the field and b) upon the model of development, meaning the mix of the various "ingredients" within the pursued accumulation regime, reflecting political and economic choices.

Infrastructure investment is a channel of capital valorisation that has the characteristics of artery function, of large lump sum investments, of irreversibility of investment, long gestation periods, and of benefits returning to the community. In this sense, infrastructure is critical as it: a) sets the base of production functions, and b) acts as a regulator of which expenditure should be directed to the production of consumption articles or to production of means of production and which to be invested on a longer term basis so as to withdraw this source from the process of immediate valorisation, and to programme it for a longer term valorisation. In this way the economy can be regulated by increasing or decreasing infrastructure investment. So infrastructure investment is a programming factor because: a) it is long term (lasting), and b) it concerns society as a whole, and not only particular factions of capital. Given this, MTPs, in their capacity as big infrastructure projects, become a major policy tool. As they embed a large amount of social capital for a long period of time and at the same time serve important social needs (something which may be questionable) planning for MTPs and big infrastructure projects becomes a social issue for which society as a whole is rational to decide rather than fragmented private interests.

Important to modern infrastructure is the degree to which modern technology, especially digital, is embedded within infrastructure construction (and operation), modern management, funding methods, etc.

This paper focuses on the development of infrastructure in Greece and raises some questions for the dilemmas the country faces today, based on the historical background of its infrastructure development.

2. THE PERIODS

Historical periods can be perceived in many ways. For instance, the statistical bureaus of most countries use decades following their census. A number of analysts use clear political periods, according to government changes. In this section we propose a periodisation according to broader periods related both to political change and changes in the priorities of the country that reflect the transformations of the accumulation regime, thus combining **principal political and economic eras** affecting the planning, funding and delivery of construction infrastructure and consequently MTPs.

2.1. From the 19th century to the 2nd WW

The first wave of infrastructure development in Greece took place under the Trikoupis government during the late part of the 19th century.

According to Tsokopoulos (1999), the major construction works in the end of the 19th century and in the beginning of the 20th, comprise railways and road works, the construction of the Corinth canal, electrification, the water system of Athens, Construction (rearrangement) of the Port of Piraeus, and the reconstruction of Thessaloniki (after the 1917 fire). Haikalis et al (2002) add the exsiccation of the Kopais Lake, and the construction of important buildings. This first wave of infrastructure works the so-called Trikoupis projects establishes the pre-conditions for the industrial spring of the mid-war period that was swiftly interrupted by the later developments (Minor Asia and 2nd World War).

This wave of infrastructure projects had as its background the establishment of the modern Greek state both structurally and spatially, as between 1832 and WWII Greece almost doubled in territorial terms despite the defeat in the Minor Asia expedition (1922). This first period was marked by an unaccomplished effort for primary accumulation (after the liberation of the country in 1832) and some efforts for industrialization. From 1880 onwards the state was financed by 7 international loans of 640 million golden francs while significant diaspora commercial and financial capital moved into Greece (A.Moschonas 1986:47-8). The Trikoupis projects, especially the railways programme, expressed the efforts to build a modern and cohesive state. They were the basis for an early industrialization that impressively increased, especially in the inter-war period until WWII, despite the almost constant war situation in which the country was (Greek-Turkish war of 1897, two Balkan wars, First WW, Minor Asia expedition). For the early part of the twentieth century, Kafkoulas and Vitopoulou (2002) note that exemplary projects of the period from the first world war until the Metaxas Dictatorship (1936-1940) such as the reconstruction of Thessaloniki and other Northern Greece cities (mid thirties) had been planned and carried out by the Ministry of Communications (which was responsible for planning and public works). They add that the well staffed ministry had developed confidence in planning knowledge and tools which did not completely vanish after the extreme political conservatism that overrun the country after 1945. Yet, in terms of major transport projects no mega projects were planned during the first half of the twentieth century after the Trikoupis wave.

2.2. The Period of Intensive Rehabilitation (1948-1962)

Between 1945 (or 1948: end of civil war) and 1962 the main infrastructure projects were those related to the rehabilitation of the country after the 2nd WW and the civil war that followed. It has to be noted that Greece suffered most from the German occupation (1941-1945), and its entire infrastructure was practically destroyed. So besides the development challenges that most countries had to face, Greece had to deal with the particular problems that had been created by the Nazis. It will suffice to say that the destroyed buildings in the whole of the country accounted for 23.3% of the entire building stock (Haikalis et al, 2002: 51). One of the most characteristic problems was the pressing need to clear the Corinth canal from the remainders of the blown rail bridge and even from train coaches deliberately thrown into the canal by the Nazis during their retreat. The effort for rehabilitation included the road and rail networks (including a new generation of bridges). The whole enterprise was supported by Marshall Plan and by AMAG (American Aid to Greece). Other important projects of this period were the resurfacing of the road network, the construction or reconstruction of ports, the irrigation works of Athens and Thessaloniki, the construction of hydroelectric dams, further electrification, the telephone network, as well as important defence works. Especially the construction of the large hydroelectric dams, the planning and construction of which gradually passed on to Greek hands became crucial for the development of the country and of the construction sector.

Via the Truman doctrine and the Marshall plan, the Greek state received around \$3 bill. from 1946 (and at least until 1953) in the form of aid or loans, of which half was allocated to military purposes, particularly civil-war expenses, and the other half to the very basic projects in the context of reconstruction. These were agricultural and urban infrastructure

(including housing), the support of parts of capital, mainly ship owning but also a few manufacturing industries, the financing of the petty bourgeois strata, and power production for the slowly emerging re-industrialisation (BoG, 1978:354; A.Moschonas, 1986: 50-1; C.A.Munkman, 1958; J.Milios, 1988: 326). (P.Skayannis, 1990: 165).

From 1953 the projects continued under a dynamic programme of the Ministry of Public Works, while by virtue of the programme many local contractors, often lacking capital themselves, were also set up in business (C.A.Munkman, 1958: 193-201). (P.Skayannis, 1990: 165).

The post war infrastructure wave, the rehabilitation of the country, lasted until 1962, and marked the rise of a new branch of Greek economy the one of construction capital.

The early post war choice made in favour of industrial development (see the Zolotas-Varvaressos debate and the positions of Batsis) could not materialise under the objective reality and, as a development choice, was practically substituted for infrastructure development. There has not been any other EEC-15 country that has invested during the post war period as much as Greece in construction infrastructure per capita, as opposed to “machinery and equipment” which is one of the indicators for investment in manufacturing industry.

Industrialisation became the aim, while migration and foreign capital inflow became the nodal points of this strategy at the economic level. Yet, the only capital capable of creating an inflow of investments to boost industrialisation at the time was US capital, which had established close relations with the hegemonic part of the bourgeoisie, specifically the diaspora financial and ship owning capital. However, the efforts to attract foreign investments in manufacture, despite the favourable measures, were not particularly successful, since foreign capital (except US) could not invest in the country, it itself needing a reconstruction period after the war. The lack of managerial ability, local capital shortages, lack of appropriate infrastructure, and lack of planning aggravated the situation.

Despite efforts and the goal of monetary stabilisation that was achieved after the devaluation of the drachma in April 1953, Greece until about 1962 remained mainly one of exporter of agricultural goods and mining products and importer of finished goods (in spite of the efforts to follow an import substitution policy with various protectionist measures). Industrial production was based on food and textiles, the only able to start operation in the manufacturing sector that was dominated by small-scale establishments targeting a small internal market. Thus Greece occupied one of the peripheral positions in the old international division of labour. In addition, low wages (remaining at low levels for a long period), in the context of wage relation expansion in association with low capital intensity, point to the fact that the accumulation regime must have been predominantly extensive.

It is very indicative that four economic plans were made and none of them worked, as the real economy had taken its own track.

In this context, and given the aforementioned pressing needs of the country, in relation with the devastation of the agricultural areas by migration (predominantly to Australia and Germany) and the beginning of a rampant urbanisation the need for urban infrastructures became intense, over and above the war rehabilitation requirements. According to Group Ergasia, it was in this framework that ‘land’ was discovered as an asset which the foreigners could not produce and as a source of income without the risks of international competition (Group Ergasia, 1975: 13-20). So, two construction fractions emerged: the one of housing to cover the vast new needs and the one of contractors (often being small and lacking the means) to undertake public works, as the vicious circle of urbanisation started to feed infrastructure.

The construction activity was conducted via centrally controlled projects and combined many aims at the same time. For example, to provide physical access to most parts of the country for reconstruction, defence and political image reasons, given the US interests for Greece's strategic position. So the determinant four actors of the economy at the time, namely the US

and foreign capital, the diaspora capital, the local newly emerging entrepreneurial strata, and the state, opted for investments in the area of infrastructure and the General Condition of Production (GCP), each for its own individual reasons and in alliance with each other.

In this sense, the new post civil-war regime of accumulation can be typified as a) belonging in the old division of labour in a peripheral position, b) extensive, c) infrastructure biased. The corresponding infrastructure of this particular stage was one of extensive provision of the very basic infrastructures and GCP creation, and served as a necessary precondition for the next stage when industrial production took off.

In this context of infrastructure prioritization for a variety of needs in a devastated country there was no space for a limited number of mega projects. Instead a number of major projects took place. As far as transport is concerned, road building was the main issue serving the emerging market and the socio-spatial integration of the country.

2.3. The Period of Intensive Accumulation (1962-1973)¹

The preconditions established during the preceding period were quite favourable for the course of capital accumulation during 1962-1973. This period was crucial for the post war economic development, since it was marked by a transformation of the economy towards industrialisation in a context of high rates of growth and rampant urbanisation. It is indicative that GDP increased at 6.5% annually during this period (at constant 1970 factor prices) while in 1974 for the first time it became negative (-1.8%). (P.Skayannis, 1990: 172)

During the first part of this period public infrastructure kept its pace (completion of various works) but did not really increase its magnitudes. The demand of housing increased rapidly. Thus, the growth (between 1961-71) of the main urban areas of Athens and Thessaloniki was 37.1% and 46.4% respectively, the largest in the post-war era (ibid: 177). The most significant infrastructure projects were important road works (such as the Athens-Thessaloniki National Road) and land reclamation projects including drainage and flood preventing works were constructed, as well as the National Airport of Athens, and several power stations (including hydroelectric dams). In a few occasions the Greek construction companies collaborated with non Greek western companies.

During the second part of this period, the economy seems to have utilised its already built infrastructure. A substantial part of construction was sustained by the building of huge hotels (D.Benas, 1976: 293).

Group Ergasia identifies the technological change that generated industrial activity peripheral to construction, and points out the rapid development in several branches: the cement industry, for instance, which in 1971 placed Greece as the third cement exporter and fifth in per capita cement consumption in Europe, the boost of ceramic, aluminium, wood, and steel for concrete industries. They also point out that the circuit 'cement-technical companies', also doing business abroad, tended to be complemented by the ship-owners. They emphasise that the interference of foreign companies was very low in these fields. They thus argue that construction comprised the basis for the development of the majority of the branches, on top of those directly related to it (Group Ergasia, 1975: 24-8).

Evidently, there has been a process of transformation from a small scale craft-like production to a more organised, large scale and industrial-like one. It seems that there was a strong concentration of capital in this area. Group Ergasia, Benas, and Tarpagos (1985) point out the emergence of the large companies and their merging with other forms of capital (finance, etc). Typical was the example of EDOK-ETER: it owned 15 companies including prefabrication factories (PRODOMI) in the Athens area, in Patras and Thessaloniki, a factory for asbestos-pipes (VIPROSOL), one for asbestos-cement (AMIANDIT), one for pipes (VIMET). It also

¹ This period covers two sub-periods: a) the sub-period from and 1962 until the *coup d' etat* of April 1967 and b) the sub-period of the dictatorship (1967-1973). These two sub-periods have a lot in common but also some different characteristics. It is not infrequent in literature that these sub-periods are dealt with as one.

owned the foundation company HELLINIKI ETAIRIA THEMELIOSEON, the GEOEREUNA (for soil research), the HYDROEREUNA (for water research), the AFRIKANOHELLINIKI TECHNIKI, the tourist company ELETE, the commercial THALASSIOS IERAX and units for the production of several kinds of railway equipment. Most interestingly, ship-owners figured among the shareholders of the company (Group Ergasia, 1975: 22-3; D.Benas, 1976: 296)².

As a result, and despite its powerful presence in most parts of the economy, foreign capital did not manage to decisively control the 'technical companies'. In 1972, it controlled only 0.7% of the technical firms' total assets. This was lower than that of any other branch of the tertiary and secondary sector, excluding printing and publishing where it was 0.5% (A.Giannitsis, 1978: 200). It provides evidence for the importance of the local construction capital in that period. This capital progressively tended to be centralised: in 1972, there were 624 companies. Six of them together with their satellites had 29% of the sector's working capital (D.Benas, 1976: 297), while between 1967-1973 when the sum of profits of all companies reached 6 bill.drs., five of them alone³ accounted for 3.3 bill.drs. (TEE Bulletin, No 838:20, cited in D.Benas, 1976: 297).

This centralisation is pointed out by Tarpagos who correctly argues that an oligopolistic nucleus was formed in the construction activity, which, by the end of the period, reached its limits in the domestic market and pursued an 'imperialist' expansion abroad (A.Tarpagos, 1985: 105).

The rise of the construction industry during the first part of this period was coupled with changes in the economy.

The accumulation regime, as far as manufacturing industry is concerned, was increasingly based on the establishment of fairly large scale capital and intermediate goods industries, especially chemicals, which had strong ties or were actually controlled by foreign western capital, not only in terms of ownership but also in terms of technology. In addition, they gained good chances in the international market. Local capital did not undertake large manufacturing investments "despite the generous tax relieves and the large volume of infrastructural projects that the state accomplished to facilitate them" (D.Carageorgas, 1978: 19). Instead, foreign and Greek cosmopolitan capital considerably grasped the opportunity to invest.

Exports increased and diversified, while the manufactured goods gained ground. Overall, there was an export oriented policy (with a continuous increase of share of industrial goods) in an open economy context, which however towards the end of the period during the dictatorship resulted in an 'import biased growth' when despite the initial export boom, a drift towards imports eventually predominated to the extent that by the end of this sub-period imports had almost quadrupled (D.Carageorgas, 1978: 22).

The development rested on the increase of labour productivity, coupled by an increase of the investment share and the net investment per employee. Despite high efficiency of capital and capital intensification of the economy, wages did not follow productivity increases. From 1963 to 1967 the political conjuncture favoured an increase of the wage share from 27% to 33% (proportion of wage increase over Net Domestic Product increase). During the dictatorship

² HELLINIKI TECHNIKI (HT) made agreements for joint ventures with the Panamerican's subsidiary Intercontinental Hotels Corporation and Hyatt International Corporation (tourism). Two of (HT) subsidiaries were also in close co-operation with Italian and Danish capital (D.Benas, 1976:295).

³ These were the joint EDOK-ETER, and SKAPANEYS, ODON KAI ODOSTROMATON, HELLINIKI TECHNIKI (TEE Bulletin, No 838:20, cited in D.Benas, 1976:297). The six mentioned before were: EDOK-ETER, SKAPANEYS, HELLINIKI TECHNIKI, ETETH, ERGOLIPTIKI, XEKTE which according to Benas had strong technological, royalties, and financial relations with foreign companies, while borrowing large sums of money capital from US banks (D.Benas, 1976:294-6).

this figure remained fixed at 33%. Towards the end of the period, these indices tend to decline (J.Milios, 1988: 345-7; 371).

Yet, despite the low wage share, the link between accumulation and consumption materialised mainly because of the injection of foreign exchange into the economy via invisible payments (remittances, tourism, and shipping).

At the public finance level, there was an attempt to apply a restricted version of Keynesianism via public spending in conjunction with the need to complete territorial integration that would effectively lead to market and economic integration. This made construction and other public works play a prominent role. In Greece it may be that the most unifying social element of the construction activity (including housing sustained by rampant urbanization) is its role as a stimulant of the economy, partly because of the backward linkages and partly because of the rest of the effects that generate a 'virtuous' cycle.

During the last years (1973-1974) the policies of the dictatorship led to galloping inflation together with private investment stagnation. Populist consumption oriented spending policies expanded causing an increase in demand which could not be met by domestically produced goods. A sharp rise in imports followed. The necessary economic and production restructuring was irreversibly cancelled, while the public works doubled (though spread over a multitude of small projects), credit limitations for dwellings were abolished so investments in housing rose by 115% between 1967-1972, and the financing of tourism multiplied by six times (D.Carageorgas, 1978: 22; cf. A.Cannelopoulos, 1978; BoG, 1978). The economic situation deteriorated when in 1973 the government, as it also did in 1971, insisted on maintaining the equivalence of the drachma to the US dollar, when the latter was devaluated for the second time (BoG, 1978: 648-55). Galloping inflation, an increase in borrowing, and a drop in production were the consequences of the dictatorships policies, especially of its second phase (1973). Investment abstention and stagnation, hoarding, and a further drop of real wages resulted from a crude anti-inflationary policy which virtually consisted in freezing the economy. Greece was led into an early de-industrialisation (D.Charalambis, 1985: 295-314).

During this period, intensive production of regulatory plans for many Greek cities and tourist development areas took place. As cities had begun to suffocate due to the massive urbanization waves, these plans came as an expression of consensus about their futures (K.Kafkoulas and A.Vitiopoulou, 2002). As Kafkoulas and Vitiopoulou (2002) note, Doxiadis' influence in the government had played a crucial role to this. However, these plans just initiated a long period in the Greek planning history where the production of a plan did not stem from the determination to implement it (K.Kafkoulas and A.Vitiopoulou, 2002).

It was during the first part of this period that the developmental necessities led to the construction of a mega transport project of the period, the "National Road" linking the major cities of Patras, Athens, and Thessaloniki, extended to Evzonoi (northern borders). This link actually materialized the renowned S shape of the Greek development axis. Yet at the same time, the optimism of the private car (and all related interests) signalled the termination of urban tramways in Athens and the first visualisation of the Athens metro (Smith study).

The National highways along with some technically advanced bridges constituted the major transport projects of this period. These projects had not been the result of comprehensive planning methods and procedures. Serious cost overruns and delays were taking place due to inadequate studies which in many occasions were not taking into account the full range of relevant technical and financial risks. There are cases where the needed additional and supplementary works were not anticipated in the studies, geological studies were not prepared, the expropriations were not finalized (and proved to be very time consuming and expensive for the state) and also cases where lack of adequate financing halted the progress of the project (S.Haikalis et al. 2002: 84). The attempt of developing Egnatia motorway in 1971

illustrates the transition of the Intensive Accumulation period to the period of crisis. In 1971 the dictatorship, in an effort to overcome the climate of international economic isolation, signed a contract of \$150 million with the US company MAC DONALD for the study, financing and project management of Egnatia motorway. According to the contract, the contribution of the US company would be \$105 million (the state contributed the remaining \$45 million deriving from a state bond issue) and the construction would be done by Greek companies. After some substantial segments of the road were tendered, the US company decided to exit the contract. A Greek consortium of 12 companies undertook the study and construction of the project and the released \$45 million are transferred to them. The consortium invested significant amounts to mechanical equipment in order to cope with the technical difficulties of the project but the democratic government after 1974 decided to halt the project and direct funding mainly for defence projects. Some of the contractors faced severe financial problems due to the investments that had already done and other focused their activity to Middle East and Africa in order to be viable and keep their activity in Greece (S.Haikalis et al. 2002: 84).

The legal, political and institutional context together with the urgency of infrastructure upgrade did not leave space for the involvement of stakeholders in the decision making. There are signs that decision-making was strictly taking place at high levels of government under non-transparent procedures especially during the dictatorship. The Greek socio-political context of this era (and later as well) is underpinned by a quite unease and the same time distanced relationship between the State and citizens. Politicians together with some high-level public servants have played the most decisive role in the planning of major projects. Moreover, environmental concerns were not high rated in the agenda, if not missing at all.

2.4. The Period of Crisis and After (1974-1981)

The new ruling era of the Right started when the political crisis obliged the junta to transfer the government to the responsibility of the parliamentary democracy in the context of which a new mode of social regulation was established, the most liberal since the civil-war.

Obviously, the economy since the 1974 recession was facing serious difficulties because of the unfavourable international situation (1973 oil crisis) which followed the dictatorship's catastrophic policies, and the increased defence expenses due to the later Cyprus crisis (1974). The crisis which Greek capitalism faced resulted in a drastic restructuring of the production structure of the country. The restructuring was characterised by a significant change of balance between the two production departments. It was paralleled by the strengthening of the military industrial complex⁴ and with a decisive switch of Greek construction capital to overseas activities.

The emergence of huge cement companies, like 'AGET HERACLES', besides being indicative of the concentration tendencies of Greek capitalism and the merges of various forms of capital (T.Tassopoulos, 1979), is also typical of the growth of the construction related industry. According to Tassopoulos, by 1979, 'AGET HERACLES' had expanded into various related activities: it bought 60% of the shares of 'AEGIS S.A.', it founded the 'SHIPPING COMPANY HERACLES S.A.' with a capacity of 10 ships of 14 th. tons, controlled 'SKYRODEMA S.A.' (Concrete), 'LAVA', 'ASTIR BETON', held the package of shares of another eight companies, and participated in various others (T.Tassopoulos, 1979: 150)⁵.

⁴ The second reaction to the crisis was the rapid increases in defence expenditure: after this period the investments in the war industry kept increasing and this industry (by now public) has become one of the most important in Greece, being also the main vehicle for the introduction of high technology in the country (see J.Milios, 1988:350).

⁵ Recent information from the company itself shows a capacity of almost 4,000 employees. Despite the unfavourable international situation, the company recovered in terms of its international markets and penetrated new ones, including the US, Italy, UK, Portugal, etc. It now owns about 20 subsidiary companies and comprises a group.

As a result, during this period, due to a) the reduced public investments which previously sustained construction, b) the reduced urbanisation rates which previously sustained the excessive investments in housing, c) the over accumulation in the broader construction sector in the previous period, and d) the reduction of the opportunities for investment in manufacturing industry, there was a considerable expansion in the private sector's construction activity abroad. This was one of the major responses of the Greek local and cosmopolitan capital, especially the infrastructure geared one, to the (post crisis) worsening conditions of accumulation within the country. Koutsoyannis argues for the case of the internal crisis of the seventies, as releasing potential that was invested abroad (P.Koutsoyannis, 1984: 134). According to another view, the period was one of the maturity process of Greek international construction firms, the expansion of which bore 'imperialist' characteristics and took the form of capital exports to almost 15 countries. It was a natural consequence of the super growth and monopolistic situation within the country (A.Tarpagos, 1985: 108) in combination with the reluctance of the government to channel funds into major transport infrastructure projects as seen in the aforementioned case of Egnatia motorway.

Whichever the case, there were more than 70 fairly large Greek companies engaged in design and execution of construction operating in the Middle East and North Africa, mainly Saudi Arabia and Libya (P.Koutsoyannis, 1984: 136). These companies varied from large design institutions such as the Doxiades Centre of Ecistics in Athens, private design offices for all scales of design (from regional to town and buildings design), to big construction companies like EDOK-ETER and HELLINIKI TECHNIKI. This last category in particular was considerably integrated with financial, industrial, and ship owning capital and was highly concentrated. From the 70 companies operating within a legal framework on which data is available, 15 were very large. These, up to 1984, had business of more than \$2 bill., i.e. 92% of the total business of all the 70 companies (P.Koutsoyannis, 1984: 135). The budget of some companies was virtually multiple to the budget of the Public Investment Programme of the Greek State (A.Tarpagos, 1985: 108-11). Latsis, for example, one of the most important ship-owners, also owned a shipyard, the petrol company PETROLA, and was engaged in construction activities in the Middle East. A similar profile applied to EDOK-ETER. HELLINIKI TECHNIKI also followed the same pattern.

The migration of the construction companies took place in a context whereby, as a response to the oil crisis there was a gradual slowdown in manufacture (especially basic metallurgy and shipbuilding) accompanied by a switch to the traditional branches of dept.II (including building materials), and by an increase in the relative weight of the small scale units. This degraded the position of Greece in the international division of labour (see G.Kafkalas, 1984: 73). Profits and capital productivity declined and paved the way for the crisis of the eighties. In spite of this, during 1974-1980 there was a further export growth, particularly directed to the Arab world. Primary product imports increased their share further, while imports of manufactured goods dropped.

Though the share of wages (increase over the increase of NDP) climbed to 41% in 1979, due to the austerity policy of the Right dropped again to 38% during 1979-81 (J.Milios, 1988: 345-6). Overall, however, the purchasing power of the wage earning class was strengthened⁶.

This period was characterised by a continuous drop of public investment in Gross fixed capital. According to the 1978 development programme, *the main restrictive factors for public investment are the finance possibilities that have been limited since 1973 from the increased public consumption expenditure for defence and social services, and state weakness in designing and executing various works* (KEPE, 1979: 51).

These are technical, construction, transportation and trading companies, which have promoted their activities overseas and earned more than a billion drs. in 1986. During the same year, 3.4 million tons of cement were exported, representing a value of \$75 million (Company information to *Economicos*, 1987 Vol.28 (1731):77-8).

⁶ Internationally compared, wages were still low, but in the period 1974-1985 their average grew by almost the fastest rate of those of the 13 most developed OECD countries (J.Milios, 1988:364-67).

At the same time, a relative industrial decentralisation within the central regions of the country took place and new trends in urbanisation occurred, whereby Athens and Thessaloniki demonstrated a decline in their rate of growth; the other large cities boomed. This led to the private sector's increase in fixed investment (1979) that was due to housing, buildings, and less to transport and construction.

As a result, during this period, the intensive accumulation regime went into a creeping crisis that the second international oil crisis brought well to the surface. From all points of view, the situation was ripe for a social-democratic contract which would attempt to manage the crisis.

Given the situation described, the state did not proceed to any major public infrastructure investments in the transport sector, neither organised any major transport projects, besides point interventions in the urban centres.

2.5. An Unsuccessful Attempt for the Management of the Crisis: the PASOK phenomenon (1981-1989)

This period was marked by Greece's accession to the EEC (1981) which was meant to change the picture of the development of the country, though this took a decade to become visible.

During this period, the state concentrated its efforts in the sectors of 'transport and communications', and 'energy'. This state activity was materialised via the construction companies which once more enhanced their position in the capitalist bloc of the country.

Tarpagos, based on early 1980's data, divided the companies into five categories: monopolistic, large, medium, small-medium and personal. He identified a dropping tendency of the monopolistic nucleus which he related to the decline of Greek construction activity internationally. Contrary to this, he observed a development of the large non-monopolistic firms (about 20), one third of which were newly established. This suggested that there was no internal crisis of the construction business. The same would be shown by examining the 150 medium companies, 60 of which have been set up in the last ten years (i.e. around 1975-1985). The next category of small-medium firms (about 150) is characterised by the specificity of its object and geographical restriction. The majority of them were established after 1970. Personal firms, some of which are very important, number about 300 but precise data was not available (A.Tarpagos, 1987: 102-12).

The crisis of the late seventies and early eighties did not leave the Greek construction firms' overseas activities intact. Competition became stronger and new forces offering better terms entered the market. S.Korea, Turkey, and Yugoslavia were among the newcomers. The lack of sophisticated management in the Greek companies did not help them maintain their good position which was just below the construction superpowers (US, Japan, Holland, FRG). A crisis started to emerge.

According to Koutsoyannis, after the eighties, the economic crisis in oil producing countries, stronger competition, and the technical weaknesses of the Greek companies created problems. After 1982 the activity dropped considerably. This is evident from the loans that the companies required from the Greek banks (which were at their highest in 1981). The problems could be identified as difficulties in competitiveness, lack of support from the Greek state, and changing local conditions in the recipient countries (see P.Koutsoyannis, 1984).

Competitiveness in particular, had to do with internal and external reasons, the most important of which had been the small market in Greece, particularly as far as special purpose buildings and complex installations were concerned (e.g. hospitals or telecommunications respectively). This was reflected in the weakness of the companies regarding programming, administration, and management in these fields. As new projects became less numerous and infrastructure requirements more specialised, the problems accentuated. Greek firms did not prove competitive in the new fields of maintenance and repairs, as experience within the country was limited, while quality requirements from the Arab countries increased. As far as

labour costs are concerned, the Greek labour force could not compete with the low costs of third world workers. The companies gradually started to employ labour from those regions. Finally, as local contractors emerged, the Greek companies were not prepared to co-operate and proved inadequate in introducing integrated operations management systems (see P.Koutsoyannis, 1984; cf. A.Tarpagos, 1987).

The lack of incentives and assistance from the Greek state in comparison to other states (e.g. no special tax relief even when the companies were taxed in the countries of operation) was counterbalanced to a certain extent from the EEC via assignment of projects. The regulations of the PASOK government, such as the help offered through the Organisation for Firms Rehabilitation, OAE, to the company SKAPANEFIS which faced tremendous difficulties due to the IRAN-IRAQ war, did not manage to reverse the trends (P.Koutsoyannis, 1984). Further state support, epitomised in the state company EKETE which acted as a super agent for the firms, although initially inducing some recovery (A.Tarpagos, 1985), proved inadequate for coping with the deteriorating situation (A.Tarpagos, 1987). Finally, the local conditions played an important role. The main issue here is the change of the developmental programmes of the Arab countries. To reduce dependence on oil, a broader spectrum of productive sectors was promoted, and there were considerable incentives for investments in the consumption and capital goods sectors. However, despite the fact that infrastructural construction was relatively reduced, it still remained high in absolute terms, at the time, though the situation had become more complex, competitive and demanding (P.Koutsoyannis, 1984).

Thus, it becomes obvious that during the first PASOK period, the state investments meant to assist the valorisation opportunities of local capital, not only in manufacturing but also in the traditionally strong infrastructure field, did not suffice to regenerate economic activity at the desired level, and led to the accentuation of the crisis. A growing deficit in the public sector has, since that period, been observed. This is not only due to the current accounts of the central government, but to the social security organisations as well. Furthermore, the net lending to the country and the various net capital transfers had also considerably increased in that period.

Skayannis, (1990) points out that, regarding the construction sector within the country, particularly interesting for this period were the 'six grand projects'. Most of them were already under consideration in one way or another. They appeared in the Regional Development Programme 1986-1990 that was submitted to the EEC in early April, 1986 (*Eleftherotypia*, 4-4-86:39; *Ta Nea*, 4-4-86:18). However, they were advertised as such in early February 1987. These projects are: 1) the new Athens airport in Spata, 2) the Athens metro, 3) the motorways programme, 4) the diversion of the Acheloos river, 5) the Rio-Antirio suspension bridge, 6) the electrification and modernisation of the railways (see *Ta Nea*, 11-2-87:16; *To Vima*, 15-2-87; *Ta Nea*, 21-2-87:11; *To Vima*, 25-2-87:25) (P.Skayannis, 1990: 191).

The repeated reactions of the 'technical community' because of the perspective involvement of foreign companies (*Ta Nea*, 23-2-87; 5-3-87) that gave rise to the demand of contractors for the repetition of competitive tenders (*Ta Nea*, 1-8-87:18; *Ta Nea*, 13-11-87) disregarded the assurance of the government that the projects would be under national control even in their operation phase (*Ta Nea*, 21-2-87:11).

However, the involvement of foreign capital was already a fact and had wider consequences for the evolution of the large Greek construction firms. Besides the Greek ETEBA and Manufacturers Hanover Ltd of London, selected by the Greek government to be the economic consultants for these projects (*Ta Nea*, 29-1-88:21), hundreds of the world's largest companies were tendering for them in joint ventures with Greek counterparts (*To Vima*, 8-5-88:31; *To Vima*, 11-9-88:27-8). However, no new contracts were signed until the June 1989 elections. Not even the modernization of the main railways line in the country (Athens-Thessaloniki - the FYRO Macedonia border), a project of the Hellenic Railways Organization that was initiated - in paper- in 1978 (Federal Research Program, 1994). Real progress in the

construction was realized after 12 years (1990) when the EC approved a grant of half the project's budget (Federal Research Program, 1994). Eventually, at the end of 1993, about 70 percent of the 510 km line from Athens to Thessaloniki had been double-tracked, electrical signals were in operation along the line except in one 134 km segment (Federal Research Program, 1994).

During this period, PASOK tried to achieve a modernisation of capitalism employing Keynesian tools and bringing about a limited level of welfare state regulations previously non-existent. Consequently, such policies bore a high risk of public deficit increase, endangering the economy. The wage increases constituted part of a policy to subsidise demand. Despite the crisis the share of wages climbed to 44%, yet compared internationally still remained at low levels: in France, UK, Spain, Germany, wages were more than 60%. Milios argues that the causal chain PASOK pursued in the economy was: increase of wages, demand, production, profitability. This never worked and the social-democratic contract broke. The result was the inauguration of the second period of austerity from October 1985 (J.Milios, 1988: 345-51; 364-7). In the first period, until 1985, the rate of growth slowed down, while the bulk of exports were now directed to the EEC.

Housing had its largest ever drop and as a share of GNP reached its lowest post war level because of a) the developing inflationary trends that made private investors reluctant to invest in housing, b) the relative fulfilment of 'needs' by the widespread housing construction of the previous decades, and c) the slow-down of urbanisation during the eighties.

All public investments except 'transport equipment' grew significantly during these years but it seems not enough to have offset the decline of the private sector.

In 1985 the government negotiated the terms of a loan with the EEC. The terms were based on a 'stabilisation programme' less strict than what an IMF one would have been. It was an austerity programme that managed to destroy the then existing social consensus around the PASOK government.

So in its second phase, based on the EEC guidelines, PASOK, attempting to stimulate the economy and escape the minimal investment situation, tried to manage the crisis with a) strict incomes policy; b) a macro-economic regulation based on austerity packages; c) a resort to large scale construction under a considerably different legal framework facilitating 'conglomerates' of design and construction firms, and d) further GCP provision policy with increasing emphasis on self-financing of the projects, a pretext for a certain kind of privatisation. These were accompanied by the adoption of a pro-EEC perspective and efforts to re-establish links with foreign capital. So, the initial attempt to establish a regulation based on quasi-keynesian policies by linking wages to the cost of living, crashed in the absence of investments and the slowdown of output, only to be slightly reversed by the virtual neo-liberal stabilisation programme of the last period, based on the EEC guidelines.

The coming neo-liberal approach became also evident in the case of transport construction projects. Kaltsounis (2004) refers to a particularly interesting case during the 1980s which was the attempt to establish a public authority that would undertake the design, construction, operation and maintenance of the major road network of the country on a self-financing basis using credit capital. The Ministry of Planning, Environment and Public Works formed a working committee to investigate the potential of such a venture and the National Road Fund (authority responsible for toll collection in Greek roads) conducted pilot studies which showed very promising results regarding the self-financing possibilities of the entire national road network. At the same period other relevant studies showed that the users of the road network would be willing to pay in tolls adequate amount to sustain the viability of the planned public authority. The reason for this was that the existing road network was in such bad condition that users would pay up high tolls to use a better network given also that the consumption ability of the population by that time had been significantly increased. However, the international economic climate of deregulation and free competition had already been dominant. Moreover, the emergence of easily moving private capital and know-how on

transport PPPs around the world brought a neo-liberal stance on the issue. The idea of a public authority as initially envisaged was abandoned and instead the promotion of a concession based type of road development started being planned.

2.6. The CFS periods of the Mega Transport Projects in Greece

This third wave of infrastructure development of Greece was mature to happen and was made possible with the EEC Community Support Frameworks (the beginning of this wave was marked by the, above mentioned, repeated announcements of the six grand projects by A.Papandreou). Planning, designing, construction, maintenance and operation of major transport infrastructure (MTPs) had been traditionally within the exclusive responsibility of the Greek State. The prefectural and local authorities have the responsibility in the case of provincial and municipal infrastructure respectively, while also EU did not participate in the planning and development of MTPs nor directly or indirectly. MTPs were entirely financed by public funds and in many cases the delayed realization of many major projects was due to the lack of available capital. Before the CSFs, major transport infrastructure development has been historically characterized by serious delays in all phases as compared to the initial time schedules but also serious budget overruns and quality deficits (P.Papaoannou and M.Peleka, 2006).

The mega transport projects of the post 1990 period were in anyway planned but their materialisation (especially those in the Athens Metropolitan Region) came to be related to the Olympic Games. As said before, the history of big projects in Greece was not showing that projects of this magnitude could be quickly realised. This was not a matter of technical competence or knowledge but a combination of state bureaucracy and of the management capacity of the big firms involved. In this sense, we can argue that a critical part of the problem was also on the “soft” side of the projects.

The period from 1984 to 1993 (during Mediterranean Integrated Programmes and CSF I) focused in small scale interventions rather than major infrastructures. The first CSF gave Greece a chance to advance on management. In this endeavour the firms reacted more positively than the public sector. Yet, the rigidities and inflexibility of the public sector left a lot of gaps in economic and bureaucratic management and the first CSF was only partly successful.

However, the EU Structural Funds’ reform in 1988 qualified Greece as a full Objective 1 status country and gave the opportunity to the country to maximally benefit from the significantly increased EU funding. According to the new set up a National Plan is submitted by the state government to the European Commission in support of its request for aid from the Structural Funds. The official agreement between the Commission and the Greek state on the amount and form of EU assistance for the National Development Plan took the form of a Community Support Framework (CSF). The above process of preparing a comprehensive development plan in order to claim structural aid was an extremely important exercise for the Greek state. This procedure forced the Greek government to approach the transport sector development in a more strategic way and start putting in the pipeline major transport interventions in the view of substantial inflow of EU funds.

In the early nineties the flagship transport study “Greece 2010” commissioned by the Ministry of Economy and Finance (to be used as feedback in to the National Strategic Development Plan for the CSF II) took a strategic view on transport planning considering the European dimension and international dimension of transport development. The study identified the priority transport axes for the development of the country’s Highway network. Their development is combined with major investment projects in points of access (ports, airports) and secondary transport networks. During the programming period 1994 to 1999 (CSF II) a great emphasis was placed on the development of major transport projects of a national

character that would also enhance connections with other countries. The commencement of the three MTPs of PATHE (Patras – Athens – Thessaloniki – Evzoni border), Egnatia motorway (the latter two are TEN-T road corridors) and Athens Metro have been critical elements of the transport interventions of CSF II. Other works included major port improvements, modernization of the Hellenic Railway Network, energy projects (wind farms, natural gas), telecommunications infrastructures and hospitals. The implementation of the 1994-1999 programmes was a crucial test in dealing with large-scale interventions and the Greek state's implementation mechanisms proved inefficient in many cases causing substantial delays in the programmed works of the pre-mentioned MTPs (MoEF, 2005a).

For the realization of the abovementioned projects, the Ministry of Planning, Environment and Public Works had prepared studies for very large projects such as the new Attiko Metro, the new Athens airport, the Attiki Odos Tollway, the Rio-Antirio Bridge and Via Egnatia focusing especially on delivery and financing issues (P.Papaioannou and M.Peleka 2006). Most of these projects had been proposed in the past, but neither complete design studies were available nor had definite decisions been made. These projects were developed with the heavy support of CSF II and CSF III funds by private sector consortia in concession-type PPPs (Rio Bridge, Attiki Odos) or by project-specific public companies operating under private sector rules, governing all phases of project development (Attiko Metro, Egnatia motorway).

In any case, the second, and the third CSFs (1994-1999 and 2000-2006) performed better due to the experience gained in-between. The urgency of the Olympic projects (and the continuous exhortation of the Olympic Committee to speed up) gave a major chance to Greece to improve effective planning measure and complete works on time (see evaluation reports of the CSFs). So the Olympic Games together with the availability of funding worked as a window of opportunity for Greece to advance with projects that were lying in the drawers and were seen with inhibition by the administration for a long time. For example, the Athens metro had been initially proposed by the renowned "Smith Study" in the early 60s, but never really started until it became an Olympic must. However, it is important to note that a) the delays have been alleged to be "artificial" so that the "urgency" could force to assigning projects to specific firms that could cope with urgency and pressure, and b) that projects were speeded up by the Hellenic Olympic Committee and the collaborating Ministries by bypassing the law and even by violating Rights and court decisions, or employing special new legislation just for this matter

Whichever the case, the fact is that important mega projects (especially outside the transport sector) started or were completed in the context of Mega Events! (of course this is not topical to Greece; the Olympic games have almost always been associated with big infrastructure projects. The same applies to Big exhibitions, such as the EXPOs that have been associated to big projects, e.g. in Seville or Lisbon).

The total transport infrastructure cost only for the period 2000-2006 is estimated to be around 13 billion Euros, largely co-financed by the EU, and concerns major projects exclusively (P.Papaioannou and M.Peleka, 2006). Table 1 gives an overview of the surface transport Mega projects.

The major MTPs that were either completed or significantly advanced in the last period (in view of the Olympic Games) were the following:

Last period: Egnatia (still constructed), PATHE Motorway (still constructed), Athens Metro (expansion projects), Rio-Antirio Bridge, Attiki Odos (expansion projects), Athens Airport El.Venizelos.

Now (2007) at *early construction or tendering stages* (MoEPPPW, 2007): Thessaloniki Metro, Thessaloniki submerged tunnel and the Concession Programme of Major Greek Highways consisting of the Ionian Corridor, the Central and Peripheral Peloponnesian Corridors, Segments of PATHE motorway, and Central Greece Corridor E65. Total costs of

the above projects are estimated of more than 9 B€ while besides the Thessaloniki Metro all other project are to be implemented through BOT style concessions.

Despite the fact that the peak of the third wave projects was related to the Olympic Games, this wave, with the unavoidable lurch, is still continuing and has led to the radical restructuring of the construction sector. Until today there have been strong efforts to keep the sector on track and competitive. The opening of the market with the ease of collaboration of foreign firms and the prospect of the opening markets of Eastern Europe, which however is highly competitive, create simultaneously opportunities and challenges. The large magnitudes required, led to important mergers and acquisitions so that the domestic construction sector could stay in the game considering also the prospect of the MTPs that are already planned and are ready for procurement.

The opening and strengthening of the infrastructure market in Greece was further reinforced by the large privatization shift in MTP development, The involvement in transport infrastructure became more attractive since projects become larger, more technically demanding and more importantly because profits for private firms could derive from a long-term exploitation of transport projects and not only from their construction.

However, we could argue that whatever happened has not been enough. The Egnatia motorway, PATHE and the new programme of motorway network, the completion of the railways projects, the expansion of the urban standard gauge systems, the expansion of energy production, the broad band networks, the management of the water resources and water provision, the urban waste treatment plants, recycling, etc, still await their completion. This is either because resources were wasted or were used inefficiently, or because technology advances in such a pace that renders the continuous modernisation and the conception of new developmental possibilities unavoidable.

In summary, during the period of the Community Support Frameworks, Greece switched from the target of internal integration to the target of European Integration. In the first CSF there was no prioritization of quality or sustainability, and the works were spread all over the country in order to satisfy urgent needs and to meet political obligations. The target was 'equity'. The second CSF (1994-1999) gave more priority to the infrastructures and especially big transport projects. The railway programme came again as one of the priorities, while the forms of co-financing with the private sector came into the picture. Attention was paid again to the urban centres. Organization became better and new special authorities were established (Egnatia SA Ergose SA, etc) The target in this period was 'efficiency' (M.Cristofakis, 2007).

In the third CSF a major part was again the big infrastructure projects (major part continuing) Athens metro, Thessaloniki metro, Egnatia motorway, PATHE motorway, etc. A special axis of this CSF is transport, coming first and accounting 28% of the CSF budget. There was a further shift towards co-operation with the private sector. Important were the urban projects in Athens. Emphasis was also put in the links with the European corridors and the TEN (Bulgaria, Romania and the others coming) in relation with the new attempts for expansion (M.Cristofakis, 2007).

In the forthcoming 4th CFS transport is still high although second (23,9%). The main projects are the completion of the old ones (such as the expansion of the Athens metro and tramways, the completion of PATHE and the expansion of Attiki Odos), while fewer are the new ones, predominantly the Thessaloniki submerged tunnel and metro, and the Ionian motorway.

TABLE 1: FEATURES OF RECENT MTPs

Project Name	Location / Route	Project Completion		Construction Costs		Financing	Operation
		Completion Date	Completion Delay	Construction Costs	Costs Overrun		
Athens Ring Road (Attiki Odos)	Prefecture of Attiki & Athens (65 Km)	Aug. 2004	3 years	Concessioned object: 1,25B€ Total Project: 3 B€	Within budget 1 B€ (33%)	51%:Loans 18%:EU Subsidies 15%:Greek State 13%:Private Capital 3%: Oper. Rev.	Private: 23years concession
Rion-Antirion Bridge	Western Greece, near Patras (2,88 km)	Dec. 2004	3 months early	0,75 B€	Within budget	48%:Loans 36%:EU Subsidies 7%:Greek State 9%:Private Capital	Private: 42years concession
Egnatia motorway	Turkish border to Ionian Sea. Plus Vertical links Northern Borders.	End of 2008	> 6 years	5 B€	2 B€ (2005 estimation)	50%:EU Subsidies 40%:Loans 10%:Greek State	Public owned company
Athens Metro (Base Project: phase 1 of lines 2,3)	Athens / Line 2: Sepolia-Dafni	2000	2 years	1,13 B€	0,4 B€ (20%)	50%:EU Subsidies 39%:Loans 11%:Greek State	Public owned company
	Athens / Line 3: Monastiraki-Ethn.Amyna (17,4km)	2003	5 years	0,93 B€			

Source: YPEHODE (2005), YPEHODE (2007), Papaioannou & Peleka (2006) and Athens Metro Website

3. INSTITUTIONS AND LEGISLATION

3.1. The Development Plans

The post WWII development in Greece was planned on the basis of several 5 year development plans or programmes (which were not necessarily observed or practically implemented).

These are prepared by the Ministry of National Economy. These programmes encompass the whole of the country and are actually economic plans. They contain sectoral and regional chapters, but their basic attitude is a-spatial. This kind of programming started after the second world-war under the Marshall Plan for the reconstruction of the country, and took the form of official planning documents in 1948 with the first 4-year development plan of 1949-52.

Including this initial plan, the plans prepared were the following:

1. Four year development plan of 1949-52.
2. Five year programme for the economic development of the country (1960-64)
3. Draft programme for the economic development of Greece (1966-70)
4. Programme for the economic development of Greece (1968-72)
5. Fifteen year plan for the long term development of Greece (1973-1987) (accompanied by a first 5-year plan: Development Programme of Greece 1973-77)
6. Programme of economic and social development (1976-80)
7. Programme of economic and social development (1978-82)
8. Regional Development Programme (1981-85)⁷
9. {Programme of social and economic development (1983-87)}
10. {Programme of economic and social development 1988-1992}

The last programme (10th) was in fact the frame for Greece's entry in the community support framework system that took the place of the up to then forms of post war programming.

In all above plans, several projects were foreseen yet in a very general manner. It was for the Government and the Ministries to include them in the Annual Investment Budget and to make the final decisions as to which would really start and how.

However, all plans of this period despite their good intentions and the fact that they are actually indicative, lack of the provision of mechanisms to monitor and implement, let alone evaluate the outcomes of planning. This gap between planning and its implementation was destined to be bridged by the regulations of the European Union regarding the Community Support Frameworks (CSF).

The CSF replaced the Integrated Mediterranean Programmes (IMP) and became the new form of national and regional planning. The annual investment budget of the state, regional development plans, all are fitting or are steps in the direction of CSF.

3.2. The Planning Institutions

From the period of the CSFs onwards, there are various institutions engaged in spatial planning, each one of them competent for a certain domain. Often there are overlaps of competence and consequently of plans, while compatibility of targets and goals is not always present.

In Greece, the agencies related to spatial planning can be divided into the following categories and sub-categories:

⁷ For details about the content of the first eight programmes, see E.Andricopoulou, 1984.

Ministries

Ministry of National Economy (now Economics and Finance), of Development, of Transport and Telecommunications (mainly air, rail, passenger transport, as well as supervising various related authorities, such as the Hellenic Railways Organisation and the Hellenic Civil Aviation Authority) and of Environment, Physical Planning and Public Works (physical regional planning, city planning, primary road network, ports, and metros).

Regional Authorities ('Regions') Thirteen Regions were for the first time established by Law 1622/1986.

Local administration comprises the 1st and 2nd degree

First degree (Municipalities) (Law 2539/1997 now about 914 municipalities and 120 communities in the country)

Second degree (Prefecture): There are 54 prefectures

Development Agencies (Law 1416/1984) 169 Regional and Local DAs including municipal organizations (see www.eetaa.gr –accessible 05/11/2007)

Public Utilities and Public Corporations, such as the Public Power Corporation, the Hellenic Telecommunications Organisation, the Hellenic Railways Organisation, and the Hellenic Civil Aviation Authority.

Out of these agencies the Ministry of Environment, Physical Planning and Public Works is directly involved in Mega Transport Projects as well as the Ministry of Transport and Telecommunications (airports, standard gauge construction). The Ministry of Economy and Finance is also involved as long as it is financing the projects either via the Public Investment Programme or via the Community Support Framework and the Cohesion Fund. The other ministries and levels of administration are involved in the sense of influencing decisions and making proposals and recommendations. Some of them, especially the 'Regions' and the local authorities are only involved in smaller scale projects. For example, the 'Regions' (after Law 2503/1997) are responsible for road construction within their area, yet not for the networks falling within the category of the Trans European Networks (TEN), or characterized as of national importance.

3.3. The old generation of legislation

According to P.Skayannis (1994) the construction of Public Works (among which MTPs) is obviously materialised on the basis of a certain legislation. For a long period of time the core of this legislation comprised the following:

Laws for the studies of Public Works: 716/ 1977 and Presidential Decree 194/1979.

Laws for the construction of Public Works: 1418/ 28/ 29.2.84 and Presidential Decree 609/1985.

Both categories were complemented by a series of additional Presidential Decrees and Ministerial Decisions.

According to the above institutional framework, studies and construction of public works can be conducted or implemented by persons or contracting companies, all ranked to various classes. The Ministry of Environment, Physical Planning and Public Works keeps two different records (studies and construction) in which persons and companies are registered.

We will focus here on the framework regarding the construction companies, (especially for normal and big projects, i.e. not for the very small ones).

Constructors, as persons, may be registered in classes A up to D. Companies may be registered in classes E, F G, H into the registry of Contracting Companies (MEEK) and have to be either Ltd or SAs. They can also form joint ventures with each other.

These companies can undertake the construction of works up to a certain budget foreseen for their class. Depending on the scientific background of the basic personnel, they are allowed to undertake projects which are categorised into 7 different categories.

Public works can be constructed according to two different methods: self-supervision/construction and contract work.

Regarding contract work, there are three kinds of tendering calls. The most important kind is the Open Tender. Tenders follow 8 various systems revolving around markdowns and discounts. Three of them are of particular importance:

a) Bid for building development with the *antiparochi* system (joint venture): this mainly applies when the owner of the work decides so. The project is materialised on the basis of a pre-existing study. The competitors offer joint ownership percentages and divided ownership as asked for in the tender. This system can be considered as a prelude of the private – public partnerships.

b) Bid including the *design and construction*: this was established for special purpose works, when there was a need for alternatives. In this occasion the designer is paid by the constructor. The design-construction system has been strongly criticised because it has been considered to decrease the quality of the studies since it renders the study (design) teams dependent upon the constructors (and contractors).

c) Bid that includes *other returns*: this applies when the owner of the work judges that it is purposive to vest a return other than money or estate. These can be industrial returns or products, but also the use or the exploitation of the project by the contractor. This system was criticised because as it was (rightfully) thought at the time to comprise the basis of the self-financing projects, it was at the same time considered to be an inadequate and vague legal regulation. Indeed, this has become the basis for the *project self-financing system*, another prelude of PPPs.

(P.Skayannis, 1994)

3.4. The new generation of legislation

The main Laws and Presidential Decrees (PDs) of the new generation of legislation that was established especially in view of the Olympic Games are presented in the table below. After 2003, new legislation was added to this list. These Laws and PDs (listed in table 2) especially concern the preparation for the full institutionalisation of PPPs.

TABLE 2: INSTITUTIONAL FRAMEWORK FOR PUBLIC WORKS IN GREECE (NEW GENERATION)

<i>J.</i>	KIND OF LEGISLATION	GOV. GAZETTE No	DATE	NUMBER OF LAW OR PD	TITLE
1.	LAW	130	25-06-99	2730	Planning, comprehensive development and execution of Olympic Works and other provisions.
2.	Presidential Decree (PD)	139	12-06-00	158	Establishment of special authority for Public Works for the design and construction of Olympic Works and for the carrying out of the 2004 Olympic Games.
3.	LAW	150	30-06-00	2833	Regulation of issues of Olympic preparation and

					other provisions
4.	PD	279	21-12-00	334	Adaptation of the Greek legislation for Public Works according to the provisions of the 93/37 EEC Directive.
5.	LAW	180	6-08-01	2940	Development, tax, and institutional incentives for the construction companies, and other provisions.
6.	LAW	242	11-10-02	3060	Regulation of issues falling under the competence of the Ministry of Justice.
7.	LAW	302A	24-12-03	3207	Regulation of issues of Olympic preparation and other provisions.
8.	LAW	308	31-12-03	3212	Building permits, town planning, and other provisions falling under the competence of the Ministry of the Environment, Physical Planning and Public Works.
9.	PD	72	4 -03-04	105	Establishment of the criteria for registration, classification and revision of the contracting companies in the registry of contracting companies (MEEP)
10	LAW	179	28-09-04	3263	Lowest bid award system for public works and other provisions.
11	LAW	42	22-02-05	3316	Award and execution of public works design and related contracts and other provisions (replaced Law 716/ 1977).
12	LAW	232	22-09-05	3389	Public Private Partnerships.

Source: Own compilation

We shall present below a brief the description of several of these laws and PDs, according to the Ministry of Economy and Finance (2005b).

3.5. Comments on certain Laws

3.5.1. *The new Law on public works contracting*

In September 2004, Law 3263/04 on a "Lowest-bid award system for public works and other provisions" was passed by parliament and was published in the Government Gazette. This law replaced Law 2576/98, thus abolishing the "mathematical formula method" of awarding contracts, which had created many problems in the construction of public works.

Today, the Greek national legislation on public works contracting consists of three basic legal acts: the Basic Law 1418/84, the Presidential Decree 609/85 and the new Law 3263/04. The latter covers one of the cases in public works contracting, namely the case where only construction activity is contracted on the basis of an analytical Bill of Quantities and the

relevant Budget of the Awarding Authority, after all the technical and financial studies have been fully completed by the Awarding Authority (MoEF, 2005b: 44).

3.5.2. The new Law on public works design

A new law (3316/22-02-05) entitled "Award and execution of public works design and related services contracts and other provisions" was recently passed, through which the design quality is improved, and Greek law is adapted to meet recent EU directives (17/04 and 18/04). The law also addresses the issue of tender evaluation, and design amendments during project construction without fully substantiated reasons are prohibited. Extensive discussions were held with the DG Internal Market before the passing of this bill, in order to achieve full compliance with Community legislation and jurisprudence. The passing of this bill has achieved the following:

The procedure has been institutionalised, thus optimising the quality of public works design, since the Awarding Authority is able to assess the available technical solutions more effectively and to choose the best and most economical of them.

Greek law has been harmonised with Community law, including the recent Directive 2004/18/EC.

Tenderers' eligibility criteria have been determined in accordance with Community law, as well as design award criteria (distinct from the eligibility criteria) are clear, adequate and assessable.

Strict conditions have been instituted concerning the modification of the design during construction and the conditions that until now made it easy to change the study and consequently to modify the deliverables of the project have been restricted.

The contract is awarded to the most advantageous tender through a criteria-based assessment related to the design quality and the financial offer made (with greater emphasis placed on design quality).

The design contract bid is not linked to the construction project budget.

The entire institutional framework for awarding design and related services contracts has been codified into a single legal document (MoEF, 2005b: 45).

Specific laws governing compulsory purchase issues and new land use and transport regulations relating to the development of Olympic infrastructures include laws 2730, 2833 and 3207.

3.5.3. Special Laws governing major projects

The establishment of special laws concerning specific major projects of significant importance is a practice met in many countries. Such laws apply exceptional conditions on the procurement, construction and operations of very major projects that cannot be effectively arranged (or is it very complex) by the existing legal framework. Such laws serve as the legitimization of a partnership with private investors under a PPP by setting the rules, conditions and requirements in the structure of the PPP.

- Law 2819/2000 and Law 2833/2000 for the structure of PPP for the development of Olympic Village and the Hippodrome Venture respectively. Both PPPs were never realized and the projects were constructed and operated by public companies.
- Law 1955/1991 for the study, construction, operation, running and development of the electrical railway network of Attica Region (Athens Metro).
- Law 2395/1996 for the ratification of the Public Private Partnership between the Greek state and the private concessionaire "Gefyra S.A." (Rion – Antirion Bridge).

- Law 2338/1995 for the ratification of the Public Private Partnership between the Greek state and the private concessionaire “I.A.A. S.A” (Athens International Airport El. Venizelos).
- Law 2445/1996 for the ratification of the Public Private Partnership between the Greek state and the private concessionaire “Attiki Odos S.A.” (Athens Ring Road).
- 3 recent laws for the ratification of the BOT concession contract (between the private concessionaires and the Greek state) for the projects of Thessaloniki Submerged Tunnel, PATHE, and the Ionian Corridor

3.5.4. The latest PPP legislation

In the later post Olympic era, the Law 3389 (232/ 22-09-2005) has been governing all PPP-type of projects that have budgets less than €200M. This first law governing PPPs in Greece provided a general legal framework for the procurement, construction, and operation of such schemes. This Law concerns construction of projects whose costs are recouped by end-user fees (concession-like PPPs) and also the provision of social services’ infrastructure (including hospitals, schools, prisons, etc), where the costs are recouped by payments from the state (PFI) Despite the fact that this law does not concern MTPs, its existence manifests the ideological shift towards infrastructure privatisation through the institutionalisation of PPPs. An Inter-ministerial Committee has been established, as well as a Special Secretariat for PPPs in the Ministry of Economy.

4. TODAY’S SITUATION AND CHALLENGES

4.1. Environmental protection and pluralistic planning as major emerging challenges

The statutory planning system aims to protect the environment by specific laws (L.1650/1986 on environmental protection, L.1739/1987 on water resource management, L.2508/1997 on the sustainable development of settlements and L.2742/1999 on regional spatial planning). Law 1650/1986 has been amended in 1990 (by joint ministerial acts 69269/5387/90 and 75308/5512/90 incorporated the EU Directives for the ex-ante Environmental Impact Assessment of projects and the public dissemination of the relevant environmental information. Since then, MTPs have to be approved in terms of environmental impact according to the standards of the EU directives. The process of environmental assessment and approval of Greek MTPs has been accompanied with serious problems that have caused revisions of the environmental terms, major redesigns of the routes, changing of construction specifications etc. MTPs are often seen as generators of environmental disturbance of certain areas while the same time they seem to meet sustainability requirements from the social and economic point of view as they contribute to increased accessibility of settlements, urban areas, cities, regions and the international gates of the country.

It is rather difficult to judge the degree to which the planning agenda of Greek MTPs has been influenced by environmental sensitivity. It seems that environmental priorities could not outweigh the need to overcome an existing situation of very poor infrastructures. The reality of Greek MTPs shows that there may be alterations in their design to avoid ecological harm of specific areas but it was proven impossible to prevent a project from going ahead. The centralized character of decision-making and the lack of transparency, especially at the early stages of MTPs’ planning, prevented the prioritization of alternative plans/projects that could have a significantly lesser impact to the environment. The on-going programme of huge investments in motorways is not balanced with adequate investment to the similarly (maybe more) outdated and limited rail network.

The same time there is an ongoing ‘promotion’ on the measures for climate change prevention. The so-called National Programmes for the Climate Change (as required by the Kyoto Protocol) have set targets that require shifting to public transport but the progress

remains minimal up to now. The increase in emissions in Greece (that are responsible for climate change as Kyoto protocol indicates) is 16.6 % in the period 1990-2004 (M.Patsoules, and G.Patsoules, 2007).

On the other hand there are projects such as the Thessaloniki Metro and the extension of Athens Metro which cannot be considered as more environmentally friendly. However, they were surely not prioritized and initiated by environmental sensitivity and concerns related to climate change. The Thessaloniki metro is a long-standing demand of the people and authorities of the city. The other two major urban transport projects which are the Thessaloniki Submerged Tunnel (construction has started) and the New Attika Freeways (extensions of Attiki Odos that are going to be tendered soon), are clearly supporting car use, clearly not showing the way towards sustainable urban transport.

During the past 15 years, some efforts were made towards enhancing the participation of civil society in planning decisions through some new institutional and legal arrangements mainly influenced by the EU and the emergence of sustainability rationale and democratic planning ideas. The authoritarian and centralized character of decision making regarding MTPs hinders participatory planning. This is very well demonstrated in the case of Attiki Odos. This MTP was developed in an urbanized area and also affected a mountain of ecological importance in the Athens area. Due to the above two facts, there have been many contradicting interests and sensitive issues and at the same time there were many voices referring to serious barriers to public participation at all stages of the project's development (see G.Kaparos 2005). The major problem is the lack of effective procedures and clear established legal framework for community involvement in the project development besides the Supreme Administrative Court and EC legal actions which prove to be very time-consuming, politically influenced and distant from the citizen. Moreover, the principal project documents and contracts that relate to the MTPs (concession contracts, project companies formation, EIAs) pass through parliamentary procedures to be ratified by laws which are extremely difficult to appeal against.

The presence of other than established procedures for participation such as media, Administrative courts appeals and lobbying gives special characteristics in the way stakeholders and community intervene in MTPs development. The appeal to the supreme administrative court (Council of State) is a very common practice in Greece and this has resulted in this court effectively formulating policy on environmental issues. The reality though of political and administrative practice favours participation and lobbying through informal routes which are lacking transparency and independence from party politics (K.Sapountzaki and H.Karka, 2001).

4.2. Evaluation and prioritization of MTPs

The process of evaluation in Greece is a 'novelty' of the Community Support Frameworks. Before 1989, practically, there was no publicly known evaluation process, neither the public sector was engaged in such exercises, at least via formal structures (eg. Units in Ministries) that could measure or the performance of implemented policies.

As far as appraisal of MTPs is concerned, it seems that no publicly known appraisal process had been taking place for the majority of the projects before CSFs, besides the feasibility studies of prospective investors. After the strategic shift of transport planning that CSFs brought, a significant appraisal work mainly by the Ministry of Planning and Environment (outsourced) has been taking place. Such appraisals include CBA analysis and environmental impacts assessment but also development impact studies. Financial analysis is also part of the ex-ante appraisal in all MTP cases in 1990s and 2000s.

Evaluation of major transport projects is now mainly conducted through the ex-post evaluation procedures of the Community Support Frameworks which do not directly focus on

the projects themselves. Within the Ministry of Economy and Finance, which is the managing authority of CSFs, three special services have been established for monitoring and financial management of the CSFs:

- **FINANCIAL CONTROL COMMITTEE (EDEL):** Ensuring proper financial management of resources, through a system of controls
- **CSF MONITORING COMMITTEE:** An institution charged with monitoring the effectiveness and quality of CSF implementation;
- **OPERATIONAL PROGRAMME MONITORING COMMITTEE:** A collective body charged with monitoring proper implementation of the Operational Programme.

Also, the European Commission (DG-Regio) is active in commissioning evaluation and appraisal reports regarding major transport interventions in Greece and MTPs (ECORYS, 2005).

The private operators of Attiki Odos and Rion-Antirion Bridge systematically monitor and evaluate the projects' financial, operational and safety while they are not involved in any kind of ex-post evaluation of their development impacts. On the other hand, the two MTPs that are developed and operated by public companies i.e. Attiko Metro and Egnatia motorway are keener in evaluating the projects according to development criteria and objectives. Egnatia Odos S.A has set-up the Egnatia Odos Observatory which comprises an innovative initiative (subsidized mainly from EU) having as its principal mission to record and evaluate the spatial impacts of the Egnatia motorway (Egnatia Odos Observatory, 2005). Similarly, Attiko Metro has been constantly working on the evaluation of the project impacts. This is also a very valuable exercise in order to proceed to the planned extensions of the network.

The prioritisation of the MTPs for a certain time period was obscure if we exclude the Patras-Athens Thessaloniki national road and later motorway (political priorities, etc). In addition to these, it now seems that the TEN project as a successor of the "Greece 2010" transport study (MNE, 1993), in relation to the maturity of the proposed projects is becoming the basic prioritisation criteria.

4.3. Further Challenges for Infrastructure in Greece

In the **energy sector** Greece is experiencing the first steps for the liberalization of the market, esp. in the area of renewable energy sources. The electricity production sector has officially been liberalised since 1999 (Law 2773/ 22-12-99). The Public Power Corporation is now privatised by 49%, while Greek Petroleum by 65%. Greek Gas is split into various companies (esp. Gas provision subsidiaries).

The **telecoms** sector has been liberalised and OTE has to a large extent be privatised.

Water and Sewage remain public

As far as **transport infrastructure** is concerned, we are going to examine it according to the various sub-sectors:

Railways, are planning the split of operations into three parts in the prospect of privatization.

Airports are public except the main Athens airport which is private (with a share of the Greek state). This airport was constructed by a consortium headed by Hochtief and is operated similarly.

Ports are essentially public but the port authorities have been converted to SAs the shares of which are held by the State and the port director is appointed by the government. There is a trend to let (basically the new) **marinas** be private.

Yet the basic involvement of the private sector is taking place in **road construction** (and accompanying technical projects such as bridges and tunnels). The important works of this

kind that were completed especially in view and under the pressure of urgency, of the Olympic Games, triggered and accelerated the introduction of various forms of BOT.

Today's dilemmas

Today, considering the fact that the country's development should be sustainable and competitive, the choices and dilemmas are multitude and significantly pressing.

The first dilemma is whether the country should continue to base its development on construction.

The easy way is the continuation of tradition. The difficult way that guarantees a leap forward, a rupture, is the emphasis on technology, research, innovation, after all on education. It is to these directions that a vast proportion of social investment should be allocated, so that the country could enter the international *avant garde*, even at its second concentric circle (layer). The issue does not only relate to the governments but the private sector and resources as well. If the "sleeping" wealth of the country accumulated in the banks seeks capital valorisation opportunities via the PPPs merely in the construction sector, the country is once more endangered to remain indirectly entangled in the infrastructure biased development model, a fact that could become a boomerang even for the construction sector itself.

The second dilemma is related to what infrastructure projects we need and to whether these projects we select are in the direction of sustainability.

If we justifiably assume that some important infrastructure works have to be completed, a question arises as to the direction of the next, the new works. The answer here should be a catapult against tradition. The choice is now necessary to be in favour of works that secure sustainability and tend to change the living patterns. For example, in transport, muscular movement (walking and cycling) is the first solution for the urban space, second come the fixed track means (metros and tramways) and only third comes the automobile (bus or private car), only if powered by renewable energy or biofuels. The production of energy should rapidly turn towards the renewable resources where the country lags behind but has tremendous potential, especially in the field of absolutely renewable resources, i.e. the sun, hydrogen, hydropower, and geothermia. This excludes imported non renewable and dependency energy resources such as natural gas which is a temporary solution as it does not pollute. Recycling is also a must. Research should switch towards exploiting synergies between the various sectors of infrastructure and industry. A good example is transport so that the chapter of sustainability is closed in the particular sector.

It is obvious that the proposed answers to the questions in both dilemmas are not leading to the abolition of infrastructure projects and MTPs. They simply give a new value position in the development of the country and simultaneously combine them functionally in the direction of research, innovation, and new technology. Thus, the discussion leads to a new generation of infrastructure works, under a new development concept, with the aim of a modern robust economy, necessarily and inescapably in the context of sustainability.

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