## University of Thessaly Department of Planning and Regional Development Graduate Program in European Regional Development Studies

## Thesis Title: EVALUATION OF THE FINANCIAL CONSEQUENCES OF LAND SLIP IN TEMPI VALLEY





**Supervisor**: Polyzos Serafeim

**Student:** Kalogirou Vassiliki

September 2010

#### ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΙΑΣ ΒΙΒΛΙΟΘΗΚΗ & ΚΕΝΤΡΟ ΠΛΗΡΟΦΟΡΗΣΗΣ ΕΙΔΙΚΗ ΣΥΛΛΟΓΗ «ΓΚΡΙΖΑ ΒΙΒΛΙΟΓΡΑΦΙΑ»

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STUDENT: KALOGIROU VASSILIKI

**SUPERVISOR: POLYZOS SERAFEIM** 

**VOLOS 2010** 

#### Στους γονείς μου Κωνσταντίνο και Φωτεινή

Για την αμέριστη συμπαράσταση και βοήθεια που μου παρείχαν

To my parents Konstantinos and Fotini

For their help and assistance during this year

TIMHMA MINIXANIKON XOPOTABIAS IN COMPANIAS KALI FIBPLIGEPEIAKHS AMARTIN ME FPAMMATEIA SETAPTYYMAKOK OPO JON Apro. Tipligron. 507

Humpouryma 16-9-2010

#### Περίληψη

Στο τέλος του έτους 2009 ένα τρομερό ατύχημα συνέβη στην Κοιλάδα των Τεμπων και ένας Ιταλός Αρχιτέκτονας έχασε τη ζωή του. Αυτό το γεγονός μαζί με την εξάμηνη παράκαμψηταλαιπωρία των οχημάτων μέσω Αγιάς, Ελασσόνας και Μουργκάνι αποτέλεσαν το έναυσμα για τηη παρούσα διπλωματική εργασία.

Το βασικό συμπέρασμα είναι ότι οι περιοχές που επηρεάστηκαν κυρίως από το γεγονός ήταν η Θράκη και η Πελοπόννησος. Η ανάπτυξη στην Ελλάδα γενικά δεν επηρεάστηκε αλλά η ζημιά στον τουρισμό ήταν μεγάλη ιδιαίτερα κατά τη διάρκεια των διακοπών των Χριστουγέννων. Επιπλέον ο νομός της Λάρισας επηρεάστηκε από αυτό το γεγονός σημειακά.

**Λέξεις κλειδιά:** Κοιλάδα Τεμπών, Πίνακας, Αξιολόγηση, Περιοχή-Νομός, Προέλευση, Προορισμός.

#### Summary

In the end of the year 2009 a terrible accident happened in Tempi Valley and an Italian architect lost his life. This fact together with the six-month traffic deviation of the vehicles via Agia, Elassona and Mourgani were the starting point for this thesis.

The basic conclusion is that the regions that were most affected from this event were Thrace and Peloponnese. Growth throughout Greece in general was not influenced but the damage on tourism was horrible for the period of Christmas. Moreover the prefecture of Larissa was affected as a point from this fact.

Key words: Tempi Valley, Matrix, Evaluation, Region, Origin, and Destination.

#### Résumé

A la fin de l'année 2009 un accident terrible est survenu dans la vallée de Tempi et un architecte italien est décédé à la suite de ceci. Cet événement ainsi que la déviation des véhicules pendant six mois via Agia, Elassona et Mourgani ont suscité la présente thèse.

La conclusion primordiale est que les régions qui ont été le plus affectées par cet événement ont été la Thrace et le Péloponnèse. Le développement en Grèce n'a pas été affecté en soi mais le tourisme a subi des pertes importantes surtout pendant la période des vacances de Noël. La circulation vers certains points de la Préfecture de Larissa a ete aussi affectée.

Mots - Cles: Vallèe de Tempi, tableau, évaluation, région, provencance, prédestination

#### ΕΥΧΑΡΙΣΤΙΕΣ

Η εργασία αυτή έγινε κατά τη διάρκεια του καλοκαιριού 2010 κατόπιν του ατυχήματος που σημειώθηκε το Δεκέμβριο του 2009 στην Κοιλάδα των Τεμπών. Τούτο είχε σαν επακόλουθο μια απίστευτη εξάμηνη ταλαιπωρία για όλους τους οδηγούς που μετακινούνταν μέσω των παρακάμψεων που παρουσιάζονται αναλυτικά στην παρούσα διπλωματική εργασία.

Για τη διεκπεραίωση της παρούσης εργασίας θα ήθελα να εκφράσω τις ευχαριστίες μου:

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This thesis was done during the summer period of the year 2010 after the accident that happened in December 2009 at Tempi Valley. As a consequence all drivers were really tormented and the vehicles were transported via deviations that are analytically presented in this essay.

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#### **ACRONYMS**

VfM Value for Money VHS Video Home System

ΕΟΜΑ Ειδικές Ομάδες Μηχανημάτων Ανασυγκρότησης ΚΤΕΛ Κοινό Ταμείο Επαγγελματιών Λεωφορείων ΜΟΜΑ Μεικτές Μονάδες Μηχανημάτων Ανασυγκρότησης ΟΣΕ Οργανισμός Σιδηροδρόμων Ελλάδος ΠΑΘΕ Πάτρα-Αθήνα-Θεσσαλονίκη-Εύζωνοι ΣΔΙΤ Συμπράξεις Δημοσίου Ιδιωτικού Τομέα ΥΠΕΧΩΔΕ Υπουργείο Χωροταξίας και Δημοσίων Έργων

**BEA** Bureau of Economic Analysis **CBO** Congressional Budget office **EPC** Energy Performance Contracting **EU** European Union **GDP** Gross Domestic Product **GIS** Geographical information System **INTERCO-PPP** Interregional Cooperation concerning PPP IRR Internal Rate of Return MIRR Modified Internal Rate of Return **O&P** Operation & Maintenance **PATHE** Patra-Athens-Thessaloniki-Evzoni **PPP** Public Private Partnerships SPV Special Purpose Vehicle **SRF** Ship Refair Facility **TEN** Transport European Networks **UK** United Kingdom

#### Introduction

In the end of the year 2009 a geological phenomenon was observed in Tempi Valley. Rocks fall in the National Road that leads from Athens to Thessalonica (also Known as  $\Pi.A.\Theta.E.$ in Greek) and a man lost his life on Wednesday the  $16^{th}$  of December of the year 2009.

The victim, identified as an Italian architect engineer, was killed when boulders smashed into the vehicle he was driving. The deceased was the project director of the bridge being constructed at the site, who had just arrived with other employees of the Malliakos-Klidi consortium to inspect damage caused by falling rocks at the same spot on Wednesday the 16<sup>th</sup> of December and Thursday the 17<sup>th</sup> of December of the same year. Another landslide occurred as the 62-year-old engineer and the consortium employees arrived in two cars.

The Tempi Valley is placed in the centre of Greece, in the region of Larissa and the prefecture of Thessaly and one of Greece's best-known and rugged canyons. It is also placed between the two highest mountains of Greece: Olympos and Ossa. It is believed that mountain Olympos was the Residence of the 12 Old Gods of Mythology. This fact together with the church of Santa Paraskevi and the peculiar geography of the Valley has made the region touristically developed. After the accident the Greek government together with the police and the construction firm of the tunnels was obliged to close the road. The vehicles were diverted either by the Larissa→Agia→Stomio the route (mainly the cars) by Larissa→Elassona→Katerini (mostly the buses and the trucks). Due to the difficulty of driving in those two routes (many curves and bad condition of the road surface) some drivers even preferred following the route Larissa-Trikala-Grevena due to the fact that driving in Egnatia odos is easier and more convenient for a driver. The latter is an issue for consideration especially for professional drivers (either bus or truck ones) if someone co-estimates the value of fuels.

All the above-mentioned facts changed the economic, social and touristic equilibrium of many Greek regions during the six-month stabilization works at the specific site. Finally transportation in Greece had changed especially concerning the mass media as the trains and the National Railway Organization (O. $\Sigma$ .E. in Greek) raised their income and the public interurban buses (broadly known as K.T.E. $\Lambda$ . in Greece) were traveling almost empty.

The aim of this essay is an evaluation of the situation that occurred from the 16<sup>th</sup> of December of the year 2009 until the 7<sup>th</sup> of May of the year 2010. More specifically the main question that is attempted to be answered is: "Was the region of Larissa the most affected from the land slip in Tempi Valley?". The sub questions are: "Which other regions and prefectures were affected from the tragic fact?", "Which sections of the local economy confronted the main problems?". Finally the conclusions that will occur concern mistakes that may have been concerned or future policies either for local development or for national development.

The main methodology that will be used is the reevaluation of the existing survey, from the year 1997, of the "Doxiadis" Transport Survey Office (that is addressed in Kifisia-Athens, 13 Aigidon Road) and the Greek Government has financed.

The originality of this essay deals with the short time from the accident (16 of December 2009) until the deposit of the essay meaning only some months, less than a year later. Even more with this essay there will be made a trial to examine in which way an accident in the center of Greece affects freight transportation, trade, tourism and the local society in general.

The utility of this thesis is complex and compound at the same time.

First of all it will be useful for the University of Thessaly as it is a first approach after the accident and the severe coincidences that occurred in Regional Economy.

Secondly it will be useful to the Prefecture of Larissa and the Municipalities that are mostly been affected from the incidence either negatively or positively. For example the Community of Ambelakia (a region that is historically important for Greece and the region) seems to be affected negatively concerning tourism arrivals. and the Municipality of Elassona also. The urban road net of the Municipality of Elassona confronts grant problems with the maintenance of the road surface inside the limits of the city as the heavy trucks caused huge damages. On the other hand Sotiritsa, Agiokampos and Velika, three coast villages were greatly benefited if someone interprets the stops of the vehicles passing through and the raised income in restaurants and fish tavernas. But the road net was not ready to hold out the freight of the trucks and buses that were diverted from that route as it was transformed to a national road.

Thirdly the representatives of drivers of both Public Trucks and Public Buses could use the conclusions that will occur as a mean of pressure towards the Government considering the lack of income that they dealt with the last months during their transportations from a certain region to another one and mainly if they were obliged to divert their usual route.

Finally the Greek government (meaning the Ministry of Environment and Social Works – in Greek Y $\Pi$ EX $\Omega$ \DeltaE and the Ministry of Economy) could and should consider under thought the conclusions that will occur from the flows of vehicles from prefecture to prefecture inside Greece and their modification after the traffic changes. A Special mention may occur for the Planning of Road Construction as the Road from Agia to Omolio is greatly damaged.

#### The main problem: traffic diversification

Road travel between northern and southern Greece remained problematic on Saturday the 19th of December, following the landslide at the Tempi Valley that cut off the main north-south axis.

Announcements by the Greek traffic police said that private cars and small trucks up to 3.5 tonnes using the Athens-Thessaloniki national highway heading south would be diverted at the junction near the city of Katerini and led to Agios Dimitrios and from there to the Katerini-Elassonas-Tyrnavos-Ambelonas-Gyrtoni national highway to the old Larisa-Thessaloniki national highway and then onto the Sykourio-Larisa rural road, where they would rejoin the Athens-Thessaloniki national highway at the Sykourio junction.

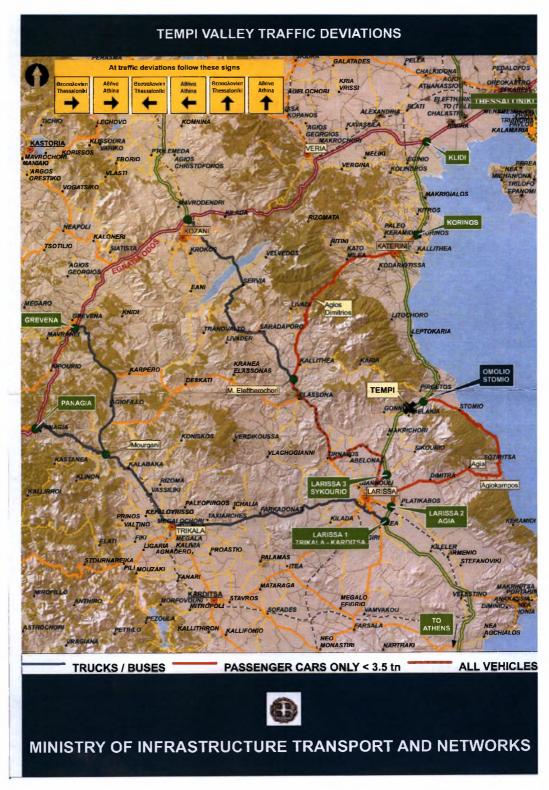
Larger vehicles and coaches will be directed off the national highway at Kleidi, Imathia toward the Egnatia Highway between Veria and Kozani, from which they would join the Kozani-Elassonas national highway and then follow the same route as cars and smaller goods vehicles.

Vehicles moving north, likewise, will be directed off the national highway at the Sykourio junction and follow the reverse routes toward Thessaloniki.

Transports and Networks Minister Dimitris Reppas stated on Friday 18 of December of 2010 that the Tempi Valley section of the Athens-Thessaloniki national motorway will be closed for at least a month as a result of the major landslide on Thursday the 17<sup>th</sup> of December that virtually cut Greece in half and killed one person.

The Minister in statements that he made in the city of Larissa, central Greece, stressed that a clearer picture of the situation will be available on Monday the 21<sup>st</sup> of December 2009, when the extent of the problem will be fully assessed by Greek and foreign experts who will suggest solutions. Minister Reppas referred to the use of alternate routes namely, the Larissa-Elassona-Kozani road, the Larissa-Elassona-Katerini road and the Larissa Prefecture coastal road, all of which had to undergo improvements to cope with the increased traffic due to the holiday season.

This traffic diversification lasted until Friday the 7<sup>th</sup> of May with the exception for 15 days for Easter holidays (between Friday the 26<sup>th</sup> of April and Monday the 12<sup>th</sup> of April) and the weekend that concluded the holiday of the first of May. The exact routes can easily be seen in the map that follows (Map 1). The map was printed by the Ministry of Transport and Networks and was distributed to the Greek drivers in the tolls. It was always available in the Ministry's Internet site.



Map 1 Traffic Deviations

#### Chapter 1. Presentation of the area

#### 1.1. Historical data

The river Pinios and its tributaries in the Larissa district, the Sarandaporos or Titarisios and the Farsalitikos or Apidanos, which in a blessed watery equilibrium make their life giving across the heart of Thessaly, water the Thessalian plain. The end of the rivers coarse is the Vale of Tempi, a delightful narrow stone gorge between Ossa and Olympos, whose praises have been sung since the depths of antiquity by poets, conquerors and travelers. And now only their eternal works of art, the mythological references, poems, engravings and paintings, the adjectives and descriptions remain to record the attraction, the aesthetic pleasure and the spiritual fulfillment. The Vale of Tempi was a place where the eternal divinities of fire, beauty and combat were venerated: the ancient gods Apollon and Aphrodite and their Christian successors St George and St Paraskevi, and on practically the same sites, as archeological research has shown. This ancient Greek tradition was continued, during the years of Ottoman rule, by the takes of Hasan Baba at the Western end of the Valley, which housed monks of the Muslim order of Bekhtasi dervishes, whose tradition shares many points of worship and dogma with the Christian faith. Down the sheer rock faces of the gorge grows the laurel, which according to tradition is the arboreal version of Daphne, daughter of Peneus, who was transformed into a bush in order to escape the amorous attentions of Apollon. According to a myth, the god Apollo was in love with Daphne, the daughter of Pinios. In order to prevent Apollo from catching his daughter, Daphne's father turned her into a plant (Daphne means bay in Greek) that is very common in the area. It was in the same vale - according to the myth - where the Greek god Pan used to chase the dryads and the nymphs.

Olympos is universally known from the Greek Mythology, as it was the residence of the 12 Gods of ancient Greece and the residence of the Muses. The 12 Gods lived in the canyons- "Olympus creases" as Homer called them-where there are their palaces, with the Pantheon (today called Mytikas) - was their meeting point. The mountain is sacred of Antiquity and became the cradle of the liberal Greek religion, philosophy and education. It is considered up until today the symbol of modern European culture. Olympos is incorporated into many myths for thousands of years. It

was laurel branches from Tempi, carried in sacred procession to Olympia that crowned the victors at the ancient Olympic games.

There is a reference of Kissavos in the Greek Mythology when the two mighty giants Otos and Ephialtes sons of Loeus, wishing to claim Zeus' power, placed Pelion on Kissavos so as to reach and conquer Olympus. In antiquity it was Magnites that inhabited this mountain, whereas it is associated with the veneration of the goddess Demeter (Dimitra in Greek), and also with Asclepius, Hercules, Philoctetes, Alexander the Great etc. Today a great part of Kissavos has been declared as "Ossa Aesthetic Forest" and classified as a special protection area by the Pan- European network Natura 2000, as it is an area of exceptional natural beauty.

#### 1.2. Geographical data

Tempi valley is situated in the area between the mountains Olympos and Kissavos (Ossa), and is run by the river Pinios. The river flows through the mountains and the vale, to finally flow into the Aegean Sea. Some historians have argued that in the distant past Thessaly was an enormously big lake, which literally split in two after a huge earthquake and emptied its waters in two the sea. The result was the formation of two mountains instead of the one that was previously there, with the valley of Tempi in between.

Olympus lines between the two prefectures of Greece, Thessaly and Macedonia, and more specifically between Pieria and Larissa, and its highest peak, Mitikas rises to 2,917 meters high. Over 1,600 meters it is an alpine zone. Its slopes are steep and covered by evergreen bushes and forests of conifer and deciduous trees. Through the deep mountain gorges two small rivers flow precipitately: Enipeas and Tilianas flow into the Golf of Thermaikos. Olympus is the highest mountain range in Greece. Olympus has an enchanting natural environment as it stands out for its rich flora and fauna and is the first area in which a special protection regime was established 50 years ago, as it was declared a National Forest in 1938. Many welcoming villages lie on the slopes of the mountain whereas the whole area is a favorable destination for nature-lovers and visitors who wish to relax. Olympos is 20 km away from Elassona (a market town belonging to Larissa's prefecture) and 18 km away from Litohoro (a market town belonging to Pierre's prefecture). The limits of the mountain spread in a circle around its roots, with a perimeter of 150 km and an

average diameter of 26 km whereas the overall area covered is 600 square km. The mountain has numerous deep ravines and a lot of regularly shaped peaks (many of which are more than 2,000 meters high). The highest and most impressive peaks are steep though. Apart from Mitikas other impressive peaks are Skolio and Stefani, which are 2,911 and 2,909 meters high respectively. These peaks rise almost vertically, thus forming an arrow called "Megala Kazania" (the Big Cauldrons), the biggest precipitous funnel-shaped hollow of Olympos, being 1,000 meters wide and 600-700 meters deep.

Kissavos, also known as Ossa, lies on the east side of Thessaly south of Tempi Valley, facing mount Olympus. The two mountains are divided by Tempi vale. The forests in Kissavos and the landscape are magnificent. Precipitous brooks create many waterfalls and ponds within large rocks, plans trees and dense vegetation including beeches, fir trees and chestnut trees. Waterfalls, rivers and ponds are very alluring. A large part of Kissavos has become the "Aesthetic Forest of Ossa" and is protected by the European Network NATURA 2000. Its east side is all green and joins the Aegean Sea creating many small beaches with clean waters. Between the two mountains Olympos and Kissavos and in parallel with the river Pinios (traveling through the Tempi Valley) is the most significant National Road of Greece also known as Ethniki Odos in Greek.

#### 1.3. Geological data

Above the eastern side of the Thessalian Plain gently rises the shapely, conical massif of Mount Kissavos, Ossa. One with Pelion, Olympos, Vermion and Vitsi, it was born at the same hour and of the same spasm of the earth. Geologists tell us that this, and the entire "Pelagonian Arc", was formed in the Eocene period, some 70-80 million years ago. Then, much later, came the waters, slowly spilling out of the vast Thessalian Lake and with unsuspected force carving themselves a channel to the Aegean, cutting Kissavos off from the other mountains as they created the much-sung, god-inhabited Vale of Tempi and leaving it, as the past says, to pine with envy for Olympos.

Its rocks and its moist Mediterranean climate, with abundant rain and snowfall (estimated at 1100-1200 mm/year) and temperatures ranging between +25 and  $-10^{\circ}\text{C}$ , have made Kissavos a habitat filled with all kinds of life.

Forests-dense, vigorous and bursting with health-of strawberry trees, chestnuts, oak, beech and fir cover 15,000 hectares of its eastern flank. And they provide the people who live there with timber and firewood, and those who venture to explore them with passages along its handful of shady watercourses, full of sent and color and the unceasing play of light and shadow, and through bright glades with ineffably restful views, passages immediately accessible from any location via the network of trails created methodically and systematically by the Forestry Service. Purling streams of cold, limpid water and innumerable scattered springs have for thousands of year's refreshed gods, nymphs and dryads, woodcutters, hunters and climbers. These gifts very early brought Man to live among its foothills and lower reaches. Higher up, says Homer, in its gorges and on its summits, lived centaurs. And today the same land, in places like Ambelakia, Spilia and Stomio sustains a world of 15-18,000 people. For climbers Ossa with its soft and gentle slopes is a great experience and delight.

#### 1.4. Important facts concerning the area

The Tempi Valley has always been an issue for great interest for Greece. Either for the beautiful geomorphology, or for the church of Santa Paraskevi (Agia Paraskevi in Greek) and together the financial profits and scandals, either for the long traffic queues that are observed there (mostly on Summer time). Even more on the 13<sup>th</sup> of April of the year 2003 a tragic accident happened and 21 children from Makryhori (a large village of the region of Imathia) and two other elder people that were following the bus lost their lives. The accident involved one bus that carried the students from Athens to their village after a school trip, one car (the one that was mounted by a couple) and a truck carrying wooden blocks. After this accident the need for faster and mainly safer passing of the Tempi Valley grew intensely. This led to a tunnel construction in Mount Ossa and unfortunately during the working process the accident involving the Italian architect engineer happened.

#### Chapter 2. Construction of roads and railways in Greece

#### 2.1. Description of the Greek interregional highways

The Greek highways that have been constructed or will be carried out are:

- The "PATHE" (Patra-Athens-Thessaloniki-Evzoni)
- The "Egnatia" highway
- The highway of West Greece ("Ionia" highway)
- The "Korinthos-Kalamata higway
- The highway of West Thessaly (E65)
- The "Kristalopigi-Ieropigi" highway
- The "Thessaloniki-Serres-Promahona" highway

These highways will be the basic infrastructures of transportation in Greece for the next years. The problem that this essay is studying is in Tempi Valley and concerns the first highway (The "PATHE" -Patra-Athens-Thessaloniki-Evzoni).

#### 2.2. Public Construction (The case of MOMA)

MOMA, which in Greek means Mixed Groups of Reconstruction Machines, was a military service that was founded approximately in the year 1956 from the Greek government in order to be occupied with the rehabilitation of the Greek open air and of Greece in general. Before MOMA (Μεικτές Ομάδες Μηχανημάτων Ανασυγκρότησης) there was another Military Service called EOMA (Ειδικές Δυνάμεις Μονάδων Ανασυγκρότησης), which translated from the Greek language means Special Groups of Reconstruction Machines. MOMA was the military technical service that was occupied with the opening of the first road in Tempi Valley, that lead from Larissa to Katerini, in between the years 1958-1961. MOMA was disbanded in the year 1990 and the employees were transmitted to other Technical branches of the Greek Government such as those of the Prefectures or the municipalities creating a large hole in the rehabilitation of Greece and especially the Greek open air.

From that year (1990), begins a new chapter for the Greek Infrastructure and work ship in general.

#### 2.3. PPP (Σ.Δ.Ι.Τ.)

#### 2.3.1. Introduction

Public Private Partnerships (PPPs) are contractual agreements, usually long-term ones, between a public entity (the Contracting Authority) and a private counterpart, with the objective of implementing a project and / or providing a service. In a PPP scheme, the private partner bears, in whole or in part, the implementation cost of the project, as well as a substantial part of the risks related with its construction and operation. The public partner, on the other hand, lays out a set of output specifications on the design, technical, and operational characteristics the project and determines the private partner's payment mechanism, either through partial (e.g. annual) payments linked with the availability of the project and the compliance with its output specifications or through direct payments by the end-users via fees (e.g. tolls).

The objective of PPPs is to involve private partners in the implementation of projects or the provision of services, aiming not only at securing additional financial resources, but also at benefiting from their know-how, human resources, innovative approach and ability to efficiently manage complex projects for the public benefit. The main benefits of PPPs are the following:

#### Ability to finance more projects

The Government, along with the local authorities, have to respond to the constantly increasing needs and requirements of the citizens for modern and qualitative provision of infrastructure and services. The use of private funds, complementary to the public ones, may contribute to the faster implementation of projects and the delivery of services. PPP schemes are a new means of achieving the strategic priorities of public entities, complementary not only to the traditional public works, which by no means will be limited, but also to other forms of partnership between the public and the private sector, such as the concession agreements of the Ministry of the Environment and Public Works or the collaborations of Local Authorities with private partners, that continue to be implemented.

Under PPP schemes, public entities implement and offer to citizens more works and services in a faster and more efficient manner.

The integration, depending on the structure chosen, of the design, financing, construction, and operation of a project under a PPP structure, along with the transfer of relevant risks to the private partner, creates incentives for a more diligent and efficient design and implementation of the projects. This, in effect, results in substantial reductions, if not abolishment, of cost and time overruns.

Moreover, the fact that the private partner also undertakes the responsibility for maintaining the projects results in services of higher quality, with greater functionality throughout the project's life cycle.

#### Enhancement of the investment environment

PPP schemes mobilize more funds than those that the public sector alone could mobilize, providing, hence, the opportunity to various parties and investors of the private sector to get involved in infrastructure projects, innovate and develop new activities. The long-term nature of PPP projects results in setting up financially stable companies with predictable cash flows. These cash flows feed the market and thus promote the growth of the economy.

#### Features of Public Private Partnerships

The selection of the private partners that will undertake a PPP project is made through an international public tender. PPPs are implemented through contractual agreements, whereby all the aspects of a project, not only during its construction period but also during its operational phase, as well as the obligations of the two contracting parties, are clearly set and agreed upon. At the end of the contractually predefined operational period the projects implemented under a PPP scheme are transferred from the private partner to the Contracting Authority.

#### Project's financing and reimbursement

Upon the termination of the tender, the private partner selected creates a Special Purpose Vehicle (SPV) that will undertake, according to the scheme of the partnership:

- the finalisation of the design of the project,
- its construction, and
- either the operation and exploitation of the project or its maintenance according to the contractual agreement.

The SPV signs an agreement with the Contracting Authority, whereby all aspects related to the project are regulated and it's financing is secured. Typically, the financing comes from, to a small extent, the private partner's equity and to larger on from bank loans.

The SPV undertakes the responsibility of constructing the project's infrastructure (construction, renovation of existing infrastructure, installation of equipment, etc) and the provision of pre-agreed services during the life of the contract, using either own resources or subcontractors that meet the criteria determined by the Contracting Authority. During the project's life, the SPV is paid either through regular instalments by the Contracting Authority (availability payments) or through fees paid by the end users. In turn, it gradually repays the loans it has obtained and, provided that it records profits, it distributes dividends to its equity investors, based on the yield on its equity. "AEGEAN MOTORWAYS" (AYTOKINHTO∆POMOI AIΓAΙΟΥ) is such an example. "AEGEAN MOTORWAYS" (AYTOKINHTOΔPOMOI AIΓAIOY) is responsible for the part "Maliakos-Klidi" of the PATHE and takes advantage of the motorway tolls for a period of about thirty years.

#### The roles of the public and the private partner in a PPP

In a PPP scheme, the roles of the public and private partners are clearly determined.

The public partner undertakes:

- the determination of the general PPP scheme
- the evaluation of the private partners' proposals
- the support of the implementation of the project
- the monitoring of the implementation of the project and of the contractual obligations of the private partner

The private partner undertakes:

- the elaboration of the design of the project
- the construction of the project
- the securing of the financial resources
- the management and operation of the project and /or its maintenance
- the transfer of the project to the public sector at the end of the contractual period

In the Table that follows (table 2.1.) one can see the Roles of the Public and the Private Sector with the basic aspects of each category.

**Table 2.1.** The Roles of the Public and Private Sector in the PPPs

Public Sector's Role		Private Sector's Role		
Formation of Output Specifications	Evaluation	Design	Construction	
Approval	Support/Monitoring	Financing	Operation	

The success of a PPP scheme depends on the efficient and smooth collaboration of all the parties involved both public and private ones.

#### A. Private Sector

- Construction Companies
- Banks / Financial Institutions
- Operators
- Advisors

#### **B. Public Sector**

- Interministerial PPP Committee
- Contracting Authorities
- Special Secretariat for PPPs, Ministry of Economy and Finance

#### The Legal Framework of Public Private Partnerships (PPPs) in Greece

Law 3389/2005 introduces a new legal framework for the implementation of Public - Private Partnerships in Greece. This legal framework aims at regulating the implementation of projects and the provision of services through PPP schemes. Specifically, the law defines the Public Entities that can implement partnership contracts with Private Entities, in areas falling within the scope of their competence.

Law 3398/2005 aims at providing incentives for both public and private entities, so as to engage themselves in PPPs for the construction of infrastructure or the delivery of services, when it can be demonstrated that this procurement method delivers value for money for the public sector. This Law defines the minimum content of a PPP contract, with a clear description of the rights and obligations of both parties, regulates specific issues, such as financing, participation of public entities in

partnerships, the payment mechanism, the granting of permits, the protection of the environment, the treatment of archeological findings, expropriations and cases of projects undertaken by Public Utility companies.

Moreover, legal issues related to these partnerships, such as the transfer of claims, validity of sureties in rem, taxation and resolution of disputes (arbitration) are clearly defined. According to the new legal framework, parliament ratification of PPP contracts is no longer required, while specific issues related to risk allocation, which were difficult to be dealt with in the past, are efficiently tackled.

The new legal framework provides that under a partnership contract, the Private Entities assume a substantial part of risks associated with the financing, construction, availability of or demand for the partnership object, against payment to be made as a lump sum or in installments by the Public Entities or by final users of the works or services. As such, the financing, in whole or in part, for the construction of the works or the provision of services, is provided by resources and funds secured by the Private Entities that are paid back during the operational period of the projects. Finally, the procurement procedures are in line with the EC Directive 2004/18.

#### 2.3.2. The Public Private Partnerships Unit

Under Law 3389/2005, a Special Secretariat for Public-Private Partnerships (PPP Unit) has been established in the Ministry of Economy and Finance, having the responsibility to identify projects that can be delivered via PPP schemes.

The establishment of this PPP Unit has been based on other similar units already operating in other Members - States of the European Union for the promotion and implementation of PPP projects. The PPP Unit aims at supporting the Inter-Ministerial PPP Committee and Public Entities, while its main tasks involve the following:

- Identification of the works or services that could be implemented or provided through Partnerships and be included under the provisions of Law 3389/2005,
- Evaluation of the proposals submitted by public entities and their subsequent forwarding to the Inter-Ministerial PPP Committee for approval,
- Promotion, in general, of the construction of works or the provision of services through the Partnership framework,

Facilitation and support of Public Entities in pursuing contract award procedures,
 as defined in Law 3389/2005, for the selection of Private Entities,

• Monitoring of the implementation of Partnership Contracts.

A Public Entity (Contracting Authority), wishing to implement a PPP project submits a proposal to the PPP Unit, whereby all related technical, financial and legal aspects of the project are outlined. The PPP Unit evaluates this proposal and if the criteria are met it is included in the "List of Proposed Partnerships", a non-binding list with proposed PPP projects that can be implemented via a PPP scheme and fall under the provisions of Law 3389/2005.

For every project included in the "List of Proposed Partnerships" the PPP Unit drafts a short report, addressed to the Inter-Ministerial PPP Committee, outlining the following:

- The financial, technical, socioeconomic and legal reasons that justify the implementation of the projects under a PPP scheme
- The criteria taken into account for the selection of the projects included in the "List of Proposed Partnerships"
- Any actions undertaken by the Contracting Authorities for the preparation of the partnership, such as, for example, the appointment of financial, legal and technical advisors, preliminary designs and drafting of project contracts
- The type of the proposed contract award procedure and an indicative time schedule
- An indicative budget of the project.

Based on the data of this short report the Inter-Ministerial PPP Committee approves and includes under the provisions of Law 3389/2005 the proposed partnerships.

#### 2.3.3. Summary of Approved Projects

Up to date (February, 2008), 34 PPP projects with a total budget of approximately 4 billion Euros have been approved, corresponding to 216 new infrastructure sites.

The majority of these projects will be implemented in the province of Greece, a fact that justifies in practice the role of PPPs as an additional, multidimensional tool of regional development that aims at contributing to the social convergence and cohesion.

The table below summarizes the tendering timetable of all approved projects.

**Table 2.2.** Presentation of approved PPP projects

	Project NP Value		Status	
	Public Sector Accommodation			
1	Construction and maintenance of seven new Fire Stations	€38 M	PPP tender under way Selection of the PPP contractor: 3 <sup>rd</sup> Quarter 2008	
2	Facility management of four buildings of the Hellenic Police	€36 M	PPP tender: 3 <sup>rd</sup> Quarter 2008	
3	Construction and maintenance of 14 new buildings of the Hellenic Police	€181 M	- PPP tender for Piraeus Police Headquarters was launched in December 2007 - 8 consortia submitted expression of internet - PPP tender for the remaining 13 police stations was launched in April 2008	
4	Construction and maintenance of a Government House for the Prefecture of Fthiotida	€34 M	PPP tender was launched in April 2008	
5	Construction and maintenance of a Government House for the Prefecture of Achaia	€36 M	PPP tender was launched in April 2008	
6	Construction and maintenance of a Government House for the Prefecture of Corinth	€25 M	PPP tender was launched in February 2008 - 6 consortia submitted expression of interest	
7	Construction and maintenance of a Government House for the Prefecture of Trikala	€23 M	PPP tender was launched in February 2008 - 6 consortia submitted expression of interest	
8	Reconstruction of the "Domboli" building complex for the accommodation of the services of the Region of Epirus	€23 M	PPP tender: 3 <sup>rd</sup> Quarter 2008	

		62634	Inpo. 1 and a coop
9	Construction and maintenance of the	€26 M	PPP tender: 3 <sup>rd</sup> Quarter 2008
	Administration Park building in the city		
10	of Alexandroupolis	600.11	DDD 1 2 <sup>rd</sup> 0 · 2000
10	Construction and maintenance of a	€29 M	PPP tender: 3 <sup>rd</sup> Quarter 2008
	Government House for the Prefecture of		
	Imathia		
11	Construction and maintenance of the new	€255 M	PPP tender: 3 <sup>rd</sup> Quarter 2008
	buildings of the Ministry of Economy and		
	Finance, of sports infrastructure and		
	animation park of the Chalandri		
	Municipality, and construction of		
	buildings for the accommodation of		
	services of the Chalandri Municipality		
	Tourism a	nd Sports	
12	Construction of an International	€65 M	PPP tender under way Selection
	Conference Center in the Faliro Pavilion		of the PPP contractor: 4 <sup>th</sup> Quarter
	(Tae Kwon Do stadium)		2008
13	Implementation of 5 sports centers and 2	€67 M	Advisors' tender: 3 <sup>rd</sup> Quarter 2008
	swimming centers		
	Jus	stice	
14	Construction and maintenance of three	€238 M	PPP tender was launched in January
	new prisons		2008 - 6 consortia submitted
			expression of internet
15	Construction and maintenance of two	€120 M	PPP tender: by end June 2008
	Court Houses		
	Educ	cation	
16	Construction and maintenance of new	€89 M	PPP tender was launched in
	buildings for the University of the		December 2007 - 7 consortia
	Peloponnese		submitted expression of interest
17	Construction and maintenance of 27 new	€180 M	PPP tender for the first group
	school buildings in the region of Attica		of 14 schools was launched in
			April 2008 - 7 consortia submitted
			expression of interest
			PPP tender for the 2 <sup>nd</sup> group of schools:
			2 <sup>nd</sup> Quarter 2008
18	Construction and maintenance of 31 new	€139 M	PPP tender: 2 <sup>nd</sup> Quarter 2008
	school buildings in the region of Central		ì
	Macedonia		
19	Construction and maintenance of 23 new	€76 M	Advisors' appointment: June
-/	school buildings in the regions of East	· •	2008
	Macedonia and Thrace, West Macedonia,		PPP tender: 3 <sup>rd</sup> Quarter 2008
	Epirus and Ionian islands		
	Denies and Toman Islands		
			<del></del>

	T	050.14	
20	Implementation of students residence	€73 M	Advisors' tender was
	halls for the University of the Peloponnese		launched in April 2008
21	Implementation of students residence	€89 M	Advisors' tender was
-1	halls for the University of Thrace	(0) 141	
	mans for the Offiversity of Thrace		launched in April 2008
	Не	ealth	
22	Construction and maintenance of the new	€389 M	PPP tender: 3 <sup>rd</sup> Quarter 2008
	Children's Hospital of Salonica	_	
23	Construction and maintenance of the new Oncological Hospital of Salonica	€396 M	PPP tender: 3 <sup>rd</sup> Quarter 2008
24		€131 M	A de instantant de la constant de la
24	Construction and maintenance of the	eisi M	Advisors' appointment: June
	new General Hospital of Preveza		2008
25		010434	PPP tender: 3 <sup>rd</sup> Quarter 2008
25	Implementation of the	€124 M	Advisors' appointment: June
	Rehabilitation and Recovery Center		2008
	of Northern Greece		PPP tender: 4 <sup>th</sup> Quarter 2008
	Ports Infra	structure	
26	Installation and operation of security	€342 M	PPP tender: 3 <sup>rd</sup> Quarter 2008
	systems in twelve Greek Ports		
	3		
	Envi	ronment	
27	Implementation of infrastructure for	€117 M	Advisors' appointment: 3 <sup>rd</sup>
	the Integrated Waste Management		Quarter 2008
	System in the Region of Western		PPP tender: 4 <sup>th</sup> Quarter 2008
	Macedonia		`
28	Implementation of infrastructure for	€291 M	Advisors' tender was
	the Integrated Waste Management	•======================================	launched in April 2008
	System in the Prefecture of Salonica		launenea in 7 pm 2000
29		€48 M	Advisors' tender: 3 <sup>rd</sup> Quarter 2008
29	Implementation of sewerage	C40 IVI	Advisors tender: 3 Quarter 2008
	networks and sewage treatment unit in		
	the Municipality of Rafina  Def	ence	
30	Implementation of residences, nursery	€158 M	Advisors' tender was
	schools and sports facilities for the		launched in May 2008
	Army and the Air Force		
31	Facility Management of the	€47 M	Advisors' tender was
	"Evelpidon" military school	_	launched in May 2008
	Liverplach minitary school	_	
37	Implementation and evaluation of a		Advisors' tender was
32	Implementation and exploitation of a new hotel unit in Methana		Advisors' tender was launched in May 2008

33	Installation and operation of security systems in 23 ammunition dumps	€30 M	Advisors' tender: July 2008
	Implementation of a flight simulators center	€65 M	Advisors' tender: July 2008

#### 2.3.4. The PPP Unit and the Procedure

#### Proposal to the PPP Unit

The Public Entity (Contracting Authority) wishing to implement a PPP project may submit a proposal to the PPP Unit, which then evaluates the feasibility of the specific project under a PPP scheme. This proposal should include the following:

- Detailed description of the project that will be provided as a PPP, and its technical characteristics,
- Indicative budget of the proposed PPP project,
- Operation and maintenance cost,
- Schedules,
- Presentation of the proposed PPP scheme,
- Value for Money (VfM) evaluation, which justifies the implementation of the project under a PPP scheme,
- Other issues that influence the implementation of the project, such as legal and environmental.

The above data should provide a reliable indication for the nature of the project, its financing needs and its lifetime. As such, a detailed financial analysis is needed, especially in the case where the private partner bears the demand risk, in order to correctly quantify this risk that affects the anticipated revenues.

The PPP unit analyses the public entity's proposal and determines whether it can be implemented as PPP under the provision of Law 3389/2005. In case that the proposal in positively evaluated, as it was initially submitted or was finally amended with necessary modifications, the PPP unit includes it in the "List of Proposed Partnerships" and notifies the public entity of this decision.

#### **Decision of the IM PPP Committee**

If the involved Public Entity decides to submit an "Application for Inclusion" within no more than two months after the date of notification the Minister of Economy and Finance, acting as the President of the IM PPP Committee, sets this application as an item of the agenda of the next meeting of the IM PPP Committee and invites all regular members and the Minister that supervises the involved Public Entity. In this meeting, the report drafted by the PPP Unit is presented to the Ministers, and all necessary and additional information and clarifications are provided, so as to help Ministers to reach a decision. After that, the IM PPP Committee announces its decision, to either approve or reject this application. If the IM PPP Committee decides to approve a partnership, the PPP Unit has to coordinate and monitor all contract award procedures, as defined in Law 3389/2005, so as to select the SPV that will participate in the partnership.

#### Contract award procedure

Beyond specific regulations with the award of PPP contracts, it must be noted that Law 3389/2005 is in line with the general principles of both national and Community law (equal treatment, transparency, protection of public interest etc), regulating the contract award procedures and the relations of the Contracting Authorities with candidates. The procedures for contract award are either open or restricted. In the case of complex contracts, the process of the competitive dialogue or the negotiated procedure may be applied.

Contracts will be awarded by the Public Entity acting as Contracting Authority either on the criterion of the tender being the most economically advantageous or on the criterion of lowest price. The minimum qualifications and abilities of the tenders who participate in the contract procedure are clearly defined by the Invitation to Tender.

#### The Special Secreteriat for PPPs

The Special Secretariat for PPPs was set up in the Ministry of Economy and Finance along with the ratification of Law 3389/2005. This Unit follows the structure

and role of equivalent units in other Member States of the European Union for the promotion and implementation of PPPs. The mission of the Special Secretariat is the provision of support and assistance to the Inter-Ministerial PPP Committee and to public entities, while its main tasks involve the following:

- the identification of the works or services which might be constructed or provided through Partnerships and be included under the provisions of Law 3389/2005,
- the evaluation of the proposals submitted by public entities and their subsequent forwarding to the Inter-Ministerial PPP Committee for approval,
- the promotion in general of the construction of works or the provision of services through the Partnership framework,
- the facilitation and support of Public Entities in pursuing contract award procedures, as defined in Law 3389/2005, for the selection of Private Entities,
- the monitoring of the implementation of Partnership Contracts.

The main responsibilities of the Special Secretariat for PPPs involve the following:

- the coordination of PPP projects that are promoted or planned by Public Entities, by seeking data related with them,
- the evaluation of projects that may be implemented via a PPP scheme according to the provisions of Law 3389/2005, by elaborating data or information gathered from any Public or Private entity,
- the elaboration of the information it receives from professional and business entities or associations, including the Greek Banking Association, the Technical Chamber of Greece, the Economic Chamber of Greece, and the Association of Contracting Companies,
- the study of comprehensive proposals elaborated by Public or Private Entities for the construction of works or the supply of services,
- the monitoring of all financial obligations undertaken by Public Entities, and especially of the future burden upon the Public Investment Programme,
- the diffusion of expertise to all relevant stakeholders, by preparing and distributing printed material with information and instructions related to

Partnerships, the purposes they serve, the internationally accepted methods of establishing,

- the standardization of documents, which can be used for the needs of the Contract Award Procedures,
- the standardization of all kinds of Partnership Contracts or Ancillary Agreements, in order to assist Public and Private Entities in formulating the terms and conditions of their Partnership Contracts,
- the submission to the Joint Ministers' PPP Committee of proposals intended to improve the legislative framework regulating the Partnerships,
- the coordination of the preparation of studies and the supply of auxiliary services in general to persons recruited pursuant to the provisions of Law 3389/2005.

Pursuant the above responsibilities, the Special Secretariat for PPPs collects the information necessary to decide which projects or services can be implemented through Partnerships, and evaluates the financial and technical parameters, as well as the associated legal and other issues. The Special Secretariat then proceeds to draw up a non-binding list of projects and services ("List of Proposed Partnerships") that may be implemented through Partnerships and may be included to the provisions of Law 3389/2005. For each project or service included in the List of Proposed Partnerships, the Special Secretariat draws up a brief report setting out its rationale for:

- the financial, technical, socio-economic and legal reasons for which it considers that the construction of the specific projects or supply of the specific services ought to proceed by means of a Public-Private Partnership,
- the criteria that it has taken into account to select the specific projects or services that have been included in the List of Proposed Partnerships,
- the actions which may have been taken by the Public Entity involved to meet the needs of preparing the award of the relevant Contracts,
- the form of the proposed Contract Award Procedure as well as the Public Entities acting as commissioning authorities,
- an indicative timetable of the Contract Award Procedure
- a report of the indicative budget of the project or services to be undertaken by the partnership under the Contract.

#### 2.4. Why is the public sector turning to PPP Projects?

The main reason is that state usually has limited funds or has other priorities. At the same time the private sector is thought to 'produce' better work or the same work cheaper; is a better manager and takes better account of the risks involved. Also PSP & PFI are utilized; transferring to the private partner those risks that he can better manage; provided services are improved; and assets are better utilized reduces public sector risk. Finally, by taking advantage of private sector innovation, experience and flexibility, PPPs can often deliver services more cost-effectively than other traditional approaches. The resulting savings can then be used to fund other needed public services. The basic motives for PPP implementation are the need to secure state budget allocations; quality improvement of public infrastructure and provided services; mobilization of private sector's know-how in project planning/implementation; limitation of the project/service operational cost; and finally sharing of financial risks. The expected results of PPPs are: better exploitation of existing public funds; differentiation of the way public infrastructure projects and services are being implemented, in order to advance innovation; increased competition and know-how transfer from the private to the public sector; and the need to guarantee the desirable level of projects' social benefit and the quality of provided services on a constant basis.

### 2.4.1. Basic requirements for a PPP project successful planning and implementation

The basic presuppositions are the formation of strong «partnerships», the Public acceptance, and the management transfer from public to private sector and finally the guaranty of meritocracy and the performance evaluation during the contracting procedures. The main contribution of the public sector in the achievement of PPP goals is in the planning process, in the financial preparation of the partnership, and in the political and legislative preparation of the partnership. Additionally the public sector acts as the coordinator that ensures the social benefits of PPP projects. The governments ought not to consider PPPs as «easy solutions» on difficult matters. A lot of efforts should be made to ensure a cooperation context that will lead to success. In the past a lot of efforts have been made for the promotion of PPP in big projects.

## 2.4.2. Benefits and risks related to PPP projects implementation

The potential benefits from implementing PPP are: cost reduction; risk management and risk assessment; improvement of provided services; and generation of revenue or other indirect financial benefits (economic development reinforcement, employment growth, etc.). The potential risks for PPP are: loss of control by the public sector; political risks; accountability question matters; ill defined and thus unreliable services; lack of competition; and the blurriness in the partners' selection procedure.

#### 2.5. Identification of the PPP success factors

PPP has attracted a lot of attention in the national and EU context. Changes and reallocations in the national and EU budget underline the necessity of increased engagement of private funds. Although EU Member States have different levels of experience and legislation, the general tendency is the increased importance of PPP. Several factors such as public acceptance and strong partners are considered as essential for success. In the near future, the ability of the administrations to create regional capacity for the implementation of PPP at a regional and local level will define the broad-scale success of PPPs. It becomes evident that PPP should become a mainstream option in EU countries with a heavy public sector legacy. However PPPs are not a panacea. Central and regional public bodies must develop the abilities to assess a PPP concept, calculate risks and benefits and decide for the most viable solution.

#### 2.5.1. The INTERCO - PPP Project Partners

The INTERCO-PPP project presents the necessary link between theory and praxis of the project partners.

The project among others aims to the identification of the basic PPP success factors. This identification is based on the accumulated experience of the project partners and the local stakeholders, who transferred their know-how and experiences in the INTERCO-PPP network through the interregional Meetings & Study

Tours organized. The successful (or not) PPP Case Studies (projects) of the project partners, which have been thoroughly analysed, constitute the basic element of this identification procedure.

### The PPP projects analysed within the INTERCO-PPP Project

This knowledge exchange process has led to the identification of the following set of twenty (20) factors:

- •Formation of "Strong" Partnership Schemes
- •Full Understanding / Acknowledgement of the Social Character of PPP
- •Public / Community Acceptance
- Political Backing
- •Public Interest Observance
- •Focusing on MIRR and not on IRR (Private Actor)
- •Profit Assurance for the Private Sector
- •Management Transfer from Public to Private Sector
- Public Initiative

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- Political Backing
- •Public Interest Observance
- •Focusing on MIRR and not on IRR (Private Actor)
- •Profit Assurance for the Private Sector
- •Management Transfer from Public to Private Sector
- •Public Initiative
- Knowledge Transfer
- •Public Guarantees for Loans
- •Quality & Product Standards Definition
- •Delimitation of Competence Fields (for the Public and the Private Sector)
- Maturity of Technology / Project Concept
- •The Guaranty of Meritocracy and Performance Evaluation During the Contracting Procedures

- •Legislative Framework and Empowerment
- •Capacity Development at National and Regional Level (Public Officials)
- •Compatibility with Structural Funds and National Co-financing
- •Establishment of an Independent Authority for Conflict Resolution

Of course, the above-mentioned set of factors doesn't cover all possible factors. It only represents the most crucial ones identified throughout the implementation of their respective PPP projects by the INTERCO-PPP project partners. For a successful PPP approach certain additional conditions have to be considered, such as:

- •Distinct regulations are laid down concerning the responsibilities of the parties regarding costs/risks
- •Project implement ability
- Favorable economic conditions & available financial market
- •Appropriate Risk Allocation
- •Effective procurement

## 2.6. Commenting the suggested factors

#### 2.6.1. Formation of "Strong" Partnership Schemes

The partners could not decide on a common position and the meaning of strong partnership. The long-term character (20-30 years) of many PPPs underlined the need for "durable" partners and partnerships, there where hesitations about the binding character and the intensity of PPP schemes. There is a certain deviation from contractual provisions towards a partnership culture that still has to be adapted in the national and regional contexts of the EU Member States and regions.

- •(Greece): The role of the public sector in the achievement of PPP results is in the planning process, in the financial preparation of the partnership, and in the political and legislative preparation of the partnership. The public and the private sector work together on basis of clear, contract agreements.
- •(Austria): It is recommended that partnership schemes should be formed in a way to be able to work within the foreseen timescale sufficiently but not to construct "strong" partnerships that fix the partners in their role like into a corset. Especially the private partner usually doesn't feel comfortable within "strong" partnership schemes.

•(Sweden): The successive formulation of strong partnership schemes has been an important success factor, but not only in a contractual perspective, the spirit of cooperation and a mutual interest and commitment in the project has been equally important.

•(Lithuania): Dialogue, trust, long-term focus and reciprocal understanding constitute essential characteristics of the partnership culture that is crucial to the success of the PPP process. However, the PPP situation in Lithuania demonstrates the lack of such partnership culture. On the one hand, private sector partners often seek to maximize their short-term profits from the PPP contracts. On the other hand, public sector institutions are often unable to understand commercial interests of the private sector in the PPP process.

•(Spain): One of the pillars on which the success of these initiatives lies is that during the drafting phase of the projects the following steps are perfectly defined: the actions to develop, the objectives and goals to reach, the technical, legal and financial implications, etc.

# 2.6.2. Full Understanding / Acknowledgement of the Social Character of PPP

PPP projects are clearly Public Projects, thus their social character is integral. During the planning and drafting phase this dimension should be clearly communicated to the involved partners and the interested public. A sound approach is to break each project/concept down to its components and decide which parts can be implemented in a PPP scheme, thus sketching the roles of the involved partners.

•(Greece): The full understanding and acknowledgement of the social character of PPP is of great importance for the success of a PPP project. It is essential that all involved parties be constantly clarified on this issue. A common misunderstanding regarding PPPs is the nature of the service or product to be provided. Thus many endeavors of private character are usually interpreted as PPPs because the private sector is entering as a partner, e.g. recreation centers. PPPs focus on core tasks of the pubic sector and examines whether this tasks can be broken down in components, which can be object of a PPP. A typical case can be educational facilities. Whereas the construction and management of buildings can be easily reallocated to the private sector, however operational issues are a much more complex matter.

•(Austria): In this case the interests of the public and private partners differ. Usually the public partners have social interests and the private economic interests. It is therefore necessary for the private partner to be aware of the social character of the project and vice versa. The public partner must accept the economic interests of the private partner. Both, social and economic interests (and their defined frameworks and borders) should be defined before starting the PPP in order to avoid problems.

•(Sweden): The project was mainly an energy efficiency and O&M (operation and maintenance) improvement project. The issue of providing better services to the tenants of the city and secured indoor climate were nevertheless important social components that strengthen the project.

•(Lithuania): As indicated above, the private partners are often unable or unwilling to understand the social character of PPP because their behavior is often driven by profit-maximization on the short-term or long-term basis.

•(Spain): When the private sector decides to carry out a project of this nature the main aim is to achieve a predetermined economic benefit.

### 2.6.3. Public / Community Acceptance

Public acceptance is crucial to PPP success taking in account the political dimension and private interests safeguarding towards political changes. At the initial phases the public might be hesitant. Thus the focus of the public debate should be set on the objectives and gains of the PPP and not on contractual details. It is very important to emphasize on the alternatives and especially on the zero potion of non-implementation.

•(Greece): A common issue arising in public discussions on PPP in Greece is the accusation of disguised privatization. Where this fear might be unjustified in many cases it could easily lead to a deadlock. Thus the efforts for community acceptance should follow three directions: a) Clarification on the PPP context (in a manner that can be accepted by the public and not become another factor of suspicion); b) Transparency of the risk allocations, expected benefits and role definition (though respecting the potential demand of the private sector for confidentiality, especially in now-how matters); and c) Promotion of PPP cases that might cause smaller suspicion or disapproval, e.g. waste management instead of real estate development

•(Austria): The acceptance of the community is important at least for the political success of a PPP project as it should demonstrate, that the public partner is looking for modern solutions for the benefit of the community. To achieve as much community acceptance as possible it is necessary to make the community getting involved by informing them about the project, in order to create identification with the PPP project.

•(Sweden): A PPP in form of Energy Services was not the first alternative that was discussed in the municipality. However, facing the fact that the financial resources for the project were limited, the municipality and its civil servants had to opt for an alternative model that gave the most value for the available money. Despite the fact that there was some hesitance regarding the business model as such, the PPP Energy Service idea was eventually accepted and approved by the political body. Over the time of the contract the community acceptance raised significantly.

•(Lithuania): Acceptance from the public is important for the political success of PPP-like projects. The acceptance of PPP arrangements in the Lithuanian public is limited (because of corruption allegations under several previous or ongoing PPP projects). However, the public usually favors better public infrastructure and/or services developed with the application of PPP arrangements in Lithuania.

•(Spain): The project's acceptance by the community is vital for its future success. In order to achieve this it is essential that the citizens understand the benefits that they will gain by putting this action in practice.

#### 2.6.4. Political Backing

The landscape of the available Structural Funds in the 2007-13 periods is changed for many NUTS 2 regions. Hence the PPP tool has a clear role in the production of public projects and services. It is crucial to have the "right" political bodies positively involved at the early stages, while citizens support can be regarded as a guarantee for political backing. Finally common suspicion of corruption and privatization, derived by the novel features of PPPs are clearly political and not administrative matters.

•(Greece): Greece, as other Objective 1 countries will experience a serious decrease in EU funding in the next programming period 2007-13. Hence whereas PPPs have been an option among others so far, they will rise in importance and necessity. This

will be especially the case for the Region of West Macedonia, which will join the "phasing out" regions. Thus PPP will inevitable enter the political agenda, especially at the regional and local level, since the support at the central level can be taken as granted.

•(Austria): Without any political backing and active involvement of policy makers most of PPP projects are convicted to failure. Depending on the kind of PPP it is crucial to have the "right" political bodies positively involved in order to have the necessary political backing. This is important especially if troubles or problems arise and political support is needed to be able to continue the project and also to have opportunities to overcome these problems.

•(Sweden): The political backing was not a success factor in this particular case, as Swedish politicians, and in particular local politicians, generally have a limited understanding of and interest in PPP. The project was however initiated and developed by senior civil servants, whereas the politicians were involved only in the later stage of the project development. Eventually they turned up to be positive, but lessons learned are that the political level must be involved in the process much earlier than in this case.

•(Lithuania): Political backing for PPP is mixed in Lithuania, depending on many reasons. Also, it is important to note that there is no political backing for PPP projects from the central government. Some Lithuanian politicians and top officials are suspicious about the transparency of PPP and its value added.

•(Spain): The political risks that can be generated as a consequence of Spain's inexperience in PPP (rejection on behalf of the trade unions, the administrative staff or the society who associates PPP with privatization), may lead to the political power showing reticence to develop these projects. However, by the current necessity to collaborate with the private sector to implement some initiatives, the political backing is evident.

### 2.6.5. Public Interest Observance

Public Interest observance has to be visualized and be exposed to public debate at all possible opportunities. Understandably at the initial stage of the introduction of PPPs as a mean of public policy, projects should be chosen that show clear benefits of the Public Interest, not only on the results level, but also impact

oriented. The general regional context will decide if an Ex-ante (as in Sweden) or Expost approach (as in Lithuania) or a certain mix is most suitable.

•(Greece): It is imperative that the public sector acts as the coordinator that ensures the social benefits of PPP projects. Social goals have to be met at all times. In relation to the former success factors, the Observance of Public Interested has to be visualized and be exposed to public debate at all possible opportunities.

•(Austria): PPP project should be developed in such a way that it will be possible to observe the results regularly to prove that public interest is fulfilled as contracted in the beginning of the partnership.

•(Sweden): In the initial phase of the project development the public and the media about the project and its character raised a lot of questions. The media followed the project closely and once the upgrading of buildings as well as a higher level of service to the tenants had become visible, the response from the general public was very cost savings could generate better conditions for the tenants without raising costs or taxes.

•(Lithuania): There is limited observance of public interest under Lithuanian PPP-like projects. The design of PPP projects is often not conducive to such observance (with the exception of a few cases). A high level of transparency in the public and private sector and the effective exercise of accountability and control from the public are required in Lithuania.

•(Spain): PPPs are currently awaking an outstanding interest among the population and companies of the region. The citizens show a high degree of interest in the programmes aimed to reinforce the innovation implemented jointly by the public and private sectors because they can provide benefits for the region.

#### 2.6.6. Focusing on MIRR and not on IRR (Private Actor)

The introduction of the MIRR element clearly signals the departure from a "traditional" contract-fulfillment approach to the point where the private partner is actively engaged in the success of the PPP. In general when expectations are met the demand for MIRR is possible, however, when unexpected failures are encountered, the Public partner is expected to offer solutions. Some partners considered the IRR approach to be more suitable when starting with PPPs. In any case the MIRR concept underlines the importance of the long-term commitment and the clear definition of the standard of services to be provided.

•(Greece): In accordance to the above-mentioned issues, the long-term reinvestment of the private sector must be motivated and facilitated. This element has a strong capacity building element in it. The partners should be able to renegotiate and extend their partnerships focusing on the objectives of the PPP and deviating from the "traditional" contract-fulfillment approach.

•(Austria): The welfare of the PPP project should have first priority. As long as the PPP project is developing in the foreseen way in case of rates of return, the focus on MIRR is possible. But in case of problems the internal rate of return has first priority.

•(Sweden): These issues had not been discussed in detail with the contractor. But since this project was considered as a bridgehead into the municipal sector to create confidence for the business model, is lightly the contractor internally used the IRR model, and not the somewhat lower return rate that normally become the result of when using the MIRR model.

•(Lithuania): No information is available whether the private actors focus on MIRR rather than on IRR. Usually IRR is applied during the project design stage. However, the nature of PPP-like projects implemented in Lithuania underlines the long-term commitment and the clear definition of the standard of services to be provided.

#### 2.6.7. Profit Assurance for the Private Sector

A profit assurance for the private sector could prove to be contra productive. The level of profit for the private sector cannot be contractually guaranteed, but determined by a combination of competition during the tendering stage and operational efficiency of the private partner during the implementation stage.

•(Greece): Commercial goals have to be met at all times. The private sector can additionally provide some useful concepts such as minimal turnover guarantee etc. However, these approaches might be a political liability and offer ground for debates beyond the scope of the PPP project.

•(Austria): In many PPP projects it is not possible to assure profits in long term. Therefore it is necessary to discuss and clarify between public and private partners before the start of the PPP project what to do in the case of less or no profit or even in the case of loss of capital.

•(Sweden): Since being an EPC (Energy Performance Contracting) project the contractor did not have any guaranteed profit assured in the contract. But with a

thorough and good analysis, the risk for the contractor was in reality limited. The third party financer had however its revenues and profits assured due to separated EPC and financial contracts.

•(Lithuania): Since all contractual provisions are not fully available, it is difficult to determine any profit assurance for the private sector. However, such provisions are unlikely to be found under most PPP-like projects in Lithuania.

•(Spain): The agreement between public and private organizations is established to cooperate in the rendering of a service, to distribute risks and responsibilities fairly, to contribute joint resources (time, financing, knowledge) and to achieve mutual benefits. While the private sector pursues financial profitability, the public sector wishes for social success.

#### 2.6.8. Management Transfer from Public to Private Sector

There is no general rule defining to which extent the management of the PPP will be transferred to the private sector. However, the management unit should be public initiative, e.g. setting up "private" units within public administrations. In any case the public sector should seek to acquire managerial know-how form the private partner and incorporate it in its structures.

•(Greece): One of the main reasons for PPP is the management transfer to the private sector. Even if the management remains in the public sector, it is beneficial to the project to set up "private" units. This model has been reproduced several times in Greece and has been proved to be successful in most cases and through different scales.

•(Austria): In most cases the management of PPP projects is done by the private sector. In some cases of smaller PPP projects there are positive experiences with a "privatized" management which means that the management is installed by the public partner but with a private contract, that is the management is not part of the public body.

•(Sweden): The management transfer from the public to the private sector was not a key issue for success in this case. However, the substantial training efforts and close co-operation between the municipality's personnel and the contractor's Key Account Managers boosted the management competence, and strongly supported the success of the project.

•(Lithuania): The transfer of management occurred under both the Vilnius city heating supply and city car parking projects. The relative success of the Vilnius city heating supply project is associated with strong performance of the experienced private operator, including good strategic and operational management of district heating services.

•(Spain): The partnership benefits from the experience that the private sector has in management techniques. The PPP takes advantage of the strong points of the private sector in order to improve the efficiency and to achieve savings through the economic management.

#### 2.6.9. Public Initiative

All PPPs are based on a public initiative. However the public initiative should focus on the goals to be met and not the implementation methodology, which should be the task of the private sector.

•(Greece): There are a few cases, where initiative came from the private sector. However, the need for political support and the social character of PPPs, it is beneficial to present any PPP as a product of Public Initiative.

•(Austria): Experiences show that most of the PPP projects came out from a public initiative - in many cases because of lack of capital, lack of management know how or lack of personal capacities. Therefore, public bodies are recommended to screen PPP possibilities that reside within their tasks.

•(Sweden): There was no main public initiative behind the success of the project and its PPP business model. Nevertheless there was a public initiative initiating the project, as the municipality had to reduce the costs for energy and O&M by 10%, which in turn triggered the civil servants to seek creative solutions due to the lack of financing.

•(Lithuania): Main PPP-like projects are launched at the initiative of public sector institutions (primarily larger municipalities rather than the government). International financial institutions supported the preparation of the Vilnius city heating supply project.

•(Spain): The main promoter of these cooperation formulas is the public administration, due to the gradually growing necessity to cooperate with the private

sector in order to develop projects with social profitability, to render services and to provide public infrastructure in the most efficient way.

#### 2.6.10. Public Guarantees for Loans

Here a departure from the role of the state in "traditional" contracts is necessary. The role of the public could be either as a lever for competitive interest rates, either on the banking market or through special funds. The new regulation on the Structural Funds mentions new financial engineering approaches, which could be (Greece): A common argument in favor of PPPs is the envisaged know-how transfer from the private to the public sector. However, this element has certain limits. While the public sector should be able to adopt some of the business models from the private sector, the objective should not be the development of private sector skills. Since the general tendency in public administration is the formation of slim public organizations, the main focus should be in the creation of competent and efficient units.

- •(Austria): Organized knowledge transfer from private to public partners makes sense only if the public partner is willing and able to overtake at least parts of the private partner. If this is not the case knowledge transfer is making less sense. The same is true the other way round. But of course a minimum mutual understanding and therefore knows how transfer is necessary in order to run the PPP project successfully.
  •(Sweden): As described in 'Management transfer from public to private sector' the capacity to manage both complex technical systems as well as organizational processes developed further in both the municipality and in the energy service
- •(Lithuania): The transfer of knowledge among public sector partners, private sector partners or between them is limited. Private sector partners are competing in the PPP market, which is dominated by one group of companies
- •(Spain): A moderate level of knowledge transfer is necessary from the private to the public sector in order to establish an atmosphere of mutual agreement, to reach the best potential of the initiative and to have good relations between the agents of the partnership. PPPs have a learning curve because the knowledge is acquired throughout their implementation.

company.

# Chapter 3. Infrastructure and Growth

#### 3.1. Introduction- Basic definitions and meanings

It is observed that European governments show a special interest in infrastructure since the beginning of the European Union or even from the years that it was called European Economical Committee. This interest in infrastructure coincides with a new wave of trade integration, which is related with the Maastricht treaty.

At this point it is useful to compare the definition of public infrastructure, which includes transport, telecommunications, law and other. Moreover there are two basic categories of public infrastructure:

- a. Domestic infrastructure (concerning a certain country) and
- **b.** International infrastructure, a global thematic.

Infrastructure interacts in an interesting way with the other determinants of industrial location examined in the economic geography literature. Arrow, Kurz, Barro, ChrisCanaleta C., Arroz P., Carate M., Gramlich E., Gruber S., Marattin L., martin P., Rogers c., Nijcamp P., Puga D., Rietvold P., Spiekermann K., Wegener M., Short J., Kopp. A. and Vickerman R. are the main scientists that have examined Infrastructure and Growth. His own supporting work and that of Holtz-Eakin, Munell, Narayana Kockerlakota and Ke-Mu Yi, Fernald and Rafael Flores de Frutos and Alfredo Pereira has followed Aschauer's initial papers. These papers have in turn generated a raft of criticisms from authors as Henry Aaron, Charles Schultze, Hulten and Schwab, Rubin, Dale Jorgensen and Tatom. One should not forget Arrow, Kurz, Barro, Christaller, Lösch, Isard, Biehl, which are regional scientists and many economic historians as for example Chinitz that have for long studied the role of public infrastructure in regional development and in the process of industrial concentration. Most of the above mentioned authors are presented in this chapter.

#### 3.2. Presentation of Edward Gramlich's review essay on Infrastructure

The Review Essay concerning Infrastructure Investment written by Edward Gramlich begins with a general setting upon economists that try not to be faddists but they often cannot avoid it. The usual pattern observed is that a reasonably important topic will be ignored for the longest time and then recognized and finally the subject

will get its importance after a long run. The author believes that a prospective importance of a topic occurs with disappointing frequency.

Edward Gramlich believes that David Aschauer changed all that by writing a series of papers in the year 1989 and examines econometrically infrastructure investment that turned down and aggregated productivity. His work hit those who had worried about the productivity puzzle and those who were worried about late rates of U.S. national saving.

There are many possible definitions of infrastructure capital. The definition of infrastructure capital that makes the most sense from an economics standpoint consists of large intensive natural monopolies such as highways, other transportation facilities, water and sewer lines and communication systems. An alternative version that focuses on ownership includes just the tangible capital stock owned by the public sector. Broader versions include successively human capital investment and/or research and development capital. Most econometric studies of the infrastructure problem have used the narrow public sector ownership version of infrastructure capital as their independent variable. This is mainly due to the fact that it is very hard to measure anything else.

There are eleven (11) basic categories presented in Table 3.1. that suggest why economists might have a trouble analyzing infrastructure capital. The services of capital such as highways and schools are generally not sold on the market. While infrastructure capital is purchased on the market at the time of initial construction or installation, it is not often sold, implying that economic rates of depreciation are almost never directly measured. Depreciation measures used in the construction of infrastructure stocks are physical measures based on service lives of different types of public structures.

 Table 3.1.PUBLIC INFRASTRUCTURE CAPITAL, 1991(Billions of current dollars)

	Item	Federal	State and Local	Total
1.	Nonmilitary structures	242.8	1791.3	2034.1
2.	Highways	16.9	708.0	724.9
3.	Education	1.2	318.8	320.0
4.	Other buildings	33.7	224.3	258.0
5.	Hospitals	11.7	50.0	61.7
6.	Water and Sewers	-	295.5	295.5
7.	Conservation	143.4	35.9	179.3

10.	Nonmilitary equipment	61.0	146.6	207.6
11.	Military  Total	514.1 <b>817.9</b>	1937.9	514.1 <b>2755.8</b>

"Is there a shortage of Infrastructure Capital?" wonders the author. He believes that the most important question involving infrastructure investment is not whether there has been a shortage of infrastructure investment, but rather whether government policies regarding infrastructure investment should be changed. There have been four ways of trying to determinate if there is or was such a shortage:

- 1. Engineering assessments of infrastructure of infrastructure needs
- 2. Political measures based on voting outcomes
- 3. Economic measures of rates of return
- 4. Econometric estimates of productivity impacts

The engineering Needs Assessments are presented below in Table 3.2.

**Table 3.2** ENGINEERING ESTIMATES HIGHWAY AND BRIDGE INVESTMENT NEEDS (Annual costs, Billions of 1982 Dollars)

	Study	Year	Period	Investment
				Need
1.	Assoc. Gen. Contractors	1983	1983-2002	65.4
2.	Cong. Budget Office	1983	1983-1990	27.2
3.	Joint Economic Committee	1984	1982-2000	40.0
4.	Fed. Highway Admin.*	1989	1987-2005	34.5
5.	Fed. Highway Admin.**	1989	1987-2005	25.1
6.	Capital expenditures	1982		19.1
7.	Capital expenditures	1987		29.0

Source: Peterson (1991)

<sup>\*</sup> Full constrained needs. Assumes that some urban needs for road widening cannot be met because of the difficulty of acquiring rights of way

<sup>\*\*</sup> Necessary to sustain current performance

As for concerning the Political Voting Outcomes state and local officials themselves report their biggest hurdle in building new infrastructure capital is in gaining the approval of voters. Roughly twenty (20) per cent of all new state and local construction must be approved by referenda, which suggests that referenda voting might prove a good way to identify and measure infrastructure shortages.

The economic approach to infrastructure investment involves computing all the benefits and costs of projects and then their rate of return. If the effective real rate of return exceeds the going real interest rate, the investment is worth-wile. Alternatively if the net present value of project benefits evaluated at the going real estate rate is positive the investment is worth-wile. The latter statement assumes that the going real interest is the proper rate for evaluating project benefits. The methodology for computing real rates return and the implied present value of net program benefits has been around in one form or another for decades it is surprising how few careful calculations of rates of return are available for infrastructure investment (see Table 3.3.).

Table 3.3 PERCENTAGE REAL RATES OF RETURN ON HIGHWAY INVESTMENT

	Investment	Rate
1.	Projects to maintain current highway conditions	35
2.	New urban construction projects	15
3.	Upgrading sections not meeting minimum standards	5
4.	New rural construction projects	Low
5.	Fix sections above minimum standards	Negative
Sou	rce: CBO (1988)	

Even though macroeconomic studies might seem to be one of the least efficient approaches for determining infrastructure gaps, econometrics is what economists like to deal with and these studies have commanded a great amount of attention.

The basic production function was:

$$Q=AF(K,L)$$

Where K is the stock of private capital, L is the labor force, and A is an index representing total factor productivity.

Aschauer and others continuously make a function of the services provided by the government capital stock (G), representing it as:

$$Q=A*F(K,L,G)$$

Where A\* is total factor productivity purged of the influence of the government capital stock. Using the Cobb-Douglas form and writing in logs gives:

$$LnQ=lnA* + alnK + blnL + clnG$$

The author believes that previous studies have not provided convincing answers to the question if there has been an infrastructure shortage and moreover they have not focused on the right question in the first place. Even if we assume that there was no doubt of an infrastructure shortage it is not clear what infrastructure policy or policies on general should be changed which means that finding no evidence of shortage would not mean that no policy should be changed. So the basic question that merges is if any policies should be changed. This is a common way in which decisions about whether to invest in infrastructure capital are made. States and localities propose bond issues and voters decide whether to build the structure. Due to the fact that voters are deciding it is hard to say there is a structural policy defect here. But voters are influenced by the financial and other terms of the deal and these are set by governments and could be altered. The most important way in which this is done now is by federal grants, but other restrictions on whether and under what circumstances state and local governments can impose user charges can also be altered.

The above comments suggest some general reforms in federal grant programs for infrastructure investment. But if it were possible to impose user fees on infrastructure facilities, which it certainly is for highways and other transportation infrastructure, many higher education structures, hospitals, many water and sewer systems, some conservation structures, and some industrial structures, it would be possible to do even better than to have revamped federal grants finance the infrastructure investment.

### 3.3. Basic aspects of Diego Puga's Review essay

In this chapter two (2) papers written by Diego Puga are summarized. The one is titled "European regional policies in light recent location theories" and the other "The rise and fall of regional inequalities".

Diego Puga in both papers describes the trends in Europe and the U.S. and discusses how recent location theories can help us to explain them and to reconsider

the role of regional policies, especially transport infrastructure improvements, in such an environment. The author believes that despite large regional policy expenditures, regional inequalities in Europe have not narrowed over the last decades and by some measures have even widened. Income differences across States have fallen but inequalities between regions in each State have risen. European States have developed increasingly different production structures. European regions have also become increasingly polarized in terms of their unemployment rates.

The main instrument of EU regional policy, the Structural funds, is articulated around three "objectives" Objective 1 is promoting the development and structural adjustment of regions whose development is lagging behind. Objective 2 is supporting the economic and social conversion of areas facing structural difficulties. Objective 3 is supporting the adaptation and modernization of policies and systems of education, training and employment. Nearly one quarter of European Union's (EU's) live in regions eligible to receive assistance under "Objective 1" of the Structural Funds, the main instrument of EU regional policy. The criterion for eligibility is to have a GDP per capita below 75 % of the EU average. There are also large disparities across the regions of the EU in terms of their unemployment rates. Belgium, Finland, France, Greece, Italy, Spain and the UK all have a difference of at least 700 basis points between the unemployment rate of their highest unemployment region and that of their lowest unemployment region.

The basic transition probability matrices of GDP per capita and unemployment rates relative to EU average are presented in Table3.4. that follows.

**Table 3.4.** TRANSITION PROBABILITY MATRICES OF GD PER CAPITA AND UNEMPLOYMENT RATES RELATIVE TO EU AVERAGE

	1995 GDP per capita							
'a	30(n)	[0-0.6)	0.83	0.17	0.00	0.00	0.00	
capita	19(n)	[0.6-0.75)	0.21	0.47	0.32	0.00	0.00	
per	50(n)	[0.75-1)	0.00	0.18	0.68	0.14	0.00	
G.D.P.	53(n)	[1-1.3)	0.00	0.00	0.13	0.72	0.15	
	18(n)	[1.3-00)	0.00	0.00	0.00	0.17	0.83	
1987			[0-0.6)	[0.6-0.75)	[0.75-1)	[1-1.3)	[1.3-00)	
1996 unemployment								
	o 21(n)	[0-0.6)	0.81	0.19	0.00	0.00	0.00	

	23(n)	[0.6-0.75)	0.52	0.26	0.09	0.09	0.04	
	42(n)	[0.75-1)	0.24	0.29	0.26	0.21	0.00	
	32(n)	[1-1.3)	0.06	0.22	0.34	0.19	0.19	
	32(n)	[1.3-00)	0.00	0.00	0.16	0.22	0.62	
-	-		[0-0.6)	[0.6-0.75)	[0.75-1)	[1-1.3)	[1.3-00)	
Source	Source: (Unemployment table) Overman and Puga (2002).							

The distribution of European unemployment rates has become increasingly polarized: there are now more regions with either very high or very low

Overman and Puga (2002) argue that this polarization of regional unemployment rates could be driven by three factors:

unemployment and fewer regions in between as compared with the middle 1980's.

- a. Different reforms in national labor market institutions
- b. A within-country polarization of labor supply and
- c. A within-country polarization of labor demand.

They show that national considerations do not play the main role in explaining regional unemployment outcomes. In fact the unemployment outcomes of individual regions are much closer to the outcomes of neighboring regions (domestic and foreign) than to the average outcomes of other regions within the same member state. Regarding changes in labor supply, these have not caused the polarization of unemployment rates and in contrast they have mitigated. They show that changes in the spatial distribution of labor demand have in a great amount pushed polarization and that these changes are similar across geographical neighbors.

#### 3.4. Vickerman R. et alls views

# 3.4.1. Vickerman's R. (1995): "The Regional Impacts of Trans European Networks" - Article review

This article is dated in a period that European Transport infrastructures where in their early stages of formulation, so it has an early concern on them. The main issue of the paper "The Regional Impacts of Trans European Networks" is to indicate the effect of transport TENs on the development of the Community's regions. The

interest of author is concentrated on the impacts that TEN have on European integration process based on the two principles of subsidiarity and cohesion.

Trans European Networks starting point were the recognition of the need of an overall planning structure in the community, which will provide and develop Infrastructure Networks of European Interest. Those networks eventually were extended in all the modes of transport (rail, road, air, ports) and further developments related the interconnection among the different modes establishing the combined transport.

According to the author, transport TENs arises out of the long history of trying to develop an appropriate financial instrument for dealing with EU infrastructure needs. TENs are considered not only as a key element in the process of EU integration, but also as a key building block in progress of convergence and cohesion. The primary objective of Transport Trans-European Networks is the enhancement of the advantages of Single European Market and ensuring a more equitable distribution of regional benefits, by linking peripheral regions to the central regions of community. However author provides that policy is needed both to compensate disadvantaged regions and to restrain development in advantaged regions, as long as there is a division among the effects that transport infrastructures have in "poorer peripheral regions" and in "congested central regions".

Objective of this paper is to highlight the different tensions among proponents and opponents of major new infrastructure programmes and to indicate some issues emerging from TEN developments.

As regards the tensions coming out from the development of TENs, the author in four groups classifies those. The first one is called "centralization versus peripheralization" by giving an emphasis in what happens either in a peripheral or in a central region after a transport investment as far as "market effects" is interfaced in space. Peripheral regions to be benefit need to have some other advantages and policy responses, however, both centralization and decentralization tendencies can be set in force by transport improvements.

The second one is called "connectivity versus location". This tension is based on the opinion that location is always a strong factor, which determines the development of a region; even its accessibility is improved. There are some cases in peripheral regions where improved connections cannot push the development. This is mostly explained by the fact that the most peripheral regions suffer by purely

intraregional networks. In those regions the absence of high quality roads, classic rail and well-developed modern combined transport will contribute to increasing tension between core urban centres and the non urban peripheral periphery.

The third tension is called "mobility versus sustainable development". It is concentrated in the fact that mobility should have some limits especially among the more developed central regions. The explanation is that increased mobility has external effects, which surpass the limits of sustainable development. "Planning versus competition" is the last tension indicated by the author. However the planning of new enhanced networks should be focused on the interest of development, the presence of private capital cause a conflict.

# 3.4.2. Vickerman R. (1996): "Location, Accessibility and Regional Development: The Appraisal Of Trans-European Networks" - Article review

This paper indicates the difficulty of accessing the Trans European Network's effect in regional development. It is based on previous observations of author, which provide his concern about the efficiency of TEN in providing convergence. Emphasis is giving in the progress of evaluation in transport investments before materialize them. This procedure will improve the equilibrium point among the planning possible proposed TENs in order to satisfy their purpose.

The role of infrastructure in regional development is important but difficult to determine quantitatively, so the focus of the paper is on improving the appraisal framework for new transport infrastructure. To do so, authors are investigating different measures of accessibility and an improved indicating model. This approach is dealing with:

- 1. The treatment of regional performance in modern economic models
- 2. A review of the ways infrastructure and especially transport infrastructure has been defined, measured and incorporated into models of regional economic performance
- 3. After taking into account the industries' production and markets there is developed a new approach to an indicator based on the transport needs of a region's needs
- 4. The way in which the use of such an indicator could be used in appraisal to assess their regional impacts of new infrastructure in Europe.

This paper is concerned primarily with the way in which infrastructure, and transport infrastructure in particular, affects accessibility, industrial location and hence regions' growth and development in Europe. It is to be investigated if infrastructure as the typical policy instrument that regions perceive as necessary to overcome relative isolation is a factor of development.

As regards the industrial location, paper looks at the treatment of regional performance in modern economic models in which the allocation of industry depends on two interrelated features, the existence of increasing returns and the differential importance of transport costs to different sectors. The author is based on those models to found its own, which explores this factor of development.

As regards transport and accessibility it is difficult to identify the precise nature that infrastructures affect regional development. On one hand there are the non-spatial impacts, which are simply the effects of infrastructure investment on the aggregate level of economic activity, productivity and competitiveness in an economy. On the other hand, spatial impacts consider the way in which infrastructure can lead to differential performance in different locations, either between regions or within regions.

For infrastructure to have an impact it must serve both the sectoral and the geographical needs of the region, including the relevance of infrastructure other than that within the region. This implies a model integrating the features of accessibility/potential models, input-output models and production function models with an explicit trade model. To measure the impact of infrastructure and accessibility for understanding and predicting the process of regional development incorporation of measures of distance, speed, and time effects is necessary. However the way that infrastructure affects the amount of production consumed in the transmission of goods from one place to another is also important to predict regional development.

To be useful in appraisal regional impacts of a certain new infrastructure, such an indicator has to be sensitive to both the needs of the individual region and to the needs of the nation or EU as a whole. The model has to satisfy both the economic logic of location and regional development and the political realities of cohesion and subsidiarity. It is important the disaggregation of planning level and to determine the way in which industries within a sector use infrastructure, which can only be seen in a model which disaggregates by mode.

# 3.4.3. Vickerman R., Spiekermann K. And Wegener M. (1999): "Accessibility and Economic Development in Europe" Article review

This paper is an earlier work of Vickerman, Spiekermann and Wegener that presents the concern about the relation among accessibility and economic development in Europe. Accessibility in European level is an issue covered by transportation TENs, so authors are giving a clear and documentary approach of the impacts of development of high-speed rail in socio-economic convergence. The empirical evidence in this paper is based on the High-Speed rail accessibility as far as it is argued that it represents the TENs philosophy and the claims are based on forecasting accessibility models. The oppositions of this paper are mainly based and aligned on the observations that Vickerman indicates in his previous work.

The theoretical debate concerning the impact of transport infrastructure on regional development is among the claims of Maastricht treaty about convergence and the fact that disparities increased between central and peripheral regions. Authors highlight the difference between the objective of improving global competitiveness of EU and the objective of socio-economic cohesion through the development of TEN. On one hand when the object is global competitiveness then the proposed TENs, which mainly connect central with peripheral regions, are successful. On the other hand when the object is socio-economic cohesion, this could not be succeeding by the same way. "Improving the links between the central and the more peripheral regions may make it easier for firms to market their products in central regions, but also enables producers in these central regions to invade peripheral markets previously protected by their remoteness. At the same time the tendency to link the major cities of the peripheral regions into the higher-level European networks may be increasing the disparities between these cities and their hinterlands in peripheral regions".

The question is if the implementation of TEN (High speed rail) is likely to contribute to spatial polarization or weather peripheral regions development will be stimulated by their linking with the European core. Two methodological approaches are used to give a certain question as regards the accessibility. Authors, however give an emphasis in the kind of measures of accessibility and by making a benchmarking among the exciting measures end up in those two methodological approaches providing sufficient measures of accessibility. Firstly, forecasting "time-space maps" showed that accessibility in EU in 2010 (forecast year) would bring in a cut of time of

5 hours all the core regions and in the same time minimize the travel time spent in all EU. Secondly "Accessibility surfaces" is a method based on two accessibility indicators generated in combination with GIS (Geographical Information System). Those indicators are the "population potential" and the "daily accessibility".

The gravity model for the population potential showed that there are considerable disparities in accessibility in 2010 after the development of high-speed rails. Urban regions have the highest accessibility and rural areas the lowest. Accessibility decreases from the city centres towards the surrounding rural areas. Moreover the areas in central Europe both urban and rural have a higher population potential than regions in European periphery. This result indicates that the Trans – European high-speed rail network will increase the existing disparities in population potential in Europe in absolute terms.

The second gravity model for the daily accessibility shows that weather the number of persons that can be reached within five hours will greatly increase, but disparities between urban and rural areas and between core and periphery not only remain but also increase.

# 3.5. "Infrastructure and Regional Development: A Multidimensional Policy Analysis" by Nijcamp P. (1986) - Review Essay

This paper investigates the relationship between infrastructure and regional development based on the "regional development potential theory". This article represents a very early concern about infrastructures in a European level as far as those then began to be a major policy instrument of the European Regional Fund. So, provides a methodological framework and an empirical analysis of the expected impact of infrastructure in regional development. This framework is used to identify the impacts of infrastructure on regional development in the Netherlands during 1970-1980. The results of the analysis will be used to formulate some general conclusions about effectiveness and usefulness of infrastructure as an instrument in European and Dutch regional policy.

Infrastructures are regarded in this paper in a broad sense as (material and immaterial) public capital. Infrastructure is only one of the instruments for improving the development of a certain region. Nevertheless, it may be a very important one, because it constitutes the foundation of many other socio-economic activities in a

country or region. Thus, infrastructure policy is a conditional policy for regional development: it does not guarantee a favourable regional development, but it creates the necessary conditions for an achievement of regional development objectives.

Nijkamp, however is concerned on the quantitative measurement of the effects that such an policy instrument has in regional development due to the lack of an overall theoretical background. Author is trying to fill this theoretical gap by providing a new modern version of growth theory named "regional development potential theory". This theory gives emphasis in the potential of a region and on the factors that introduce it. Theory suggests that regional development potential depends in general on:

- Regional potentiality factors (such as availability of natural resources, locational conditions, sectoral composition, international linkages and existing capital stock)
- Mobile production factors (such as various kinds of labor and new investments).

In this framework, infrastructure capital is essentially a public, immobile regional potentiality factor, which may be either material or immaterial. The emphasis of the regional development potential theory on public capital is extremely important for regional infrastructure policy, as then public policy may become an effective tool in coping with the problem of spatial disparities.

An emphasis is given in the different stages that a region could be as regards the level of development. In each stage a typical and specific "package" of infrastructure endowment can be identified. Based on empirical evidence, network infrastructure is particularly important during the first stages of the development. During the next stages, also urban infrastructure is becoming more important while finally social infrastructure may play an important role. It is also an empirical fact that the average infrastructure equipment in richer areas is usually lower than in less wealthier areas.

In general is extremely important to extend regional production functions (explaining differences in regional efficiencies regarding production and income) by means of potentiality factors (among others infrastructure equipment) in order to identify disparities among regions with an approximately equal private capital stock. This leads to the notion of a so-called quasi-production function. The notion of the

quasi-production function takes for granted that regional product is determined by traditional (substitutable) production factors (such as capital and labour) as well as by specific regional determinants (such as agglomeration, sectoral structure and infrastructure). More specific a quasi-production function, based on a Cobb-Douglas specification, will be used in our empirical analysis to give answer in what extent does infrastructure contribute to regional development.

# 3.6. Martin's P. and Rogers' C. paper titled "Industrial location and public infrastructure - Review Essay

The paper, titled "Industrial location and public infrastructure" deals with the impact of public infrastructure on industrial location in the case that increasing returns are present. Firms tend to locate in countries with a better domestic infrastructure and high levels of international infrastructure as well as strong returns to scale magnify industrial relocation. The last is observed due to differentials in domestic infrastructure or capital endowments. As an impact we have relocation of firms leaded by regional policies, which finance domestic infrastructure in a poor country. As contrast regional policies that finance international infrastructure in a poor country leads firms to abandon a country.

During the past years many new important infrastructure projects have been developed throughout Europe. For example the Channel Tunnel, the high speed rail network, transalpine base channels, new telecommunication networks, training networks and education infrastructure. It is important to notice that this interest of European governments in infrastructure coincides with a tending wave of trade integration marked by the building of the internal market and the Maastricht treaty. Moreover the changes in Eastern Europe have also revealed that an important obstacle to the integration of these countries in the global economy is the bad condition of their infrastructure.

The authors propose a new way to model different types of public infrastructure, which allows the analysis of the impact on trade patterns, industrial location, welfare and the incentives for countries to inhibit industrial relocation.

Poor infrastructure imposes costs on trade within and between countries (this is the difference from Krugman's modeling on transport costs which only affect international trade). Not only transport and telecommunications but also such thins as law and order qualify as public infrastructure. If infrastructure is poor then the national or foreign purchaser will not actually consume a large portion of the goods produced and traded.

There are two basic conclusions concerning this paper. The first conclusion is that firms of the increasing returns sector will tend to locate in countries with the best domestic infrastructure when trade is integrated, in order to take advantage of economies scale. Also it is notified that infrastructure interacts in an interesting way with the other determinants of industrial location examined in the economic geography literature. In Europe, the EC Commission views the wide regional disparities in infrastructure both at the national level and between EC as a major impediment to real convergence (see Biehl, 1986). Because of this concern, the EC regional policies (the structural funds and the new cohesion funds created by the Maastricht Treaty) are mostly used to finance new infrastructure in transport, telecommunications, education and energy in the poorest regions.

A regional policy of financing domestic infrastructure will always bring industrial relocation to this region. However a regional aid program that improves international infrastructure in the poor country brings more rather than less industrial concentration and may therefore contribute to regional divergence. Finally, a country with poor infrastructure may want to restrict industrial location that follows trade integration since the higher cost of goods produced outside the country because of relocation dominates the income effect for capital owners who can benefit from investment in the good infrastructure country.

The model is a variant of Helpman and Krugman (1985) and Krugman (1991). There are two countries. In each country, a representative consumer chooses from a menu of goods to maximize the utility function. The models departs from earlier models, such as Arrow and Kurz (1970) and Barro (1990) in which infrastructure is an input in the production function. The above-mentioned models cannot address the role played by infrastructure in regional integration because they do not capture the function of infrastructure in facilitating trade within and between countries. In Martin's and Rogers' model infrastructure intervenes in the relation between the firm and the consumer and therefore its main impact will be through demand. In the models of of Helpman and Krugman (1985) and Krugman (1991) as well as Arrow's and Kurz's (1970) and Barro's (1990) models cannot address the role played by infrastructure in regional integration because they do not capture the function of

infrastructure in facilitating trade within and between countries. In contrast the examined model infrastructure intervenes in the relation between the firm and the consumer and therefore its main impact will be through demand.

#### 3.7. Conclusions

The characterization of the authors of public infrastructure as affecting the amount of output that actually reaches the consumer captures a key role played not only by transport but also by other types of infrastructure. If law and contract enforcement of telecommunication networks are weak this will also divert real output from consumption. In the context of the examined model telecommunication networks as well as transport infrastructure that facilitates domestic trade can be classified as domestic infrastructure. One other view is that the building of a harbor or of an international airport or the improvement of the trade administration or of the international telecommunication system would be interpreted as improvements of international infrastructure. In all these cases both imports and exports are facilitated. There is no way to distinguish between "export" infrastructure and "import" infrastructure because it is difficult to think of many types of infrastructures that would facilitate exports but not imports and vice versa. The main distinction made in this model is between domestic infrastructure and international infrastructures because the focus is on the role of infrastructure in facilitating transactions with the assumption that neither domestic nor international infrastructure are affecting the production function. Public infrastructure should reflect some resource constraint of the governments.

# Chapter 4. Transport and Economic Evidence

#### 4.1. Introduction

"The regional economic impact prediction, as a consequence of construction of interregional highways, displays some particularities in comparison with other infrastructures or general public interventions. These particularities result from the general change of spatial relationships and the difficulty of the ex ante long term determination of the "direction" in which some changes will move".

(Polizos S., Interregional Highways and Spatial Economic Changes: A methological Appoach, Τεχν. Χρον. Επιστ. Εκδ. ΤΕΕ, ΙΙ, τευχ. 1&2 2001, τευχ. 1&2 2001, Τεchn. Chron. Sci.J. TCF, II, No1&2, page 38)

#### 4.2. Viable touristic development

Tourism is an economic activity which if not developed after a certain planning; it is very likely to bring unfavorable consequences as much to the natural, as to the economic and social environment of the touristic areas. In a period during which the evolution of technology, the economic augmentation and improvement of the standard of living led to the augmentation of free time, to the facilitation of transportations and therefore to the augmentation of touristic demand, a rational planning is necessary for the touristic sector.

Planning for tourism must aim to the effort of environmental preservation, which attracts and develops tourism, in order to guarantee the duration and the positive consequences from its expansion. The policy for tourism must aim to the maximization of the benefits and the minimization of the negative consequences. A priority must be the attenuation of phenomena such as the space and time overcentralization of the touristic activity and the weakness of distribution of demand in the dimension of space and time.

The social activities, the economic activities and environmental conditions, in any geographical space, European-national-regional-local, constitute an important factor for the configuration and application of the touristic policy.

Relatively to the touristic environment and concerning it, the "viable development" on the reception locations refers mainly to:

- \* The need for economically viable practices.
- \* The need for practices that guarantee the human needs.
- \* The need for environmentally positive practices.
- \* The need for practices that promote an improved quality of life.

Viability in tourism, like the other economic activities, has three interconnecting sides: the environmental, the socio-cultural and the economic. Furthermore, the viability indicates duration. Therefore, viable tourism presumes a rational use of natural resources, respect of biodiversity, minimization of the adverse ecological, social and cultural consequences and maximization of benefits for the environment and the local societies.

As viable touristic development is determined the touristic development that is actuated equally in the local, social, economical, cultural and environmental structure of every touristic area, by forming in parallel terms (services, infrastructure, knowhow) for the continuous feedback. Viability in tourism focuses in subjects, such as:

- \* The equality of the local society, referring to the standards of living and quality of life.
- \* The satisfaction of needs and desires of the tourists and the needs of the tourist industry.
- \* The protection of the resources that constitute the base of tourism (natural and anthropogenic environment).
- \* The conservation or improvement of competitiveness of touristic industry.

In the literature for viable tourism a great emphasis is given to the comparison of this example with mass tourism that prevailed in the past and which, despite the contribution of the economic regional prosperity

**Table 4.1** Distribution of data of the agricultural sector in the prefectures of Greece (the surfaces are in thousands of hectares)

Prefectures	Lowland agricultural area	Sub- mountainous agricultural area	Mountainous agricultural area	Total of agricultural area
Attica	31,6	58,4	3,9	93,9
Aetolia-Acarnania	51,4	48,2	20,9	120,5

Boeotia	73,7	31,3	8,9	113,9
Euboea	49,8	40	18	107,8
Evrytania	0	0	10,1	10,1
Phthiotida	56	71,2	25,6	152,8
Phocida	2,7	9,3	6,6	18,6
Argolida	22,2	19,4	29,2	70,8
Arcadia	13	26,5	29,7	69,2
Achaea	39,3	16,9	40,1	96,3
Ilia	96,7	21,6	17,2	135,5
Corinthia	21,5	24,3	38,6	84,4
Laconia	37,5	45,8	13,8	97,1
Messinia	64,8	39,3	26,1	130,2
Zakynthos	97	6,5	0,2	16,4
Corfu	23,4	11,3	0	34,7
Kefallinia	6,9	5,4	3,9	16,2
Lefkada	2	3,2	6,8	12
Arta	18,4	4,5	10,4	33,3
Thesprotia	2,6	8,8	9,6	21
Ioannina	5,8	12,4	21,6	39,8
Preveza	16,3	5,9	8,4	30,6
Karditsa	90,5	5,3	14,2	110
Larissa	177,8	40,2	20,3	238,3
Magnesia	45,3	23,8	20,7	89,8
Trikala	33,3	12,3	19,7	65,3
Grevena	7,8	25,8	11,7	45,3
Drama	29,2	21,2	6,9	57,3
Imathia	62	3,5	6,9	72,4
Thessalonica	128,2	27,6	4,9	160,7
Kavala	24,9	19,5	11,6	55,7
Kastoria	9,9	12,8	8,9	31,6
Kilkis	98,2	13,7	3,1	115
Kozani	40,1	40,6	17,7	98,4
Pella	70,6	8,8	14,6	94
Pieria	37,5	15,6	4,6	57,7
Serres	125,7	35	9	169,7
Florina	32,6	9,5	11,2	53,3
Chalkidiki	46,8	44,3	6,8	97,9
Evros	143,6	18,6	5,6	167,8
Xanthi	39,1	4	5,6	48,7
Rhodope	62,3	16,7	8	87
Dodecanese	24,5	13,1	5	42,6
Cyclades	16,7	21,7	7	45,4
Lesbos	44,4	20,4	14,4	79,2
Samos	2,4	3,6	12,7	18,7
Chios	7,8	4,7	3,9	16,4
CIIIOS	. , -			
	,	40	36.4	145.2
Heraklion	68,8	26.1	36,4	145,2 56,9
	,	26,1 11,1	36,4 23,3 25,5	56,9 49,3

**Table 4.2** Distribution of data of the agricultural sector in the prefectures of Greece (the Gross added value is in billion drachmas)

Prefectures	Average plot	Gross added	Total of gross	Number of
	area (hectares)	value for	added value	employed in
		agriculture,		agriculture
		livestock, forests		
		(year 2001, billion		
		drachmas)		
Attica	0,469	68,952	15368,12	38802
Aetolia-Acarnania	0,977	88,989	261,15	71635
Boeotia	0,844	84,087	246,77	32339
Euboea	0,603	75,895	222,79	44710
Evrytania	0,473	5,156	15,13	5238
Phthiotida	0,983	103,279	303,09	42809
Phocida	0,463	11,157	32,74	12117
Argolida	0,787	52,714	154,69	29614
Arcadia	0,624	38,487	112,94	25837
Achaea	0,749	75,380	221,21	47561
Ilia	0,907	106,585	312,79	48662
Corinthia	0,507	59,376	174,25	37633
Laconia	0,811	53,627	157,37	36884
Messinia	0,582	77,151	226,41	53236
Zakynthos	0,608	11,900	34,92	11217
Corfu	0,317	18,427	54,07	25082
Kefallinia	1,129	9,510	27,90	7802
Lefkada	0,344	5,417	15,89	7138
Arta	0,514	20,399	59,86	24122
Thesprotia	0,978	12,207	35,29	12883
Ioannina	0,650	42,101	123,55	18087
Preveza	0,747	19,251	56,49	15641
Karditsa	1,286	99,689	292,55	34339
Larissa	1,249	160,770	471,81	50459
Magnesia	0,890	84,381	247,63	27979
Trikala	0,924	85,256	250,20	29880
Grevena	0,799	27,110	79,55	8105
Drama	0,783	43,557	127,80	12521
Imathia	0,815	50,299	147,60	31710
Thessalonica	0,790	102,717	301,44	33129
Kavala	0,546	44,439	130,40	23503
Kastoria	0,577	18,336	53,81	6021
Kilkis	0,899	31,017	91,02	16588
Kozani	0,582	67,194	197,79	25911
Pella	0,607	70,014	205,47	41166
Pieria	0,747	51,346	150,68	26775
Serres	0,585	96,665	283,68	43249
Florina	0,547	31,190	91,53	10348
Chalkidiki	0,774	50,096	147,01	20785

Evros	0,643	112,310	329,60	31099
Xanthi	0,691	35,662	104,66	19382
Rhodope	0,620	87,680	169,30	34448
Dodecanese	0,467	20,004	58,70	22725
Cyclades	1,065	23,794	69,82	13901
Lesbos	0,468	53,815	157,93	30791
Samos	0,199	12,576	39,90	11525
Chios	0,467	10,151	29,79	9815
Heraklion	0,396	109,681	321,88	79182
Lasithi	0,422	35,719	104,82	27133
Rethymno	0,875	32,470	95,28	25783
Chania	0,835	46,897	137,62	37203

Table 4.3 Distribution of data of the agricultural sector in the prefectures of Greece

Prefectures	Irrigated areas (hectares)	Investments in the agricultural	Number of agricultural	Number of privately owned	
		sector (billion	tractors (year	agricultural	
		drachmas)	1995)	machinery	
Attica	51,3	82,02	6002,5	3565	
Aetolia-Acarnania	11,3	28,65	9566,5	6595	
Boeotia	40,5	17,21	9195,5	8015	
Euboea	13,4	16,92	7699	3748	
Evrytania	2,4	6,90	185,5	84	
Phthiotida	52,3	28,94	12386,5	10195	
Phocida	5	14,63	953	550	
Argolida	22,8	6,24	5557	4209	
Arcadia	10,9	6,67	3700,5	2971	
Achaea	22,8	9,15	12601,5	3934	
Ilia	38	11,51	13000	4851	
Corinthia	21,5	6,98	13503,5	5958	
Laconia	20,2	8,39	5611	4895	
Messinia	11	7,84	11146	4654	
Zakynthos	0,5	1,02	3773	1444	
Corfu	2,6	2,00	2043,5	1284	
Kefallinia	0,5	2,30	2481,5	539	
Lefkada	0,8	0,93	612	173	
Arta	13,7	21,15	1848,5	1261	
Thesprotia	8,2	11,16	754,5	402	
Ioannina	10,8	17,38	1251,5	993	
Preveza	10,6	17,63	1970	1258	
Karditsa	75,6	28,25	9422,5	8395	
Larissa	97,2	43,72	15407	13639	
Magnesia	18,4	17,57	5143,5	2841	
Trikala	41	22,36	6342,5	5435	
Grevena	2,2	5,40	1788	1225	
Drama	21,8	25,01	5339,5	4221	
Imathia	48,4	31,90	13311	8587	
Thessalonica	46,4	36,12	12695,5	9562	
Kavala	26,5	26,67	5901,5	5319	
Kastoria	6,7	6,06	1740	1351	

Kilkis	15	22,15	8348,5	6144
Kozani	10,2	14,65	6321	4669
Pella	55,5	63,10	18472,5	14041
Pieria	23,3	25,67	8822	6704
Serres	67,1	54,75	16318	13000
Florina	11,8	13,90	4128,5	3768
Chalkidiki	9,6	19,18	4578	4498
Evros	51,4	54,47	11922,5	9627
Xanthi	23	22,42	3716	3245
Rhodope	28,6	52,42	7904,5	9319
Dodecanese	4,4	9,02	5408	1836
Cyclades	4,4	3,15	4216	971
Lesbos	4,8	8,76	2394	1393
Samos	1,6	3,13	3122,5	233
Chios	1,5	1,54	3603	519
Heraklion	30,7	10,90	32272,5	3607
Lasithi	14,7	5,49	5427,5	796
Rethymno	7	11,70	4705	1013
Chania	13,9	14,30	4638,5	1453

Table 4.4 Distribution of data of cultural resources and notable settlements in the prefectures of Greece

Prefectures	Traditional	Notable	Cultural	Monuments of
	settlements	traditional	monuments	international
		settlements		interest
Attica	2.96	2.19	9.55	14.7
Aetolia-Acarnania	1.26	0.80	3.18	2.24
Boeotia	0.91	0.20	2.58	3.83
Euboea	2.22	1.59	3.48	1.92
Evrytania	1.35	1.39	1.06	0
Phthiotida	2.31	0.40	3.33	0.64
Phocida	2.13	0.40	2.12	2.24
Argolida	0.57	0.20	3.94	3.51
Arcadia	3.35	1.79	5.45	0.64
Achaea	2.39	0.80	2.12	0.96
Ilia	1.65	0.60	2.88	0.64
Corinthia	0.83	0.20	3.33	3.83
Laconia	8.09	16.10	9.7	2.24
Messinia	3.96	0.80	3.03	3.19
Zakynthos	0.52	0.00	0.45	0.00
Corfu	5.31	10.74	0.61	2.24
Kefallinia	1.00	0.60	0.76	0.32
Lefkada	0.96	1.79	0.45	0.00
Arta	1.22	0.80	1.21	2.56
Thesprotia	0.96	1.79	1.36	0.32
Ioannina	3.57	2.58	3.18	1.92
Preveza	0.52	0.99	1.52	0.96
Karditsa	0.44	0.40	0.45	0.00
Larissa	1.00	1.59	1.06	2.64

Magnesia	2.05	4.17	2.42	2.56
Trikala	1.13	1.19	1.21	2.88
Grevena	0.09	0.00	0.15	0.00
Drama	1.22	0.60	0.15	0.64
Imathia	0.09	0.00	0.91	1.92
Thessalonica	0.70	0.60	0.91	3.83
Kavala	2.22	0.00	0.76	2.56
Kastoria	0.30	0.40	0.76	1.92
Kilkis	0.26	0.00	0.00	0.00
Kozani	0.09	0.20	1.52	0.64
Pella	0.30	0.00	0.61	0.64
Pieria	0.26	0.20	0.15	0.64
Serres	1.35	0.60	0.91	1.28
Florina	0.30	0.20	0.61	0.64
Chalkidiki	0.78	0.20	1.67	4.47
Evros	1.52	1.19	0.76	1.60
Xanthi	2.18	0.00	0.15	0.00
Rhodope	4.31	0.60	0.15	0.96
Dodecanese	6.31	10.93	3.33	3.33
Cyclades	9.44	18.49	5.15	5.15
Lesbos	1.83	1.19	1.36	1.36
Samos	1.17	1.19	0.45	0.45
Chios	0.74	2.19	1.06	1.06
Heraklion	3.05	0.80	3.03	3.03
Lasithi	3.00	2.39	1.67	1.67
Rethymno	3.05	1.99	1.21	1.21
Chania	2.79	1.99	2.12	2.12

Table 4.5 Distribution of data of touristic resources and infrastructure in the prefectures of Greece

Prefectures	Shoreline	Sand	Hotel beds	Beds in rented	Total nights
		shoreline		rooms	(thous.)
Attica	4.17	6.01	71312	5643	6343
Aetolia-Acarnania	3.05	3.35	2476	347	221
Boeotia	0.94	0.59	1005	156	104
Euboea	6.09	5.22	12600	4520	491
Evrytania	0.00	0.00	1187	90	99,5
Phthiotida	1.84	1.08	9741	1400	287
Phocida	1.08	0.79	2985	285	252
Argolida	1.08	1.87	11783	1162	656
Arcadia	0.62	0.79	2011	499	143
Achaea	1.21	2.76	5917	144	545
Ilia	1.26	6.7	5588	744	408
Corinthia	1.39	1.87	8117	184	362
Laconia	3.14	1.67	2800	625	215
Messinia	1.98	5.22	3998	1137	234
Zakynthos	1.1	1.48	6865	5891	558
Corfu	1.95	4.14	30817	23792	2785
Kefallinia	2.28	2.36	3744	2431	288

Lefkada	1.05	1.08	1474	2893	99
Arta	0.49	0.00	391	40	58,6
Thesprotia	0.81	1.58	1385	863	71
Ioannina	0.00	0.00	2486	866	378
Preveza	0.85	2.86	2635	2296	178
Karditsa	0.00	0.00	726	75	80,9
Larissa	0.45	1.58	2450	1752	273
Magnesia	6.62	2.17	13277	8085	655
Trikala	0.00	0.00	2124	275	141
Grevena	0.00	0.00	277	58	14,56
Drama	0.00	0.00	515	10	59
Imathia	0.11	0.00	761	20	107
Thessalonica	1.21	2.86	8627	1101	1177
Kavala	2.42	3.35	7465	4409	444
Kastoria	0.00	0.00	740	22	92,5
Kilkis	0.00	0.00	328	0.001	13,165
Kozani	0.00	0.00	1130	3	114,32
Pella	0.00	0.00	917	0.001	50,11
Pieria	0.76	1.58	6917	3462	206
Serres	0.09	0.69	867	60	96
Florina	0.00	0.00	653	22	115,29
Chalkidiki	4.62	5.81	17666	9976	1046
Evros	1.49	1.58	2510	808	252
Xanthi	0.31	0.99	656	146	96
Rhodope	0.49	1.58	934	90	121
Dodecanese	11.25	4.83	76829	12178	8873
Cyclades	14.76	1.48	24046	17417	863
Lesbos	5.95	4.83	4936	4625	299
Samos	3.47	1.38	7786	449	364
Chios	2.67	1.58	1649	1105	118
Heraklion	1.75	3.05	39229	7185	4043
Lasithi	2.74	4.04	17377	3513	1415
Rethymno	1.17	1.97	14606	3149	1194
Chania	1.3	3.25	11882	5199	803

# 4.3. Economic Impacts

The evidence obtained with respect to the question – What is the impact of charging on economic activity? - Further addresses the timing issue, and leads the research to suggest that the effects on economic activity will be modest and relatively benign overall, except perhaps for some businesses that operate at the margins of profitability. This is based on analysis of the accumulated evidence from:

- The foundation of existing literature on the economic impact of charging that was developed in the literature review phase of the project (see Whitehead, 2003) and
- 2. The original research that was undertaken (Whitehead, 2002, Whitehead et al., 2005, in press).

To a reasonable degree the results of these studies were, together, underpinned with in-depth information about transmission mechanisms and influences on travel choice and business decision-making when the network conditions change due to road user charging (and, in limited number of cases, workplace parking levies).

In any event, none of the behavioral studies attempted to appraise the overall net economic benefit that may be brought about by charging within any sort of accounting framework, such as was done in the transport models considered in the literature review.

Even though evidence can now be presented to show that economic impacts will be modest during the period before reduced car journeys by other modes, the timing issue will remain at the heart of concerns expressed by business communities. This is likely to be the case until the proponents of charging have clearly and convincingly, articulated local revenue investment strategies. In this regard, charging schemes in some local authorities will only be successfully implemented if sophisticated marketing and public relations techniques are adopted in advance of proposals.

# Chapter 5. Evaluation of the origin-destination tables

## 5.1. Origin-Destination Charts

The need for movement is the result of the dispersion of the uses of the land in space. Today movement has been increased enormously, because of the fast evolution and development in all the sections. The increase of movement, however, creates many traffic problems while the tolerance of traffic jams and the low level of service decreases more and more. The answer of these problems cannot be the continuous construction of new infrastructure. Initially, there should be a full record of the problems and the reasons that cause them. Then, with the proper elaboration of the data and the development of adequate models the traffic systems must be improved. This, of course, requires a systematic approach and analysis of the problems.

Origin – destination matrices are required in order to model traffic routing behavior in networks. For a large number of applications conventional methods for estimating an origin – destination matrix became too expensive to use. To overcome this problem, alternative methods for estimating an origin destination matrix from traffic counts, have been developed.

The basic information for this analysis is the chart of Origin-Destination. The simulation models, having this information and the characteristics of the network try to predict where the traffic jams will occur.

The Origin-Destination Charts are two-dimensional and produce information for the movement that takes place between the various study areas. In the lines of the chart the origin zones are given in the columns the destination zones. The values of the cells have a directional sense by showing the number of movements from the origin zone to the destination zone. The cells of the diagonal represent the movement in the interior of each zone.

The collection of the necessary information in order to create these charts can take place in various ways. The conventional method for the finding of an Origin-Destination chart developed for large-scale research uses a combination of house interviews and field research. However, the high cost, the high requirement in personnel, and the long periods needed for the elaboration of the data and the errors resulting from the sampling eliminate the use of this approach for most of the

applications. Alternative methods proposed for smaller scale research is the field limited research, research of traffic signs, aerial photographs, but they are also considered having a high cost regarding the needs in personnel and data elaboration. All these methods however, with the possible exception of the aerial photographs, are based in sampling and therefore for the evaluation of the full Origin-Destination Chart, a deduction must take place for the whole of he population. Additionally, the above-mentioned methods have another important drawback. They do not have the capacity of taking into consideration the modifications of various factors (change of

movement number, change in the geometry of the network, etc.), which have an

immediate influence on the considered obsolete and the need accrues to repeat a new

one of the above mentioned methods with the forbidding cost.

Because, however, in every research or study there is a fund, time and personnel limitation, the researchers begin looking for alternative methods for the determination of these charts. Taking into consideration the above, we conclude the necessity of use of simplified method for the easy, fast and economic determination of the Origin-Destination Charts. Various such methods are based on measurement of traffic loads on the traffic intersections, one of the most common elements of traffic information. These data are relatively cheap to be collected and are usually used for

various reasons (accidents studies, maintenance planning, intersection improvement).

#### 5.2. Presentation of 1997 Doxiades' Transport Survey

The research will be based on the table of origins-destinations that occurred from the 1997 Transportation Survey concerning the vehicle flows from region to region in Greece. The Survey of the office "Doxiadis" (that is addressed in Kifisia-Athens, 13 Aigidon Road) and the Greek Government has financed concerns the daily freight of

- i) Agricultural products (Table 6 Annex C)
- ii) Industrial and chemical product (Table 7 Annex C)
- iii) Minerals, combustibles and lubricants and (Table 8 AnnexC)
- iv) Construction materials measured in tones (Table 9 Annex C).

It is obvious that a lot of data is not included especially concerning the islands of the Ionian and the Aegean Sea and Crete that are excluded.

#### **5.3. Determination Parameters**

The main determination parameters that will be used are the flows of vehicles, (meaning the trucks) from region to region and the freight transportation that is involved. Most of the cars diverted the Tempi valley by using the road Larissa—Agiokampos—Stomio but there are no data for the Number of cars diverting the route or the ones passing the Moschohori or Dion tolls (available neither from "AEGEAN MOTORWAYS" nor from the Greek Traffic Police.

The determination parameters are:

F for the Freight measured in tones

T for the time measured in days

D for the Distance measured in kilometers

Q for parameter that multiplies the Freight by the Time

Meaning O=F\*T

M for the parameter that multiplies the Freight, the Time and by the Distance

Meaning M=F\*T\*L=Q\*D

The four categories of vehicles are:

- i) Agricultural and livestock products
- ii) Industrial and chemical products
- iii) Minerals, combustibles and lubricants
- iv) Construction materials.

The tables that occur are 4 and they concern each category. First of all the primary tables 6, 7, 8 and 9 of the Annex C are multiplied with 365/2=182,5 days which is the exact six-month period of the Tempi traffic deviation. This way we have the new Freight (F). Continuously the four new tables are multiplied with the route kilometers two times. Two new categories of charts will occur, one with the kilometers of the route via Tempi (Tables 14, 15, 16 and 17 of Annex C) and finally one with the new kilometers via the deviations (Tables 18, 19, 20 and 21 of Annex C).

The eight new tables that occur can be compared in pairs concerning the same vehicle category. Conclusions about the extra kilometers and extra cost are presented in Chapter 6.

#### 5.4. Theory- Matrix of the year 2010

The research will be based on the table of origins-destinations that occurred from the 1997 Survey concerning the vehicle flows from region to region in Greece. All the tables are in Annex C.

Table 1 is the table with the distances between the prefectures of Greece. In Table 2 we have the distances of the regions also but where the cells are in a dark colorwe have the only passages that have no problems due to the rock falling. Tables 3, 4 and 5 concern the distances of the routes via Agia, Elassona and Mourgani correspondingly.

The first tables are:

Table 6 concerning the Agricultural and livestock products

Table 7 concerning the Industrial and Chemical products

Table 8 concerning the Minerals, combustibles and lubricants

Table 9 concerning the Construction materials.

These Tables have been examined and from them have derived the final tables 14, 15, 16, 17, 18, 19, 20 and 21.

As an assumption we take that:

- a. the first category of vehicles will use the route Larissa→Agiokampos→Omolio
- b. the second category of vehicles will use the route Larissa →Elassona→Katerini
- c. the third category of vehicles will use the route Larissa—Trikala—Grevena
- d. the fourth category of vehicles will use the route Larissa — Elassona — Katerini

The equation parameters are estimated by using statistical data from Greece, from the national Search "Origin-Destination" Matrix that is above presented with the following sectors:

- i) Agricultural and livestock products
- ii) Industrial and chemical products
- iii) Minerals, combustibles and lubricants
- iv) Construction materials.

The basic assumptions are:

1. The vehicles carrying agricultural and livestock products (category i) divert via Agia covering an extra route of 106 kilometers.

- 2. The vehicles carrying minerals, combustibles and lubricants (category iii) divert via Mourgani covering an extra route of 110 kilometers.
- 3. The vehicles carrying products of the rest categories meaning industrial and chemical products (category ii) and construction materials (category iv) divert via Elassona. This route is the most surcharging as an extra route of 160 kilometers is being covered.

#### 5.5. Comments

After applying the above methodology occur eight basic tables (Tables 14,15,16,17,18,19,20 and 21) that lead us to the final conclusions that are presented in Chapter 6.

The exact range and content of the Tables of Annex C are:

- Table 1. Distances of the prefectures (in km)
- Table 2. Distances of affected regions (in km)
- Table 3. Distances via Agia (in km)
- Table 4. Distances via Elassona (in km)
- Table 5. Distances via Mourgani (in km)
- Table 6. Daily Freight of Agricultural and livestock products (in ton)
- Table 7. Daily Freight of Industrial and chemical products (in ton)
- Table 8. Daily Freight of Minerals, combustibles and lubricants (in ton)
- Table 9. Daily Freight of Construction materials (in ton)
- Table 10.Q concerning Agricultural and livestock products
- Table 11. Q concerning Industrial and chemical products
- Table 12. Q concerning Minerals, combustibles and lubricants
- Table 13. Q concerning Construction materials
- Table 14. M concerning Agricultural and livestock products
- Table 15. M concerning Industrial and chemical products
- Table 16. M concerning Minerals, combustibles and lubricants
- Table 17. M concerning Construction materials
- Table 18. M concerning Agricultural and livestock products via deviation
- Table 19. M concerning Industrial and chemical products via deviation
- Table 20. M concerning Minerals, combustibles and lubricants via deviation
- Table 21. M concerning Construction materials via deviation

# **Chapter 6. Conclusions**

## 6.1. Ending Remarks on the PPP Projects

The up to date progress of the PPP institution creates positive prospects for the further implementation of PPPs in Greece. It is now demonstrated in practice that the Greek public authorities have a clear picture of the benefits and the new opportunities that the careful design and implementation of PPP projects can yield for the faster provision of infrastructure and better quality services to the citizens. It is also evident that the private sector considers PPPs as a new field for business activity. The approval of the implementation of a significant number of projects, along with the demonstrated consistency of words and actions, creates substantial investment opportunities that stimulate the interest of many firms for participating in the implementation of these projects.

On top, the rapid development of PPPs renders Greece a focal point for the wider implementation of this institution in neighbor countries. Through the leading position that Greece now has in the European PPP map in the wider region of Southeastern Europe and the Mediterranean, it is an attractive pole that has all it takes so as to foster business activity and maximize benefits for both public and private sector.

The INTERCO-PPP project partners had the opportunity to describe their experiences and reflect on the commonly defined set of Success factors. While different institutional backgrounds and operating frameworks make each project a comprehensive case study, certain common points could be defined:

- •The social character of the PPPs, public acceptance, and related political support should be considered,
- •Technical / administrative issues should always be separated from the omnipresent political aspects,
- •The projects selected should safeguard the interests of all parties, while making clear that success or failure is related to their engagement and risks management,
- •PPPs are based on partnerships of equal partners; hence roles, duties, standards and outputs must be clearly defined,
- •Legal and institution support at the regional level is essential and last but not least,

•Programmed support in the drafting phase could solve numerous problems at later stages.

While the mentioned factors' list is not exhaustive and reflects only the experiences of the INTERCO-PPP project partners, it forms a useful starting point for public debate for PPPs at a regional level.

### 6.2. Conclusions concerning infrastructure

Concluding concerning the alleged infrastructure shortage the evidence reviewed in Gramlich's paper is decidedly mixed. The needs assessment approaches and macro time series approaches used to justify big increases in infrastructure spending are flawed in many ways. The basic question is "What should be done about any shortages". The answer is that the best approach is not to try to analyze the numbers and tell how short the supply is and how much national or state spending or grants should be increased. An even more sensible approach is to set up institutional structures that permit state and local governments, the holders of almost all infrastructure capital, to find their own optimal stock. As for the contribution of economic researchers to this new understanding, there are both good and bad news. After years of ignoring the issue, economists following Aschauer did finally find it, giving some more professional gloss to advocacy pieces that up to then were totally from the infrastructure lobby. But the contributions of economists were not all that they could have been. There seems to have been far to much attention to the details of macro production studies which can never answer the relevant policy questions very well and too little attention to more disaggregated rate of return studies and studies of the impact of different types of policy changes. While in a way the problems outlined and discussed here are more at the state and local level than at the federal level, the federal government could help matters in various ways. More importantly the federal government might give policy analysts something to study by doing experiments with policy changes of various sorts to see how state and local governments and their voters will respond. Studying reactions of this sort can redirect the efforts of economists onto studies of just what policy changes are in order.

## 6.3. Conclusions over Growth in Europe

Economic theory has traditionally explained differences in production structures mainly through differences in underlying characteristics (endowments of natural resources, factors of production, infrastructure, or technology), which make space itself uneven. In its framework, economic integration leads to specialize according to their comparative advantage.

The cumulative causation mechanism modeled by Krugman (1991) relies on the assumption that, when a region does relatively well in attracting firms it is able to attract more workers on the basis of higher wages and better access to a wider range of goods. Blanchard and Katz (1992) show that in the U.S. there is such an adjustment process working through regional migration. This is not the case in Europe where adjustment to changes in regional fortunes takes place mostly through participation decisions (Decressin and Fatàs, 1995).

The migration rates in Europe are significantly low comparing with those of the US (Bentignoli and Pagano, 1999). Moreover they are low by historical standards, especially when compared with the much higher migration rates that were typical for Europe in the 60s. The Single Act came in order to create a single market for goods and workers within the EU Only 1.5% of EU citizens live in a member state different from where they were born. Even in the European countries migration across regions remains very small. There is some arguments as to whether

- a. This is the result of people being reluctant to move
- b. The incentives are insufficient or
- c. Barriers to migration are being to high.

The author wonders what do new economic geography models have to say about the relationship between trade costs and regional inequalities if migration does not occur either due to lack of mobility or to the incentives to move not materializing and presents scientists such as Baldwin, Venables, Krugman, Hirslhman, Akerlof et al and his own views together with Venables (1997).

The main conclusion from the work of Anderson and Forslid, Kind et al, Ludema and Wooton and Baldwin and Krugman is that the benefits of agglomeration make firms less sensitive to taxes and thus allow jurisdictions where firms cluster to tax more heavily. An additional implication is that tax harmonization may benefit neither rich nor poor regions: it can make rich regions lose tax revenue while making it more difficult for poor regions to attract industry (Baldwin and Krugman, 2000).

Studying the effects of infrastructure investments by estimating aggregate production functions can give us an idea of the impact of an investment on infrastructure of "average past quality". While useful, this is not always a good indication of the likely impact of future infrastructure investments. This observation is particularly relevant for Europe where the focus of infrastructure investments is shifting from roads to high-speed rail.

Based on the outcomes of the quasi-production function applied in Netherlands regions, some general conclusion can be drawn. The more developed regions tend to have a relative infrastructure bottleneck while less developed regions tend to have an excess capacity of infrastructure. This may imply that in less developed regions, policy efforts are to be made to attract mobile production factors such as private investments and qualified labour. In more developed regions, infrastructure bottlenecks may then be removed. However, agglomeration economies can also explain the over utilization of infrastructure capital in more developed areas. Generally, densely populated industrialized areas tend to have a higher network infrastructure endowment than peripheral, agricultural and less densely populated areas.

The extent to which infrastructure contributes to regional developments varies over time and depends also on the spatial level of analysis and on the overall level of economic welfare. However, locational conditions have become increasingly important in explaining regional employment and growth differences. In that sense, implications of locational perceptions (based on mental maps, e.g.) in the spatial decision-making process deserve more attention. Especially in peripheral regions where spatial discrepancies are likely to be determined by more factors than infrastructure endowment and locational profiles this seems to be a recommendation for further research. Moreover, precise evaluation of the contribution of specific infrastructure investments to regional development is hard to provide.

Based on those tree papers of Vickerman, the conclusions are concentrated in the impact that major transport infrastructures and especially TENs have in Regional development of European Union.

Infrastructure can be thought of as having the nature of a public good, which either enhances the productivity of the 'private' factors of production or combines

with private capital in an optimal ratio to raise productive potential. The spatial implications of infrastructure have been developed more in relation to the impact of specific infrastructure projects. What new infrastructure does first and foremost is change accessibility. Changes in accessibility lead to changes in the value of a region's economic potential.

Emphasis on some issues emerging by TEN developments is given in the first paper. A fundamental issue is the "Problem of asymmetry". An emphasis is given in the fact that location matters as far as there is always a difference among the way that TEN affect on Central and on Peripheral European Regions. Infrastructure is not the only measure needed especially for the development of lagging behind regions was a package of measure is proposed, however the same package does not have the same effects in all locations.

Another issue is the "focus of development" as far as there is a division among the developmental effects that TEN have in intraregional and interregional level. Either in central and more developed regions or in peripheral lagging behind regions, in intraregional level the distribution of infrastructures occurs to metropolitan areas, advantaging them and causing "corridor effects" which disadvantage the non-urban areas.

It is suggested that there is an additional dimension of classification of regions, cutting across the core-periphery one, which we term corridor and shadow. Corridors are linear regions with good transport, lying on networks; shadow regions are those apart from the networks. This classifies an intra-regional split for a region in any given location and with any given average levels of development concerning the level of transport consumption necessary to serve both the regional market as well as those of other regions. A further distinction can be made between nodal and interstitial places in a corridor. The effect of distance is not monotonic relative to a given centre.

The emphasis on corridors is very significant. The issues to be considered here are the imposition of costs from transit traffic on locations within the corridor, but also the abstraction of traffic away from other routes or corridors and the creation of 'shadow areas' outside the corridors. The effectiveness of this corridor will also depend on the development of other links in the macro-regional network. The balance between the central and peripheral parts of Europe is extremely difficult to assess; for

some networks such as high-speed rail it is clearly biased in favour of more central regions.

For thus author's consideration is about the most appropriate level of planning transport infrastructures. On one hand European planning is needed to indicate infrastructures that meet needs of majority but on the other hand there is an important role of subsidiarity in transport infrastructures, which requires the planning in local level.

The "mode of delivery" is another issue by emphasizing in the need of planning framework for TEN in deferent spatial levels, but also the need of private sector contribution in the planning and in the process of interconnection among different modes of transport infrastructures.

There is a considerable emphasis EU has placed on the development of TENs as an instrument of regional development. This raises two principal questions, the appropriate level at which to coordinate infrastructure planning and how to ensure a consistent means of appraising and financing major infrastructure projects.

As it is already highlighted phenomena such as "corridor effects" are proof of the opposition that TENs cannot succeed the purpose of convergence and cohesion in the European territory. TENs have to be re evaluated and are designed in order to faith this purpose. However the point is a documentary evaluation of TENs that can be covered by the proposed in this paper method. Issues such as the level of planning and the disaggregating evaluation in different modes have to be reconsidered. There is a need for a multi-level decision making framework, consistent with the principle of subsidiarity, but which will require information on the spatial incidence of both costs and benefits. One other issue is the appropriate kind of financial assistance for TENs and if joint ventures between public and private sectors are to be used these will require a careful analysis of the risks being born by each, which again depend on an acceptable set of indicators.

Based on analysis of the two proposed refined indicators of accessibility, generates the effects to regional development of high-speed rail, in all modes of transport. Those conclusions are focused on the relationship between changing accessibility and changing market structure and competition in order to access the full economic impact of new infrastructure.

In general, relative gains in accessibility of peripheral regions may be beneficial to their economic development; however these gains will always be overshadowed by the larger gains in accessibility of the regions in the European core. In other words, TENs cannot be unambiguously instruments to promote the cohesion between regions in Europe and the reduction of interregional economic and social disparities. To success this, European transport Policy should be focused on the investment of links within and between the peripheral regions, not in addition to, but at the expense of, transport investment in the European core.

#### 6.4. Final Evaluation

The basic conclusions that occur from the analysis of the Origin-Destination Charts of the year 2010 and especially the ones concerning the deviation routes and the parameters F, Q and M are:

- The prefectures of Thrace and Peloponnese are the most affected ones (see Maps 3 and 5)
- The prefectures of Central Greece and Central and East Macedonia were affected to a smaller extent than the prefectures of Thrace and Peloponnese. The routes that were most affected were the ones concerning Athens.
- The Prefecture of Thessaly was affected. Especially the prefecture of Larissa, which had problems inside its borders. For example Larissa→Pirgetos or Larissa→Papsani, a route of about 22 kilometers was diverted via Agia or Tirnavos or Elassona meaning extra kilometers and difficult and dangerous road with a lot of curves and traffic due to the deviation of PATHE. The only "solution" was a 4 kilometers 3A road from Tempi to Rapsani as a deviation. There were many people (mostly local mayors and other representatives) supporting that this road should be smeared with asphalt but the problem was and remains that the road is inside the limits of the NATURA 2000 region and this is prohibited.
- The regions of Western Macedonia, Epirus and Western Central Greece were not affected as their routes were transit from Domokos or Grevena (Egnatia Odos) or they used the highway of Western Greece ("Ionian" highway) as they usually do.

- The most affected vehicle categories were the trucks as they were diverted as it is analytically presented in Chapter 5 and all the three deviation routes were very difficult to be driven (narrow roads, many curves, extra kilometers, extra cost).
- Another parameter is that the accident and the obligatory deviation routes happened in a period that the country and Greece's citizens were fronting the Financial Global Crisis and the grave measures of the Greek government and the EU.
- The two deviation routes, the one via Agia and the one via Elassona
  are similar in kilometers (106 extra kilometers via Agia and 110
  extra kilometers via Elassona). The deviation road in both cases was
  not ready to accept so many vehicles (we must not forget that the
  majority of the cars were diverted via Agia). Moreover the road
  surface was severely damaged
- The deviation route via Mourgani was an extra 160 kilometers route, which means the most aggravating one. Many drivers preferred it though due to the good condition of part of the road (from Thessaloniki to Grevena, Egnatia Odos). The prefectures that preferred this route were the ones of Western Thessaly, meaning the regions of Trikala and Karditsa.
- Moreover the road surface of all the deviations was severely damaged because these roads were not designed and constructed to resist to such a heavy vehicle load.
- Tourism was affected in general. The region of Tempi (Ambelakia for example) was affected negatively as the only visitors were mostly from the region of Larissa. The regions of Elassona, Agia and Mourgani were affected positively.

Concluding it is obvious from the data and the examination of the Maps that the most affected routes are the ones related to the PATHE. The Tempi Valley splits the PATHE road and Greece in two parts and this fact together with the peculiar geological shape of the region leaded the country and its transportation to a sixmonth inconvenience.

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#### Other Internet Links

#### **Emportal**

http://www.inthessaly.gr/en/tempi/Tempi.html (access at 12/9/2010)
http://www.inthessaly.gr/en/tempi/Olympos.html (access at 26/3/2010)
http://www.inthessaly.gr/en/tempi/Kissavos.html (access at 4/6/2010)
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Kalogirou Vassiliki - Evaluation of the Financial Consequences of Land Slip in Tempi Valley

**ANNEX A – PHOTOS** 



Photo 1 The Greek National Road (PATHE) after the rock fall



**Photo 2** Closer view of the place of the accident (Tempi Valley) of Wednesday the 16<sup>th</sup> of December of the year 2009.

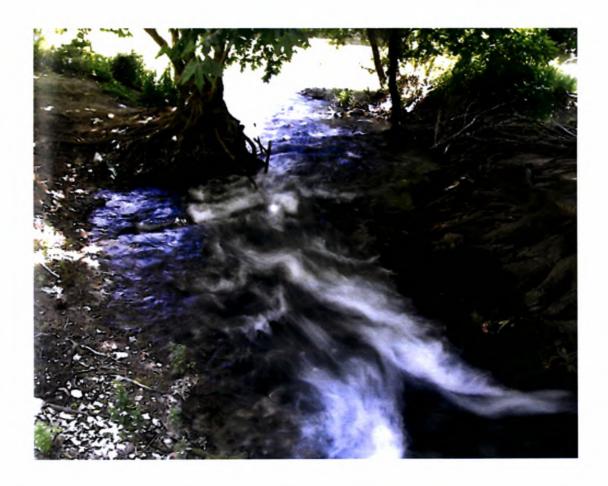
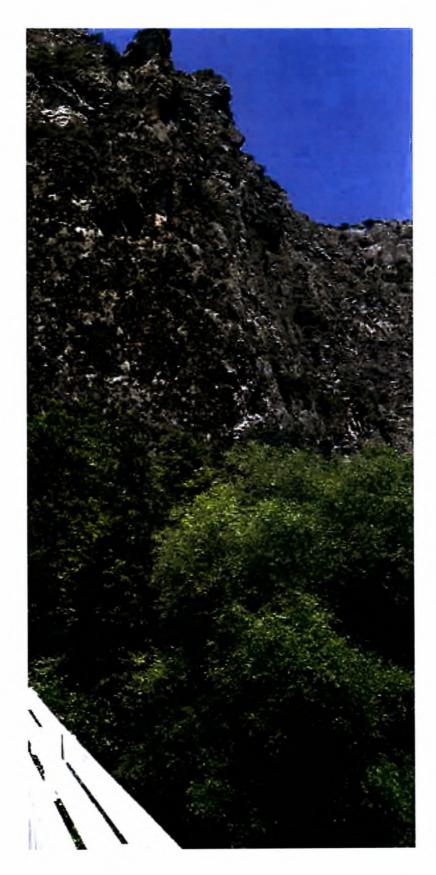


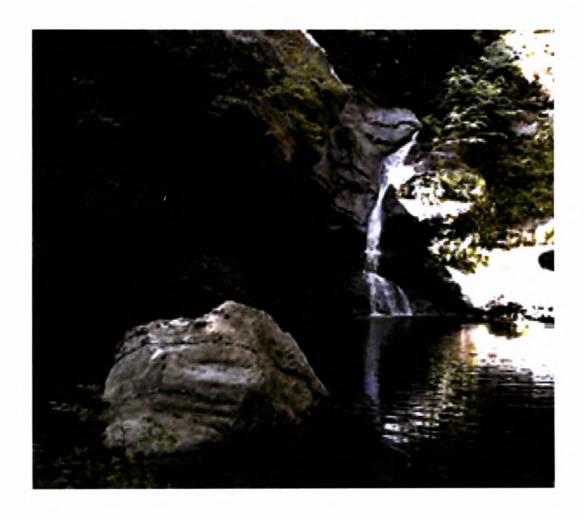
Photo 3 View of Pinios River



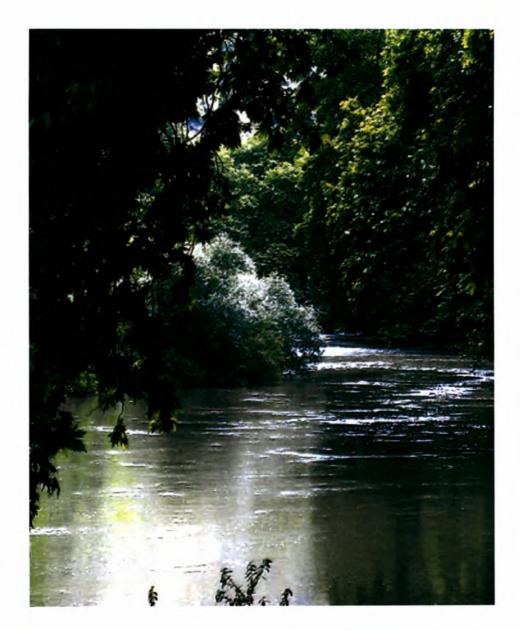
Photo 4 View of the Tempi Valley



**Photo 5** View of the nature of Mountain Olympos from the bridge of Santa Paraskevi (Agia Paraskevi)



**Photo 6** View of the Spring of Diana



**Photo 7** View of the Valley of Tempi from Mountain Kissavos (Ossa)

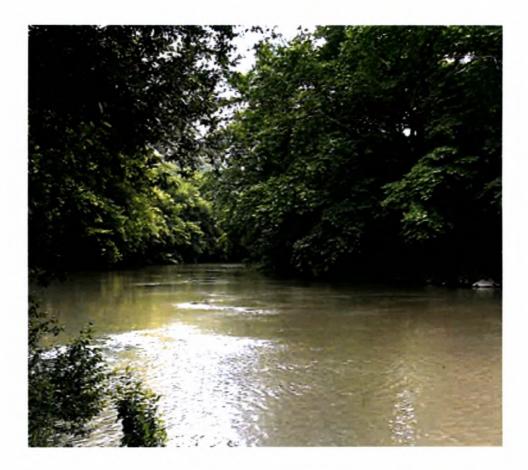
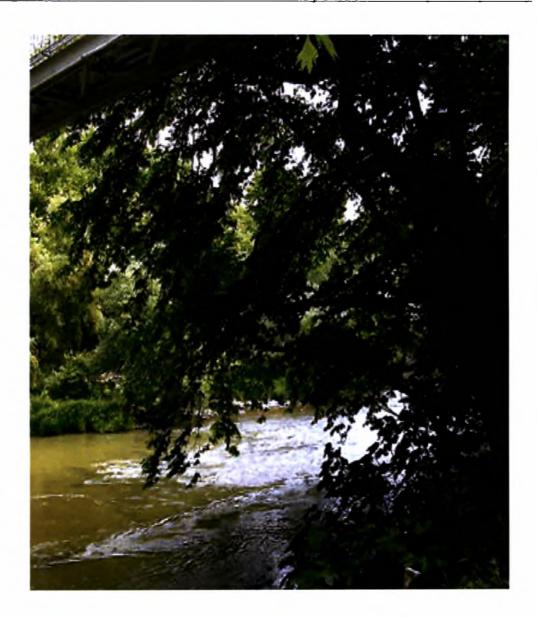


Photo 8 River Pinios



**Photo 9** The trees and the water under the bridge

Kalogirou Vassiliki - Evaluation of the Financial Consequences of Land Slip in Tempi Valley

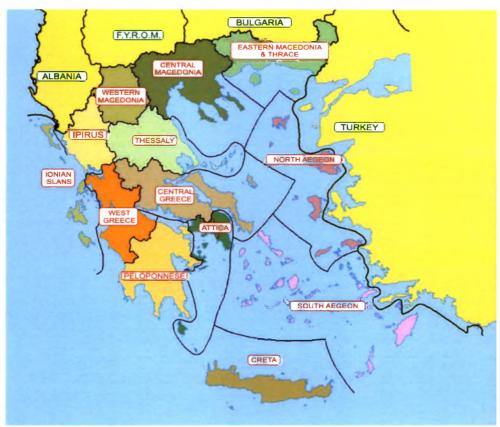
ANNEX B - MAPS



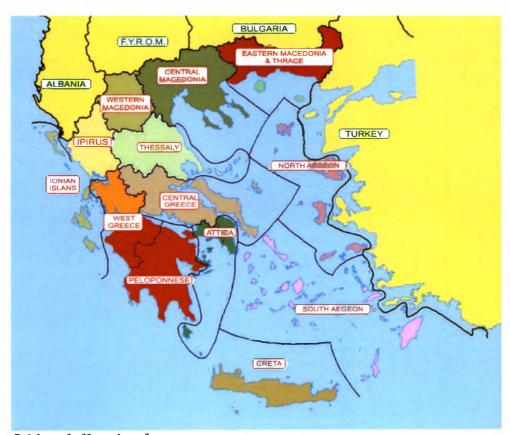
Map 2. Map of Greece (Roads)



Map 3. Map of affected regions (Nomoi)



Map 4. Map of Greek prefectures



Map 5. Map of affected prefectures

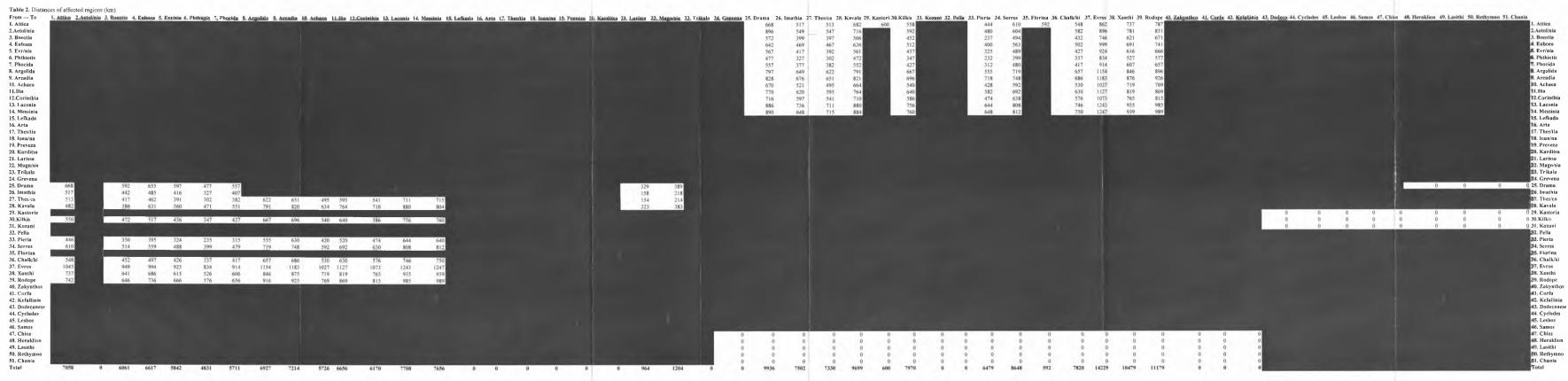
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**ANNEX C - TABLES** 

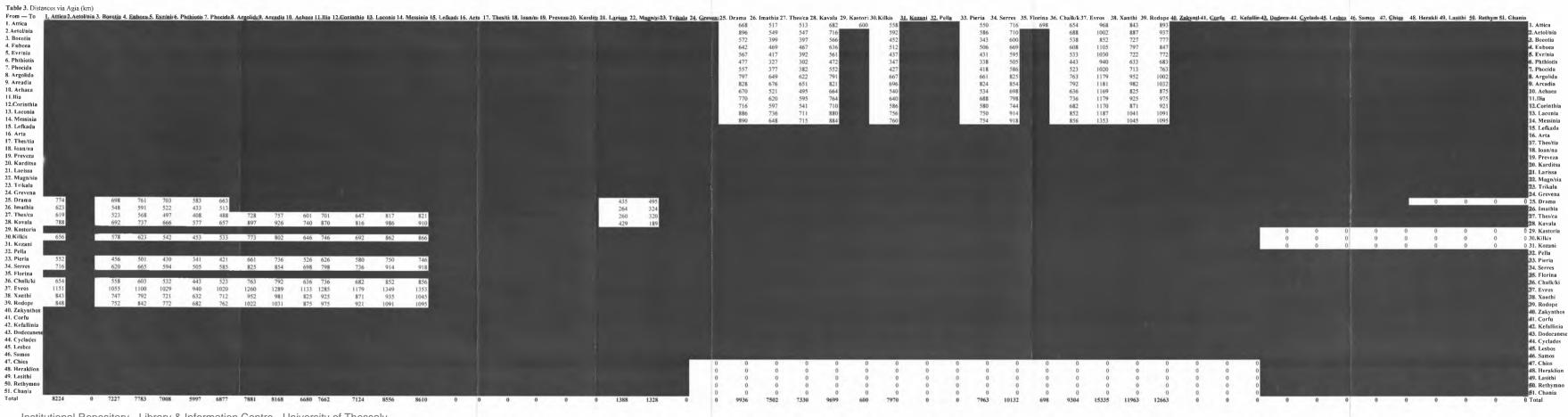
 Table 1. Distanses of prefectures (km)

GREECE	VOLOS	VERIA	TRIPOLI	TRIKALA	THES/NIKI	SPARTI	SERRES	PYRGOS	PYLOS	PREVEZA	PATRA	NAFPLIO	MON/SIA	LARISSA	LAMIA	KOZANI	KORINTHOS	KAVALA	KATERINI	KASTORIA	KALAMATA	IOANNINA	IG/NITSA	FLORINA	EVZONI	EDESSA	DRAMA	ALEX/POLI	AGRINIO	ATHENS	km
ATHENS	326	517	194	332	513	254	610	320	337	378	220	165	350	361	215	506	84	682	444	600	284	447	481	592	555	569	668	862	284		ΒΟΛΟΣ
AGRINIO	310	448	258	312	532	318	629	182	308	96	82	283	414	308	195	395	200	701	430	381	302	165	199	481	574	523	707	881		216	BEPOIA
ALEX/POLI	563	427	1000	565	349	1060	290	944	1070	824	844	971	1156	503	651	490	946	180	422	569	1064	716	816	515	421	441	218		653	464	ТРІПОЛН
DRAMA	389	253	826	391	175	886	7:	2 770	896	650	670	797	982	329	477	316	772	38	248	395	890	542	642	341	247	267		466	210	124	ТРІКАЛА
EDESSA	276	47	713	280	92	773	189	657	783	478	557	666	869	218	364	114	603	261	135	128	777	348	448	74	118		216	651	78	214	ΘΕΣ/ΝΙΚΗ
EVZON1	256	104	639	260	72	753	169	637	763	531	537	646	849	198	344	167	583	241	115	246	757	401	501	192		711	526	60	717	524	ΣΠΑΡΤΗ
FLORINA	293	139	699	233	166	759	263	643	769	450	543	552	886	231	350	86	589	335	209	68	763	320	420		808	97	313	748	175	311	ΣΕΡΡΕΣ
IG/NITSA	371	383	457	247	467	517	564	381	507	103	281	482	613	309	364	330	419	636	392	316	501	100		692	180	595	410	155	597	408	ΠΥΡΓΟΣ
IOANNINA	271	283	423	147	367	483	464	347	473	130	247	448	579	209	264	230	385	536	292	216	467		126	818	113	721	536	143	727	534	ΠΥΛΟΣ
KALAMATA	518	717	90	520	715	60	812	120	53	398	220	163	156	561	413	677	200	884	642	703		404	278	572	414	475	277	354	413	406	ПРЕВЕZА
KASTOR1A	301	157	639	173	220	699	317	583	679	346	483	592	795	239	290	94	529	389	232		178	226	100	592	236	495	310	176	497	308	ПАТРА
KATERINI	141	75	578	145	73	638	170	522	648	424	422	531	734	83	229	138	468	242		201	379	216	301	719	133	622	419	73	606	417	NAYIIAIO
KAVALA	383	247	820	385	169	880	110	764	890	644	664	791	976	323	471	310	710		229	332	510	209	276	904	96	807	622	156	809	620	ΜΟΝ/ΒΑΣΙΑ
KORINTHOS	354	543	110	356	541	170	638	238	253	316	138	63	266	389	239	503		655	452	341	339	567	441	251	559	154	62	499	158	62	ΛΑΡΙΣΑ
KOZANI	207	63	644	147	141	704	238	586	712	360	486	597	769	145	264		150	505	302	193	291	419	293	399	409	302	117	349	304	115	ΛAMIA
LAMIA	115	304	349	117	302	409	399	293	419	291	193	302	505	150		264	145	769	597	486	360	712	586	238	704	141	147	644	63	207	KOZANH
LARISSA	62	158	499	62	154	559	251	441	567	339	341	452	655	<u></u>	503	239	389	266	63	138	316	253	238	638	170	541	356	110	543	354	ΚΟΡΙΝΘΟΣ
MON/SIA	620	809	156	622	807	96	904	276	209	510	332	229		710	310	471	323	976	791	664	644	890	764	110	880	169	385	820	247	"383	КАВАЛА
NAFPLIO	417	606	73	419	622	133	719	301	216	379	201		242	468	138	229	83	734	531	422	424	648	522	170	638	73	145	578	75	141	KATEPINH
PATRA	308	497	176	310	495	236	592	100	226	178		232	389	529	94	290	239	795	592	483	346	679	583	317	699	220	173	639	157	301	ΚΑΣΤΟΡΙΑ
PREVEZA	406	413	354	277	475	414	572	2 278	404		703	642	884	200	677	413	561	156	163	220	398	53	120	812	60	715	520	90	717	518	КАЛАМАТА
PYLOS	534	727	143	536	721	113	818	126		467	216	292	536	385	230	264	209	579	448	247	130	473	347	446	483	367	147	423	283	271	ΙΩΑΝΝΙΝΑ
PYRGOS	408	597	155	410	595	180	692	2	100	501	316	392	636	419	330	364	309	613	482	281	103	507	381	564	517	467	247	457	383	371	ΗΓ/ΝΙΤΣΑ
SERRES	311	175	748	313	97	808		420	320	.763	68	209	335	589	86	350	231	886	652	543	450	769	643	263	759	166	233	699	139	293	ΦΛΩΡΙΝΑ
SPARTI	524	717	60	526	711		192	501	401	757	246	115	241_	583	167	344	198	849	646	537	531	763	637	169	753	" 72	260	693	104	256	ΕΥΖΩΝ0Ι
THES/NIKI	214	78	651	216		118	7.	4 448	348	777				603				869		557	478	783	657	189	773	92	280	713	47	276	ΕΔΕΣΣΑ
TRIKALA	124	210	466		267	247	341	642	542	890	395	248	38	_	_		7	982	797	670	650	896	770	72	886	175	391	826	253	389	ΔΡΑΜΑ
TRIPOLI	464	653			441	421	515	816	716	1064					490			1156	971	844	824	1070	944		1060		565	1000	427	563	ΑΛΕΞ/ΠΟΛΗ
VERIA	216	<u> </u>	881	707	523	574			165	302	381	430	701	200	395	195	308	414	283	82	96	308	182	629	318	532	312	258	448	310	ΑΓΡΙΝΙΟ
VOLOS		284	862	668	569	555	592	2 481	447	284	600	444	682	84	506	215	361	350	165	220	378	337	320	610	254	513	332	194	517	326	AOHNA
χλμ.	AOHNA	ΑΓΡΙΝΙΟ	АЛЕΞ/ПОЛН	ΔΡΑΜΑ	ΕΛΕΣΣΑ	ΕΥΖΩΝΟΙ	ΦΛΩΡΙΝΑ	HI/NITEA	IΩANNINA	KAAAMATA	ΚΑΣΤΟΡΙΑ	KATEPINH	KABAAA	ΚΟΡΙΝΘΟΣ	KOZANH	AAMIA	ΛΑΡΙΣΑ	MON.ΣIA	NAYIIAIO	ПАТРА	ПРЕВЕZА	ΠΥΛΟΣ	ΠΥΡΓΟΣ	ΣΕΡΡΕΣ	ΣΠΑΡΤΗ	ΘEΣ/NIKH	TPIKAAA	ТРШОЛН	BEPOIA	ΒΟΛΟΣ	ΕΛΛΑΔΑ

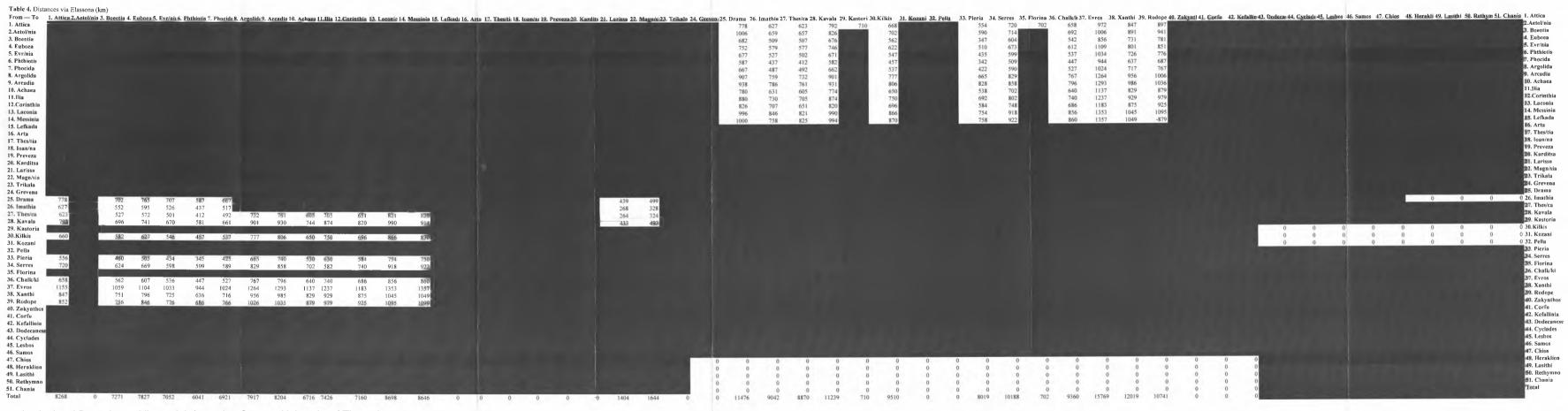
Affected Routes



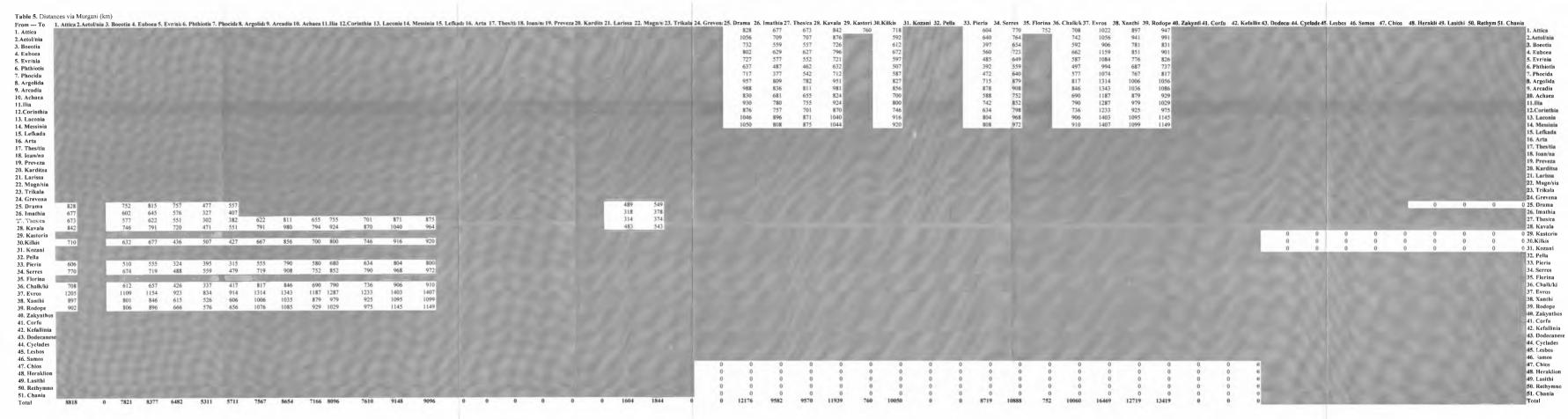
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Table 6. Agricultural and livestock products			
From — To 1. Attica 2.Actol/nia 3. Bocotia 4. Euboca 5. Evr/nia 6. Phthiotis 7. Phocida 8. Argolida 9. Arcadia 10. Achaea 11.1lia 12. Corinthia 13. Laconia 14. Messinia 15. Lefkada 16. Arta 17. Thes/tia 18. Joan/na 19.	. Preveza 20. Karditsa 21. Larissa 22. Magn/sia 23. Trikala 24. Grevena 25. Drama 2	The state of the s	,
1. Attica 4.4 61,7 312,9 221,4 16,5 203,1 26,6 37,6 53,6 125,9 79,8 163,3 48,4 47,9 1,7 36,8 11 48,8	21,1 9,9 149,9 172,5 18,8 3,1 2,8	2,8 68,6 518,3 27,5 4,9 0 23,3 8,5 68,7 20,7 0,2 0 16,2 20,8 4,9 23,3 12 5,8 0 0 0 0 0 0 0 0 0 <b>0 1. Arti</b>	
2.Aetol/nia 148,7 326,5 32,7 0 2 15,6 16,9 12 0 43,6 142,7 25,4 5,6 0 18,7 90,3 12,2 46,5	11,7 0 3,I 1,7 3,6 0,6 1	1 4 50,3 1,6 0 0 0 0 0,3 1,9 0 0 0,9 1,1 0,1 0 6 9,8 0 0 0 0 0 0 0 0 0 0 2.Aeto	
3. Boeotia 803,2 36,9 412,3 188 0 110,4 21,1 33,8 58,7 27,9 26,7 26,5 33,8 7,3 0 2,1 3,3 1.8	18,8 10,1 11,5 10,4 9,2 0 0	0 10 13,8 0 0 0 0 0 2,6 2,5 0 0 0,3 0 0 0 2,6 7,2 0 0 0 0 0 0 0 0 0 3.Boe	
4. Euboea 757,4 14,7 1023,9 75,9 0 23,3 11,5 7,8 10 10,7 15,1 158,4 0 19,2 0,7 0 0 1,5	0 15,5 2,3 13,7 15,7 0 0	0 0 54,3 0 0,1 1,6 0,6 0 10,4 5,4 2,8 0 0,4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
5, Evr/nia 25,2 3,8 0 0 0 21,9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1,9 5,1 43,2 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
6. Phthiotis 418,8 11,5 371,2 17,9 10,5 186,3 66,9 17,9 1,3 20,9 24,6 0 6,3 0 0 0 0 1.5	1 94,5 143,5 158,1 32,9 10,2 3	3 59,3 219 3,6 0 7,4 13 5,7 19,2 4,3 10,2 0 0,8 0,9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
7. Phocida 14,1 0,2 4,6 0,9 0 26,4 13,7 0 0 4,4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 3,1 14,6 0,3 0 0	0 0 2,8 0 0 0 0,6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
8. Argolida 67,3 21,3 7 0,2 0 1,8 0 879,8 66,7 6 0,8 57,7 4,4 6,1 U 0 4,6	0 0 6,6 8,8 1,2 0 5,4	5,4 8,5 44,7 5,4 0 5 18,5 20,9 0 0 0 0 0 1 0 0 0,8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
9. Arcadia 54,6 0,2 0 15,6 0 0 0 12,2 40,2 12,3 16,9 18,7 70,9 57,4 0 0 0 0,9	267 04 124 17 04 0 66	0.1 0 10.1 0 0 0 0 0 0 0 0 0,2 0 0,8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
10. Achaea 293,5 128 0 22,8 0 3,1 3,4 85,6 16,2 354,7 151 26,9 11 7,5 4,3 19,6 4,5 18,9	0 0 0 0 0 0 0 0	6.6 50,1 36 0 0 0 0 8,2 5,5 5,3 0 0 4,4 0 0 0 0,2 2,5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
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12.Corinthia 489,3 19,5 52 64,3 0 2,9 0 385 48,1 22 73 111,8 38,1 33,2 U 16 U 31,3	1 0 04 17 2 03 0 0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
13. Laconia 104,8 4,8 0 0 0 8,5 0 37,6 10 3,3 3,8 6,5 193,2 20,4 0 1 0 0,8	0 0 28 0 0 0 0	0.3 0.1 1.4 0 0 0 0 1.5 0 1.7 0 0 1.8 0 0 0 1.7 0.7 0 0 0 0 0 0 0 0 14.00	
14. Messinia 66,2 4,3 0,9 1,6 0 1,1 0 6,7 14,8 63,4 54,7 5,9 6,9 389,4 U 1,2 U 0,0	46 0 0 0 0 0 0	0 6.1 3.5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
15. Lefkada 3,8   4,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1578 28 105 03 34 3 0	0 16.6 14.7 0.9 0 3.1 3.7 2.9 3.2 1.4 0 0 0 0.8 0 0 4.3 0 0 0 0 0 0 0 0 16.6r	
16.Arta 23 78,2 0,4 0 0 2,9 0,7 6,9 3,3 30,5 0 10,7 0 0,0 44,9 3,7 34,9 10,0 10,7 0 0 14,7 8,210,6 58,9	102.1 0 0.7 0 2.1 0 0	0 0,3 36,1 0 0 0 0,6 0,4 1,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
17. Thes/tia 8,6 2,4 2 0,4 0 0 0 0 0 14,2 0 2,2 0 0 1,4 7,8 210,5 28,9 17. Thes/tia 8,6 2,4 1 1 1 0 0 0 0 18,6 5 1,3 1,2 0 4,5 7,5 21 2,4 9,5 (4)	129.7 5.3 18.1 8.5 5 4.7 0	0 164 11,3 0,1 5,1 0 7,2 0 0 1,4 0,9 0 0 0 0,3 0 15,2 0 0 0 0 0 0 0 0 0 18,100	
18. loan/na 25,6   14   1,1   0   4,4   0   0   1,8   6,5   11,3   1,2   U   4,2   13,7   32,1   24,9   304,9   13,0   13	83 18 82 54 81 0 0	0 5.2 5.1 0 0 0 0 0,1 0 0 0 0 0,9 0 0 27,2 0 0 0 0 0 0 0 0 19.9F	
19. Preveza 33,9 30,9 0 0,5 0,9 0 3 0 0 7,5 0 2,5 0 0 0 101,1 130,7 400,9	0 251 1603 589.1 203 0 0	0 62.4 118.4 1.1 0 25.5 2,6 0.4 40 0 0.6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
20. Karditsa 86,4 0,8 30 0,8 4,4 65,4 0,3 4,6 0 17,7 1,3 4,8 0 0 2,4 11,5 16,3 12,7 21. Larissa 265,1 17 24,2 28,7 3,1 195,5 0 11,5 7,4 23,8 0,4 17,9 0,5 1,4 0 9,1 17,7 23,5	11 91.5 1211.6 614.6 220.6 13.8 2.6	2.6 218 246,4 9.5 3,7 0 48 23,1 29,2 61,6 2,7 0 2,5 1,3 0 0 5,2 0 0 0 0 0 0 0 0 0 21.La	
	14.7 2.6 118.7 109.2 61 0 0	0 30 863 0 0 0 13,9 41,4 3 16,5 0 5,5 0 1,4 0 0 2 0 0 0 0 0 0 0 0 0 0 22.Mi	
22. Magnosia 150,5 3 20,9 5,6 0 73 0 2,3 0 11,2 0 0 0 7,4 0 3,2 3,5 14,7 23. Trikata 165,9 7,4 22,1 9,2 25,5 57,7 0,9 2 0 22 0,3 0 0 0 0 10,7 10,9 46,4	5,4 208,9 394,4 18 313 31,6 0	0 3,8 86,8 0 3,8 0 4 3,7 22,6 0,5 1,1 0 0,3 0 8,1 0 0,6 0 0 0 0 0 0 0 0 0 0 23,Tr	
23. Irwalu 20,2 0,1 2,5 0 1,3 2,4 0 0 0 0 0 0,5 0 0 7,6 0 7,2	2,2 2,3 92,3 41,1 139,5 0 0	0 3.6 5.2 0 1.7 0 8.8 0 0 0 0 0 0.3 0 0 0 0 1.9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
25, Drama 29,4 3,5 1,7 5,1 0 0 0 0 0 0 1.4 0 0 0 0 0 3.8	0 0 3,9 6,2 0 0 0	0 8,7 150 153,4 0 22,9 0,2 0,8 7,3 232,8 0 8 0,3 107,4 1,8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
26. Imathia 238,9 29,9 10,4 1,5 0 14,2 0 2,4 1,8 7,8 4 0 2,3 1 1,9 0 14,4 11,4	1,6 5,9 490,2 82,6 14,8 10,4 9,5	9,5 936,6 1769,7 0,2 1,6 12,2 101,1 209,3 290,2 14,3 36,4 7,5 0,8 1,9 0,5 0 2,1 0 0 0 0 0 0 0 0 0 0 0 0 2 <b>6.1m</b>	
20. Thesica 451,1 12,7 21,7 37,7 0 45,5 19,2 13,1 6,7 47 8 19,5 0 2,3 0 22,7 38,2 15,8	8,5 43,7 242,9 75,8 54,4 16,6 114	114 493 680,5 180,1 24,6 280,4 90,8 486,1 155,4 434 29,3 446,1 39,3 61,7 29,1 0 3,2 0 0 0 0 0 0 0 0 0 0 0 0 27, Th	
28, Kayala 36.2 0,9 3,8 8,6 0 0 0 0 0 11.8 0 0 0 0 0,2 2,7 2,3	5,6 0 25,5 10 6,4 0 126,3	16,3 42,2 188,1 334,7 0 3,8 2,4 4,5 0 56,1 0 2,5 31,9 187,6 9,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 28,Kg	avala
29, Kastoria 12,1 2,5 0 0 0 0 0 0 0 0 0 0 0 0 0 5,2 3,7 1,2	0 0,3 15,8 0 8,5 0,3 0	0 20 34,9 0 71,5 0 17,6 12 0,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	astoria
30.Kilkis 34,1 0 0 0 0 0 0 0,1 0 0 0 0 5,5 0 0,2 0 0	0 0 0 0 0,2 0 0,2	0,2 36,6 446,8 2,4 0,4 180,1 1,8 53,9 3,7 14,1 0 0,8 0,1 1,2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 30.Kil	kis
31. Kozani 26 0,4 0 0,7 0 20,4 0 0,6 0 3,4 0 0 0 0,7 0 3,8 0,4 6,2	4,8 6,5 132,8 224,7 10,4 15,1 0,6	0,6 408,3 318,4 1,7 21,6 2,6 75 49,2 1,2 0 31,5 0 0,6 0,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 31. Kg	Jzani
32. Pella 64,5 0,4 1,9 0,9 0 1,7 0 13,3 0 19,1 0 0 1,5 0 0 0 3,4 3,4	0 2,2 50,8 8,3 5,5 3,2 0	0 1075,1 1479,1 19 4 40,8 12,1 843,7 64,3 78,2 24,4 0 0 5,7 0 0 0,2 0 0 0 0 0 0 0 0 0 0 0 32. Pel	.i]a
33. Pieria 27,4 0 0 0 0 0 13,2 0 6,3 0 9,4 0 0 0 0 0 0 4,1 0	0 77,2 117,3 72,3 0 6,3 1,9	1,9 325,4 288,5 1,5 0,9 45,7 9,4 52,7 1,1 23,7 3,2 7,1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 33. Pic	zria
34. Serres 120,7 0 14,4 35 0 3,1 3,1 0 7,8 21 0 5,2 4,6 6,4 0 4,6 0 90,5	0 0 63,5 15,1 16,8 1,6 70,3	70,3 32,8 1504,3 64,3 1,3 64,5 8,9 28,4 5,6 271 0,8 20,8 3,8 15,3 3,2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 34. Set	rres
35. Florina 25,5 0 0 0 0 0 0 0 0 0 2,1 0 0 0 0 5.8 0 0	0 0 3,9 4 0,3 5 0	0   168,8   46,6   0   4,9   1   91,1   10,8   5   0   0   1,2   0   0   0   0   0   0   0   0   0	
36. Challe/ki 13,6 0 0 11,1 0 0 0 0 0,1 0 0 0,2 0 0 0	0 0 0 7,8 0 0 2	2 52,8 481,2 0,3 0 8,1 0 2,4 8,8 2,6 0 33,5 0 4,6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 36,Ch	
37. Evros 79,4 0 0,5 6,1 0 1,2 0 0 0 4,3 11,7 0 0,9 0 0 0 0.8	0 0 39,4 8,3 0 0 7,1	7,1  7,7  65,8  15,5  0  1,8  2,7  31,4  0  1,7  0  0,2  2331,1  47,3  79,3  0  0,4  0  0  0  0  0  0  0  0  0	
38. Xanthi 144,4 0,1 0 0 0 0 0 0 0 5,7 0 0 1,3 0 0 0 0 0	0 0 49,1 0 0,3 0 23,3	23.3 1,8 48,7 73,7 0 0,6 0 0,1 0 21,1 0,2 0,2 27,5 12,2 34,9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 38. Xa	
39. Rodope 31,5 5,9 0 1,9 0 1 0 0 0 0,1 0 0 1,6 0 0 0	0 0 5,3 5,1 0 0 2,9	2,9 5,7 30,5 27,6 0 0 0 0 0 7,6 0 0 203,9 60,5 73,7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 39. Ro	
40. Zakynthos 0,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0,5 0 0 0,3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
41. Corfu 1,7 5,1 0,7 0 0 0 0 0 1,9 0 0 0 0 3 0 2,6	7,5 0 0 0 0 0 0	0 1,8 0,9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
42. Kefallinia 2,1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
43. Dodecanes 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
44. Cyclades 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
45. Lesbos 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
46. Samos 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
47. Chios 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
48. Heraklion 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
49. Lasithi 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		$\begin{smallmatrix}0&&0&&0&&0&&0&&0&&0&&0&&0&&0&&0&&0&&0&&$	
50. Rethymno 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
51. Chania 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	565.9 606.9 3616.6 2300,7 1203.4 125.5 381.1		
Total 5697,7 872,6 2375,9 764,3 64,2 1106,6 187,3 1579,7 367 1179,9 725,6 705 452,2 874,2 47,4 445,6 518,2 1399,7	200, 000, 2010,0 2200,1 1202,4 123,3 201,1	ארבו בארבו	
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Table 7. Transport between the continental Prefectures of Industrial and Chemical products

From To	Attion 2 Auto	/nie 3 Rosotia	4. Euboea 5. Evr	/nia 6 Phthiotic	7 Phoeida 8	8 Argolida 9	Arcadia 10	Achaea 11.lli	ia 12.Corinth	hia 13 Laconia	14 Messinia	15. Lefkada 16	Arta 17. Thes	tia 18. Ioan/na	a 19. Preveza 2	0. Karditsa 21.	. Larissa 22. i	Magn/sia 23. T	rikala 24 Gre	vena 25. Dran	ma 26. Imathia	a 27 Thes/ca	a 28. Kavala 29. Ka	astoria 30 Kilkis	31 Kozani 32	Pello 33 Pieri	ia 34 Sarrec	35 Fiorina 36	Challefel 37	Evror 19 Vani	hi 10 Podono	40 Zalamthon 41 C	Confu. 42 Mafallin	in 42 Dodgenner	o 44 Cuoladae	45 Leeboe	16 Samos 1	7 Chice 48 I	Jeroklion 40	Locithi 50	Rethymno 51.	"honio
I. Attica		27.8 1341.	7 1134 5	86 432.9	385	213.1	179.7	1018.5 10	18 4 87	7.5 206.7	205.7	18.5	44	39 133	2 29.3	26.8	146	119.8	72.2	3.5 1	15.6 21	.8 689./	.6 28.2	1.2 4	3 14.9	38.8 12	7.5 44	1 12	43.3	11 1	78 74	1225	36 1	37	n n	13. Ecaboa	10. Saluos 1	0	1012KIOH 42	n 124311111 1301	0	0 1. Attica
2. Actol/nia		25.5	.7 14.8	3.1 1.7	1	0,5	0	304.1 1	12.3	21 0	1,1	59,2	42,1	6,6 23,	1 68,7	0	0	3,9	4,9	0	9,5	0 31,7	,3 1,1	0	0 2,7	0	0 9.2	2 2.1	0	0	0 3.2	133,5	7.5	8.1	0 0	0	0	0	0	o o	0	0 2.Actol/nia
3. Boeotia		11.9 516.		0 60,8	11,7	12,9	0,6	70,8 2	23,8 6	5,2 2,4	0,4	0,9	2,7	0,4 7,9	9 8,4	4	8,6	3,4	2,4	0	0 16	,1 23,1	,5 0	0 11,	7 3,2	0	0 0	0.4	0	0	0 0	1.6	0 3	3.6	0 0	0	0	0	0	0	0	0 3. Bocotia
4. Euboea	1013,1	1,8 308,	,2 733,5	0 15,6	0,8	4,9	0	29,9	5,6 6	1,3 2,8	1,6	0,6	0	0 3,9	9 0	3,2	7,5	0	0	0	0	0 67,3	.2 0	0	0 0	1,6 5	5,4 0,4	0	5,7	1	0 3,9	0	0	0	0 0	0	0	0	0	0	0	0 4. Euboea
5. Evr/nia	0	1,8	0 0	0 1,5	0	0	0	0	0	0 0	0	0	0	0 (	0 0	0	0	0	0	0	0	0 (	0 0	0	0 0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0	0 5. Evr/nia
6. Phthiotis	233,1	7,3 92,	,7 9	1,4 34,1	2,3	1,3	2,2	19,6	7,3	7,6 0	8,2	0	0	1,3 1,	7 0	1,9	20,1	101,9	1,4	0	0,5	,2 73,1	,1 0	0 4,	2 9,2	4,2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0	0 6. Phthiotis
7. Phocida	7,2	25,7 10,	,3 I	0 16,4	6,7	0	0	0,9	33	0 0	0	0	0	0 0,	.1 0	0	0	0	0	0	0	0 0	0	0	0 1,3	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0	0 7. Phocida
8. Argolida	93,5	8	0 0	0 49	0	360	107,6	7,3 1	13,4 15	0,8 14,3	9,9	0	0	0 (	0 0	0	1,3	10,2	0	0	0	0 23,9	9 0	0	0 1,6	0	0 0	0	0	0,1	2,3 0	8,1	0	0	0 0	0	0	0	0	0	0	0 8. Argolida
9. Arcadia	92,2	0 0,	,3 23	0 0	0	28,5	113,1	41,6	4,4 3	0,9 24,6	16,3	0	0	0 8,	1 0	0	2,1	6,4	0	0	0	0 0	) 0	0	0 0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0	0 9. Arcadia
10. Achaea	1195	184,5 18,	,4 6,5	0 5,2	56,9	74	64,7	229,7	439 8	19,6 36,4	138,4	15,8	61,2	15,1 65,	9 33,3	0,2	4,4	3,4	2,1	0	2,5	0 79,8	3 0	0,1	0 0	0	8,0,8	0,5	0	3,3	1,9 0	235	28,1	5,7	0 0	0	0	0	0	0	0	0 10. Achaea
1 I. Ilia	196,5	0,3	0 0	0 0	0	43,4	11,9	192,8 10	14,7	0,6	14,3	2,8	0	46	0 71	3,7	4,9	0	0,2	0	0	0 4,2	2 0	0 0,	2 0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0	0 11.1lia
12.Corinthia	616,8	142,8 189,	,9 1,8	0 65	11,9	102,2	55,6	136,8	121 8	10,4 60,2	78,9	0	8,8	4,6 9,1	8 7,1	0	50,9	3,3	3,5	0	0 /	0 19,4	1 1,9	0	0 6,3	0 5	5,4 26,9	0	0	0	1 0	176	0 2	1,3	0 0	0	0	0	0	0	0	0 12.Corinthia
13. Laconia	23,7	2,2 0,	,4 0	0 0	0	11,4	37,5	21	0,2	9,2 129,3	6,4	U	5,9	0 (	0 0	0	0,9	0	0,3	0	0	0 5,3	3 0	0	0 0	0	0 0	) 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0	0 13. Laconia
14. Messinia	44,1	1,4	0 0	0 0		3,8	6,00	81,0 4	21,2	0 31,4	323,7	0	1,/	0 1	6 0	0	0	0	4,7	0	0	0 7,2	2 0	0	0 0	U	0 0	) 0	0	0	0 0	0,9	0	0	0 0	0	0	0	U	0	0	0 14. Messinia
15. Lefkada	4	19,8	0	0 0	0	0	0	17,3	0	0 0		0	62	120 15	1 102	0.0	0.6	0.6	0	0	0	0 0	0 0	0	0 0	0	0 0	, 0	0	U	0 0	0	U	U	0	0	0	0	U	0	0	0 15. Lefkada
16. Arta	22,4	27,4	0 0	0 2,9	, ,	0	0	2.8	0	0 0	2,1	0.8	3.5	10,7 10,	2 50	0,9	0,0	0,0	22	0	0 0	15 71	9 12	0	0 0	0,1	U U	. 0	0	U	0 0,9	0	2,0	0	0 0	0	0	0	0	0	0	0 16. Arta 0 17. Thes/tia
17. Thes/tia 18. Ioan/na	31.4	12.0	2 09	0 0	, 0	0	0	26.2	9.3	06 0	26	0,0	77.4	80.4 20,	7 61	1	91	45.7	11.1	0	0 1	21,0	3 0	0 0	3 14	16	J,0 U	, 0	0	2.7	U 0,4	. 0	41.6	0	0 0	0	0	0	0	0	0	0 17. Thes/tia 0 18. Ioan/na
18. Ioan/na 19. Preveza	31,4 18.8	14,8 U,	0,0	0 0	, 0	0	0.4	51.2	0	0 0	1.2	0,7	75 5	84.5 26	7 17	'n	0	0	0	0	0	0 0	4 0	0 0,	0 1, <del>4</del>	1,0	0 0	, 0	0	4,7		, 0	41,0	0	0 0	0	0	0	0	0	0	0 19. Preveza
20. Karditsa	10,0	24,7	0 20	0 6		0	0,4	J1,2	0	0 0	0.4	0	0.3	153 37	6 0	10	2.4	1.6	22.1	0	0 9	12 23	5 0	0	0 0	2 2	0 0		0	0.7	0 0	, ,	0	0	0 0	0	0	0	0	0	0	0 20. Karditsa
21. Larissa	145.2	06 3	0 2,6	0 42.8		0	0	3.1	0	0 0	1.2	0	0,5	96 1	3 3	63.5	247.6	76.2	87.6	1.6	17 17	/3 1651	2 73	09 0	9 248	24.3 45	54 44		20.2	1.6	14 1		1.4	0	0 0	0	0	0	0	0	0	0 21. Larissa
22, Magn/sia	161.5	10.5 46	0 14	0 42,0	, ,	0	0	12.2	0	0 0	1.7	0	0	0.7	7 19	83.6	124.3	69.3	39.8	0 4	40.6	0 141/	6 48	0	0 97	22.1 29	7 05	17	27,2	1,0	1,4 1	) 0	2.4	0	0 0	0	0	0	0	0	0	0 22. Magn/sia
23. Trikala	37.5	5.7 2	3 35	0 8		0	0	2.6	0	0 0	0	0	0	0.1 15.	7 3.6	86.9	71	22.4	55.7	19.3	0.5 4	4.4 9./	4 3.1	0 2	7 161	0	0 20.7	7 0	.0	0	0 0	) 0	0	0	0 0	0	0	0	n	0	0	0 23. Trikala
24. Grevena	0.1	0	0 18	0 0	) 0	0	0	0	0	0 0	0	0	0	0 4.	.7 0	0	0	-0	II	0	0 7	/.7 33.1	.5 0	0	0 18.7	0.8	0 0		0	0	11 0		0	0	0 0	0	0	n	0	0	0	0 24. Grevena
25. Drama	46.2	0	0 0	0 0	) 0	0	0	0	0	0 0	0	0	0	D	0 0	0	5	0	0	0	9.5	0 61/	A 119.5	0	0 2.9	0	0 37	0.6	0	2	9.0		0	0	0 0	0	0	0	0	n	0	0 25. Drama
26, Imathia	72.5	0	0 0	0 0.1	. 0	0	3.8	10.4	6	0 1,1	0	0	3	5,6	0 0	0	11,7	0	2,4	0.8	1,5 206	i.2 967.	.6 8.7	3.5 6.	.1 51	420.9 283	3.3 0	66.9	24.2	0.7	0 4	4 0	0	0	0 0	0	0	0	o o	0	0	0 26. Imathia
27. Thes/ca	746.4	28 1 27	6 2.9	0 26.3	4.5	48.4	15,8	57,5	4.5	8.3 6,6	8.2	2,7	20,3	17,6 26,	,2 3,7	163,5	262,4	148,5	199,2	89.9 2	69,8 1058	4,7 2132	.4 397.5	131.7 348.	2 539,8	958 762	2.8 833.5	163.7	755.5	88.2 15	98 69	1 0	38.4	2.5	0 0	0	0	0	0	0	0	0 27, Thes/ca
28. Kavala	48.9	0	0 0	0 14.8	3 0	1,3	0	0	7,3	0 2,4	0	0	0	0 6,	,1 0	17,9	18,7	10,7	10,8	0 3	13,9 4	4,1 19	15 487,8	0,1 7,	8 0	11,9 0	0.6 338,8	3 0	23.1	234.7 21	0.6 115.3	3 0	1.4	0	0 0	ō	0	0	ō	0	0	0 28. Kavala
29. Kastoria	0.3	0	0 0	0 0,5	5 0	0	0	0,5	0	0 0	0	0	0	0	0 0	0	0,1	0	0,3	1,5	0	1 5,7	,8 1,2	4,8	0 18,7	0,5	6 0	0	0	0	0 (	0	0	0	0 0	0	0	0	0	0	0	0 29. Kastoria
30. Kilkis	21	0	0 24,5	0 3,6	5 0	0	0	4,3	0	0 0	0	0	0	0	0 0	7	0	0	0	0,4	0 11	,8 230,	,7 0,2	1,5 94,	6 5,3	198,2 0	0,7 3,6	5 2,7	8,3	0,2	0 (	0	0	0	0 0	0	0	0	0	0	0	0 30. Kilkis
31. Kozani	18,7	0,5 2	.3 0	0 33,7	7 0	0	0	4,4	0	0 0	3	0	20,7	0 1	14 0	10,6	39,7	89,7	13,8	87, I	0 61	1,2 187/	,6 0	39,8 0,	3 523,2	40,8 27	7,4 0	95,6	0	0,6	0 (	0 0	0	0	0 0	0	0	0	0	0	0	0 31. Kozani
32. Pella	28,8	0	0 0	0 0	0	0	0	1,1	0	1,1 0	0	0	0	5,3 4,	,1 0	0,2	32,8	1,1	1,3	5,7	6,9 191	,l 1001,1	,2 2,3	18,5 38,	6 40,4	273,2 48	8,7 3,5	10,6	8,8	1,4	0 0,	1 0	0	0	0 0	0	0	0	0	0	0	0 32. Pella
33. Pieria	4,3	0 3	,7 0	0 0,5	5 0	0	0	5,2	0	0 0	0	0	0	3,2 4,	,3 0	2,7	0	22,9	0	0,5	1,6 101	,2 149,7	,2 0,3	0,1 44,	7 2,9	27,5	0 26,6	5 0	6,3	0	0 2,	7 0	0	0	0 0	0	0	0	0	0	0	0 33. Pieria
34, Serres	29,5	1,4 0.	0 8,1	0 21,5	5 0	20,9	2,1	22,7	2,6	0 0	0	0	1,7	0,1 4,	,1 0	0	34,2	0	1,6	1 10	00,2 8	.,7 386,	,1 3,3	0 18,	7 0,3	2,8 3	3,6 359,7	1,2	13,2	0,7	7,4 3,6	6 0	0,4	0	0 0	0	0	0	0	0	0	0 34. Serres
35. Florina	8,4	0	0 0,1	0 5,8	8 0	0	0	1,6	0	0 0	0	0	0	0	0 0	0	0	0	1,1	2	0 12	.,7 63,1	,1 0	1,1	0 104,8	15,4	0 0	1,1	0	0	0 (	0 0	0	0	0 0	0	0	0	0	0	0	0 35. Florina
36. Chalk/ki	30,1	0	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0	0	0 3	,,7 391,4	,4 0,7	0	0 0,8	4,2 1	1,2 9,1	4,1	40,3	2,2	2,3	0 0	0	0	0 0	0	0	0	0	0	0	0 36. Chalk/ki
37. Evres	23,6	0	0 1,1	0 0,1	1 0	0	0	0,6	0	0 0	0	0	0,7	0 0,	,4 0	0	13,4	2,7	1	0	1,7 5	,5 48	.8 9,5	0 1,	9 0	1,7	0 7,8	0	0		1,8 74,	7 0	0	0	0 0	0	0	0	0	0	0	0 37. Evros
38, Xanthi	24,6	0	0 0	0 0	0	0,5	0	5,8	0	0 0	1,4	0	0	0 1,	,4 0	0	15	0,9	0	0	10,6	0 88,6	,6 80,4	0	0 1,8	0	0 10,1	0	0		3,9 53,4		0	0	0 0	0	0	0	0	0	0	0 38. Xanthi
39. Rodope	68,8	0	0 0	0 0	0	0	0	0	0	0 0	2	0	0	0	0 0	0	1,8	0	0	0	14,8 0.	,5 20,3	,3 19,4	0,1	0 0,5	2,2	0 2,9	0	0	56 1	5,2 85,	5 0	0	0	0 0	0	0	0	0	0	0	0 39. Rodope
40. Zakynthos	0	0	0 0	0 0	) (	0	0	54,7	0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0 0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0	0	0 40. Zakynthos
41. Corfu	12,6	0	0 0	0 0	) 0	0	0	9,8	0	0 0	0	0	0	0 3,	,7 0	0	0	0	0	0	0	0 4,5	.5 0	0	0 0	0	0 0	0	0	0	0 (	0 0	0	0	0 0	0	0	0	0	0	0	0 41. Corfu
42, Kefallinia	13,8	0 1	,2 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	U	0	0	0 (	0 0	0	0 0	0	0 0	0	0	0	0 (	0 0	0	0	0 0	0	0	0	0	0	0	0 42. Kefallinia
43. Dodecanes	0	0	0 0	0 0	0	0	0	U	U	0 0	0	0	0	U	0	0	0	0	U	0	0	0 (	0 0	U	0	0	0	. 0	0	0	0 (	0 0	0	0	0 0	0	0	0	0	0	0	0 43. Dodecanese
44. Cyclades	0	0	0 0	0 0	0	0	0	U	U	0 0	0		0	0	0 0	0	0	0	0	0	0	0 0	0 0	U	0 0	0	0 0	. 0	0	0	0 (	0 0	0	0	0	0	0	0	0	0	0	0 44. Cyclades
45. Lesbos	0	0	0 0	0 0	0	0	0	0	0	0 0	0		0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	Ð	0	0	0	0	0 (	0 0	0	0	0 0	0	0	0	0	0	0	0 45. Lesbos
46. Samos	0	U	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0		0	0	0	0	U	U	0 0	. 0	0	0	0	0	0	0 46. Samos
47. Chios 48. Heraklion	U	U	0 0	0 0		0	0	0	n n	0 0	U	. 0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	, 0	0	U	0 (	U U	U	U	0 0	0	0	0	0	0	U	0 47. Chios 0 48. Heraklion
48. Heraklion 49. Lasithi	U	U O	0 0	0 0	0	0	0	0	0	0 0	0		0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	, ,	0	0	0 !	0 0	0	0	0 0	. 0	0	0	0	0	0	0 48. Heraklion 0 49. Lasithi
49. Lasithi 50. Rethymno	0	0	0 0	0 0		0	0	0	0	0 0	0		0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	, ,	0	0	0	0 0	0	0	0 0	. 0	0	0	0	0	0	0 50. Rethymno
50. Ketnymno 51. Chania	0	0	0 0	0 0	0 0	0	0	0	0	0 0	0		ű.	0	0 0	n	0	0	Ď.	0	0	0	n 0	n	0 0	0	0 0	, U	0	0	0	0 0	0	0	0 0		0	0	0	0	0	0 51. Chania
Total	6602,1	9735 2505	5,5 2018,4	13,1 849,1	1 134,3	927,1	655.3	2514.6	924 141	14.3 518.8	1031.7	102	375.2 4	22.4 755.	1 476.7	479.5	1136.5	744.6	552.7	213.3 7	92.4 1744	4.8 736	66 1169.5	203.4 623	9 1486.6 2	055.6 1241	1.5 1730 5	352.4	961.6	9924 53	69 433	U U 4 5601	160.8 17	78.2	0 0		0	0	p	0	0	0 Total
1000		erago 4393 **	4010,4	0 1 6	. 1540	0	1.1.	20140	( T)		100117				,		1100,0	,-	·	- 100	2.44	,500		_551- 025,		1241	1,35,3		501,0	702,9 53	u,, 433,	300,1	100,0 17	شوا		. 0	U	U	ď	v	0	o i otal
Instit	itional R	eposito	ry - Librar EEST - 5	y & Intor	mation	Centre	e - Univ	ersity c	of Thess	saly																																
$\Omega \Omega / \Omega A$	/2024 1	0.35.40	EEST 5	1 86 132	1/12			-		-																																
03/02	/ _ U _ + I	J.JJ.4U	LLOI " 0'	T.00.132	140																																					

Table 8. Transport between the continental prefectures of Minerals-fuel-lubricants.

From To 1	Attica 2.Aeto	ol/nia 3, Boe	eotia 4. Eub	oea 5, Evr/ni	ia 6. Phthiotis	7. Phocida	8. Argolida	9. Arcadia	10. Achaea 11.Ilia	12.Corinthia 13.	. Laconia 14. i	Messinia 15. Le	efkada 16 Art	17. Thes/tia 18	Iоап/па 19.	reveza 20 Ka	rditsa 21. Larissa	22. Magn/sia	23. Trikala 24	. Grevena 25. D	Orama 26. Im	nathia 27. The	es/ca 28. Kavala 2	9. Kastoria 30.1	Kilkis 31. Koza	ni 32. Pella 3	3. Pieria 34. S	Serres 35. Flo	rina 36. Chal	lk/ki 37, Evi	ros 38, Xanthi	39. Rodope 40. Za	akynthos 41. Co	orfu 42. Kefallinia 43. I	Dodecanese 44. Cvo	clades 45. Les	shos 46. Same	os 47. Chios	48. Heraklion	49. Lasithi 50.	Rethymno 51 6	hania
1. Attica	3091	350,7	779 136	60,3 10,	,8 369,6	6 167,	8 612,3	573,7	1468,5 273,3	1259	287,7	318,6	4,8 28,	9 90	48,9	96,8	20,8 112	2 111.4	9,7	1,2	3,7	9,8	210,2 46,6	0	0 :	2,5 14,4	26,3	1,4	0	0	4,7 3,2	4,2	74	2.2 37	0	0	0	0 0	0	) 0	0	0 1. Attica
2.Aetol/nia	102,9 1	507,3	0	0	2 2,3	3 48,	6 0	0,7	232,3 30	0	0	0	422,4 35	9 111,5	450,4	315,7	0 14	3 18,6	2,7	0	1,4	0	7,1 0	0	0	0 0	0	20,3	0	0	0 0	0	0	5.3 0	0	0	0	0 0	0	) 0	0	0 2.Aetol/nia
3. Boeotia	1654,4	1,2 2	2428,2 45	52,6	0 94,	7 94,	7 0	0	0 0	75,4	0	0,5	0	0 0	0	0	0	0 0	8,2	0	2,2	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	) 0	0	0 3. Boeotia
4. Euboca	1577,9	25,1	517,1 123	29,1	0 168,	7 3,	3 0	109,8	2,4 0	26,3	7,9	4,2	0	1,4	2,5	0	4,7	0 6,3	7,6	0	11,6	0	3,7 0	0	0 -	1,8 0	0	0	0	0,6	0 0.8	0	0	0 0	0	0	0	0 0	0	) 0	0	0 4. Euboea
5. Evr/nia	6,2	5,8	0	0	0 13,1	8	0 0	0	0 7,3	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 4,4	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 5. Evr/nia
6. Phthiotis	219,2	6 '	728,2	18,9	0 105,2	2 3	1 0	0	0 0	0	0	0	0	0 0	0	0	6,5	0 66,3	0,3	0	0	0	34,4 0	0	0 1:	5,8 0	2,7	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 6. Phthiotis
7. Phocida	12,9	6,5	19,5	0	0 (	0 1,	9 0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 7. Phocida
8. Argolida	68,3	1,4	0	19,5	0 (	0	0 715	88,3	7,5 16,8	53,6	0	10,6	0 7,	3 0	0	0	0	0 0	0	0	3,6	0	2,4 0	0	0 :	3,2 0	0	0	0	0	0 0	0	4,5	8 0	0	0	0	0 0	0	0	0	0 8. Argolida
9. Arcadia	193,2	0	0	6,6	0 (	0	0 189,2	465	320,1 21,9	95,4	35,7	399,2	0	0 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 9. Arcadia
10. Achaea	160,3	508,9	0	0	0 4,4	4 32,	,I 0	51,9	263,6 585,2	3,1	0	144,3	29,2 77,	9 42,7	143,9	46,9	0	0 5,2	1	0	0	0	4,3 0,4	0	0	0 0	3,5	0	0	0	0 0	0	202	6 100,6	0	0	0	0 0	0	0	0	0 10. Achaea
11.Ilia	9,2	0	5	0	0 (	0	0 5,1	31,8	546,6 57,5	4,9	4,1	40,1	0	0 0	0	0	0	0 0	0	0	0	0	6,5 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 11.Ilia
12.Corinthia	147,6	51,4	70	15,8	0 54,3	3	0 111,7	236,2	366,9 86,9	857,9	219,8	31,5	10,4 29,	5 38,9	35,3	0,9	0	0 0	0	0	0	0	5 0	0	0	0 0	0	0	0	0	1,2 0	0	0	2 91,4	0	0	0	0 0	0	0	0	0 12.Corinthia
13. Laconia	19,1	0	0	0	0 (	0	0 0	123,7	5,5 4,3	20,4	446,9	131,1	0	0 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 13. Laconia
<ol><li>14. Messinia</li></ol>	12,9	0	0	0	0	0	0 0	208,4	47 80,3	0,3	44,3	1512,9	0	0 0	0	0	0	0 0	0	0	0	0	0 0	0	0	1,4 0	5,2	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 14. Messinia
15, Lefkada	17	49,2	0	0	0 (	0	0 0	0	60 0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 15. Lefkada
16. Arta	6,1	76,7	0	0	0 (	0	0 0	0	10,1 0	1,7	0	0	0 48,	5 44,1	26,3	60,7	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	5,7 0	0	0	0	0 0	0	0	0	0 16. Arta
17. Thes/tia	8,6	21,1	0,7	0	0 (	0	0 0	0	6,8 0	0	0	0	0 69	6 498,2	274, I	1632,4	0	0 0	0	0	0	0	4,9 0	0	0	0 0	0	0	0	0	0 0	0	0	17 0	0	0	0	0 0	0	0	0	0 17. Thes/tia
18. Ioan/na	32,5	12,5	0	2,7 2,	.,8	2	0 0	1,4	17 1,3	0	0	0	0 6	6 80,5	1689,6	159,3	0	0 0	31,9	0	0	0	3,9 0	0	0	0 3,4	0	0	0	0	0 0	0	0,2	16,5 0	0	0	0	0 0	0	0	0	0 18. loan/na
19. Preveza	10,3	24	0	0	0	0	0 0	0	0 7,5	0	0	0	0 122.	6 675,1	19,7	0	0 7	.1 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 19. Preveza
20. Karditsa	2,5	0	0	0	0 (	0	0 0	0	0 0	9,1	0	0	0	0 1,8	0	0	4,9 3	.2 8,7	94,4	0	0	0	16,1 0	0,3	0	0 0	8,2	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 20. Karditsa
21. Larissa	39,3	0	0	0	0 11,	7 4,	,1 0	0	0,7 0	0	0	0	0	0 0	0	0	100,7 404	4 246,6	46,7	0	0	0,5	204,5 3,4	0	1 3	3,1 0	21	0	0	0	0 3,5	0	0	11,6 12,4	0	0	0	0 0	0	0	0	0 21. Larissa
22. Magn/sia	50,9	5,8	1,9	5,8	0 365,	4	0 0	0	4,9 0	0	0	0	0 1	4 0	3,4	0	352,4 682	443,4	306,3	0	27,4	4	46,7 0	0	0	75 0	27	0	3,2	0	0,8 0	0	0	0 0	0	0	0	0 0	0	0	0	0 22. Magπ/sia
23. Trikala	1,3	1	0	0	0 '	7	0 0	0	0 0	0	0	0	0	0 0	10,1	0	228 22	,3 102,8	519,2	17,5	0	0,9	35 <b>0</b>	0	0	0 0	0	0	0	0	0,5 0	0	0	7,2 0	0	0	0	0 0	0	0	0	0 23. Trikala
24. Grevena	0	0	0	0	0 (	0	0 0	0	0 0	0	0	0	0	0	0	0	0,7 6	.8 0	0,4	0	0	0	6,7 0	0	0 [4-	1,8 10,8	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 24. Grevena
25. Drama	15,8	0	0	0	0 (	0	0 0	0	0,6 0	0	0	1,3	0 9.	6 1,7	0	0	0 6	,3 0	5,4	0	6,9	5,8 3	330,1 278,5	0	11,5	0 2,1	15,1	46,8	0	8,1 1	16,3 19,9	0,2	0	0 0	0	0	0	0 0	0	0	0	0 25. Drama
26. Imathia	10,1	0	0	0	0 (	0	0 1,6	0	0 0	0	0	0	0	0 0	0	0	3,2 1	,2 0	0	1,3	0	362,3	301,1 0	7,1	20,6 3	5,2 143,3	1058,4	0,5	2,3	53,7	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 26. Imathia
27. Thes/ca	212	2,5	1,8	2,1	0 30,0	,6	0 0	0	13,4 0	0	0	2,1	0	0 13,2	10,5	0	48,6 500	,6 256,9	133,7	231,5	528,1	1217,1 27	745,4 826,3	162,8	475 134	5,9 823	1076,1	1323,7	182 2	186,1 9	5,9 165,9	70,5	0	0 0	0	0	0	0 0	0	0	0	0 27. Thes/ca
28. Kavala	189,3	5	0	4,5	0 35,	.7	0 1,5	0	4 1,2	1,2	0	0	0,4 0,	9 0,9	17,9	0	4,6 62	,2 3,3	71,7	0	555,5	23,1	479,8 989,7	0	0 (	),3 3,6	0	56,9	0,8	16,9 4	17,6 214,1	30,8	0	1,8 0	0	0	0	0 0	0	0	0	0 28. Kavala
29. Kastoria	2,9	0	0	0	0 (	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0 3	,9 0	0	1,3	0	4,6	1 0	0	0 4	0,4 0	0	0	3,6	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 29. Kastoria
30. Kilkis	3,2	0	0	0	0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	1,2	0	1 1	132,5 0	0	245,5	0 5,2	95,7	0,8	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 30.Kilkis
31. Kozani	14,9	4,1	11,5	5,4	0 142,	9	0 3,7	0	0 0	0	0	0	6,1	0 0	24,2	0	4,3 34	5 609,6	8,1	1494	0	170,6	466,2 0	56	1,2 315	5,8 12,1	1005	2,4 3	369,3	0	0 0	0	0	3,3 0	0	0	0	0 0	0	0	0	0 31. Kozani
32. Pella	8,7	0	0	0	0	0	0 1,4	0	0 0	0	0	1,1	0	0 0	4,1	0	0	2 4,4	0	0	0	274,4	591,3 0	0	0 4:	5,8 468,I	11,4	6	20,3	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 32. Pella
33. Pieria	9,4	0	0	0	0 1	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0 13	,5 0	31,6	0	0	460	7,5 0	0	0 1	1,9 4,4	0	63,4	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 33. Pieria
34. Serres	4,2	0	0	0	0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0 37	,2 4,3	0	0	57,6	0 2	234,1 29,8	0	2,2	0 0	0	577,3	0	0	0,6 5	1,3	0	0 0	0	0	0	0 0	0	0	0	0 34. Serres
35. Florina	8,9	0	0	2,4	0 :	3	0 0	0	0 0	0	0	0	0	0 0	0	0	0	6 17,1	0	0	0	26,9	38,9 0	0	0 721	1,2 87,9	0	1,4	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 35. Florina
36, Chalk/ki	6	0	0	0	0 1	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0 22	,6 0	0	0	3,7	0 1	101,2 0	0	0	0 0	0	22,6	0	25,3	0,5	1,3	0	0 0	0	0	0	0 0	0	0	0	0 36. Chalk/kj
37. Evros	4,5	0	0	0	0 1	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	1 0	0	0	2,6	0	23,2 10,5	0	0	0 0	0	3,6	0	0 104	102,1	79,5	0	0 0	0	0	0	0 0	0	0	0	0 37. Evros
38. Xanthi	7,4	2,8	0	0	0 1	0	0 0	0	0 0	0	0	0	0	U 0	0	0	0 7	,9 2,3	0	0	16,7	0	41,6 33	0	0	0 0	0	17,2	0	0	29 143,9	10	0	0 0	0	0	0	0 0	0	0	0	0 38. Xanthi
39. Rodope	2,5	0	0	0	0	U	0 0,9	0	0 0	0	0	0	0 0.	7 0	0	0	0	0 0	0	0	8,8	0	16,3 0,6	0	0	0 0	3,1	0	0	0 1	14,9 29,1	98,9	0	0 0	0	0	0	0 0	0	0	0	0 39. Rodope
40. Zakynthos	6,4	0	0	0	0 1	0	0 0	0	0 0	0	0	0	0	U 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 40. Zakynthos
41. Corfu	3	0	0	0	0	0	0 0	0	4,1 0	0	0	0	0	U 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 41. Corfu
42. Kefallinia	0	U	0	0	0 1	0	0 0	0	30,7 0	7	0	0	U	0	0	0	0	0 0	0	0	0	0	0 0	0	U	0 0	0	U	0	U	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 42. Kefallinia
43. Dodecanes	0	0	0	0	0	U	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 43. Dodecanese
44. Cyclades	U	0	U	U	0	U	0 0	0	0 0	0	0	0	U	0	0	0	U	0 0	0	0	0	U	0 0	0	U	0 0	0	U	U	U	0 0	0	0	0 0	0	0	0 .	0 0	0	0	0	0 44. Cyclades
45. Lesbos	U	0	0	0	0	0	0 0	U	0 0	0	U	U	0	0 0	0	0	Û	0 0	0	Ü	U	0	0 0	U	0	0 0	U	0	0	U	0 0	0	U	0 0	0	0	0	0 0	0	0	0	0 45. Lesbos
46. Samos	0	0	0	0	0	U	0	0	0 0	0	U	0	0	0 ^	0	U	U	0	0	0	0	0	U 0	U	0	0 0	U	U	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 46. Samos
47. Chios	U	U	U	0	0	U	0	0	0 0	0	U	0	0	0	0	U	U	0	0	U	U	0	0 0	U	0	0	0	0	0	0	0	0	0	υ 0	0	0	0	0 0	0	0	0	0 47. Chios
48. Herakiion	U	0	U	0	0	U	0	0	0 0	0	0	0	U	0	0	0	U	0	0	0	U	U	0 0	0	0	0 0	0	0	U	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 48. Herakiion
49. Lasithi	U	U	0	0	0	U	0	0	0 0	0	0	U	U	0	0	U	U	0	0	U	U	U	0 0	U	0	0 0	U	U	0	U	U 0	U	0	U 0	0	0	0	0 0	0	0	0	0 49. Lasithi
50. Rethymno	U	0	0	0	0	0	0 0	0	0 0	0	0	0	U	0	U	U	U	0 0	· ·	U	U	U	0 0	0	U	0 0	0	U	U	U	0 0	0	0	0	0	U	U	0 0	0	0	0	0 50. Rethymno
51. Chania Total	7952.8	2669 4	U 4562.9 31:	207 10	U	U 3 383.	.5 1642.4	1890.9	3412.7 1173.5	2415.3	1046.4	2597.5	473.3 834	5 1600	2760.9	2312.7	779.4 2262	.1 1907.2	1278.9	1740	1220.6	2001 61	1016 22100	226.2	252 1213	1502.5	2250.5	21442 6	581.5 2	290.7 125	6.9 687.5	304.7	280.7	0 0 86.6 241.4	0	U	0	0 0	0	0	0	0 51. Chania
					,0 1411,	5051	104214					4397,3	n/3,3 834	2 1000	2/60,9	4314,/	779,4 2262	,1 1907,2	12/8,9	1748	1449,8	4301 01	101,0 2218,8	220,2	/57 1213	5,1 1582,7	33587	4144,3 5	501,5 2	490,7 125	50,9 687,5	304,7	280,7	86,6 241,4	U	0	0	0 0	0	0	0	0 Total
Instit	itional I	Repos	sitory -	Library	y & Info	ormatio	on Cent	tre - Ur	niversity of	Thessal	У																															

1.15
25. Frame 20,9 0 0 1,7 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Table 10. Q (Φόρτοι) of Agricultural and livestock products

Table 10. Q (Φόρι	ot) of Agricultura	al and livestock pr	oducts																																				
From To 1	Attica 2. Aet	ol/nia 3. Boeotia	4. Euboca 5. Ev	r/nia 6. Phthiot	tis 7. Phocida 8	8. Argolida 9	Arcadia 10. Acl	haea [1.Ilia	12.Corinthia	13. Laconia 14	. Messinia 15. Le	efkada 16. Arta	17. Thes/tia 18	. Ioan/na 19. Prevez	za 20. Karditsa 21	. Larissa 22. N	Aagn/sia 23. Trik	cala 24. Grevena	a 25. Drama 2	6. Imathia 27. T	Thes/ca 28. Ka	avala 29. Kasto	ria 30.Kilkis 3	1. Kozani 32. Pe	lla 33. Pieria	34. Serres 3	35. Florina 36. C	halk/ki 37. Evros	38. Xanthi 39.	Rodope 40. Zakynth	os 41. Corfu 42.	Kefallinia 43. Dod	decanese 44. Cyclad	les 45. Lesbos 4	46, Samos 47, Ch	hios 48. Herakli	on 49, Lasithi 50	. Rethymno 51. Cl	hania
1. Attica		260,25 57104,2	25 40405,5 301	11,25 37065,	,75 4854,5	6862	9782 229	976,75 1456	3,5 29802,25	8833	8741.75	310,25 6716	2007.5	8906 3850.7	75 1806.75	27356,75	31481.25	3431 565.75	5 511	12519.5	94589.75 5	5018.75 894	.25 0	4252,25 1.	551,25 12537,75	3777,75	36,5	0 2956,5	3796	894,25 4252	,25 2190	1058,5	0	0 0	0	0	0 0	0	0 1. Attica
2.Aetol/nia	27137,75 59	586,25 5967,7	75 0	365 28	3084,25	2190	0	7957 26042.	.75 4635.5	1022	0 3	3412.75 16479.75	2226.5	8486.25 2135.2	25 0	565.75	310.25	657 109.5	5 182.5	730	9179.75	292	0 0	-0	0 54,75	346.75	0	0 164,25	200,75	18,25	0 1095	1788,5	0	0 0	0	0	0 0	0	0 2.Aetol/nia
3. Becotia	146584 6	734,25 75244,7	75 34310	0 201	48 3850.75	6168.5	10712.75 50	191.75 4872	.75 4836.25	6168.5	1332.25	0 383.25	602.25	328.5 343	31 1843.25	2098.75		1679 0	0 0	1875	2518.5	0	0 0	n	0 474.5	456.25	0	0 54.75	0	0	0 474.5	1314	0	0 0	0	0	0 0	0	0 3. Boeotia
4. Euboea	138225.5 2	682.75 186861.7	75 13 <b>851.</b> 75	0 4252	25 2098.75	1423.5	1825 19	952.75 2755	75 28908		3504	127.75	002,20	272.75	0 2828.75	419.75		55.25 0	0 0	0	9909 75	0 19	25 202	109.5	0 1898		511	0 73	0	n	0 0	0	0	0 0	0	0	0 0	0	0 4. Euboca
5. Evr/nia	4599	693.5	0 0	0 3996	75 0		0	0	0 0	0	3304	0 0	0	273,73	0 2020,75	346.75	930.75 7	7994	, ,	0	9909,73	0 10	0 0	105,5	0 1070	1 ,00,0	0.11	0 0	0	0	0 0	0	0	0 0	. 0	0	0 0	0	0 5. Evr/nia
6. Phthiotis		098.75 6774	M 3266.75 101	16 25 22000	75 12200.25	2266.75	22725 20	214.25 449	0 0	1140.75	0	0 0	0	200 00 100	0 1001606	340,73	28853.25 6004	7a64 U NA 75 18615	5 5475	10000 05	20077.5		0 1750.5	2272 6 1	040.05 3504	70475	1861.6	0 146	16476	0	0 0	0	n	0 0	. 0	0	ó O	0	0 6. Phthiotis
7. Phocida	2573.25	36.5 839	F 16426	10,23 33999,	118 2500.25	3200,73	237,23 38	814,25 448	9,5	1149,75	0	0 0	0	273,75 182	,5 17246,25	26188,75	28853,25 600/	4,25 1861,5	547,5	10822,25	39967,5	657	0 1350,5	2372,5	040,25 3504	/84,/5	1861,5	0 146	164,23	0	0 0	0	0	0 0	. 0	0	0 0	n	0 7. Phocida
8. Argolida		30,5 839. 1887.25 1277	104,20				0	803	0 0	0	0	0 0	0	0	0 0	565,75	2664,5 5/	4,75 0	J 0	0	511	0	0 0	0	0 109,5	. 0	0	0 0		0	0 0	0	0	0 0		0	0 0	0	0 8. Argolida
		,	,5 36,5	0 328	8,5 0	160563,5	12172,75	1095	10530,25	803	1113,25	0 0	0	839,5	0 0	1204,5	1606	219 0	0 985,5	1551,25	8157,75	985,5	0 912,5	3376,25 3	814,25 0	) 0	0	0 0	182,5	0	0 146	U	0	0 0		0	ó 0	0	0 9. Arcadia
9. Arcadia	9964,5	36,5	0 2847	0	0 0	2226,5	7336,5 22	244,75 3084,	,25 3412,75	12939,25	6825,5	0 0	0	164,25	0 0	638,75	0 1'	18,25 0	0 18,25	0	1843,25	0	0 0	0	0 0	) 0	36,5	0 146	0	0	0 0	0	U	0 0	0	0	0 0	0	0 10. Achaea
10. Achaea		23360	0 4161	0 565,	,75 620,5	15622	2956,5 647	732,75 2755	7,5 4909,25	2007,5	1368,75	784,75 3577	821,25	3449,25 6697,7	75 73	2445,5	310,25	73 C	0 1204,5	9143,25	6570	0	0 0	0	1496,5 1003,75	967,25	0	0 803	0	0	0 36,5	456,25	0	0 0	0	0	0 0	0	
11.Ilia		770,25 36	,5 146	0 109	9,5 0	109,5	3394,5 39	9748,5 178	385 7208,75	365	9672.5	0 0	0	529.25	0 0	0	73	0 (	0 219	0	292	0	0 365	146	821,25 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 11.Ilia
12.Corinthia	89297,25 3	558,75 949	0 11734,75	0 529.	.25 0	70262.5	8778.25	4015 1332	2.5 20403.5	10603.25	9709	0 2920	0	5712.25 233	36 0	3303.25	967.25	803 (	0 0	346.75	8924.25	0	0 0	365	806.75 1460	0	0	0 0	0	91.25	0 492,75	0	0	0 0	0	0	0 0	0	0 12.Corinthia
13. Laconia	19126	876	0 0	0 1551	25 0	6862	1825 6	502.25 60	1.5 1196.25	25250	2722	0 182.5	0	146	0 71	210.25	265 5	(176	0 0		1076.75 2	2217 76	0 0	0	0 0		Ď	0 0	273.75	0	0 0	0	0	0 0	. 0	0	0 0	0	0 13. Laconia
14. Messinia		784.75 164.2	5 202	0 200	75 0	1222.75	2701 11	1670 5 0003	75 1076 75	1250.25	107565	0 162,3	0	100.5	0 /3	510,25	203 3*	+,73	0 5476	18.25	1070,75 2.	6317,73	0 0	0	277 76 0	210.25	0	0 328.5	273,75	0	0 310.25	127.75	n	0 0	. 0	0	0 0	0	0 14. Messinia
15. Lefkada		609.75	0 0	0 200,	,,,,	1222,73	2701 11	0 9982,	,75 1070,75	1239,23	10/202,2	0 219	U	109,5	U 0	211	U	0 0	3 34,/5	18,25	233,3	U	0	0	0 0 0	310,23	0	0 328,3	0	0	0 510,25	147,73	0	0 0	0	0	0 0	0	0 15. Lefkada
16. Arta		.002410	0 0	0	U U	1050.05		U	0 0	0	0	U 930,75	0	0 839.	-15	0	0	0 0	J 0	1113,25	638,75	U	0 0	0	U 0		U	0 0	0	U	0 704.75	0	0	0 0	0	0	0 0	0	0 16, Arta
		4271,5 7	3 ()	0 529,	,25 127,75	1259,25	602,25 55	566,25	0 1952,75	0	0	109,5 4544,25	1040,25	5913 28798,	,,5 511	1916,25	54,75 6	.20,5 547,5	5 0	3029,5	2682,75	164,25	0 565,75	675,25	529,25 584	255,5	0	0 0	146	0	0 784,75	0	Ü	0 0	. 0	0	0 0	0	0 17. Thes/tia
17. Thes/tia	1569,5	438 36	5 73	0	0 0	0	0 2	2591,5	0 401,5	0	0	255,5 1423,5	38434,5	10749,25 18633,7	25 0	127,75	0 38	.3,25 €	9 0	54,75	6588,25	0	0 0	109,5	73 237,25	5 0	0	0 0	0	0	0 1423,5	0	0	0 0	U	U	0 0	0	0 17. Thes/tia
18. Ioan/na		2555 182	,5 200,75	0 8	103 0	0	328,5	186,25 2062,	,25 219	0	766,5 2	2865,25 9508,25	4544,25	92144,25 23670,2	25 967,25	3303,25	1551,25 9	912,5 857,75	5 0	2993	2062,25	18,25 930	,75 0	1314	0 0	255,5	164,25	0 0	0	54,75	0 2774	0	0	0 0	0	0	0	U	
19, Preveza		639,25	0 91,25 1€	64,25	0 547,5	0	0 13	368,75	0 419,75	0	0	0 18450.75	23852,75	73164,25 1514,7	75 328,5	1496,5	985,5 1478	78,25 0	0 0	949	930,75	0	0 0	0	18,25 0	) 0	0	0 0	164,25	0	0 4964	0	0	0 0	0	0	0 0	0	0 19. Preveza
20. Karditsa	15768	146 547	5 146	803 11935	5.5 54.75	839.5	0 32	230.25 237.	.25 876	0	0	438 2098 75	2974.75	2317.75	0 4580.75	29254.75	07510.75 3704	147.5	0 0	11388	21608	200.75	0 4653.75	474 5	73 7300	0	109.5	0 0	0	0	0 0	0	0	0 0	. 0	0	0 0	0	0 20. Karditsa
21. Larissa	48380,75	3102.5 4416.	.5 5237.75 56	65.75 35678.	75 0	2098 75	1350 5 4	1343 5	73 3266.75	01.75	255.5	0 1660.75	3230.25	4288.75 200"	15 16608.75	221117	112164.5 402	150.5 25187	5 474.5	20785	44068 1	1733.75 675	25 0	8760 4	215.75 5329	11242	492.75	0 456.25	237.25	0	0 949	0	0	0 0	, 0	0	0 0	0	0 21. Larissa
22. Magn/sia	27466.25	547.5 3814.2	5 1022	0 13323	7.5 0	419.75	0	2044	0 5200,75	71,40	1250.5	0 1000,75	638.75	260,75 2007.	75 474.5	21662.76	19929 1113	27,5 2310,5	0 0	5475	15740.75	0133,73		752675	7555 5 547 5		472,15	1002.75	255.5	n	0 365	n	0	0 0	, 0	0	0 0	0	0 22. Magn/sia
23. Trikala	30276,75	1350.5 4033.2	5 1679 464	62.76 10620	26 16426	266	0	1015 64	76 0	0	1330,3	0 1952.75	0.50,75	8468 985	11.40	71978		132,5 5767	, ,	3473	13/49,/3	0	0 0	2330,73	675.25 4124.5	5011,45	200.75	0 54.75	200,0	1478 25	0 109.5	0	0	0 0	. 0	0	a 0	0	0 23, Trikala
24. Grevena		18.25 456.2		22,75 10330,	23 104,23	303	0	4015 54,	,/3 U		0	0 1952,75	1989,25	8468 985	,5 38124,25	71978	3285 5712	22,5 5767	/ 0	693,5	15841	0 69	3,5	/30	6/5,25 4124,5	91,25	200,73	0 34,73	0	1478,23	0 109,5	0	0	0 0	. 0	0	0 0	n	0 24. Grevena
25. Drama		638.75 310.7	5 000 75	31,23 4	38 0	0	0	0	0 0	91,25	0	0 1387	0	1314 401	,5 419,75	16844,75	7500,75 2545	8,75 0	J 0	657	949	0 310	,25; 0	1606	0 0	) 0	0	54,75			0 340,73	0	0	0 0	, ,	0	0 0	0	0 25. Drama
		038,75 310,2	5 930,75	0	0 0	0	0	0 25:	5,5 0	0	0	0 0	0.	693,5	0 0	711,75	1131,5	0 (	) 0	1587,75	27375 2	27995,5	0 4179,25	36,5	146 1332,25	42486	0	1460 54,75	19600,5	328,5	0 0	0	0	0 0	. 0	0	0 0	0	0 26. Imathia
26. Imathia	43599,25 5	456,75 189	8 273,75	0 2591	1,5 0	438	328,5	1423,5 7	730 0	419,75	182,5	346,75 0	2628	2080,5 29	J2 1076,75	89461,5	15074,5 2	2701 1898	8 1733,75	170929,5 3	322970,25	36,5	292 2226,5	18450,75 38	197,25 52961,5	5 2609,75	6643	1368,75 146	346,75	91,25	0 383,25	0	0	0 0	. 0	0	0 0	0	0 27. Thes/ca
27. Thes/ca	82325,75 2	317,75 3960,2	5 6880,25	0 8303,	75 3504	2390,75	1222,75 8	3577,5 14	160 3558,75	0	419,75	0 4142,75	6971,5	2883,5 1551,1	25 7975,25	44329,25	13833,5	9928 3029,	.5 20805	89972,5 1	124191,25 32	2868,25 448	19,5 51173	16571 88	713,25 28360,5	79205	5347,25	81413,25 7172,25	11260.25	5310,75	0 584	0	0	0 0	0	0	0 0	U	
28. Kavala		164,25 693,	5 1569,5	0	0 0	0	0 2	2153,5	0 0	0	0	0 36.5	492.75	419.75 10	.22 0	4653,75	1825 1	1168	0 23049.75	7701.5	34328.25 61	1082.75	0 693.5	438	821,25 0	0 10238,25	0	456,25 5821,75	34237	1697,25	0 0	0	0	0 0	. 0	0	0 0	0	0 28. Kavala
29. Kastoria	2208,25	456,25	0 0	0	0 0	0	0	0	0 0	0	0	0 949	675.25	219	0 54.75	2883.5	0 155	51.25 54.75	/5 N	3650	6369.25	0 13048	75 0	3212	2190 54.75	5 0	0	0 0	0	0	0 0	0	0	0 0	, 0	0	0 0	0	0 29. Kastoria
30.Kilkis	6223,25	0	0 0	0	0 0	18.25	0	0	0 0	ň	1003.75	0 36.5	0,5,25	0	0 5-1,75	0	0 133	16.5	0 265	6670.5	81541	438	73 37868.25	328.5 9	836.75 675.25	5 2573.25	0	146 18.25	219	0	0 0	0	0	0 0	, 0	0	0 0	0	0 30.Kilkis
31. Kozani	4745	73	0 127.75	0 37	23 0	100.5	0	620 E	0 0		1005,75	0 50,5	72	1121 6	176 1186.25	24226	41007.76	1898 2755.75	75 109.5	74614.76	61341	210.06 2	947 4745	12607.6	000,75 073,25	0 20,0,20	6249.76	0 100.5	64.75	Ď	0 0	0	n	0 0	. 0	0	0 0	0	0 31. Kozani
32. Pella	11771.25	73 346.7	5 164.25	0 310.	25 0	2427.25	0 14	185.75	0 0	070.75	127,73	0 093,3	620.5	1131,3 67	1100,23	24230 .	+1007,73	1090 2133,13	3 109,3	74314,73	38100	310,23 3	942 474,3	13007,3	07/7 417	140716	146,73	0 109,5	1040.26	0	0 365	0	0	0 0	. 0	0	0 0	0	0 32. Pella
33. Pieria	5000.5	75 540,7	0 104,23		.23 U	2427,23			0 0	2/3,/5	0	0 0	620.5	620,5	0 401,5	9271	1514,75 100	3,75 584	4 0	196205,75 2	269935,75	3467,5	/30 /446	2208,25 153	9/5,25 11/34,/5	5 142/1,5	4433	0 0	1040.23	0	0 30,3	0	0	0 0	. 0	0	0 0	0	0 33. Pieria
34. Serres	22027,75	0 000	0 0	0 24	09 0	1149,75	0 1	1715,5	0 0	0	0	0 6	748,25	0	0 14089	21407,25	13194,75	0 1149,75	5 346,75	59385,5	52651,25	273,75 164	1,25 8340,25	1715,5 9	617,75 200,75	3 4325,25	584	1295,75 0	0		0 0	0	0	0 0		0	0 0	0	0 34. Serres
		0 262	8 6387,5	0 565,	75 565,75	0	1423,5 3	3832,5	0 949	839,5	1168	0 839,5	0;	16516,25	0 0	11588,75	2755,75	3066 292	2 12829,75	5986 2	274534,75 11	1734,75 231	7,25 11771,25	1624,25	5183 1022	2 49457,5	146	3796 693,5	2792,25	584	0 0	U	U	0 0	- 0	0	0 0	0	0 35, Florina
35. Florina	4653,75	U	0 0	0	0 0	0	0 3	383,25	0 0	0	0	0 1058,5	0	0	0 0	711,75	730 5	4,75 912,5	,5 0	30806	8504,5	0 894	1,25 182,5	16625,75	1971 912,5	5 0	0	0 219	0	0	0 0	0	0	0 0	U	U	0 0	0	0 36. Chalk/ki
36. Chalk/ki	2482	0	0 2025,75	0	0 0	0	0	18,25	0 0	0	36,5	0 0	0	0	0 0	0	1423,5	0 4	0 365	9636	87819	54,75	0 1478,25	0	438 1606	5 474,5	0	6113,75 0	839,5	0	0 0	0	0	0 0	. 0	0	0 0	U	
37. Evros	14490,5	0 91,2	5 1113,25	0 2	.19 0	0	0 7	784,75 2135.	.25 0	164,25	0	0 0	0	146	0 0	7190.5	1514.75	0 /	0 1295.75	1405.25	12008,5 2	2828.75	0 328.5	492,75	5730,5 0	310,25	0	36,5 425425,75	8632,25	4472,25	0 73	0	0	0 0	, 0	0	0 0	0	0 37. Evros
38. Xanthi	26353	18,25	0 0	0	0 0	0	0 10	040.25	0 0	237.25	0	0 0	0	0	0 0	8960.75	0 *	54.75	0 4252.25	328.5	8887.75 13	3450.25	0 109.5	0	18.25 0	3850.75	36.5	36.5 5018.75	2226,5	6369,25	0 0	0	0	0 0	, 0	0	0 0	0	0 38. Xanthi
39. Rodope		076,75	0 346,75	0 182	2,5 0	0	0	0 18	.25 0	0	292	0 6	n	0	0 0	967.25	930.75	0 /	0 529.25	1040.25	5566.25	5037	0 0	0	0 0	1387	0	0 37211.75	11041.25	3450,25	0 0	0	0	0 0	, 0	0	0 0	0	0 39. Rodope
40. Zakynthos	54,75	0	0 0	0	0 0	0	n .	0	0 109.5	ň	183.25	0 0	0	0	0 0	.0,,,,,	0	0	0 0	10-0,25	0	0	0 0	ň	0 0	456.25	0	0 54.75	0	0	0 0	0	0	0 0	, 0	0	0 0	0	0 40. Zakynthos
41. Corfu		930.75 127.7	5 0	0	0 0	0	0 2	146.75	0 0	0	رعارور	0 547.6	0	474.5 1368.7	75 0	0	0	0	, 0	220 5	164.26	0	0 0	0	0 0	0 -00,20	0	0 54,75	0	0	0 0	0	0	0 0	. 0	0	0 0	0	0 41. Corfu
42. Kefallinia	383.25	0	0 0	0	0 0	0	0 3	740,73	0 0	U	U	U 547,5	0	474,5 1368,7	.5 0	0	U	0 0	. 0	328,3	104,23	Û	0	U	0 0		0	0 0	0	0	0 0	0	0	0 0	.) 0	0	0 0	0	0 42. Kefallinia
43. Dodecanese	0	0	0 0	0	0 0	U	U	0	0 0	U	U	0 0	0	0	0	0	0	U ()	0	U	0	U	0 0	U	0 0	0	U	0 0	U	0	0 0	0	0	0 0	0	0	0 0	0	0 43. Dodecanese
44. Cyclades	0	0	0 0	0	0	U	U	0	0 0	0	0	0 0	0	0	0	0	0	0 (	0	0	0	0	0 0	0	0 0	J 0	0	0 0	U	U	0 0	0	0	0 0	0 0	0	0 0	0	0 44. Cyclades
	U	0	U U	U	0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0 (	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0	υ 0	0	U	0 0	0 0	0	0 0	0	0 45. Leshos
45. Lesbos	Ü	0	0 0	0	0 0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0 (	0 0	0	0	0	0. 0	0	0 0	0 0	0	0 0	0	0	0 0	0	0	0 0	U	U	b ^	0	0 46. Samos
46. Samos	0	0	0 0	0	0 0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0 /	0 0	0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0 0	0	0	0 0	, 0	0	0 0	U	
47. Chios	0	0	0 0	0	0 0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0 (	0 0	0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0 0	0	0	0 0	, 0	0	0 0	0	0 47. Chios
48. Heraklion	0	0	0 0	0	0 0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0	0 0	Ď	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0 0	0	0	0 0	J 0	0	0 0	0	0 48. Heraklion
49. Lasithi	0	0	0 0	0	0 0	0	0	0	0 0	n	n	0 0	6	0	0 0	0	0	o o	0 0	0	0	0	0 0	0	0 0	0 0	ů.	0 0	0	0	0 0	0	0	0 0	J 0	0	0 0	0	0 49. Lasithi
50. Rethymno	0	ů.	0 0	0	0 0	0	0	0	0 0	C	0	0 0		0	0 ^	0	0	0	J 0	0	0	0	0 0	0	0 0	0 0	0	0 0	e	0	0 0	0	0	0 0	a 0	0	0 0	0	0 50. Rethymno
51. Chania	0	o o	0 0	o o	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0	v	0 0	J 0	0	0	0	0 0	0	0 0	0 0	0	0 0		0	0 0	0	0	0 0	a 0	0	0 0	0	0 51. Chania
	030830.25 15	0240 6 433601 7	5 139484,75 117	716 201024	U 14102	200205.25	66977.5 2153	· · · · · · · · · · · · · · · · · · ·	0 0	0		U (	0	U	0 0	0		0 (	J U	0		U	0 0	0	U U	U U	0	U U	97710.5	14840.25 425	2.25 17538.25	4745	0	0 0	0 6	0	0 0	0	0
colar	027030,42 13	7497,3 433001,7	5 1 <b>39484,/5 11</b> 7	/10,5 201954	4,5 34182,25	488295,25	00977,5 2153	331,75 1324	128662,5	82526,5	159541,5	8650,5 81322	94571,5	255445,25 103276,7	/5 110759,25	660029,5 4	419877,75 2196	620,5 22903,75	5 69550,75	764036,25 16	670769,25	170966 27393	5,25 129410,75	102218,25 349	761,25 138243,75	5 234129,25	26371,25	97181,25 487129	97/10,5	14040,25 425	4,45 1/558,25	4/43	U		u	U	. 0	•	-

	a) of Industrial and Chemical							20. 9			- 62																														
From — To 1. A 1. Attica	Attica 2.Aetol/nia 3. Bo					rcadia 10. Acha 2705 25   185876			3. Laconia 14.		fkada 16. Arta			19. Preveza 20. Ka 5347.25	rditsa 21. Lariss 4891 - 266					thia 27. Thes/ca 178.5 1258					a <b>33. Piería</b> 3 7081 22 <b>8</b> 1.25	34. Serres 35. F 8030		alk/ki 37. Evros 902.25 200					linia 43. Dodeca 002.5	anese 44. Cyclade	es 45. Lesbos	46. Samos 47.	. Chios 48. Her	raklion 49. Lasiti	ni 50. Rethymno	51. Chania 0 0 1. A	
2. Actol/nia	2609,75 23323,5 244 25221,5 41153,75		1569,5 79004,25 565,75 310,25		38890,75 32 91.25	0 55498	6,25 19783 8 25 2244 7		3//22,/3		376,25 <b>8</b> 10804 7683			12537.75	4891 200	0 711.75				0 5712.				492.75	0 0		383.25	902,23 200	0 0	584	2 1000,10		78.25	0	0 0	0	0	0	0		etol/nia
		1334,25 6588,25	0 11096		2 1 pm 0		921 4343.5	o oo mile	438		164.25 492		1441.75	1533	730 1569		438	0		8.25 4288.		0	2135.25	584	0 0	0	73	0	0 0	0	292	0	657	0	0 0	0	0	0	0		Boeotia
		56246.5 133 <b>8</b> 63. <b>7</b> 5	0 2847	146	2334,23		6.75 4343,:	11077	430		109,23 492	,75	711.75	1000	584 1368	75 020,5	430	0	0 293		264 0	0	2133,23	0	292 985.5	73	0 1	040.25 18	25 0	711.75		0	0.57	0	0 0	0	0	n	0	0 04.1	
5. Evr/nia	0 328,5	0 0	0 273,75	140	0,54,23	0 3430	0,75	11107,23		0	0	0 (	,,,,,,	0	0	0 0	0	0	0	0 122	0 0	0	0	0	0 0	, 0	0	0	0 0	0	0	0	0	0	0 0	0	0	n n	0	0 05. E	
	42540.75 1332.25 16	5917.75 1642.5	255.5 6223.25	419.75	237.25	401.5 3	577 1332.29	5 1387	0	1496 5	0	0 237.25	310.25	0	146.75 3668	25 18596.75	255.5	0	91.25	36.5 13340.	.75 0	0	766.5	1679 76	66.5 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		hthiotis
7. Phocida		1879 75 182 5	0 2993	1222.75	0	.0240	4.25 6022.5	5 0	0	0	0	0 (	18.25	0	0	0 0	0	ō	0	0	0 0	0	0	237.25	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	Ď	0		hocida
8. Argolida	17063,75 1460	0 0	0 8942.5	0	65700	19637 1332	2.25 2445.5	5 27521	2609.75	1806.75	0	0 (	0	0	0 237.	25 1861.5	0	0	0	0 4361.	.75 0	0	0	292	0 0	0	0	0 18	.25 419.75	0	1478.25	0	0	0	0 0	0	0	0	0		rgolida
9. Arcadia	16826.5 0	54.75 4197.5	0 0	0	5201.25 20	0640.75 75	592 803	3 5639,25	4489.5	2974,75	0	0 (	1478,25	0	0 383,	25 1168	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 9. A	
10. Achaea	218087,5 33671,25	3358 1186,25	0 949	10384,25	13505 11	1807,75 41920	0,25 80117,	5 16352	6643	25258 2	2883,5	169 2755,75	12026,75	6077,25	36,5 8	03 620,5	383,25	0	456,25	0 1456	3,5 0	18,25	0	0	0 1460	146	91,25	0 602	,25 346,75	0	42887,5 5	128,25 104	40,25	0	0 0	0	0	Đ	0	0 10.	Achaea
11.Ilia	35861,25 54,75	0 0	0 0	0	7920,5 2	2171,75 35	186 19107,75	5 146	109,5	2609,75	511	0 (	0	0	575,25 894,	25 0	36,5	0	0	0 76	6,5 0	0	36,5	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 11.1	llia
12.Corinthia	112566 26061 34	4656,75 328,5	0 11862,5	2171,75	18651,5	10147 249	966 22082,	5 14673	10986,5	14399,25	0 1	506 839,5	1788,5	1295,75	0 9289,	25 602,25	638,75	0	0	0 354	0,5 346,75	0,	0 1	149,75	0 985,5	4909,25	0	0	0 182,5	0	32120	0 388	87,25	0	0 0	0	0	0	0	0 12.0	Corinthia
13. Laconia	4325,25 401,5	73 0	0 0	0	2080,5 6	6843,75 383	32,5 36,5	5 1679	23597,25	1168	0 1076	,75 (	0	0	0 164,	25 0	54,75	0	0	0 967	,25 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Laconia
14. Messinia	8048,25 255,5	0 0	0 0	0	693,5 11	1004110	892 3869	9 1825	5730,5	95575,25	0 310	,25 (	182,5	0	0	0 0	857,75	0	0	0 13	314 0	0	0	0	0 0	0	0	0	0 0	0	164,25	0	0	0	0 0	0	0	0	0		Messinia
15. Lefkada	730 3613,5	0 0	0 0	0	0		2,25	0 0	0	0	0	0 (	292	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Lefkada
16. Arta	4088 5000,5	0 0	0 529,25	0	0		315	0 0	0	930,75		1,5 2536,75		35222,5	164,25 10	,5 109,5	0	0	0	0 1076	,75 0	0	0	365	292 0	0	0	0	0 0	164,25	0	474,5	0	0	0 0	0	0	0	0	0 0 16.	
17, Thes/tia	949 182,5	0 0	0 0	0	0	0 0,	93,5	0 0	0	0	146 638		4781,5	10767,5	0	0 0	401,5	0	0 9	1,25 397		0	0	0	0 146	0	0	0	0 0	73	0	0	0	0	0 0	0	0	D	0		Thes/tia
18. loan/na	5730,5 2336	36,5 146	0 237,25	0	0		81,5 1697,2	5 109,5	0	474,5 I	127,75 1412	5,5 14672	59677,5	11680	182,5 1660,	75 8340,25	2025,75	0	0	219 1332,	,25 0	0	54,75	255,5	292 0	0	U	0 492	,75 219	U	0	7592	0	0	0 0	0	0	0	0		Ioan/na
19. Preveza	3431 4507,75	0 0	0 0	0	0		344 (	u 0	0	219	0 1368	1,50	4872,75 657	310,25	146.75	U 0	4027.25	0	0	0 1679 4288	7.5 0	0	0	0 (0)	U 0	U	0	0 107	0 0	0	U	U	0	0	U 0	0	0	0	U		Preveza
20. Karditsa	1879,75 0 26499 109.5	5475 1222.75	0 912,5	0	0		82,5	0	0	73	0 54	,75 2792,2	2372.5	647.6	546,75 4	38 292 87 13906.5	4033,25 15 <b>987</b>	202	210.26 216		,/5 149 1332.25	164.26	16426	4526 4424	12,23 U	902	0	5329	,/5 U	182.5	912.5	200	0	0	0 0	0	0	0	0		Karditsa
21. Larissa 22. Magn/sia		3473 1222,73 R559.25 2555	0 7811	U	0		5,75 ( 26.5 (	0 0	0	219	0	0 1/32	675.25	247,5 11	16367 23694	13900,3	7263.5	292	7400 5	0 258		104,23	104,23	16700 4035	14,70 6260,0	91.25	210.25	3329 . 675.75	292 200,0	102,5	912,3	620.5	0	0	0 0	0	0	0	0		Larissa Magn/sia
23. Trikala		419.75 638.75	0 1460	0	0		20,5 (	0 0	0	310,23	0	0 127,73	2865.25	340,73 657 14	13237 22004; RSQ 25 1205	75 12047,23	10165.25	2522.25	91.25	803 171		0	492.75 29	938.25	0 0	2777 75	510,23 A	075,25	0 0	36.5	0	0.20,3	0	0	0 0	0	0	0	0		Trikala
24. Grevena	18.25 0	0 229.5	0 1400	0	0	0 47	74,5	0 0	0	0	0	0 10,2.	2003,23	037 1.	0 (2,70	0 0	2007.5	0 0	2 1 gm D	171.	-,-	0	0 3	412.75	146 0	5777,75	0	0	0 200.75	0,00	0	0	0	0	0 0	0	0	0	0		Grevena
25. Drama	8431.5 0	0 320,3	0 0	0	0	0	0	0 0	0	0	0	0 (	0	n	0 91	5 0	2007,5	0	91.25	0 1120	,	0'	0	529.25	0 0	6752.5	109.5	0 .	1679	1460	0	0	0	n	0 0	0	0	n	0		Drama
26. Imathia	13231.25 0	0 0	0 1825	0	0	693.5 1:	1898 109	5 0	200.75	0	0 54	7.5 1023	0	0	0 2135	25 0	438	146	273.75 376	31.5 1765	587 1587.75	638.75	-	9307.5 76814	14.25 51702.25	0 13	12209.25	4416.5 127	.75 0	730	ů.	0	0	0	0 0	0	0	0	0		Imathia
27. Thes/ca	136218 5128.25	5037 529.25	0 4799.75	821.25	8833	2883 5 10493	3.75 821.2	5 1514.75	1204.5	1496.5	492.75 3704	.75 3213	4781.5	675.25 29	838.75 478	88 27101.25	36354	16406.75	49238.5 19321	2.75 3891	163 72543.75	24035.25	63546.5 9	8513.5 174	4835 139211	152113.75 29	29875.25 137	878.75 1609	6.5 29163.5	12610.75	0	7008 45	56.25	0	0 0	0	0	o o	0		Thes/ca
28. Kavala	8924,25 0	0 0	0 2701	0	237.25	0	0 1332.2	5 0	438	0	0	0 (	1113.25	0	266.75 3412	75 1952,75	1971	0 5	7286.75 74	18.25 3558	7.5 89023.5	18,25	1423.5	0 217	71,75 109,5	61831	0 4	215.75 42832	.75 38434.5	21042.25	0	255,5	0	0	0 0	0	0	0	0		Kavala
29. Kastoria	54.75 0	0 0	0 91,25	0	0	0 91	1.25	0 0	0	0	0	0	0	0	0 18	25 0	54,75	273,75	0 1	182,5 105	8,5 219	876	0 3	412,75 9	1,25 1095	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Kastoria
30.Kilkis	3832,5 0	0 4471,25	0 657	0	0	0 784	4,75	0 0	0	0	0	0 (	0	0	1277,5	0 0	0	73	0 21	153,5 42102	,75 36,5	273,75	17264,5	967,25 361	171,5 127,75	657	492,75 I	514,75 3	6,5 0	0	0	0	0	0	0 0	0	0	0	0	0 0 30.	Kilkis
31. Kozani	3412,75 91,25	419,75 0	0 6150,25	0	0	0	803	0 0	0	547,5	0 377	,75	2555	0	1934,5 7245	25 16370,25	2518,5	15895,75	0 1	1169 342	237 0	7263,5	54,75	95484 7	7446 5000,5	0	17447	0 10	9,5 0	0	0	0	0	0	0 0	0	0	0	0	0 0 31.	Kozani
32. Pella	5256 0	0 0	0 0	0	0	0 200	0,75	0 200,75	0	0	0	0 967,2	748,25	0	36,5 59	86 200,75	237,25	1040,25	1259,25 3487	75,75 1827	117110	3376,25	7044,5	7373 49	9859 8887,75	638,75	1934,5	1606 25	5,5 0	18,25	0	0	0	0	0 0	0	0	0	0	0 0 32.	
33. Pieria		675,25 0	0 91,25	0	0	0	949	0 0	0	0	0	0 584	784,75	0	492,75	0 4179,25	0	91,25	292 18		229 54,75	18,25	8157,75	529,25 5011	18,75 0	4854,5	0 1	149,75	0 0	492,75	0	0	0	0	0 0	0	0	0	0	0 0 33.	
34. Serres	5383,75 255,5	146 0	0 3923,75	0	3814,25	383,25 4142	2,75 474,	5 0	0	0	0 31	),25 18,2	748,25	0	0 624	1,5 0	292	182,5	18286,5 158	37,75 70463	,25 602,25	0	3412,75	54,75	511 657	65645,25	219	2409 127	,75 1350,5	657	0	73	0	0	0 0	0	0	0	0		Serres
35. Florina	1533 0	0 18,25	0 1058,5	0	0	0	292	0 0	0	0	0	0 (	0	0	0	0 0	200,75	365	0 231	17,75 11515	,75 0	200,75	0		810,5 0	0	200,75		0 0	0	0	0	0	0	0 0	0	0	0	0		Florina
36. Chalk/ki	5493,25 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0 (	0	0	0	0 0	0	0		75,25 7143 03.75 8°			0		766,5 219	1660,75 1423.5	748,25 7	354,75 40	1,5 419,75 -25 7628.5		0	0	0	0	0 0	0	0	0	0		Chalk/ki
37. Evros	4307 0	0 200,75	0 18,25	0	0		09,5	0 0	0	0	0 12	7,75	73	0	0 244		182,5	0	1934.5	0 1616	760 1733,75 i9.5 14673		346,/5	328 5	10,25	1843.25	0	0 102364	,25 /628,5 528 11661.75		U	0	0	0	0 0	U	0	0	0		Evros Xanthi
38. Xanthi	4489,5 0	0 0	0 0	0	91,25	0 103	58,5	0 0	0	255,5	0	0	255,5	0	0 2/3	,	0	0	1934,5	91.25 3704			0	520,5	\$01.5 O	529.25	0	0 2	220 2774	5 7 1 m yes	0	0	0	0	0 0	0	0	0	0		Rodope
39. Rodope 40. Zakynthos	12556 0	0 0	0 0	0	0	0 0000	2.75	0 0	0	303	0	0		0	0 32	0 0	0	0	2/01 9	0 3704	0 3340,3	10,23	0	91,23 41	0 0,10	329,23	0	0 10	0 0	13003,73	0	0	0	0	0 0	0	0	0	0		Zakvnthos
41. Corfu	2299.5 0	0 0	0 0	0	0	0 9982	2,73	0 0	0	0	0	0	675.75	0	0	0 0	0	0	0	0 821	25 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Corfu
42, Kefallinia	2518.5	219 0	0 0	0	0	0 1/8	00,5	0 0	0	0	0	0	073,23	0	0	0 0	0	0	0	0 621	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Kefallinia
43. Dodecanese	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	n i	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	o o	0 0	0	0	0	0	0	0 0	0	0	0	0		Dodecanese
44. Cyclades	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	ő	0	0 0	0	0	0	Ó	0 0	o o	ő	0	0 0	ő	0	0	0 0	0	0	ő	0	ō	0 0	ő	ů	o o	0		Cyclades
45. Lesbos	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Lesbos
46. Samos	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Samos
47. Chios	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 0 47.	Chios
48. Heraklion	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Heraklion
49. Lasithi	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Lasithi
50. Rethymno	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0		Rethymno
51. Chania	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0	0 0 51.	Chania
Total 1	1204883,25 159413,75 473	3678,75 368358	2390,75 154960,75	24509,75 1	169195,75 119	9592,25 45891	14,5 16863	0 258109,75	94681	188285,25	18615 68	474 7708	137805,75	86997,75 8	508,75 207411	25 135889,5	100867,75	38927,25	144613 318	8426 13443	295 213433,75	37120,5	113861,75 27	1304,5 375	5147 226573,75	317458,75	64313	175492 179	288 97984,25	79095,5	102218,25	29346 325	521,5	0	0 0	0	0	0	0	0 0	
Inotituti	anal Panacitar	y Librory	9 Informati	on Cont	ro Ilni	ivoroity o	of Thomas	olv.																																	

Table 12. Q (Φόρτοι) of Minerals-fuel-lubricants

	Φόρτοι) of Minerals-fue																																							
	1. Attica 2.Acto							.Ilia 12.€o	rinthia 13. Lacor					n/na 19. Preveza					na 25. Drama	26. Imathia 27		. Kavala 29. Kas	toria 10.Kilkis			reria Din Derrea	s 35. Florina 36. (	Chalk/ki 37. Evro				fu 42. Kefallinia 4	3. Dodecanese 44	4. Cyclades 45. L	Lesbos 46. Samo	os 47, Chios 48	B. Heraklion 49. l	Lasithi 50. Rethy	mno 51. Chani	1
1. Attica	564107,5 640		248254,75 1971			44,75 104700,		49877,25 2:	29767,5 52505	,25 58144,5	0,0	5274,25		24,25 17666				70,25 2	19 675,2	1788,5	38361,5	8504,5	0	0 456,25	2628 47	<b>7</b> 99,75 255	212	0 857	,75 584	766,5	13505 40		0	0	0	0 0	0	0	0	0 1. Attica
2.Aetol/nia	18779,25 2750		0 365	117,10	8869,5	0 127,	,75 42394,75	5475	0	0 0		65517,5 20	348,75	2198 57615,25	0	1609,75		92,75	0 255,	,-	1295,75	0	0	0 0	0	0 3704,7	,75 0	0	0 0	0	0 967	,25 0	0	0	0	0 0	0	0	0	0 2.Aetol/nia
3. Boeotia		219 443146,5	82599,5 0	17282,75	17282,75	0	0 0	0	13760,5	0 91,25		0	0	0 0	0	0		196,5 1387	0 401,	,5 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0 3. Bocotia
4. Euboea	287966,75 45		224310,75 0	30787,75	602,25	0 20031	8,5 438	1000.00	4799,75 1441	,/5 /66,5	0	U	255,5 4:	56,25 0	857,75	0 1	1149,75	1387	0 211	7 0	675,25	0	0	0 876	0	0	0 0	109,5	0 146	0	0	0 0	0	0	0	0 0	9	0		0 4. Euboea
5. Evr/nia		0 1005 10090 5	2440.25	2518,5	0	0	0 0	1332,23	0	0 0	0	0	0	0 0	1106.06	0 12	2000.76 6	U E4.76	0	0 0	6278	0	0	0 0	803	400.776	0 0	0	0 0	0	0	0 0	0	0	0	0 0	a	0		0 5. Evr/nia
6. Phthiatis		1095 132896,5	3449,25 0	19199	3637,3	0	0 0	U	0	0 0		U	0	0 0	1180,25	0 12	2099,73 3	24,73	0	0 0	6278	U	0	0 2883,5	0 4	492,75	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		0 6. Phthiotis
7. Phocida	2354,25 11 12464.75	36,25 3558,75	2559.75	0	340,73	U 1487 5 16114	75 1269 75	1066	0792	0 10346		1222.26	0	0 0	0	0	0	0	0 66	7 0	420	U	0	0 0	0	0	0 0	0	0 0	0	0 821.25 IA	0 0	0	0	0	0 0	0	0		0 7. Phocida
8. Argolida 9. Arcadia	35259	0 0	1204 5	0	0 1304	7467,3 10114, 34530 9494	25 58418.25	2006 75	7/04 17/10 5 4515	25 72854		1332,23	0	0 0	0	0	0	0	0 03	0 0	430	0	0	0 384	0	0	0 0	0	0 0	0	821,25 14	460 0	0	0	0	0 0	0	0		8. Argolida
10. Achaea	29254.75 928	74.25 0	0 0	803	5858.75	0 0471	75 48107	106700	565.75	0 26334.75	5329	1/21675 7	7792 75 262	61 75 8550 25	0	0	949 1	182.5	0	0 0	784 75	73	0	0 0	0 6	629.75	0 0	0	0 0	0	26965 17	0 10250.6	0	U	U	0 0	0	0		9. Arcadia
11.Ilia	1679	0 912.5	0 0	000	0 03	20.75 580	2.5 0075/1.5	10/03/75	901.75 748	25 7318.25		0	0	0 0	0	0	0	0.213	0	0 0	1186.25	,,	o l	0 0	0 0	038,73	0 0	0	0 0	0	30003 11	0,762291	· ·	0	U	0 0	U	0		10. Achaea
12.Corinthia		380.5 12775	2883.5 0	9909.75	0 2038	85.25 43106	6.5 66959.25	15859.25 15	6566.75 4011	3.5 5748.75	1898	5383.75 7	7099 25 64	17.25 164.25	0	n	0	0	0	0 0	912.5	0	0	0 0	0	0	0 0	0	10 0	0	0 3	365 16680 5	0	0	0	0 0	0	0		0 11.llia
13. Laconia	3485.75	0 0	0 0	0	0 2050	0 22575	25 1003.75	784.75	3723 81559	25 23925.75	0	0	0	0 0	0	0	0	0	fl .	0 0	0	0	0	0 0	0	0	0 0	0 .	0 0	0	0 .	0 0	0	0	0	0 0	9	U		12.Corinthia
14. Messinia	2354,25	0 0	0 0	n	n	0 380	33 8577.5	14654.75	54.75 8084	.75 276104.25	0	n	0	0 0	0	0	ū	0	0	0 0	n	0	0	0 255.5	0	949	0 0	0	0 0	0	0	0 0	u n	0	0	0 0	0	0		0 13. Laconia 0 14. Messinia
15, Lefkada		8979 0	0 0	ű	0	0	0 10950	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 233,5	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		0 15. Lefkada
16. Arta		97.75 0	0 0	0	0	0	0 1843.25	0	310.25	0 0	0	8851.25 8	3048.25 47	99.75 11077.75	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0 1040	125 0	0	0	0	0 0	0	0		0 16. Arta
17. Thes/tia	1569.5 38	50.75 127.75	0 0	0	0	0	0 1241	0	0	0 0	0	12702 9	90921.5 500	23.25 297913	0	0	0	0	0	0 0	894.25	0	0	0 0	0	0	0 0	0	0 0	0	0 310	1	0	0	0	0 0	0	0		0 17. Thes/tia
18. Joan/na		31.25 0	492,75 511	365	0	0 255	5.5 3102.5	237,25	0	0 0	0	12045 14	1691,25 30	8352 29072,25	0	0	0 582	21,75	0	0 0	711,75	0	0	0 0	620.5	0	0 0	0	0 0	0	36.5 3011		0	0	0	0 0	0	0		0 18. Ioan/na
19, Preveza		4380 0	0 0	0	0	0	0 0	1368,75	0	0 0	0	22374,5 123	3205,75 35	95,25 0	0	295,75	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		) 19. Preveza
20. Karditsa	456,25	0 0	0 0	0	0	0	0 0	0	1660,75	0 0	0	0	328,5	0 0	894,25	584 1	1587,75	7228	0	0 0	2938,25	0	54,75	0 0	0 1	1496,5	0 0	0	0 0	0	0	0 n	0	0	0	0 0	0	0		20. Karditsa
21. Larissa	7172,25	0 0	0 0	2135,25	748,25	0	0 127,75	0	0	0 0	0	0	0	0 0	18377,75	73803 4	45004,5 852	22,75	0	0 91,25	37321,25	620,5	0 182	.5 6953,25	0 3	3832,5	0 0	0	0 638,75	0	0 21	117 2263	0	0	0	0 0	0	0		21. Larissa
22. Magn/sia	9289,25 1	358,5 346,75	1058,5 0	66685,5	0	0	0 894,25	0	0	0 0	0	2555	0	620,5 0	64313	124538 8	80920,5 5589	99,75	0 5000,	,5 730	8522,75	0	0	0 13687,5	0 4	4927,5	0 584	0	46 0	0	0	0 0	0	0	0	0 0	0	0		22. Magn/sia
23, Trikala	237,25	182,5 0	0 0	1277,5	0	0	0 0	0	0	0 0	0	0	0 18	43,25 0	41610	1069,75	1876I 9	4754 3193,	,75	0 164,25	6387,5	0	0	0 0	0	0	0 0	0 91	,25 0	0	0 13	314 0	0	0	0	0 0	0	0		23. Trikala
24. Grevena	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	127,75	1241	0	73	0	0 0	1222,75	0	0	0 26426	1971	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		24. Grevena
25. Drama	2883,5	0 0	0 0	0	0	0	0 109,5	0	0	0 237,25	0	1752	310,25	0 0	0	149,75	0 9	985,5	0 1259,2	.5 1058,5	60243,25	50826,25	0 2098,		383,25 27	755,75 854	541 0	1478,25 2974	,75 3631,75	36,5	0	0 0	0	0	0	0 0	W	0		25. Drama
26. Imathia	1843,25	0 0	0 0	0	0	292	0 0	0	0	0 0	0	0	0	0 0	584	219	0	0 237,2	,25	0 66119,75	54950,75	0 12	95,75 3759		26152,25 I	193158 91,2	,25 419,75	9800,25	0 0	0	0	0 0	0	0	0	0 0	0	0		26, Imathia
27. Thes/ca		56,25 328,5	383,25 0	5584,5	0	0	0 2445,5	0	0	0 383,25	0	0		16,25 0	8869,5	1359,5 46	6884,25 2440	00,25 42248,	,75 96378,2	5 222120,75	501035,5	150799,75	29711 86687	,5 245809,25	150197,5 1963	388,25 241575,2	,25 33215 3	98963,25 17501	,75 30276,75	12866,25	0	0 0	0	0	0	0 0	0	0	0	27. Thes/ca
28. Kavala		912,5 0	821,25 0	6515,25	0 27	273,75	0 730	219	219	0 0	73	164,25	164,25 32	66,75 0	839,5	1351,5	602,25 1308	85,25	0 101378,7	5 4215,75	87563,5	180620,25	0	0 54,75	657	0 10384,2	,25 146	3084,25	39073,25	5621	0 32	8,5 0	0	0	0	0 0	9	0	0	28. Kavala
29. Kastoria	529,25	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	711,75	0	0 237,2	25	0 839,5	182,5	0	0	0 7373	0	0	0 657	0	0 0	0	0	0 0	0	0	0	0 0	9	0	0	29. Kastoria
30. Kilkis	584	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0		19	0 182,5	24181,25	0	0 44803,	75 0	949 174	465,25 14	146 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	30.Kilkis
31. Kozani		18,25 2098,75	985,5 0	26079,25		575,25	0 0	0	0	0 0	1113,25	0		416,5 0	784,75	52962,5	111252 147	78,25 2726	55	0 31134,5	85081,5	0	10220 2	19 576116	2208,25 183		138 67397,25	0	0 0	0	0 602	,25 0	0	0	0	0 0	0	0	0	31. Kozani
32. Pella	1587,75	0 0	0 0	0	0 2	255,5	0 0	Ü	0	0 200,75	u u	U	0 /-	48,25 0	U	363	803	0	0	0 50078	107912,25	0	0	0 8358,5	85428,25 2	2080,5 109		0	0 0	0	0	0 0	0	0	0	0 0	0	0		32. Pella
33. Pieria	1715,5 766.5	0 0	0 0	Ü	0	0	0 0	U	0	0 0	J U	0	0	0 0	0 .	6789	784.75	5/0/	0 1051	0 83950	1368,75 42723.25	5438.5	0 401	0 2171,75	803	0 11570		0	0 0	0	0	0 0	0	0	0	0 0	0	0		33. Pieria
34. Serres	/66,5 1624,25	0 0	420 0	0	0	0	0 0	0	U	0 0	, ,	0	0	0 0	0	1005	184,73	0	0 1051	0 4909.25	7099.25	3438,3	0 401	0 1216044	16041.75	0 105357,2	,25 0	0 10	9,5 912,5	237,25	0	0 0	0	0	0	0 0	0	0		34. Serres
35. Fiorina 36. Chalk/ki	1024,25	0 0	438 0	347,3	0	0	0 0	0	0	0 0	, ,	0	0	0 0	0	4124.5	0 0	0	0 6757	0 4909,23	18469	0	0	0 1310044	16041,/3	0 255	5,5 0	4617.25	0 0	0	0	0 0	0	0	0	0 0	0	0		35. Florina
37. Evros	821,25	0 0	0 0	0	0	0	0 0	0	0	0 0	, ,	0	0	0 0	0	192.5	0	0	0 474	5 0	4234	1916.25	0	0 0	0	0 4124	4,5 U	0 100604	25 10422.26	14508.75	0	0 0	0	0	U n	0 0	0	0		36. Chalk/ki
38. Xanthi	1350.5	511 0	0 0	0	0	0	0 0	0	0	0 0	) 0	0	0	0 0	0	441.75	419.75	0	0 3047.7	,	7592	6022.5	0	0 0	0	0 313	130 0	0 190094	25 2626175	3285	0	0 0	0	0	0	0 0	0	0		37. Evres
39. Rodope	456,25	0 0	0 0	0	0 1/	164.25	0 0	0	0	0 0	1 0	127.75	0	0 0	0	0	0	0	0 160	6 0	2974 75	109.5	0	0 0	0 5	565.75	0 0	0 323	.25 5310.75	18049.25	0	0 0	0	0	0	0 0	0	0		38. Xanthi 39. Rodone
40. Zakynthos		0 0	0 0	0	0	0	0 0	ű.	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0 .	0	0 0	0 2/1)	0 3310,73	0	0	0 0	0	0	0	0 0	0	0		39. Rodope 340. Zakynthos
41. Corfu	547.5	0 0	0 0	0	0	0	0 748.25	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		) 41. Corfu
42. Kefallinia	0	0 0	0 0	0	0	0	0 5602,75	0	1277.5	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	ō l	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	6	0		42. Kefallinia
43. Dodecanes	e 0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 1	0 0	0	0	0 0	0	0 0	0	0	0 0	0	ű.	0	0 0	0	0		43. Dodecanese
44. Cyclades	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	Ů		44. Cyclades
45. Lesbos	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 [	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	ó	0		45. Lesbos
46. Samos	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		46. Samos
47. Chios	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		47. Chios
48. Heraklion	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		48. Heraklion
49. Lasithi	0	0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		) 49. Lasithi
50. Rethymno		0 0	0 0	0	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0		50. Rethymno
51. Chania		0 0			0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0	0	0	51. Chania
Total	1451386 487	092,5 832729,25	570440,25 2847	257562,25	69988,75 29	99738 345089.	,25 622817,75	214163,75 44	0792,25 1909	968 474043,75	86377,25	152296,25	292000 5038	64,25 422067,75	142240,5 41	833,25	348064 23335	99,25 3190	10 224438,	5 467382,5	1113542	404931 41	281,5 138152	2,5 2214655,75 2	88842,75 6129	962,75 391334,7	,75 106123,75 4	18052,75 229384	,25 125468,75	55607,75 5	1227,75 1580	4,5 44055,5	0	0	0	0 0	Ð	6	0	)
Ineti	tutional Rep	neitory - Li	hrany & Info	ormation	Contro	- I Inivo	reity of Th	vlessor																																
111511	iulional Nep	Jailory - Li	Dialy & IIII	omalioi	Centre	- Offive	risity Of TI	icosaly																																

Table 13. Q (Φόρτοι) of Construction Materials

Table 13. Q																																									
From To					Evr/nia 6, Phth	hiotis 7, Phoc	ida 8 Argolio	da 9 Arcac	dia 10. Achaei	a 11.Ilia	12.Corinthia 1	3. Laconia 14.	Messinia 15. Let	fkada 16 Arta	17. Thes/tia 18.		eveza 20. Karditsa		. Magn/sia 23. T	rikala 24. Gr	evena 25. Drama	a 26. Imathia 27	/. Thes/ca 28.	. Kavala 29. Kas	storia 30.Kilkis	31. Kozani 32	. Pella 33. Pier	eria 34. Serres	35. Florina 36. 0	Chalk/ki 37. Evi	ros 38, Xanthi	39. Rodope 40. Za	akynthos 41. Corfu	42. Kefallinia 43	Dodecanese 44. Cyc	clades 45. Lesbos	s 46. Samos 47.	Chios 48. Hera	aklion 49. Lasithi	50. Rethymno 51. (	
1. Attica	1580-				7300 26	097,5 7	66,5 29218	3,25 1834	11,25 110777	,5 16917,75	196881	5128,25	7336,5	2409 2847	3686,5	13614,5 30	31,75 1934,: 52 25 1295 7	5 16187,75	24966 54.75	7446 13	368,75 4945,	75 419,75	52231,5	2719,25	0 1003	,75 1606	2482 3157	57,25 292	. 0	1222,75 1	861,5 930,75	1259,25	9106,75 9125	15731,5 2609.75	0	0 (	0 0	0	0 0	0	0 1. Attica
2.Aetol/nia	14727,					949 2903	5,75	0	584 15421,3 0 6478.3	-5	2135,25	0		5219,5 23706,75 164.25 (	12282,25		52,25 1295,7	5 821,25 5 1295.75	602.25	620.5	0	0 0	2007,5	0	0	0 0	0	0 0	0	0	0 0	Û	0 18414,25	2609,75	0	0 (	0 0	U	0 0	0	0 2.Aetol/nia
3. Boeotia	82106, 158464.			141291,5	693,5 424	167,75 21	1462 :	211	0 6478,	75 2056.6	J 0	219	520.26	104,25	765	438	01.75 421,23	0 1290,70	4170.25	620,5	401.6	,5 0	8/6	0	0 /6	0 0,0	0	0 0	0	0	100	100 €	0 2440.25	1700 6	0	0 (	0 0	0	0 0	U	0 3. Boeotia 0 4. Euboea
4. Euboea	158464,		91140,5	125450,5	0 245	109,75	0 1149	9,75	/3 11114,	2930,3	0001,43	1204,3	349,43	438 1843,23	303	1204,5 50	0 43	0 0/32,3	4179,23	/93/	401,3	0 0	10000	0	0	0 0	0	0 0	0	0	303 303	109,5	0 3449,23	1 /86,3	0	0 (	0 0	0	0 0	0	0 5. Evr/nia
<ol><li>Evr/nla</li><li>Phthiotis</li></ol>	30787		20951	2120 1	1155275 000	166.76 700	2 25	0	0 1939	75 1140.75	J U	0	0	0 (	0	020.75	202 445	1 976	20677.25 2	692.75	0	0 0	2750.5	0	0 969	0 1080.25	0 225/	5425 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 6. Phthiotis
7. Phocida	492		3175.5	3139 4	0 00 0	30,23 190. M0.25	976	0	0 2020,	0 0	127,721	0	0	0 (	0	950,75	0 443	0 0	0	002,75	0	0 0	3139,3	0	0 803	0,5 1909,25	0 233-	0 0	. 0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 7. Phocida
8. Argolida	23086		1 0	146	0 10	0	0 155362	2.25 6071	17.75 273.1	75 419.75	5 31828	1387	1149.75	0 (	0	401.5	0	0 346.75	0	0	0	0 0	164.25	0	0	0 0	0	0 0	0	0	0 0	109.5	2518.5 1295.75	0	0	0 (	0 0	0	0 0	0	0 8. Argolida
9. Arcadia	1616		) 0	1 0	0	0 34	6.75 3288	86.5 4425	56.25 12902	75 1460	139795	14399.25	2719 25	0 (	0	0	0 1	0 0	912.5	0	0	0 0	0	n	0	0 0	ñ	0 0	n	0	0 0	0	0 0	ñ	0	0 (	0 0	n	0 0	0	0 9. Arcadia
10. Achaea		.75 92983.7	620.5	4142.75	1277.5 11	49.75 33	94.5	0 6	520.5 538	01 65426.25	5 7555.5	0	18560.25	12994 15567.25	4179.25	7354.75 88	14.75	0 0	1825	164.25	0	0 419.75	5237.75	346.75	0	0 0	0	0 182.5	0	0	0 0	0	0 6296,25	0	0	0 (	0 0	0	0 0	0	0 10. Achaea
11.llia		192	0	0	0	0	0	0 50	073.5 7646.	75 15749.75	5 2445.5	0	4106.25	0 (	0	1095	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 11.Ilia
12.Corinthia	21954		0	0	0	0	0 5091	1.75 264	16,25 10493,	75 730	78584,5	0	0	0 (	0	1697,25	810,5	0 0	766,5	383,25	0	0 0	3978,5	0	0	0 0	0	0 0	0	0	0 0	401,5	0 0	2901,75	0	0 (	0 0	0	0 0	0	0 12.Corinthia
13. Laconia	9800	.25	0	0	0	0	0 273	3,75	4161 116	68 127,75	5 1660,75	46993,75	1460	0 1898	0	0	0 (	0 0	0	0	0	0 0	346,75	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 13. Laconia
14. Messinia	2573	,25	0	0	0	0	0 127	7,75 2494	17,75	0 237,25	5 127,75	5292,5	225661,25	0 (	0	620,5	0	0 0	0	0	0	0 0	273,75	0	0 }	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 14. Messinia
15. Lefkada	54	,75 51	0	0	0	0	0	0	0 474	,5 0	0 0	0	0	0 (	0	0	0	0 0	0	0	0	0 0	18,25	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	b o	0	0 15. Lefkada
16. Arta	156	9,5 5657,		54,75	0	0	0	0	0 3011,		0 0	0	0 15	514,75 8212,5		0270 11	658,5	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 16. Arta
17. Thes/tia		0 3668,2		0	0	0	0	0	0 912	.,5 €	0 0	0	0	0 4270,	71613	45825,75 3	426,5	0 0	1241	0	0	0 0	1186,25	0	0	0 0	0	0 0	0	0	0 0	0	0 10110,5	0	0	0 (	0 0	0	0 0	0	0 17, Thes/tia
18. Ioan/na	478			1569,5	0	0	0	0	292 1660,	75 0	529,25	0	164,25	0 5894,75	19381,5	114263,25	13870 36,	5 237,25	1952,75	4854,5	0	0 0	401,5	310,25 I	127,75	0 0	0	0 766,5	0	0	182,5 383,25	54,75	0 0	0	0	0 (	0 0	0	0 0	0	0 18. Ioan/na
<ol><li>Preveza</li></ol>		0 602,2		0	0	0	0	0	0 2	19 0	0 0	0	0	0 43289	10402,5	16534,5	0	0 0	0	766,5	0	0 0	0	0	0 1	0 0	0	0 0	0	0	0 0	0	2974,75 3303,25	0	0	0 (	0 0	0	0 0	0	0 19. Preveza
20. Karditsa		,25 383,2		,.	0 9	1964,5	0	0	0	0 0	0 730	0	0	0 803	0	967,25	0 8486,2	5 5456,75	2263	13286	3175,5	0 0	7300	0	0	0 0	0	0 0	419,75	0	0 0	0	0 766,5	0	0	0 (	0 0	0	0 0	0	0 20. Karditsa
21. Larissa		746 21			0 98	36,75	0 2	292 16	64,25 1259,	25 91,25	5 456,25	0	0	0 (	1843,25	7665	36,5 86450,2	5 340727,5	66174,5 43	781,75 7	719,75	0 10804	21334,25	1058,5	693,5 200	17,5 24254,25	0 6916	167,5 0	365	1733,75	0 0	0	0 1879,75	0	0	0 0	0 0	0	0 0	0	0 21. Larissa
22. Magn/sia	2215			1022	0 256	577,75 122	2,75	0	0 30	56 U	0 511	0	0	0 (	912,5	6296,25 16516.25	91,25 9891,	3 82381,23	/3310,25 2	1279,5 4	/99,/5 3595,	25 4234	13048,75	1314	255,5	0 5876,5	0 6916	16,/5 492,/5	0	0	0 0	200.75	547,5 602,25	0	0	0 (	0 0	0	0 0	0	0 22. Magn/sia 0 23. Trikala
23. Trikala	9289	,25 492,7	0	1460	1441,/5 3	0170,0	0 18	82,5	U 237,	25 (	0	0	219	0 (		2427.25	0 1843.3	/ 13/03,/3 s 4222.25	4799,75 334	142.75	10383	0 1040.25	3903,3	0	0 3008	0 22995	210.26	1108 0	0	037	0 4101	200,75	0 0,5	0	0	0 (	0 0	0	0 0	U	0 24. Grevena
24. Grevena 25. Drama	3814		, ,	) 110.16	0	1925	0	0	0	0 0	0 4016	0	0	0 (		1113.25	0 1643,2	0 1670	54.75	710.75	0 10	1040,23	20226.5	145700.75	0 565		971.25	0 19306	0	1269.75	1975 9412.75	7700 5	0 0	0	0	0 (	0 0	0	0 0	0	0 25. Drama
26. Imathia	711		) 0	310,23	0	1023	0 200	0 0.75 74	18.25	0 365	5 474.5	0	0	0 1		91,25	0	0 1079	0	2263	1460	0 00885	29230,3 1	193/99,23	0 273		5///58 177761	62.25 0	5727.75	1/973 75	0 54.75	2299,3	0 200.75	0	0	0	0 0	0	0 0	0	0 26. Imathia
27. Thes/ca		,73 340 4489.	17155	731775	1095 7	7263 5	0 317	75.5	0 71	54 (	0 1149.75	456.25	219 4	529.25 3066	2445.5	3887.25	0 262	8 36627.75	27575.75	646.75	5256 510	127 56538 5	893739	56867	6497 178101	75 59933	117238 50	0589 73219	10001	603199	16352 17574.75	3923.75	292 0	0	0	0 (	0 0	0	0 0	0	0 27. Thes/ca
28. Kavala		738 182,	1715,5	1095	0	365	0 317	, n I	182.5 1204	15 (	0 1147,75	150,25	0	0 273.7	0	1606	0 182	5 2573.25	1314 10	785.75	0 1554	17 4069.75	46318.5	444387 5	0 193	14.5	766.5	0 19710	1058.5	1770.25 100	92.25 103222	13286	0 0	n	0	0 0	0 0	n	n 0	0	0 28. Kavala
29. Kastoria		0	1 0	) 10/0	n	0	0	0	0	0 (	0 0	0	0	0 (	73	0	0	0 0	273.75	255.5	259.25	0 0	127.75	0 41	1062.5	0 492.75	0	0 0	0	0	0 0	0	0 0	0	0	0	0 0	0	0 0	0	0 29. Kastoria
30.Kilkis	1989		1660.75	. 0	0	0	0	0	0	0 (	0 0	0	0	0 (	0	0	0	0 0	0	0	36.5	0 5913	170893	5000.5	146 37321	.25 1003.75	164.25	0 1113.25	146	5274.25	0 36.5	0	0 0	0	0	0 (	0 0	0	0 0	0	0 30.Kilkis
31. Kozani	383		) 0	) 0	0 10	040.25	0 :	511	0	0 (	0 0	0	0	109,5 1023	0	1624,25	0 456,2	5 65298,5	22447,5	0 6	2086.5 182	2.5 45205.25	30185,5	54,75	7263.5 83	9.5 205914,75	1131.5 32	2120 0	50789,75	2171,75	730 0	0	0 0	0	0	0	0 0	0	0 0	0	0 31. Kozani
32. Pella		0	0	0	0	0	0	0	0	0 (	0 255,5	36,5	0	0 383,25	474,5	438	0	0 1058,5	0	219	876	0 36865	76303,25	0	0 25	5,5 1569,5	132495 25	518,5 985,5	7026,25	748,25	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 32. Pella
33. Pieria	2500	,25	0	529,25	0	0	0	0	0 474	1,5 (	0 0	0	0	0 (	328,5	0	0 3850,7	5 19710	7300	0	0	0 35094,75	11771,25	0	0	0 1186,25	2427,25 231	372,5 0	0	0	0 657	0	0 0	0	0	0 (	0 0	0	0	0	0 33. Pieria
34. Serres	602	,25	0	456,25	0	0	0	0	0 182	2,5	0 0	0	0	0 237,2	0	0	0	0 0	2536,75	693,5	0 39109,	,75 292	53983,5	5712,25	0 1244	6,5 0	0	0 421228,25	0	2938,25 8	21,25 3011,25	18,25	0 401,5	0	0	0 (	0 0	0	0 0	0	0 34. Serres
35. Florina	1149		0 0	0	0 6	502,25	0	0	0	0 (	0 0	0	0	0 (	0	0	0	0 0	0	0	0	73 0	1788,5	0	1569,5	0 73054,75	0	0 620,5	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 35. Florina
36. Chalk/ki		0,5	0	0	0	0	0	0	0	0 (	0 0	0	0	0 (	0	0	0	0 0	894,25	0	0	0 0	37357,75	0	0	0 474,5	0	0 657	0	19618,75	547,5 0	182,5	0 0	0	0	0 (	0 0	0	0 0	0	0 36. Chalk/ki
37, Evros		6,5	0	401,5	0	0	0 127	7,75	0	0 (	0 0	0	0	0 18,2	0	0	27,75	0 0	0	0	0 164,	,25 0	3175,5	5073,5	0	0 0	0	365 36,5	0	0 42	25225 6241,5	2025,75	0 0	0	0	0 (	0 0	0	0 0	0	0 37. Evros
38. Xanthi	3449		0	0	0	0	0	0	0	0 0	0 0	0	0	0 (	0	0	0	0 912,5	0	310.25	0 67	716 0	1916,25 1	107072,75	0 [	0 0	0	0 711,75	0	0	6205 5164,75	15841	0 0	0	0	0 (	0 0	0	0 0	0	0 38. Xanthi
39. Rodope	565		0	0	0	0	0	0	0	0 (	0 0	0	U	0 1	0	0	0	0 492,75	894,25	310,25	0 4653,	75 109,5	912,5	3212	0 1	0 73	0	0 127,75	0	0 ;	22922 10493,75	23907,5	0 0	0	0	0 (	0 0	0	0 0	0	0 39. Rodope
40. Zakynthos	127	',75	. 0	0	0	U	U	0	U	0 (	0 0	0	0	0 1	0	0 2	0 15	0 0	∠00,/5	0	0	0 0	456.25	0	01	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 1	0 0	0	0 0	0	0 40. Zakynthos 0 41. Corfu
41. Corfu 42. Kefallinia		U O	. 0	, 0	0	0	0	0	0	0 (	0 0	0	0	0 4	, ,	0 3	0	0 0	0	0	0	0 0	430,23	0	0	0 0	0	0 0	. 0	0	0 0	0	0 0		0	0 1	0 0	0	0 0	0	0 42. Kefallinia
42. Ketallinia 43. Dodecanes		0	1 0	) 0	0	0	0	0	n	0 (	0 0	0	0	0	) 0	0	0	0 0	0	0	0	0 0	n	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0	0 0	0	0 0	0	0 43. Dodecanese
43. Dodecanes 44. Cyclades		0	, ,	, 0	0	0	0	0	0	0 (	0 0	0	0	0	) 0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	. 0	0	0 0	0	0 0	0	0	0	0 0	0	0 0	0	0 44. Cyclades
45. Lesbos		0	1 0	) 0	ű.	0	0	0	0	0	0 0	0	0	0	) (1	0	0	0 0	0	0	0	0 0	0	0	0 1	0 0	0	0 0	. 0	0	<b>0</b> 0	0	0 0	0	0	0	0 0	ő	6 0	0	0 45. Lesbos
46. Samos		0	) 0	) 1	ő	0	0	0	0	0 0	0 0	0	0	0	0	ő	0	0 0	ō	0	ō	0 0	0	0	0	0 0	ő	0 0	0	0	0 0	0	0 0	0	0	0	0 0	o o	0 0	0	0 46. Samos
47. Chios		0	0 0	) 0	ō	0	0	0	0	0 0	0 0	0	0	0	0	0	0	0 0	0	0	ō	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0	0 0	ō	0 0	0	0 47. Chios
48. Heraklion		0	) 0	0	ō	0	0	0	0	0	0 0	0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0	0 0	0	0 0	0	0 48. Heraklion
49. Lasithi		0	0 0	0	0	0	0	0	0	0 (	0 0	0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 1	0 0	0	0 0	0	0 49. Lasithi
50. Rethymno		0	0 0	0 0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	0 0	0	0 50. Rethymno
51. Chania		0	0	0 0	0	0	0	0	0	0 (	0 0	0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 (	0 0	0	þ 0	0	0 51. Chania
Total	522734	1,75 33280	7 348520,25	330799,5	36974,5 2449	933,25 650	006,5 22911	10,5 16280	08,25 252762	2,5 105302,5	5 346494,5	75117	262124,75 233	378,25 113332,	5 132093,5	278677,5 97	08,25 307220,	5 603564	268220,25 40	4827,5 9	9024,5 267526,	,75 291890,5	1579336,75	779311,5 576	615,25 247	835 409365,75	312294 347	17991 538539,25	75044	655576,5 48	87129 160709,5	63619,5	15439,5 56538,5	23031,5	0	0 (	0 0	0	0 0	0	0
							_																																		

1 of Agricultura L Attica			4. Euboea	5. Evr/nia	6. Phthiotis	7. Phocida	8. Argolid	la 9. Arcadia	10. Achaes	ea 11.Ilia	12.Corinthia	13. Laconia 14	Messinia 15. Le	efkada 16. Arta	17. Thes/tia 18.	loan/na 19. Preveza 20	. Karditsa 21. Larissa	22. Magn/sia 33	. Trikala 24. G					. Kastoria 30. Kilkis	31. Kozani 32. Pell	la 33. Pieria .	34. Serres 35.	Florina 36. Chalk/k	i 37. Evros 3	38. Xanthi 39. I	Rodope 40. Zakyn	tl 41. Corfu 42. K	efallin 43. Dodeca: 44.	Cyclade 45. Les	bos 46. Samos 4	47. Chios 48.	. Herakli 49. Las	ithi 50. Rethy
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	0 (		1	0 0	(		0	0	0	0	0 (	0	0	0 (	0 0	0 0	0 (	0	0	0 1635		70 5021323,25		0	0 0	0 26280		0	0 147168	156785,75	15165,75	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	(	0	0		0	0	0	0	0 (	0	0	0 (	0	0 0	0 0	0	0	0	0 72817		0	0	0 0	0 112456,5		0	0 40843,5	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	1 (	0 0	0		0	0	0	0	0 (	0	0	0 (	0	0 0	0 (	0	0	0	0	0 462785325	0	0 1495	04 0	0 759200	554836,5	0	0 72927	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	. (	0	(		0	0	0	0	0 (	0	0	0 (	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 n	0 0	0	0 0	0	0	0
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	0 (	0 0	1 (	0	(		0	0	0	0	0 (	0	0	0	0	0 0	0 (	0	0	0 1686		0 173740	0	0 2336	00 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	1 (	0 0	(		0	0	0	0	0 (	0	0	0 (	0	0 0	0 (	0	0	0	0 207009,7		0	0	0 0	0 692040	0	0	0 0	0 :	74368,75	0 0	0 0	0	0 0	0	0	0
	0 (	0 0		0 0	(		0	0	0	0	0	0	0	0 (	0	0 0	0 (	0	0	0	0 57757		2039620	0	0 0	0 0	0	0	0 0	255956,25	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	1 (	0 0	0	1	0	0	0	0	0 (	) 0	0	0	0	0 0	0 (	0	0	0 48727	,5 1182	26 18268 ,5	0	0	0 0	0 0	251923	0	0 409639,5	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(		0	0	0	0	0 (	0	0	0 (	0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0	(		0	0	0	0	0	0	0	0 (	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(		0	0	0	0	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(		0	0	0	0	0	0	0	0 (	0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
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	0 (	0 0	) (	0 0	(		0	0	0	0	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(		0	0	0	0	0 (	0	0	0	0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(		0	0	0	0	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) 1	0 0	(		0	0	0	0	0 (	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) 1	0 0	(		0	0	0	0	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
3584		0 183668		5 0	(	1	0	0	0	0	0	0	0	0	0 0	0 0	0 234165,75	440153,5	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
22540812		0 838916		5 0	847420,5		0	0	0	0	0	0	0	0	0 0	0 0	0 1413491	3286241	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
42233109		0 1651424,25		5 0	2507732,5	13385	28 14 <b>87</b> 04	46,5 796010	0,25 424586	362,5 8687	00 1925283,7	5 0	300121,25	0 (	0 0	0 0	0 6826704,	2960369	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
45056		0 406391	990354,:	5 0	(		0	0	0 1365	5319	0	0	0	0	0 0	0 0	0 1503161,2	698975	0	0	D	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(	1	0	0	0	0	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
342278		0 0	) (	0 0	(	)	0 12172	2,75	0	0	0	0	762850	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0 (	0 0	) (	0 0	(		0	0	0	0	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
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22302		0 0	)	0 0	566115		0 63811	1,25	0 720	0510	0	0	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
1343692	7,5	0 1350792	3570612,	5 0	225734,25	270994,	25	0 1064	778 2268	8840	0 59787	678316	948416	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
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1360			1006797,7		(		0	0	0 967	572,5	0	0	27375	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
1514257		0 86596,25	1106570,	5 0	182646		0	0	0 805938	38,25 2406426,	75	0 204162,75	0	0	0 0	0 0	0 (	0	0	0	0	0 0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
19422		0 0	)	0	(		U	U	0 747939	19,75	0	0 221828,75	0	0	U 0	0 0	0 (	0	0	0	U	0	0	0	0 0	0 0	0	0	0 0	0	0	U 0	0 0	0	0 0	0	0	0
426557	2,5	0 0	25520	8 0	105120		0	0	G	0 15859,	25	0	288788	0	0	0 0	0 (	0	0	0	0	0 0	0	0	U 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
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	0	0 0	) !	0 0	(		U	U	0	0	U	0	0	0	U 0	0 0	0 (	0	0	0	U	0	0	0	0 0	0 0	0	0	0 0	0	0	0	0 0	0	0 0	0	0	0
	0 (	0 0	] '	0 0	(		0	U	U	0	0	υ 0	0	0	0	0 0	0 (	0	0	U	U	0	0	U	0	0 0	0	0	0	0	0	0 0	0 0	0	0 0	0	0	0
	0 1	0 0		0	(		U	U	U	U	U	υ 0	0	0	0	0 0	0 (	0	U	U	U	0	0	0	0 0	0 0	0	0	0	0	0	U 0	0 0	0	U 0	) 0	0	0
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	0 1	0 0	)	0 0	(		0	0	U	0	0	0	0	0	0 0	0 0	U	0	0	0	0	0	0	0	0 0	0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
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	0	0 0	)	0 0	(		0	0	U	0	0	0	0	0	0	0 0	0 (	0	0	0	0	0	0	D	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
	0	0 0	)	0 0	(	)	0	0	0	0	0	υ 0	0	0	0 0	0 0	0 (	0	0	0	0	0	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0	0
7339121	905	0 2628060207	7 92297059	1 68447793	975642189.5	195214829	9.8 1997021	1197 483175	KARS 17370RQ	9601 8814008	32 70384762	5 636114262	771449774	0	0 0	0 0	0 636268431	505532811	- n	0 6910562	52 573179994	48 12246738603	1659100234	16435950 10314036	78 0	0 895691256	2024749754 1	15611780 7599573	75 6931359541	1023909330 50	11260155	0 0	0 0	0	0 0		-0	0

0 2.Aetol/nia 3. Boeotia 0 3. Bocotia 4. Euboea 5. Evr/nia 0 5. Evr/nia 6. Phthiotis 0 6. Phthiotis 0 7. Phocida 8. Argolida 0 8. Argolida 9. Arcadia 0 9. Arcadia 10. Achaea 0 10. Achaea 0 11.Ilia 0 12.Corinthia 13. Laconia 0 13. Laconia 14. Messinia 0 14. Messinia 15. Lefkada 16. Arta 0 16. Arta 17. Thes/tia 0 17. Thes/tia 18. loan/na 0 18. Ioan/na 19. Preveza 0 19. Preveza 20. Karditsa 0 20. Karditsa 21. Larissa 0 21. Larissa 22. Magn/sia 0 22. Magn/si 23. Trikala 0 23. Trikala 24. Grevena 25. Drama 26, Imathia 0 26. Imathia 27. Thes/ca 0 27. Thes/ca 28. Kavala 0 28. Kavala 29. Kastoria 0 29. Kastoria 30. Kilkis 0 30.Kilkis 31, Kozani 0 31. Kozani 32. Pella 0 32. Pella 33. Pieria 0 33. Pieria 34. Serres 0 34. Serres 35. Florina 0 35. Fiorina 36. Chalk/ki 0 36. Chalk/ki 37. Evros 0 37. Evros 38. Xanthi 0 38. Xanthi 39. Rodope 0 39. Rodope 40. Zakynthos 0 40. Zakyntho 41. Corfu 0 41. Corfu 42. Kefallinia 0 42. Kefallinia 43. Dodecanese 0 43. Dodecane 44. Cyclades 0 44. Cyclades 0 45. Lesbos 46. Samos 0 46. Samos 47. Chios 0 47. Chios 48. Heraklion 0 48. Heraklion 49. Lasithi 0 49. Lasithi 50. Rethymno 0 50. Rethymn 51. Chania 0 51. Chania

Table 17. M of Co	enstruction Mat	erials															1																																	)				
From — To	Attica	2.Aetol/nia	3. Bocotia 4	Euboea 5.	. Evr/nia 6	6. Phthiotis	7. Phoc	cida 3. A:	rgolida	9. Arcadia	10. Acha	aea 11.Ilii	а 12.	.Corinthia	3. Laconia	14. Messinia	15. Lefkac	a 16. Arta	17. Thes/tia 1	8. Ioan/na 19.	. Preveza 20	Karditsa 21.	. Larissa 🗆	22. Magn/sia	ia 23. Trika	ala 24 Gre	evena 25. Dr	rama 26. I	Imathia 27	7. Thes/ca 2	8. Kavala 2	29. Kastoria	30.Kilkis	31. Kozani	ii 32. Pella	33. Pieria	34. Serres	35. Fiorin	na 36. Chalk	/ki 37. Evre	s 38. Xan	thi 39. Ro	lope 40. Zaky				44. Cyclade 4	45. Lesbos 46	6. Sames 47.	Chios 48. E	Herakli 49. La	sithi 50. Retl	nym 51. Chania	
1. Attica	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0 3	303761 2	217010,75		1854528,5	0	560092	2,5	0 0	1401819	17812	20	0 670	0067 160	4613 6859	62,75 9910	29,75	0	0 0	0	0	0	0	0	0	0	0 01.	Attica
2.Actol/nia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0	0	1098102,5	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 02.	Aetol/nia
3. Boeotia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	313170	0	347772 7500020	0	0	3464	458	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Boeotia
4. Euboea	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0	0	7500020	0	0		0 (	0 0	0		0	0	0 36	4635 2	52215 81	139,5	0	0 0	0	0	0	0	. 0	0	0	0 0 4.	Euboea
5. Evr/nia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	U	Ü	U	1125250	U	U	2001#22	0 (	0 0	0		U	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Evr/nia
6. Phthiotis	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0	0	1135369	0	0	3001723	3,5	0 0	546186		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0 6.	Phthiotis
7. Phocida	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	U	U	U	1001606	U	U		0 (	0 0	U		0	0	0	U	0	0	0	0 0	0	0	0	0	0	0	0	0 0 7,	Phocida
8. Argolida	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	U	0	U	102163,5	0	0		0 (	0 0	U		0	0	0	0	0 !	98112	0	0 0	0	0	0	0	9 0	0	0	0 0 8.	Argolida
9. Arcadia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0	U	2592686.25	230242	U		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0 9,	Arcadia
10. Achaea	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0 2	218689,75	2592686,25	230242	0		0 (	0 0	0	10804	40	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Achaea
11.Ilia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	U	U	U	01502505	0	U		0 (	0 0	U		0	0	0	0	0		0	0 0	0	0	0	0	0	0	0		.Ilia
12.Corinthia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	U	Ü	0	2152368,5	U	U		0 (	0 0	Ü		0	0	0	U	0 327	222,5	0	0 0	0	0	0	0	. 0	0	0	0 0 12	.Corinthia
13. Laconia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	Ü	U	0	0	246539,25 195731.25	U	U		0 (	0 0	U		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0 0 13	. Laconia
14. Messinia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	U	0	0	0	195/31,25	0	0		0 (	0 0	0		0	0	U	0	U	U	U	0 0	0	0	0	0	0	0	0		. Messinia
15. Lefkada	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0	0	0	0	U	0		0	U	U	U	U	Q Q	0	0		0 (	0 0	0		0	0	U	U	0	0	U	0 0	0	0	0	0	0	0	0		i. Lefkada
16. Arta	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0 (	0 0	0		0	0	0	U	0	U	U	0 0	0	0	0	0	0	0	0		. Arta
17. Thes/tia	0	0	0	0	0		0	0	0		0	0	0	0	0		U	0 0	0	U	U	0	0		0	0	0	0	0	q	0	0		0 (	0 0	0		0	0	0	U	0	U	Ü	0	0	0	0	0	0	0	0		. Thes/tia
18. Ioan/na	0	0	0	0	0		0	0	0		0	0	0	0	0		U	0 0	0	0	U C	Ü	0		0	0	0	0	0	ų o	0	0		0	0 0	0		0	0	0	0	0	0	U	0 0	0	0	0	0	0	0	0		. Ioan/na
19. Preveza	0	0	0	0	0		0	0	0		0	0	0	0	0		U	0 0	0	U	0	U	0		0	0	0	0	0	ų a	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Preveza
20. Karditsa	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	U	0	0	0		0	0	0	0	0	ų 0	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Karditsa
21. Larissa	0	0	0	0	0		0	0	0		0	0	0	U	U		0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	U	0	0	0	0	0	0		. Larissa
22. Magn/sia	0	0	0	0	0		0	0	0		0	0	0	0	0		0	0 0	0	0	0	0	0		0	0	0	0	0	9	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Magn/sia
23. Trikala	0	0	0	0	0		0	0	0		0	0	U	0	U		0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0	0 0	0		0	0	0	0	0	0	0	0 0	0	U	0	0	0	0	0		. Trikala
24. Grevena	0	0	0	203213.75	0	050	0	0	0		0	0	0	0	u		0	0 0	0	0	0	0	552391	21207	75	0	0	0	0	ó	0	0		0 1	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Grevena
25. Drama	2547919		0	203213,75	Û	8705	525	0	0		U	0	0	0	· ·		0	0 0	0	0	0	0	332391	21297,1	.7.3	0	0	0	0	0	0	0		0 1	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Drama
26. Imathia	367974,75		0	10000000	420145	21024	0	0	1075161		0 20	41220	0	622014.75	224202.76	15651		0 0	0	0	0	0	5640673.5	5001210	15	0	0	0	0	a	0	0		0 1	0 0	0		0	0	0	0	0	0	0	0 0	0	0	U	0	0	0	0		. Imathia
27. Thes/ca	21720420 5277316		715363,5	1070800,5 690945	428145	1719	015	0	19/5101	14965		41230 63653	0	022014,73	324393,73	1303	0	0 0	0	0	0	0 .	921150 75	50326	62	0	0	0	ő	ů.	0	0		0 1	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Thes/ca
28. Kavala	3277310	0	0	090943	0	1715	913	0	0	14902	0 //	03033	0	0			0	0 0	0	0	ň	0 .	031133,73	50520	0	ů.	0	n	ň	0	0	0		0 1	0 0	0		0	0	0	0	0	ů	0	0 0	0	0	0	0	0	U	0		. Kavala
29. Kastoria 30. Kilkis	1094087.5	0	783874	0	0		0	0	0		0	0	0	0			0	0 0	0	0	n	0	0		0	0	0	ñ	ő	0	0	0		0 1	0 0	0		0	0	ů.	n	0	0	ů	0 0	0	0	0	0	0	0	0		. Kastoria
30. Kilkis 31. Kozani	1094087,5	0	/838/4	0	0		0	0	0		0	0	0	0			0	0 0	0	0	0	n	0		n	0	n	0	0	ā	0	0		0 1	0 0	n n		0	0	n	0	0	0	0	0 0	0	0	0	0	0	0	0		.Kilkis
31. Kozani 32. Pella	0	0	0	0	0		0	0	0		0	0	0	0			0	0 0	0	n	ű	0	0		0	0	0	0	0	0	0	0		0 1	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	U		. Kozani
33. Pieria	1115111.5	0	0	209053.75	0		0	0	0		0 1	00290	0	0			0	0 0	0	0	0	ů.	0		Ů.	0	0	0	0	0	0	0		0 1	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Pella
34. Serres	367372,5			255043.75	0		0	0	0		0 1.	09040	0	0	,	,	0	0 0	0	n	0	0	0		0	0	o o	0	0	0	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Pieria
35. Florina	0,212,0		0	233043,73	0		0	0	0		0 1	000-10	0	0	Č	1	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	ı	0 (	0 0	0	ı	0	0	0	0	0	0	o o	0 0	0	0	0	0	0	0	0		. Serres . Florina
36. Chalk/ki	340034	. 0	0	0	0		0	0	0		0	0	0	0		)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	1	0	0 0	0	1	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Florina . Chaik/ki
37. Evros	1563842,5		0	399091	n		0	0	147423.5		0	0	0	0	Č	)	0	0 0	0	0	0	ó	0		0	0	0	0	0	0	0	0	)	0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Chatk/ki . Evros
38. Xanthi	2542097.25		0	0	0		0	0	0		0	0	0	0		)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0 (	0 0	0	1	0	0	0	0	0	0	0	0 0	0	n	0	0	0	0	0		. Xanthi
39. Rodope	419786.5		0	0	ů.		0	0	n		0	0	0	0	Č		0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	I	0 (	0 0	0	1	0	0	0	0	0	0	0	0 0	0	0	0	0	0	a	0		. Rodope
40. Zakvnthos	0.00,0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	ő	0	o o	0		. Zakynthos
41. Corfu	n	0	0	0	0		0	ò	0		0	0	0	0		)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	I	0	0 0	0	1	0	0	0	0	0	0	0	0 0	0	ū	0	0	0	0	ő		Corfu
42. Kefailinia	0	. 0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0 (	0 0	0	l .	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	Ó		. Kefallinia
43. Dodecanese	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	l .	0	0 0	0	l .	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	Ó		. Dodecanese
44. Cyclades	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	l .	0 (	0 0	0	l .	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Cyclades
45. Lesbos	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	D	0	0	)	0 (	0 0	0	1	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Lesbos
46. Samos	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	)	0	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		. Samos
47. Chios	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0		0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Chies
48. Heraklion	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	1	0 (	0 0	0	1	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Heraklion
49. Lasithi	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	)	0	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Lasithi
50. Rethymno	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	)	0 (	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Rethymno
51. Chania	0	0	0	0	0		0	0	0		0	0	0	0	(	)	0	0 0	0	0	0	0	0		0	0	0	0	0	0	0	0	)	0	0 0	0		0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0		Chania
Total	3689461866	0	2112381235	2188900292	216005029	11832725	531 3712	252121,5 15	587048434	11744987	16 14473	18075 70	00893440	2137871065	579001830	20068270	86	0 0	0	0	0	0 5	581835696	32293718	81	0	0 2658	8145788 21	189762531	11576538378	7558542239	34569150	19752449	950	0 0	2254633689	465728743	34 444260	148 5126608	3230 693135	8541 16840	74851 7112	2391	0	0 0	0	0	0	0	0	0	0	0 0	
4																																																						
4																																																						
Inatitut	in all D	:4	a		1 6	- 45	0 1 -				-1																																											

Table 18. M' of Ag	icultural and Li	vestock products																																						
From To 1.			4. Euboea	5. Evr/nia 6. I	Phthiotis 7.	. Phocida 8.	3. Argolida 9.	). Arcadia 10.	Achaea 11.11	ia 12.Corinth	nia 13. Laconia	14. Messinia 15. I	efkada 16. Arta 17.	Thes/tia 18. Ioa	n/na 19. Preveza 20	. Karditsa 21. La	rissa 22. Ma	agn/sia 23. Trik	ala 24. Greveni	a 25. Drama 2	6. Imathia 27	7. Thes/ca 28.	Kivala 29. K	Kastoria 30.Kilkis	31 Kozani	32. Pella 33. Pieri	ia 34. Serres	35. Florina 36.	Chalk/ki 37, Evros	38. Xanthi	39. Rodone	0. Zakynthos 41. Cor	fu   12. Kefallin 43. D	lodecai 44. Cveladi	le 45. Leshos #6. 5	Samos 47. Cl	hios 48 Hera	klic49. Lasithi	50. Rethym 51. C	hania
I. Attica	0	0	0 0	) 0	0	0	0	0	0	0	0 0	0	0 0		0 0	0	0					48524541,75			0 0		762.5 2704869		0 2861			n zakyninos vii con	0 0	0 0	0 0	0	0	0 0	0	0 1. Attica
2.Aetol/nia	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 163520		5021323.25	209072	0	0 0	0 32	083.5 246192.5		0 1645			ů	0 0	0 0	0 0	0	0	0 0	0	0 2.Actol/nia
3. Boeotia	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	728175	999844.5	0	0	0 0		753,5 273750		0 46	6647 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 3. Boeotia
4. Euboea	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	4627853.25	0	0 1495	504 0	0 96	50388 659299.5		0 80	0665 0	0	ů.	0 0	0 0	0 0	0	0	0 0	0	0 4. Euboea
5. Evr/nia	0	0	0 0	) 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	-0	0	0	0 0	0	0 0	) 1	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 5. Evr/nia
6. Phthiotis	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 261157,5	3538875.75	12070185	310104	0 46862	3.5 0	0 118	396298.75	5 0	0 137	240 103970.25	0	0	0 0	0 0	0 0	0	0	0 0	0	0 6. Phthiotis
7. Phocida	0	0	0 0	0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	195202	0	0	0 0	0 4	15771 0	1 0	0 151	0 105510,25	0	0	0 0	0 0	0 0	0	0	0 0	0	0 7. Phocida
8. Argolida	0	0	0 0	) 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 785443.5	1006761.25	5074120.5	779530.5	0 608631	7.5 0	0	0 0	0	0	0 173740	ň	ů	0 0	0 0	0 0	0	0	0 0	ů	0 8. Argolida
9. Arcadia	0	0	0 0	) 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 15111	0	1199955.75	0	0	0 0	0	0 0	) 0	0 172	426	ň	ů.	0 0	0 0	0 0	0	0	0 0	0	0 9. Arcadia
10. Achaea	0	0	0 0	) 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 807015	4763633.25	3252150	0	0	0 0	0 536	002.5 675140.5	5 0	0 938	707 0	n n	ň	0 0	0 0	0 0	0	0	0 0	0	0 10. Achaea
11.Ilia	0	0	0 0	) 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 168630	0	173740	0	0 2336	600 0	0	0 0	, )	0	0 0	ň	ů	0 0	0 0	0 0	0	0	0 0	ů.	0 11.Ilia
12.Corinthia	ŏ	0	0 0	0	0	0	0	0	0	ō	0 0	0	0 0	0	0 0	0	0	0	0	0 0	207009.75	4828019.25	0	0 2550	0 0	0 84	16800 0	) 0	0	0 0	84041.25	0	0 0	0 0	0 0	0	0	0 0	0	0 12.Corinthia
13. Laconia	0	0	0 0	) 0	0	0	n	ő	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	577576	765569.25	2039620	0	0 0	0	0 0	) 0	0	0 284971.75	n	0	0 0	0 0	0 0	0	0	0 0	0	0 13. Laconia
14. Messinia	0	0	0 0	0 0	0	0	0	ó	0	ō	0 0	0	0 0	0	0 0	0	0	0	0	0 48727.5	11826	182682.5	0	0	0 0	ú	0 284800.5	. 0	0 4444	60.5	0	0	0 0	0 0	0 0	0	0	0 0	0	0 14. Messinia
15. Lefkada	0	0	0 0	0	n	0	0	ő	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 20-409,5	) (	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 15. Lefkada
16. Arta	ő	0	0 0	0	0	0	0	ó	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	ő	0	0	0 0	0	0 0	) 0	0	0 0	n	0	0 0	0 0	0 0	0	0	0 0	0	0 16. Arta
17. Thes/tia	0	0	0 0	1 0	0	0	0	0	o o	0	0 0	0	0 0	0	0 0	0	ō	0	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 17. Thes/tia
18. Ioan/na	0	Õ	0 0	1 0	0	0	0	0	ů.	0	0 0	0	0 0	ó	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) (	n n	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 18. Ioan/na
19. Preveza	0	0	0 0	0	0	0	0	ó	ō	0	0 0	0	0 0	0	0 0	0	ō	0	0	0 0	0	0	0	o o	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 19. Preveza
20. Karditsa	o o	ů.	0 0	) 0	0	0	0	ó	ō	0	0 0	0	0 0	0	0 0	0	ō	0	0	0 0	ő	ő	0	ů .	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 20. Karditsa
21. Larissa	0	0	0 0	) (	0	0	0	ó	0	0	0 0	0	0 0	0	0 0	0	ō	0	0	0 0	0	ő	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 21. Larissa
22. Magn/sia	ő	0	0 0	) (	0	0	0	ó	ō	0	0 0	0	0 0	0	0 0	0	ō	0	0	0 0	0	ő	0	o o	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 22. Magn/sia
23. Trikala	0	0	0 0	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 23. Trikala
24. Grevena	0	0	0 (	0	n	0	0	0	ő	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 24. Grevena
25. Drama	4152897	0 216554	4.5 708300.75	5 0	n	0	0	0	0	0	0 0	0	0 0	0	0 0	0 3096	511.25 56	60092.5	0	0 0	n	0	0	ő	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 25. Drama
26. Imathia	27162332,75	0 10401		5 0	1122119.5	0	0	0	0	0	0 0	0	0 0	Ó	0 0			884138	0	0 0	0	0	0	ű.	0 0	0	0 0	) ()	ů.	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 26. Imathia
27. Thes/ca	50959639.25	0 2071210.			3387930	1709952	1740466	925621.75	5155077.5	1023460 2302511	.25	344614.75	0 0	0	0 0	0 115		426720	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 27. Thes/ca
28. Kavala	5205922	0 4799			0	n	0	0	1593590	0	0 0	0	0 0	0	0 0	0 1996		344925	0	0 0	0	0	0	ű.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 28. Kavala
29. Kastoria	0	0	0 (	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 29. Kastoria
30. Kilkis	4082452	0	0 0	0	0	n	14107.25	0	0	0	0 0	869247.5	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 30. Kilkis
31. Kozani	0	0	0 (	) (	0	n	0	0	0	0	0 0	) 0	0 . 0	0	0 0	0	0	0	0	0 0	0	o o	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 31. Kozani
32. Pella	0	0	0 (	0 0	n	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 31. Rozani 0 32. Pella
33. Pieria	2760276	0	0 (	0 0	821469	0	759984.75	ő	902353	0	0 0	) 0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ő	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 33. Pieria
34. Serres	15771869	0 16293	860 4247687.5	5 0	285703.75	330963.75	0	1215669	2675085	0 6984	464 767303	1072224	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ű	0 0	0	0 0	1 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 34. Serres
35. Florina	0	0 .0233	0 (	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	ρ	0	0	ŏ	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 35. Florina
36. Chalk/ki	1623228	0	0 1221527.25	5 0	0	0	0	0	11607	0	0 0	31244	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ő	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 36. Chalk/ki
37. Evros	16678565.5	0 96268.			205860	0	0	0		43796.25	0 221573.25		0 0	0	0 0	0	0	0	0	0 0	0	0	0	ű	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 37. Evros
38. Xanthi	22215579	0 70200,	0 (	0 0	0	0	0	0	858206.25		0 221828.75	. 0	0 0	0	0 0	0	0	0	0	0 0	o o	0	0	Ď.	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 38. Xanthi
39. Rodope	4874940	0	0 291963.5	5 0	124465	0	0	0	0	17793,75	0 0	319740	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	n	0	0 0	0 0	0 0	0	0	0 0	0	0 39. Rodope
40. Zakynthos		0	0 (	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	ů.	0 0	0	0 40. Zakynthos
41. Corfu	0	0	0 (	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	ů.	0	0	0	0 0	0	0 0	) 0	ů.	0 0	0	0	0 0	0 0	0 0	0	ů.	0 0	0	0 41. Corfu
42. Kefallinia	0	0	0 (	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) ()	0	0 0	0	ů.	0 0	0 0	0 0	0	0	0 0	0	0 42. Kefallinia
43. Dodecanese	0	0	0 0	0 0	0	0	0	0	0	0	0 0	0	0 : 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 43. Dodecanese
44. Cyclades	0	0	0	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	ů.	0 0	) 0	0	0 0	0	0	0 0	0 (	0 0	0	0	0 0	0	0 44. Cyclades
45. Leshos	o o	0	0	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 0	0 0	0	0	0 0	0	0 45. Lesbos
46. Samos	0	0	0	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	ē.	0	0	0	0 0	o o	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 (	0 0	0	0	0 0	0	0 46. Samos
47. Chios	0	0	0 0	0 0	0	0	0	0	0	0	0 0	0	0 0	0	0 0	0	0	0	0	0 0	ű	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 (	0 0	0	0	0 0	0	0 47. Chios
48. Heraklion	0	0	0 0	0 0	ō	0	0	0	0	0	0 (	) 0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 (	0 0	0	0	0 0	0	0 48. Heraklion
49. Lasithi	0	0	0 (	0 0	0	0	0	0	0	0	0 (	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	Ď	0 0	) 0	0	0 0	0	0	0 0	0 6	0 0	0	0	0 0	0	0 49. Lasithi
50. Rethymno	0	ő	0 (	0 0	0	0	0	0	0	0	0 (	) 0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	0	0 0	0	0 0	) 0	0	0 0	0	0	0 0	0 (	0 0	0	0	0 0	n	0 50. Rethymno
51. Chania	0	0	0	0 0	0	0	0	0	0	0	0 (	0	0 0	0	0 0	0	0	0	0	0 0	0	0	0	ů.	0 0	0	0 0	) 0	0	0 0	n	0	0 0	0 (	0 0	0	0	0 0	0	0 51. Chania
	8551563976				1211121137	235071333-3	2272054865	547072220 1	438416090 10	14617364 9165916	650 706096734	1 1373652315	0 0	0	0 0	0 9161	20946 557	597652	0	0 691056252	5731799948 1	12246738603 1	558199234	16435950 10314036	678 0	0 110083	34981 2372197561	18407132.5	04174350 7470123	1215 1168910712	567812085 8	u	0 0	0 (	0 0		0	0 0		0 51. Chanta
- 3441		0 21230070												-	•	. ,,,,,	557								0	0 210002	20,217,501		74/0123	210 1100910/12	23701200340			,		0				

Table 19. M' of Inc	netrial and Che	nical products																																				
	Atties 7,4	etol/nia 3, Bocotia	4, Euboea 5. Evr/	r/nia 6 Phthiotis 7. I	Phocida 8. Arg	golida 9. Arcadia	10. Achaea 1	11.Ilia 12.Corin	thia 13. Laconia	14. Messinia 1	5. Lefkada 16. A	Arta 17. Thes/tia	18. Іоап/па 19. Рте	eza 20. Kardi	tsa 21. Larissa	22. Magn/sia	23. Trikala 24. Gi	revena 25. Dra	ma 26. Imathia 14966 2494519	27. Thes/ca	29. Kavala 4076028	29. Kastoria 30.Kill 155490 53	tis 31. Kozan 242130	i 32. Pella 3	3. Pieria 34	4. Serres 35, F	lorina 36. Chalk/ki 37.	Evros 38. Xani	thi 39. Rodope 4	0. Zakynthos 41. C	Corfu 42. Kefal	llin 43. Dodecai 44. C	Cyclade 45. Lesbo	os 46. Samos 47.	Chios 48. He	erakli 49. Lasitl	hi 50. Rethym 51	
1. Attica	Û	0	0 0	0 0	0	0 (	0 0	0	0	0 0	0	0	0 0	0	0 0	U	0	0 22		0 3752948.25		155490 5.	0 0	0 0	1263812,5	5781600 1198806	153738 5199680,5	1951290 2751	479,5 1211398,5 0 549544	0	0	0 0	0	0 0	0	0	0 0	0 1. Attica
2 Actolenia	0	0	0 0	0 0	0	0 (	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 174	0 [495569.			0 120	0010.5	0 0	0	0	0 0	0	0 349344	0	0	0 0	0	0 0	0	0	0 0	0 2 Aetol/nia
3. Bocotia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0 (4)330),	0 7076328		0 120	0.010,5	0 0	502605	49129	0 636633	202392.5	0 605699.25	0	0	0 0	0	0 0	0	0	0 0	0 3. Boeotia
4. Euboea	0	0	0 0	0 0	0	0 1	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 030033	0	0 003077,23	0	0	0 0	0	0 0	0	0	0 0	0 4. Euboea
5 Evr/nia	0.	0	0 0	0 0	0	0 1	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 53	63.75 15950	).5 5496389		0 35	0290.5	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 5. Evr/nia
6. Phthiotis	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	ű.	0 0	0	0 0	0	0	0 0	0 6. Phthiotis 0 7. Phocida
7. Phocida	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 3192801	. 0	0	0	0 0	0	0	0 0	23068 40	01281 0	0	0	0 0	0	0 0	0	0	0 0	0 8. Argolida
8. Argolida 9. Arcadia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	) { 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 9. Arcadia
10. Achaea	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 3	55875	0 8810917,5		0	0	0 0	785480	102492	0 0	684758,25 2874	155,75 0	0	0	0 0	0	0 0	0	0	0 0	0 10. Achaea
1 LIlia	0	0	0 0	0 0	0	0 (	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 540382,5	- 0	0	27375	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 11.Ilia
12.Corinthia	Ď	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 2304865,5	284335	0	0	0 0	575532	3672119	0 0	0 159	687,5 0	0	0	0 0	0	0 0	0	0	0 0	0 12.Corinthia
13. Laconia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 794112,25		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 13. Laconia
14. Messinia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 1084050	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 14. Messinia
15. Lefkada	0	Ö	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	1 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 15. Lefkada
16. Arta	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0	. 1 0	U	0	0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 16. Arta
17. Thes/tia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	U	0 0	U	0 0	0	U	U	0	0 0		O O	0	0 0	U	0	0 0	0	U 0	0	0	0	0	0 0	0	0	0 0	0 17. Thes/tia
18. Ioan/na	0	0	0 0	0 0	0	0	0 0	0	U	0	0	U	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	U C	0	0 0	0	0 0	U	0	0 0	0	0	0	0	0 0	0 18. Ioan/na
19. Preveza	0	0	0 0	0 0	0	0	0 0	0	Ü	0 0	0	0	0 0	0	0 0	0	0		0	0 0		0	0	0 0	0	0	0 0	Ū O	0 0	0	0	0 0	0	0 0	0	0	0 0	0 19. Preveza
20. Karditsa	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 20. Karditsa
21. Larissa	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		- fl	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 21, Larissa
22. Magn/sia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	n	0	0 0	0	0 0	0	0	0 0	0 22. Magn/sia 0 23. Trikala
23. Trikala	0	0	0 0	0 0	0	0	0 0	0	n	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	)   0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 24. Grevena
24. Grevena	0	0	0 0	0 0	0	0	0 0	0	n	0 0	0	0	0 0	0	0 400587.5	0	0	0	0	0 0	) (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 24. Grevena 0 25. Drama
25. Drama	6559707 8295993.75	0	0 0	0 7975.25	0	0	0 0	0	0	0 0	0	0	0 0	0	0 572247	0	0	0	0	0 0	) (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 26. Imathia
26. Imathia 27. Thes/ca	84863814	0 26544	100 302731	0 1977497	404055	6465756 2194343.	.5 6348718.75	578981.25 9861	02.25 988894	1,5 1234612,5	0	0	0 0	0	0 12642432	8780805	0	0	0	0 0	) [ (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 27. Thes/ca
28. Kavala	7068006	0 20544	0 0	0 1569281	0 21	13762.25	0 0	1164386,5	0 43362	20 0	0	0	0 0	0	0 1477720,75	962705,75	0	0	0	0 0	) (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 28. Kavala
29. Kastoria	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	) / 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 29. Kastoria
30.Kilkis	2529450	0	0 2803473.75	0 300249	0	0	0 510087,5	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	) [ 6	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 30.Kilkis
31. Kozani	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 31. Kozani
32. Pella	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	U O	0 0		U	0	0 0	0	0	0 ()	0	0 0	0	0	0 0	0	0 0	0	.0	0 0	0 32. Pella
33. Pieria	436321	0 3106	515 0	0 31481,25	0	0	0 502970	0	0	0 0	0	U .	0 0	0	0 0	0	t)	U	0	0 0		0	0	0 0	0	0	0 0	0	0 0	U	0	0 0	0	0 0	0	0	0 0	0 33. Pieria
34. Serres	3876300	0 911	104 0	0 1997188,75	0 316	62013,25 328828,	3,5 2908210,5	276159	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	Û	0 0	0	0	0 0	0 34, Serres
35. Florina	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 35. Florina
36. Chalk/ki	3614558,5	0	0 0	0 0	0	0	0 124501.5	0	0	0 0	0	0	0 0	0	0 0	0	0	n	0	0 0	í   i	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0. 0	0 36. Chalk/kj
37. Evros	4974585	0	0 221628	0 17228	0	U 92215	0 124301,3	0	0	0 268019.5	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	n	0	0 0	0	0 0	0	0	0 0	0 37. Evros 0 38. Xanthi
38. Xanthi	3802606,5	0	0 0	0 0	0	0/233	0 6//470,3	0	0	0 401135	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 39. Rodope
39. Rodope	10697712	0	0 0	0 0	0	0	0 0	G C	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	) (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 40. Zakynthos
40. Zakynthos 41. Corfu	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	)   (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 41. Corfu
42. Kefallinia	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	) } (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	-0	0	0 0	0 42. Kefallinja
43. Dodecanese	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0	)   (	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 43. Dodecanese
44. Cyclades	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 44. Cyclades
45. Lesbos	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 45. Lesbos
46. Samos	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0	.   9	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 46. Samos
47. Chios	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0	0	0	0	0	0 0	0	0	0 0	0 47. Chios
48. Heraklion	0	0	0 0	0 0	0	0	0 0	0	0	0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	U	0	0	0	0 0	0	0	0 0	0 48. Heraklion
49. Lasithi	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	0	0 0		0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	U	0 0	0	0	0 0	0 49. Lasithi
50. Rethymno	0	0	0 0	0 0	0	0	0 0	0	0	0 0	0	0	0 0	0	0 0	0	0	0	ů.	0 0	5	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0 50. Rethymno
51. Chania	0	0	0 0	0 0	160671070 8 133	30522753 0011240	U 2092060792	1252246380 18480	U 64810 8235353	138 1627914272	0	0	0 0	0	0 291205395	223402338	0	0 1659	78788 28792078	892 11923896650	2398781916	26355555 1082	825243	0 0	1816894901	3234269745 4	5147726 1642605120 28	327192472 117767	72701 849564765.5	0	0	0 0	0	0 0	0		0 0	0 51. Chania
Total	9961974711	0 3444118	191 2883138066 168	6859569 936117890,8	105031979,8 133	37344/33 9811348	147 3084009/84	143440300 18460	0.0010 04033333	200 104/9142/2				-	. =>		-			11122110000													v			a	0 0	0
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From To	I. Attica	2.Aetol/nia 3	Boeotia 4	Euroea 5	Evr/ma 6. Phi	tnietis 7. l	rnocida 8	s. Argonda 9. A	Arcadia IU. Ac	спиен 11.1118	EZ.Corini	Laconi	ia m. Messinia	15. Leikada 16.	Arta Er. Thes/ti	a se. roanvila 19. Preve	a co. reardisa	AI. Larissa 22.	. 1712 gii/512 2.	o. iiikaia .4. Gi	evena 65. Drar	ama 26. (matria 559107 1210814	4.5 25817289.5	1160700	47. R.2510FIB 30	O.KIIKIS	31. NUZBNI 32.	. rena 33. Pieri	18 34. Serres 35. 99049 196735	riorma 30. Chaik	0 87662	20.5 523848	uope 40. Zakynino 125875.5	a 4L Coriu	42 Ketalin 43. De	nuecai 44. Cyr	CINGE 45. Lesbos	40. 3811105 47.	. v.mios 48.	rierakii 49. Lasit	ni 50. Kethym 51	Chania
1. Attica	0	0	0	0	U	U	0	U	0	0	0	0	0	0 0	0	0 0	0 0	u e	0	0		269808	1,5 25817289,5 0 91609525	1100/89	. 0	0	Û	0 289	0 2830429	U	U 8/002	0,3 323848	23813,3	0	0 0	0	0 0	0	0	0	0 0	0 1. Attica
2.Actol/nia	0	0	U	0	0	U	U	U	Û	U	O .	0	0	0 0	0	0 0	0 0	0	0	0			0 910093,23			0	U	0	0 2830429	0	0	0 0	0	0 0		0	0 0	0	0	0	0 0	0 2.Aetol/nia
3. Bocotia	0	0	0	0	0	0	0	0	0	0	U	0	0	0 0	U	0 0	0 0	0	U	0		293898	0 0		U	U	U	0	0 0	U	0	0 0	U	0 0	0	0	0 0		0	0	0 0	0 3. Boeotia
4. Euboea	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	-0	f) 16s	697834	0 423381,75		0	0	0	0	0 0	0 72	2489	0 124246	0	0 0	0	0	0 0	0	0	0	0 0	0 4. Euboea
5. Evr/nia	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	- 0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 5. Evr/nia
6. Phthiotis	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 2900436	- 0	0	0	0	0 19	93158 0	0	0	0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 6. Phthiotis
7. Phoeida	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	. 0	0	0	-0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 7. Phocida
8. Argolida	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0 6	28749	0 342516	. 0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 8. Argolida
9. Arcadia	0	0 0	0	0	0	0	-0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 9. Arcadia
10. Achaea	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 514011,25	60152	. 0	0	0	0 37	75585 0	0	0	0 0	0	0 0	0	0	0 0	-0	0	0	0 0	0 10. Achaea
11.llia	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 895618,75	- 0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 11.Ilia
12.Corinthia	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 639662,5	- 0	0	0	0	0	0 0	0	0 270	027 0	0	0 6	0 0	0	0 0	0	0	0	0 0	0 12.Corinthia
13. Laconia	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	-0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0 13. Laconia
14. Messinia	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 6	0	0 0	0 0	0	0	0	0	0	0 0	- 0	0	0	0	0 76	66792 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 14. Messinia
15. Lefkada	-	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 15. Lefkada
16. Arta	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 16. Arta
17. Thes/tia		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 0	0	0 (	0 0	0	0 0	0	0	0	0 0	0 17. Thes/tia
18. Ioan/na	(	0 0	n	n	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 18. Ioan/na
19. Preveza		0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 1	0 0	0	0 0	Ó	0	0	0 0	0 19. Preveza
20. Karditsa		0 0	0	n	0	0	0	0	0	n	0	0	-fi	0 0	n	0 0	0 0	0	0	0	0	0	0 0	1 0	0	0	0	0	0 0	0	-O	0 0	0	0 /	0 0	0	0 0	0	0	0	0 0	0 20. Karditsa
21. Larissa		0 0	0	0	0	0	0	0	0	0	0	n n	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 (	0 0	0	0 0	n	0	0	0 0	0 21. Larissa
22. Magn/sia	(	0 0	0	0	0	0	0	n	0	0	0	0	0	0 0	n	0 0	0 0	0	0	0	0	0	0 0		0	0	n	0	0 0	0	0	0 0	0	0 /	n 1	Û	0 0	0	0	0	0 0	0 22. Magn/sia
23. Trikala		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	n	- A	0	0	0 0		) 0	0	0	0	0 0	0	0	0 0	0	0 (	0 0	n	0 0	0	0	0	0 0	0 23. Trikala
24. Grevena	,	0 0		0		0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	1		0	0	0	0 0	0	0	0 0	0	0 /	0 0		0 0	0	0	0	0 0	0 24. Grevena
25. Drama	2387538		0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	562227.75	0	0	0	0	0 0		, ,	0	0	0	0 0	0	0	0 0	0	0 /	0 0	0	0 0	0	0	0	0 0	0 25. Drama
26. Imathia	1247880.25		0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	69642	0	0	0	0	0 0			0		0	0 0	0	0	0 0		0 /	0 0		0 0	. 0	0	0	0 0	0 26. Imathia
	26038370		189544.5	238381.5	0	1686519	0	0	0 16	01907 6	0	0	0 2752427	5 0	0	0 0	0 0	28686883	17534709.5		0	0	0 0			0	0	0	0 0	0	0	0 0	0	0 /	n 10	0	0 0		0	0	0 0	0 27. Thes/ca
27. Thes/ca	29088784.5		189344,3	649608.75		068682.75	0	216536.25	0 10	579620 2	02256 10	10620	0 333343,7	0 0	0	0 0		5482774.5	32701 .75		0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 (	0 0	0	0 0			0	0 0	0 28. Kavala
28. Kavala	29088784,3	0	0	049008,73	0 30	008082,73	0	210330,23	0	0	02330 19	0.0330	0	0 0	0	0 0	0 0	0 0	327073	0	0	0	0 0				0		0 0	0	0	0 0	0	0 0	) O	0	0 0		0	0	0 0	0 29. Kastoria
29. Kastoria	414640	0 0	U	U	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0			0	0	0	0 0	0	0	0 0	0	0 (		0	0 0			0	0 0	0 30. Kilkis
30. Kilkis	41464	0 0	U û	0	U	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0			0	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	
31. Kozani		0 0	Û	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0			0	0	0	0 0	0	0	0 0	0	0 0	) 0	0	0 0		0	0	0 0	0 31. Kozani 0 32. Pella
32. Pella		0 0	U	0	0	U	0	U	0	U	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0			U		0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	
33. Pieria	1039593		0	0	0	0	0	U	0	U	0	U	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0			U	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	U	0	U	0 0	0 33. Pieria
34. Serres	59020	5 0	0	Ü	0	0	0	0	U	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0			U	0	0	0 0	0	0	0 0	0	0 0	0	0	0 0	0	0	0	0 0	0 34. Serres
35. Fiorina		0 0	0	0	0	0	0	U	0	U	ti .	0	Û	0 0	0	0 0	0 0	0	0	0	0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0		0	U	0 0	0 35. Florina
36. Chalk/ki	775260		0	Ü	U	0	0	U	U	U	U	0	Ü	0 0	U	0 0	0 0	U	U	U	0	0	0 0		0	U		0	0 0	U	0	0 0	Û	0 0		0	0 0	U	0	U	0 0	0 36. Chalk/ki
37. Evros	989606,25		0	0	0	0	0	0	0	0	e e	0	0	0 0	0	0 0	0 0	0	U	U	Û	U	0 0		0	0	U	0	0 0	0	0	0 0	0	0 0	J - U	0	0 0	0	0	0	0 0	0 37. Evros
38. Xanthi	1211398,		0	0	0	0	0	0	U	0	0	0	0	0 0	0	0 0	0 0	0	0	U	0	Ü	0 0		0	U	Ü	0	0 0	0	0	0 0	0	0 0	U U	0	0 0	0	0	0	0 0	0 38. Xanthi
39. Rodope	411537,	5 0	0	0	0	0	0	176733	0	0	0	0	0	0 0	0	0 0	0 0	0	U	U	0	U	0 0		0	0	0	U	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	1 0	0	0 0	0 39. Rodope
40. Zakynthos	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	U	0	U	0 0		0	U	Ü	U	0 0	U	0	0 0	0	0 0	U U	0	0 0		0	0	0 0	0 40. Zakynthos
41. Corfu	(	0 0	0	0	0	0	0	0	0	0	0	U	0	0 0	0	0 0	0 0	0	U	U	0	U	0 0		, ,	U	U	U	0 0	0	0	0 0	0	0 0	J - U	0	0 0		U	0	0 0	0 41. Corfu
42. Kefallinia	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	C	0	0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	) 0	0	0 0	0 42. Kefallinia
43. Dødecanese	: (	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	. 0	0	0	0 0	0 43. Dodecanese
44. Cyclades	(	0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	- U	0	0 0	1 6		0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	- 0	0	0	0 0	0 44. Cyclades
45. Lesbos		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	9	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 45. Lesbos
46. Samos		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	1 0	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 46. Samos
47. Chios		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	] (	0	0	0	0	0 0	0	0	0 0	0	0 0	0 0	0	0 0	0	0	0	0 0	0 47. Chios
48. Heraklion		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	1 0	0	0	0	0	0 0	0	0	0 0	0	0 6	0 0	0	0 0	0	0	0	0 0	0 48. Heraklion
49. Lasithi		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	(	0	0	6	0	0 0	0	0	0 0	0	0 6	0 0	0	0 0	0	0	0	0 0	0 49. Lasithi
50. Rethymno		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0		0	0	0	0	0 0	0	0	0 0	0	0 6	0 0	0	0 0	0	0	0	0 0	0 50. Rethymno
51. Chania		0 0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0 0	0 0	0	0	0	0	0	0 0	(	0	0	0	0	0 0	0	0	0 0	0	0 6	0 0	0	0 0	0	0		0 0	0 51. Chania
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