



*Land: An asset  
with great  
potential for  
Greece,  
but with  
significant  
development  
challenges*

**Paul Mylonas**  
*Chief Economist*  
**NBG Group**  
+30 210-3341521,  
e-mail: [pmylonas@nbg.gr](mailto:pmylonas@nbg.gr)

- Greece has an advantageous geographic position and several natural characteristics that make its land a more valuable asset compared with most countries.
- Although these characteristics could lead to significant revenue from more efficient land use (mainly in form of tourism investments), unique historical reasons have resulted in a framework regarding land that is extremely complex, and thus hinders investment.
- The problems start with issues of ownership. Both the public and the private sector have overlapping property claims that lead to significant number of land plots without proper titles, with the Greek state claiming that almost 60 per cent of land is public, while the private sector claims around 50 per cent.
- The other major problem is the lack of spatial planning, which results in overlapping regulations and unclear laws, thus leading to long-running and disruptive disputes regarding allowed land uses.
- However, the potential gains if these issues were to be resolved are significant. NBG Research has used an econometric model to estimate the benefits for just one sector – tourism. While tourism activity has so far been approached by the literature through demand models, we propose an alternative view to analyze the patterns of global tourism activity based on supply side considerations (relating to the land characteristics of each country).
- Our estimates suggest that critical reforms in the Greek land market could lead to additional tourism revenue of €8.1 bn per year (€6.3 bn in extra receipts and €1.8 bn in extra investment). These estimates for the tourism sector capture only a part of the total benefit for Greece, as other sectors will also benefit from these reforms.
- To reach this potential, the following steps could be considered:
  - ✓ A coherent national cadastre needs to be a policy priority, which in turn requires the clarification of what constitutes forest (i.e. public) land. Any attempt for a complete spatial planning framework requires cadastral maps for the Greek territory. In the meantime, information from the many local mortgage registers could be used to form a temporary cadastral map, specifying, at least, land boundaries.
  - ✓ Although important legislative initiatives have been made during the past months to improve the business environment, these aim to bypass the existing legislative obstacles and do not address the root cause of the problem. Difficult political decisions are needed in order for the land uses to be clarified, with provisions for the environmentally sensitive areas as well as for the landowners that will suffer wealth losses. In particular: (i) while illegal buildings in environmentally sensitive areas should be demolished, the state could legalize other illegal buildings (as attempted by recent law); (ii) for land with no buildings, the state could determine land uses according to economic and environmental criteria, with the aim of limiting development to specified areas -- increasing the density of development in such areas -- while leaving protected areas free of any development (e.g. NATURA). Towards that end, the state could start with a pilot land exchange program in specific areas.

*Fragiska Voumvaki,*  
*+30 210-3341549,*  
*e-mail: [fvoumv@nbg.gr](mailto:fvoumv@nbg.gr)*

*Maria Savva,*  
*+30 210-3341646,*  
*e-mail: [sava.maria@nbg.gr](mailto:sava.maria@nbg.gr)*

*Athanasia Koutouzou,*  
*+30 210-3341528,*  
*e-mail: [koutouzou.ath@nbg.gr](mailto:koutouzou.ath@nbg.gr)*

#### Natural and cultural attributes

	Greece	EU 27 average
Coastline length (km)	13,676	3,291
Blue flag beaches	393	80
Average temperature (°C)	18	10
Hours of sunshine (daily average)	7.6	5.5
World Heritage cultural sites (UNESCO)	18	14

Sources: World Economic Forum, CIA World Factbook, Foundation for Environmental Education, Climatemps.

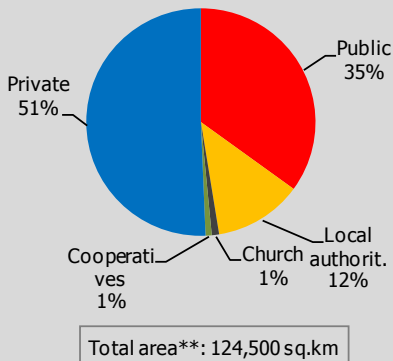
Greece has an advantageous geographic position and several natural characteristics that make its land a valuable asset. Indicatively, a long coastline covering about  $\frac{1}{3}$  of the Mediterranean's coasts (due to its large family of islands), a warm and pleasant climate throughout most of the year, many high quality beaches and cultural and historical sites are some of the distinctive characteristics of Greece. Based on these attributes, Greece possesses a significant comparative advantage over other European and Mediterranean countries.

These unique characteristics could lead to significant revenue from the use of land, mainly in the form of investments in real estate properties and the exploitation of the resulting infrastructure. However, the framework regarding land use in Greece is complex and often unclear, with several issues hindering such investments.

In the following analysis, we will examine the framework for land use in Greece, its main problems and the way they discourage investment. We will focus on the determinants of investment in tourism infrastructure and its effect on tourism receipts, and derive estimates for the potential of the Greek tourism sector in the event investment in land is facilitated. We conclude with some potential reforms that could help the debate on solving some of these long-standing and difficult issues of land ownership and land use.

Our analysis indicates the existence of significant untapped possibilities. Specifically, if property rights converged to the European level and other business environment rigidities were removed (such as FDI constraints), tourism investment could reach €7.8 bn per year (from around €6 bn currently) and tourism receipts €16.3 bn per year (from around €10 bn currently). Note that the estimates for the tourism sector capture only a part of the total benefit, as other sectors will also benefit from land reform. To reach this potential, (i) a coherent national cadastre needs to be a policy priority; and (ii) land uses need to be clarified for the Greek territory, with provisions for the environmentally sensitive areas as well as for the landowners that will suffer wealth losses (for instance, through a land swap program).

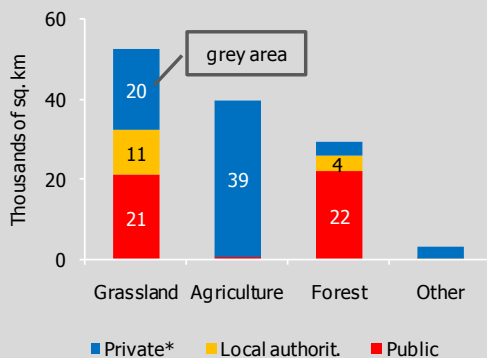
### Non-residential land ownership structure in Greece\*



\* as estimated by land market participants.  
 \*\* excluding 7,500 sq. km of residential area.

Source: Tsoumas, Tasioulas "Ownership status and exploitation of rural land in Greece", 1986, Agricultural Bank of Greece.

### Non-residential land ownership in Greece (by type of land use)



\*Including land owned by cooperatives and the church

Source: Tsoumas, Tasioulas "Ownership status and exploitation of rural land in Greece", 1986, Agricultural Bank of Greece.

## THE FRAMEWORK OF LAND USE IN GREECE

The policy for land use and ownership, as well as urban development in Greece, was to a large extent circumstantial, rather than a result of planning, mainly due to historical reasons such as the Ottoman occupation and the Asia Minor catastrophe (see BOX 1). Despite several attempts by the Greek State to set specific land planning frameworks on a national as well as a regional level, investments in land still face delays and complications. The three main inter-related problems comprise:

- unclear land ownership,
- high land fragmentation, and
- an unclear framework of land use.

### 1. Unclear land ownership

The lack of clarity regarding ownership status and allowed land uses are the main issues that complicate the efforts of an investor trying to buy land in Greece. Ideally, this information would be recorded in a land registry system.

However, the current land registry system in Greece is based on the French person-centered deeds system of registrations, rather than the more traditional property-based titles system, as is the case in most European countries. A deed registration system only provides evidence that a particular transaction occurred, but it is not in itself proof of the legal rights of the involved parties. Thus, before any dealing can be safely completed, the owner must try to trace land ownership back to the root of the title. In contrast, in a title registration system the transaction registers the ownership change. Under the latter system, the state guarantees all ownership rights shown in the land register. In the event, the main difficulty in the creation of a property-based deeds system requires the resolution of ownership disputes, in the case of Greece, mostly between the state and private individuals (see below).

#### Private vs public land

About half the Greek territory is "claimed to be" privately owned land<sup>1</sup> (65,000 sq. km of about 130,000 sq.km. in total), mainly used for agricultural purposes. However, only 60 per cent of this privately owned land (i.e. 40,000 sq. km) can be verified through

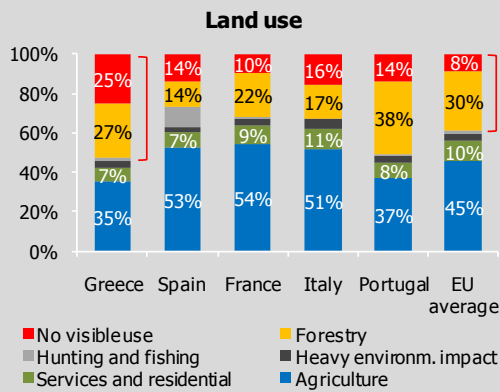
<sup>1</sup> Based on a survey of the agricultural bank of Greece (Tsoumas, Tasioulas "Ownership status and exploitation of rural land in Greece", 1986, Agricultural Bank of Greece) and recent European land use/cover surveys (LUCAS).

historical developments following the creation of the modern Greek state in 1828 (e.g. land distributions – see BOX 1). For, the remaining privately-claimed land (i.e. 25,000 sq.km.) - consisting mainly of grassland – persons who exploit it for over 20 years can acquire legal ownership right using the usufruct law<sup>2</sup>, as long as the area under consideration is not public land.

The situation gets more complicated as the Greek state does not have clear titles of ownership for the largest share of public land. In fact, land is publicly owned mainly through its classification as a forest<sup>3</sup>. The Greek State determined “forest lands” (i.e. public land) based on aerial photos taken in 1945. Based on these photos, the Greek State claims that almost 60 per cent of land is public (around 80,000 sq.km.). Note that a fraction of these “forest lands” are actually grasslands, i.e. areas with low tree density (this share is estimated around 20,000 sq.km.). In fact, a draft law is currently under public consultation (and has already raised significant opposition) that classifies these areas as public land that can be used for development. In any case, according to recent European land use/cover surveys (LUCAS), forest is actually less than 30 per cent of land (close to the European average) - with about another 30 per cent of land having no visible use, higher than the European average of 8 per cent (see graph).

Therefore, both the public and the private sector appear to claim land plots without clear titles, with the Greek state claiming that almost 60 per cent of land is public<sup>4</sup>, while the private sector claims around 50 per cent. Even if we assume that there are no unclaimed land plots, the share of overlapping properties (and thus a source of potential dispute) is at least 10 per cent of land (i.e. 13,000 sq.km.) - an astonishingly large share for an advanced economy, and evidently a huge impediment to land use and development.

From this analysis, it becomes evident that the clarification of what constitutes public land is of primal importance to resolve the

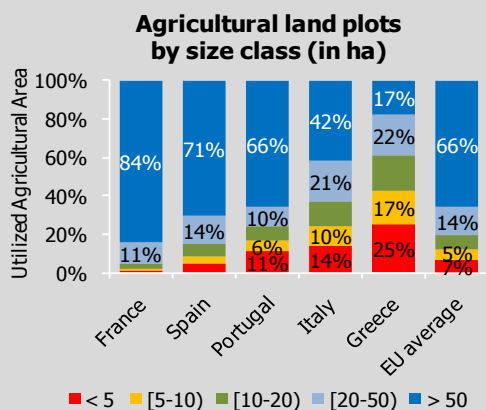


Source: Eurostat

<sup>2</sup> Within the civil law, a person can acquire ownership of a real property (if it doesn't belong to the state) by using and exploiting it in good faith for a period of 20 years, even if he has no legal title.

<sup>3</sup> Based on the Law of 17/11/1836 on private forests, forest areas are considered as public land, unless the owner of a private forest declared it as their ownership providing the proper titles. For someone to claim part of those lands as private property, they need to prove their legal ownership by providing a chain of deeds going back to 1884.

<sup>4</sup> Note that the non-forest public land is a negligible share of the total Greek land (around 3 per cent).



Source: Eurostat (2010 data)

issue of grey areas. Despite several state efforts, forest land mapping and registration remains pending. The immensity of this issue becomes evident if we consider the 1976 effort to record forest lands. For the first small area under consideration (4,000 sq.km.), more than 20,000 disputes were submitted to courts leading to an early abandonment of the process.

## 2. Fragmented land

Another impediment for investment is the extensive fragmentation of Greek land. Indicatively, land plots larger than 50 hectares (or 0.5 sq. km) comprise 17 per cent of agricultural land in Greece, compared with 66 per cent in Europe. The existence of many small properties increases the number of required transactions necessary to obtain an investable size of land, and makes the process more complex and time-consuming (e.g. investors have to deal with several owners). For instance, for the formation of a golf course in the Costa Navarino complex, the investing company needed to acquire more than 1,300 plots of land.

It should be noted that to a large extent the fragmentation of land was mainly the result of the land reform of 1917-1923, resulting in the distribution of small-sized land plots (see BOX 1). The problem intensified over the years as inheritance law allows the partition of land plots and the transfer of ownership to the heirs as multiple separate properties.

### **BOX 1: Historical socioeconomic conditions and their effect on land ownership**

#### **Land ownership**

The state of land use and ownership in Greece is to a large extent a result of the socioeconomic conditions in the period following the Ottoman occupation. Previously, rural areas in Greece were the ownership of the Ottoman Empire, monasteries and a small number of landowners.

Under Ottoman Law, all land was the property of the State (sultan), while most “owners” of private property were given the right to exploit or manage a certain land plot (tessaruf). The relevant property title (tapu) could be transferred in the form of an inheritance, but it did not lead to ownership of the property. This situation caused many ownership complications when all public land was transferred from the Ottoman to the Greek State, and still affects transactions of property.

#### **The need for privatization of land**

After the Greek Revolution in 1821, the land abandoned by the Ottomans (Peloponnesus and Sterea Ellada) was considered public land, and its ownership was transferred from the Ottoman to the Greek State as decided in the first National Assembly of 1822 in Epidaurus. In some cases, Ottoman properties were transferred to Greeks who had previously managed them or were sold to Greeks who could afford them. That led to the creation of the first private properties of modern Greece, which were estimated to be just about **5,000 sq. km**, from a total of about 47,500 sq.km. Regarding the remaining lands added to the Greek territory during 1864-1947 (about 82,500 sq.km.), several large properties in Macedonia, Thessaly and Epirus called tsiflikia (covering around 21,500 sq.km.) were clearly private, as they were sold by the Ottomans to a few wealthy Greek citizens while the area was still under Ottoman control.

In the years that followed, there were significant demands for distribution of land, since the bulk of the population owned no land to exploit as a source of income. To that end, as a result of Greek government social policy, it is estimated that:

- ✓ About **700 sq.km.** of public land were distributed before 1871.
- ✓ The most significant land allocations were realized after the First Agrarian Reform, which began in 1871, and allowed the expropriation of private properties by the State in return for fair compensation, in order to redistribute land plots to landless citizens. The redistribution of land intensified with the enlargement of Greek territory to include Macedonia, Epirus and Thessaly, as most private properties in those areas concerned tsiflikia, while there was a large share of landless population. It is estimated that an additional **2,700 sq.km.** of agricultural land were distributed during the period 1887-1911. These land plots, apart from their small size (just 0.7 hectares on average or 0.007 sq.km.), were also dispersed, since each owner was granted about 4-6 separate plots of land, situated in different areas so as to avoid discriminations regarding the quality of allocated land.
- ✓ Even more extensive were the expropriations of land after the catastrophe in Asia Minor in 1922, which created a great need for the accommodation of refugees (the population exchange resulted in nearly 1.5 million people coming to Greece at a time when its population was only 6.3 million). During the period 1922-1938 (Second Agrarian Reform), about **18,000 sq.km** of land were distributed (more than ½ of cultivated land), comprising public land (about 10,000 sq.km) as well as private tsiflikia (about 8,000 sq.km., while the remaining **13,000 sq.km.** were left to their initial landlords). The land plots distributed were significantly

larger compared with those of the First Agrarian Reform (about 6 hectares compared with 0.7 hectares). It should be noted that the distributed lands were exploited in the form of long-term concessions, with the possibility of ownership once a small compensation was given. Thus, it is possible that some of these lands are not considered private with a legally guaranteed property title if compensation was never paid.

### Re-allotment of land in Greece during the two main agrarian reforms

(I) 1871-1911 (II) 1922-1938

(in thousands of sq. km.)

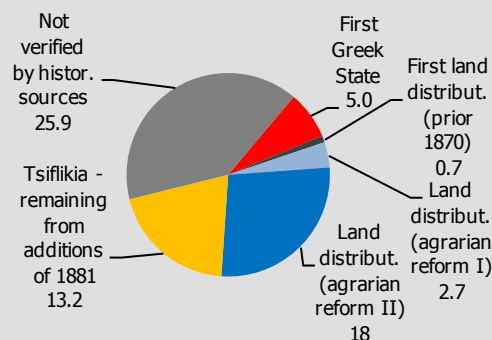
Total land	63	130
Cultivated land	18	33
Distributions of land	2.7	18
- expropriated ( <i>tsiflikia</i> )	-	8.3
- other public land	2.7	9.7
% of cultivated land	15%	55%
Average size of distributed holdings (in ha*)	0.7	6

\* 1 hectare (ha) is equivalent to 0.01 sq. km.

Source: NBG estimates, historic sources and publications

### Recorded acquisitions of privately-owned land (2012)

Privately owned land\*: 65,450 sq.km



\* NBG estimates based on: Tsoumas, Tasioulas "Ownership status and exploitation of rural land in Greece", 1986, Agricultural Bank of Greece.

Source: NBG estimates, historic sources and publications

Taking into account the estimated private properties existing at the time of the creation of the first modern Greek State, the ones added with the enlargements of 1881 (mainly in the form of *tsiflikia*) as well as the recorded re-allotments of public land, the privately-owned land in Greece justified by these developments amounts to about **40,000 sq.km.**, (or 60 per cent of the estimated privately-owned area of 65,500 sq.km.). The remaining privately-owned area could be just abandoned land, which using the usufruct law can lead to legal property titles. However, part of this remaining land is a result of encroachment of public land and, according to the constitution, there is no usufruct right on any publicly owned land. Therefore, even after several transfers of property, such land is liable to legal disputes regarding ownership.

### The problem of informal settlements and urban planning

Until the Greek territory took its current form in 1947, the country underwent a series of significant developments such as wars, population movements (due to refugees' arrivals as well as the urbanization process) and agrarian reforms. Under these circumstances, the policy for land use and urban development was to a large extent circumstantial rather than a result of careful planning.

Specifically:

- ✓ After the end of the Ottoman occupation, the first City plans were drawn up (e.g. Athens 1830, Nafplio 1834), consisting mainly of individual building regulations and restrictions, rather than a coordinated urban plan. With the gradual addition of new territories, although a coherent spatial planning strategy on a national level was needed, a strategy to develop only individual city plans was actually adopted.
- ✓ With the population exchange in 1922, the significant number of Greek refugees increased housing needs, especially around big cities. Indicatively, the arrival of refugees in the region of Attiki raised its population by over 50 per cent. The inadequate response of the land use planning system to the demand for integration of additional land into the official urban plan resulted in extensive informal building. As only a rudimentary legal framework was issued (Presidential Decree 17.07 of 1923 on "City Plans, Large Villages, Settlements of the State and building"), building was allowed in areas outside the city limits, as long as:



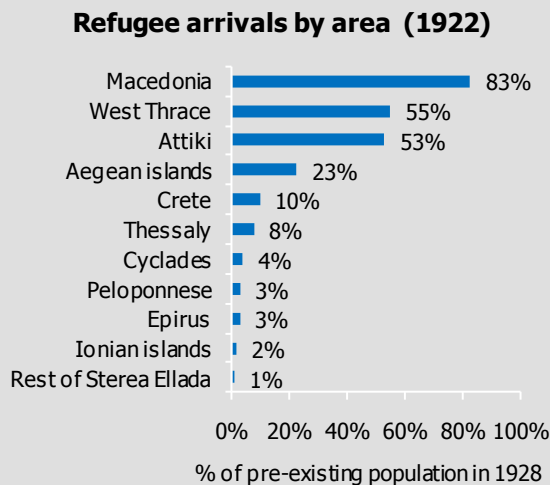
- i) the land plot size was at least 0.4 ha with access to public infrastructure (road, square, park).
- ii) if the property's distance was less than 500m from a populated area, the minimum size was 0.2 ha.
- iii) Those building in areas outside the city limits were obligated to finance the provision of public infrastructure (roads, water, electricity) and services to the specific areas, which was an additional benefit for the State.

Although the decree of 1923 was created for the specific needs of the absorption of the large number of refugees, it is still in effect today, thus perpetuating the problem of informal settlements.

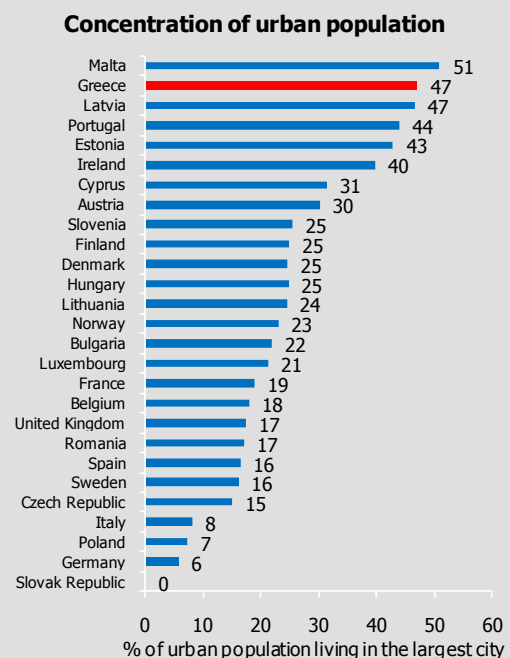
- ✓ After World War II (1950-1960), the abandonment of many rural areas led to a higher concentration of the population around big cities, which were in the process of rapid development. However, most of the internal migrants could not afford a residence within the city limits, so they resorted to less expensive informal structures in suburban areas.

Specifically, "land entrepreneurs" originally bought large pieces of rural land at low prices on the periphery of the big cities. Then, by constructing private road networks within the large properties, they legally subdivided the land into small parcels<sup>5</sup> (mostly of 150-200 sq.m.). Mostly low-income people bought them legally and then started construction on these small parcels without building permits.

It is estimated that about 380,000 informal settlements were created in Greece during 1945-1966 (which constitute legally owned private land – however without building permits). These structures (along with the above mentioned informal building following the population exchange with Turkey) form "the first generation of informal settlements", which was mainly used by the poor to cover their housing needs. These informal settlements can be seen as the result of an albeit "helter-skelter" social housing policy (which is also reflected in the high share of homeownership in Greece).



Source: Hellenic Statistical Authority (EL.STAT.) / census of 1928, (Margariti, Azeli, Andrioti, Detoraki, Fotiadi, "Issues of Modern Greek History for the 3rd grade of high school", 2013).



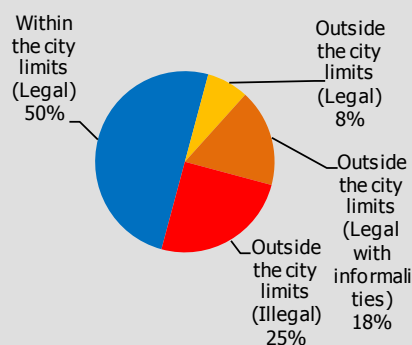
Source: World Bank database (2011 data)

- ✓ Since the mid '80s informal settlements are mainly in the form of second homes away from urban areas (the "second generation of informal settlements") and thus the issue involves mostly forests or coastal zone and becomes more serious as it switches from social policy to the expropriation of public land, the creation of environmental issues, and the hampering of growth due to the lack of a strategy for economic development.

<sup>5</sup> It was not until 1992 that the state determined by law that fragmentation of rural land is not allowed to create parcels smaller than 0.4 ha.



### Buildings in Greece



Source: NBG estimates based on several press publications

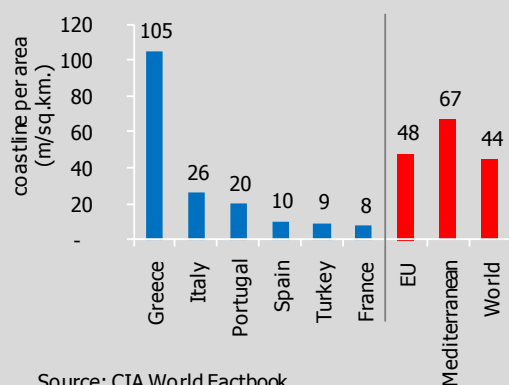
The fact that building outside city limits is allowed by law does not exist in most advanced economies. In Greece, it is estimated that about ½ of buildings (corresponding to 1/3 of residences) are situated outside the city limits, and the most worrisome feature is that part of the out-the-city-limits settlements are also illegal. In fact, about ½ of settlements outside the city limits (or 25 per cent of all buildings) have no building license. Note that these illegal settlements in Greece are mainly related to construction without building permits and not to lack of ownership rights.

Over the years, there have been several efforts to legalize informal land use, in an attempt by the Greek State to record and control these informal settlements. Indicatively, the process began mainly through the law 720/1977 and the stricter Housing Law 1337/1983, which set specific spatial planning requirements which needed to be met in order for pre-existing informal settlements not to be demolished. However, the legalization process of building is costly and time-consuming (it is estimated that about 600 sq.km. of land have been under the process of legalization since 1983). At the same time, the problem has only intensified, as the penalties for further informal settlements were not severe enough and there were always loopholes, providing additional incentive for informal building, as well as the fact that there was the expectation that illegal buildings would eventually be legalized without severe consequences.

Recently, there were several initiatives aiming to record the present situation and control residential and business-related building in the future, while gradually eliminating buildings outside the city limits. To that end:

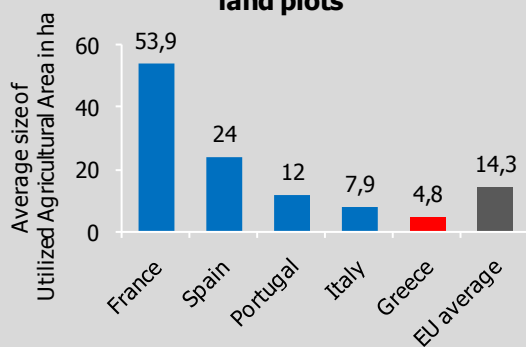
- i) The Master Plan for Athens and the wider region of Attiki under consideration (estimated to be expanded to the entire Greek territory by 2018) provides incentives for building within specific areas – mainly within the formal city plan. This is only a step towards the elimination of further building outside city limits, which will be achievable once a nationwide spatial planning framework is finalized.
- ii) Law 4178/2013 for informal settlements aims to record informal buildings, take necessary action (e.g. demolition or monetary payments and legalization) according to the significance of the existing informalities and more importantly prevent future informal building. As a sign of the Greek state’s determination to deal with the problem, the reform only allows the legalization of informal buildings built before 2011 (a limit set by previous law 4014/2011). Undeclared informal buildings will be in danger of demolition and future transactions will not be allowed (sale or transfer of property). Moreover, the new law, for the first time, aims to prevent future illegal buildings, through a set of tools, such as electronic records of all buildings, aerial photographs confirming the year of construction, and stricter building inspections. Specifically, according to the law 4030/2011, the confirmation of the legality of each construction is performed by auditors, instead of the public services that provided the building license, thus limiting potential corruption.

**Length of coastline per area of land**



Source: CIA World Factbook

**Average size of agricultural land plots**



Source: Eurostat (2010 data)

### 3. Unclear framework of land use

Despite the fact that there had been a considerable number of spatial planning initiatives (see BOX 2), the framework for land management remains unclear, with many overlapping laws which render the legal planning landscape chaotic. This has resulted in endless disputes and is often a source of corruption.

In particular:

- (i) Due to the lack of necessary spatial data infrastructure (cadastral maps, forest maps, etc.), any effort to implement strategic land use planning is time-consuming and expensive. For example, in the few instances where it has been attempted, city plans take more than 15 years and cost higher than €0.6 million per sq.km.
- (ii) While construction is also allowed under conditions in non-planned areas, obtaining the required building permits requires involvement of many agencies and in many cases also requires court decisions.
- (iii) The unclear issue of what constitutes public land (as explained in the previous section) leads to major delays in the land use planning and the urbanization process.
- (iv) The spatial planning legislation is extremely complex (over 25,000 pages of laws) leading to conflicting interpretations of the law and thus to confusion in the decision-making process.
- (v) Greece is in a unique geographical position – it has more coastline than any other European or Mediterranean country. Coasts are among the most environmentally vulnerable, and also in high demand – a combination that complicates land use planning. Although the drafting of a special legislative framework began in the late 1990s, the coastline has not yet been officially defined while the related construction regulations remain practically unclear.
- (vi) The relatively small size of Greek land parcels (due to the high fragmentation as discussed above) makes any attempt of expropriation (required for the urban planning process) to be stubbornly resisted by landowners.

All these anomalies led to an unclear situation regarding land use and formed huge obstacles for strategic spatial planning policy in order for Greece's comparative advantages to be exploited.

## **BOX 2: The Greek spatial planning regime and The recent legislative reforms to promote tourism investment**

Greek legislation lacked a coherent framework for spatial planning, as most laws were limited to the issues of the development rights of landowners. The first effort towards strategic planning of land use was with the Constitution of 1975, which prioritized measures for the protection of the environment and officially placed spatial planning under the regulatory authority and the control of the State. Law 360/76 that followed initiated the distinction between three hierarchical levels of planning frameworks: National, Regional and Special. Moreover, in the late 1990s, a new law for national, regional and urban planning (L.2508/1997 and L.2742/1999) was established.

However, these initiatives merely provided general guidelines, with little to no practical implications for a strategic clarification of land uses in Greece. Moreover, the procedures for applying spatial planning are costly and time-consuming. Specifically, the national and regional spatial plans are amended by Presidential Decrees - with their publication being a rather complicated and time-consuming administrative and legal procedure (a series of consultancies are needed by several agencies, while the ratification by the Council of the State is required). Therefore, even though the spatial planning legislation of 1997 has made land-use plans obligatory for all local authorities, the relevant procedures have been delayed so long that in many cases the plans became obsolete and needed revision even before their adoption. Moreover, these legal efforts actually created excessive – and in many cases overlapping- regulations with extremely rigid and detailed provisions. Therefore, both the Greek state and its citizens remain trapped in a complex, inconsistent, rigid and bureaucratic legal framework, which urgently needs to be reformed (mainly through the setting of clear rules for land use).

Against this background of overlapping, conflicting and unclear framework, it is important to note that, while most European countries have had Frameworks for Spatial Planning for several decades (Germany in 1965, Denmark and Poland in 1928, Slovenia in 1967), the first General Framework for Spatial Planning and Sustainable Development was introduced in Greece in 2008. This General Framework coexists with 13 Regional Frameworks and several Special Frameworks for specific segments that require particular attention (e.g. tourism, aquaculture, renewable energy). In particular, the **Special Framework for Spatial Planning of Tourism Development** aims to divide Greek territory in areas based on three criteria: i) geographical criteria (e.g. islands, coastal areas, mountains); ii) the existing and potential level of tourism development (e.g. developed or developing, available for alternative tourism); and iii) the existence of special needs (e.g. archeological sites, protected areas). For each area, specific directions are provided concerning future tourism development and its limitations. Although this legislative effort is in the right direction, it could be more specific if: i) there were more precisely specified areas for each type of tourism development rather than the current very broad specifications, often at the level of an entire region (e.g. island); and ii) tourism development was controlled based on indices of tourism carrying capacity<sup>6</sup> (this point becomes important as, although there is a provision for the protection of mountains, small islands and Natura area, the restrictions for building in those areas have been decreased).

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<sup>6</sup> According to that concept, the potential tourism development of a region should be decided based on indices combining tourism activity (such as tourist arrivals, nights spent, hotel beds, activity in peak season) and the characteristics of the specific region (such as area, population, coastline).

Moreover, due to the country's economic crisis, planning processes are currently gaining momentum in Greece through important legislative initiatives. The recent **Fast Track framework** (L.3894/2010), which is based on the special Olympic legislation, accelerates the licensing procedures and thus is manifested as a way to bypass the legal, administrative and operative obstacles (that we have outlined in the previous sections). Moreover, the subsequent law 4062/2012 (which establishes the general legal framework for the development of the former Hellinikon Airport) introduces a new model for land development in Greece where the planning process is undertaken almost exclusively by the private investor – with the role of the state being limited in the approval of plans and the delivery of permissions. This model also applies to the public property assets offered for residential and tourist uses under the current privatization program. In particular, the law 3986/2011 provides a special planning regime for public land development and transfer to private investors and introduces the Special Public Property Development Plan (ESXADA) that all public properties under privatization should have.

While the fast track framework is currently used to promote several large tourism investment projects, organized tourism activity is also promoted with the Law 4179/2013 for the **support of tourism entrepreneurship** (in practice improving the regulations of Law 4002/2011) which will work in conjunction with the previously-described framework for spatial planning of tourism development. Its main goal is to cover the previous legal gaps to facilitate large scale investments – mainly integrated resorts containing hotel establishments, vacation homes, golf courses and other infrastructure. In particular, the law introduces the institution of Integrated Tourism Development Areas, with special land use frameworks, which will provide guidelines and requirements depending on the location and the type of establishment (e.g. size, building ratios, distance from coast). The law also relaxes several restrictions regarding investing in tourism infrastructure. Specifically, establishments within the resort are allowed to be sold or leased to different holders, as unified ownership status is not obligatory (an option that was not permitted in the past). Indicatively, for an integrated resort with an 18-hole golf course, up to 70 per cent of the built area (in the form of vacation homes or hotel rooms) can be sold or leased under certain conditions. In parallel, several restrictions are lifted and investment incentives are provided such as higher proximity to the coast for hotels and private villas (50 meters and 30 meters respectively). Further contributing to the acceleration of the investment process, administrative changes are promoted transferring responsibilities to special services of the ministry of tourism, which acts as a one-stop-shop for the licensing of large scale investments.

These important legislative initiatives are in the right direction to attract investors in the Greek tourism sector; however it is important to keep in mind that their urgent and bypass character (used to mitigate the structural deficiencies of the Greek land policy) can backfire in terms of sustainability. In particular, excessive tourism infrastructure and activity could lead to adverse effects for a specific area such as environmental damage, resource depletion and reduced quality of the tourism product (e.g. too many tourists). An example of uncontrolled tourism development that led to the devaluation of the tourism product is the case of Spanish coastal areas. These considerations make a clear and coherent Spatial Planning Framework for Tourism vitally important.

### Summing up – A low property rights index for Greece: An important obstacle to investment

These three interrelated problems of the Greek land market – unclear ownership, lack of spatial planning, high segmentation – are reflected in poor scores in international comparisons. Indeed, a property rights index (constructed by the Heritage Foundation) gives a score of just 40/100 for Greece, compared with the European average of 74/100. The factors it takes into account are mainly the ability of individuals and businesses to enforce contracts, the likelihood that private property will be expropriated and the independence of the judiciary system. Moreover, based on the “Doing Business” report (2014), Greece’s competitiveness index is close to the world average – but with the low scores in the subcomponents “registering property” and “enforcing contracts” counterbalancing the high scores in the subcomponents of “starting a business” and “trading across borders”.

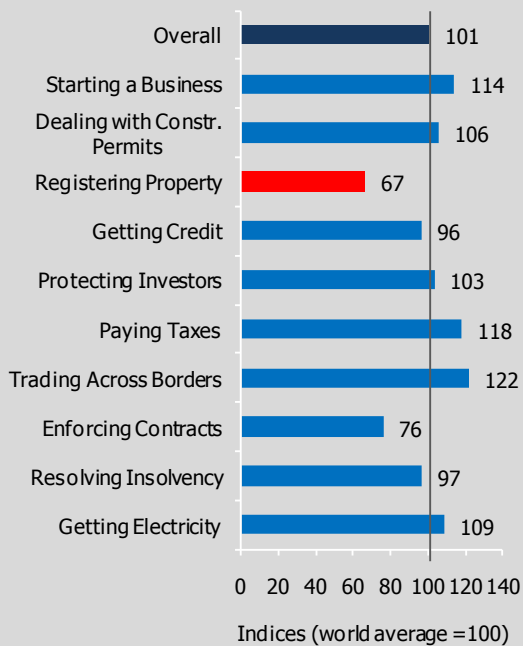
These results point to entrepreneurs’ land-use problems as one of the most significant obstacles to investment in Greece. Indeed, for the all-important tourism sector, investment in land is the most critical component of the total investment.

### LAND PROBLEMS AND THEIR EFFECT ON TOURISM – A TWO STEP ECONOMETRIC APPROACH

Tourism activity has so far been approached by the literature through demand models<sup>7</sup>, which traditionally comprise of variables such as income, prices and exchange rates. In view of the significance of the constraints imposed by land use on the development of tourism sector in Greece, NBG Research proposes an alternative supply-side view to analyzing the patterns of global tourism activity, based on the land characteristics of each country (relating both to natural endowments and real estate market considerations).

In particular, we establish a two step approach. First, based on the literature for FDI flows<sup>8</sup>, we develop an econometric model for

#### Doing Business in Greece



Source: Doing business Report 2014

<sup>7</sup> Crouch, G.I. (1994), “The study of international tourism demand: A review of findings”, *Journal of Travel Research*, 33, 12-23. Lim, C. (1997), “An econometric classification and review of international tourism demand models”, *Tourism Economics*, 3, 69-81. Song, H. and Li, G. (2008), “Tourism demand modeling and forecasting: A review of recent research”, *Tourism Management*, 29, 203-220.

<sup>8</sup> Dunning, J.H. and Lundan, S.M. (2008), “Theories of FDI”, *Multinational Enterprises and the Global Economy*, 79-115. Faeth, I. (2009), “Determinants of FDI: A tale of nine theoretical models”, *Journal of Economic Surveys*,

tourism investment based on the two factors that determine the real estate investment decision: the physical attributes of land and the business environment in each country. In a second step, we estimate the effect of tourism investment on tourism receipts.

Therefore, from this supply-side perspective, the receipts of the tourism sector are determined by the level and the quality of tourism infrastructure (as the output of the aforementioned tourism investment), the hotel price competitiveness, the hotels' annual capacity utilization, and the country's overall infrastructure. Note that the endowed land attributes of each country feed-in as a determinant to the tourism receipts through their inclusion in the determination of tourism investment.

### Step one: Land problems and tourism investment

Over the previous decade (2003-2012), tourism capital investment in Greece – as measured by the World Travel and Tourism Council - has reached a total of about €60 billion or €437,000 per sq.km. of land (about 43 per cent above the EU average). The amounts that are included cover capital investment spending by sectors directly involved in travel and tourism, or by other industries (or the government) whose investment concerns exclusively tourism related assets, such as accommodation, passenger transportation equipment, restaurants and leisure facilities. We note that the Greek market share in world tourism investment decreased to 0.6 per cent in 2012 from the 2 per cent in 2003 (albeit inflated by the preparation of the 2004 Athens Olympics) and even lower than a pre-Olympics level of about 1 per cent.

### An econometric model for tourism investment

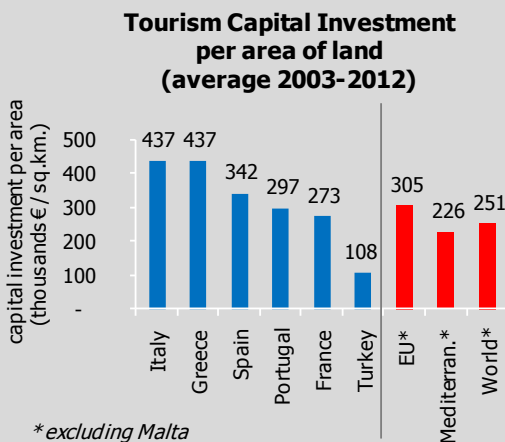
With a view to quantifying the determinants of investment in the tourism infrastructure, we have constructed a cross-sectional<sup>9</sup> model based on a worldwide sample of 92 countries<sup>10</sup>, attracting about 90 per cent of international tourist arrivals.

Though the decision for an investment is a complicated process affected by many factors, we have grouped several characteristics



\* Capital investment spending by sectors directly involved in travel and tourism, or by other industries (or government) whose investment concerns exclusively tourism related assets, such as accommodation, passenger transportation equipment, restaurants and leisure facilities.

Source: World Travel and Tourism Council, NBG



\*excluding Malta

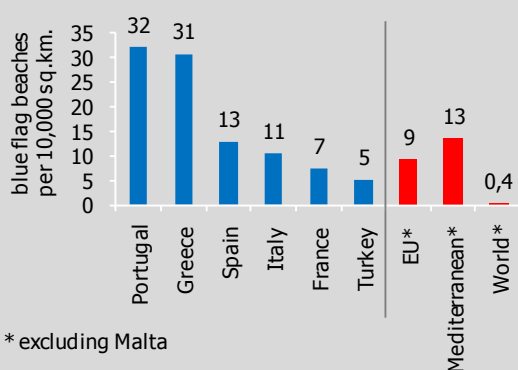
Source: World Travel and Tourism Council, CIA World

23, 165-196. Markusen, J.R. and Venables, A.J. (1998), "Multinational firms and the new trade theory", Journal of International Economics, 46, 183-203.

<sup>9</sup> In order to take account of the effect of the different size of each country, we have expressed the variables in terms of their level per sq.km.

<sup>10</sup> Our sample consists of the most significant tourism destinations, assessed by two criteria: more than 1 million tourist arrivals per year or more than 100 tourist arrivals per sq. km.

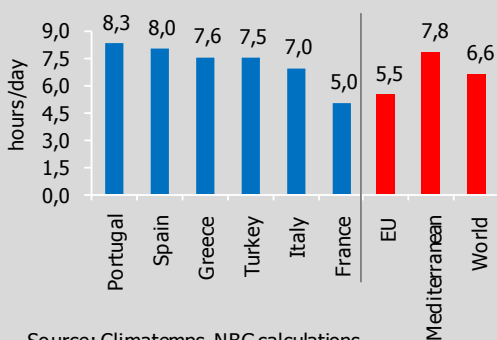
### Blue flag beaches per area of land



\* excluding Malta

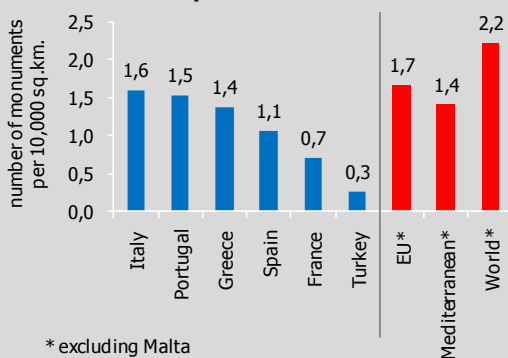
Source: Foundation for Environmental Education

### Average daily hours of sunshine



Source: Climatemps, NBG calculations

### World Heritage cultural sites per area of land



\* excluding Malta

Source: Eurostat, World Economic Forum/ Travel & Tourism Competitiveness Report 2013, NBG estimates

into two main composite drivers:

- i) a Land Index, consisting of the main attributes of land motivating tourists to visit a country
- ii) a Business Environment Index, consisting of factors affecting the attractiveness of a country for investments in land.

#### i. Land Index

Concentrating on the important attributes of land for tourism, we focus on natural environment (coastline, beaches, sunshine) and culture related attractions (cultural sites, international exhibitions, sports stadiums):

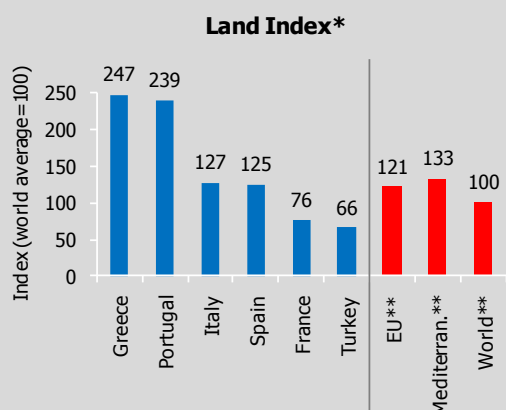
##### ✓ *Natural Environment Index*

- The Greek coastline offers many possibilities for tourism activities, stretching for about 13,676 km (or 100 meters per sq.km. of land, compared with 48 meters per sq.km. in the EU and 67 meters per sq.km. in the Mediterranean countries).
- Greece also has a large number of high quality beaches, with about 400 having a blue flag, which is an international award, indicating high water quality, facilities, safety, environmental education and management. We note that Greece has one of the highest concentrations of blue flag beaches per area of land, gaining an advantage as a summer destination (30 blue flag beaches per 10,000 sq.km. of land, compared with 9 on average in EU countries – excluding Malta due to its very small size).
- Similar to other Mediterranean countries, Greece enjoys about 8 hours of sunshine on average daily, which is 40 per cent more than the EU average and 20 per cent more than the world average.

##### ✓ *Cultural Attractions Index*

- The attractiveness of a country as a tourism destination increases when good weather and natural environment are combined with other attractions such as sites of historical importance. Such cultural treasures are abundant all over Greece. To facilitate comparisons, we consider the concentration of World Heritage cultural sites (recognized by UNESCO) as indicative of the cultural attractiveness of a country. Greece has 18 sites in the world heritage list, equivalent to about 1.4 cultural sites per 10,000 sq.km. of

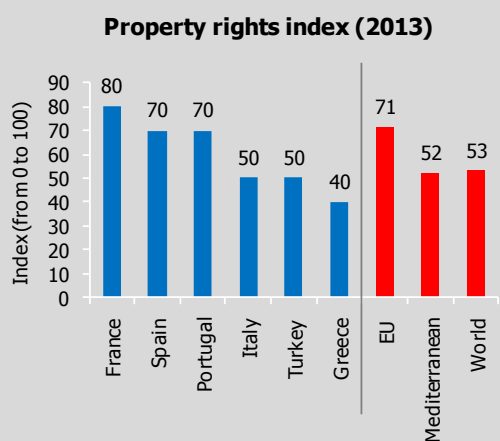




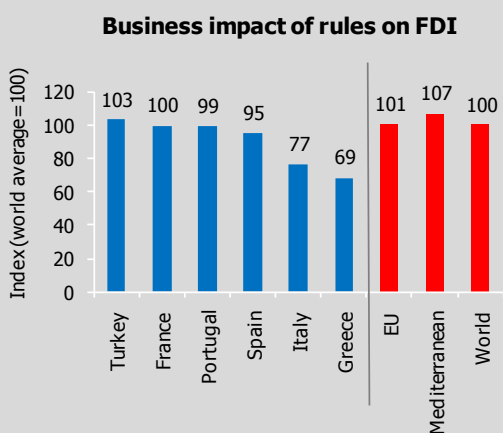
\* The Land Index takes into account the relative attractiveness of each country based on natural environment (coastline, beaches, sunshine) and culture related attractions (culture, exhibitions, stadiums).

\*\* excluding Malta

Source: Eurostat, World Economic Forum/ Travel & Tourism Competitiveness Report 2013, NBG estimates



Source: Heritage Foundation/Index of Economic Freedom, NBG estimates



Source: Eurostat, World Economic Forum/ Global Competitiveness Report 2013, NBG estimates

land, similar to other Mediterranean countries<sup>11</sup> and slightly lower than the EU average (1.7 sites per 10,000 sq.km.).

- The existence of international events and exhibitions increases the popularity of a country for both business and leisure tourism. According to the International Congress and Convention Association (ICCA), about 130 international fairs and exhibitions (organized by international associations and attended by at least 50 participants) were held annually on a regular basis in Greece (compared with 100 exhibitions on average worldwide and 175 in the EU). Adjusting for the size of the country, Greece is close to the world average of 10 exhibitions per 10,000 sq.km. of land (but significantly below the EU average of 20 exhibitions per 10,000 sq.km. of land).
- Sports events are another motive for tourist visits in a country, with available sports infrastructure an indicator of the potential for future similar events to be held in the country. The capacity of sports stadiums in Greece amounts to about 6 seats per sq.km. of land, similar to the Mediterranean average, but about 1/2 of the EU average.

Combining the above-mentioned factors, we have constructed a Land Index as an average of equally weighted sub-indices of these characteristics. NBG Research's land index suggests that Greece has an advantage as a tourism destination compared with the world (Land Index for Greece is 2.5 times higher than the world average) as well as other competitive destinations (Land Index for Greece is double the EU average).

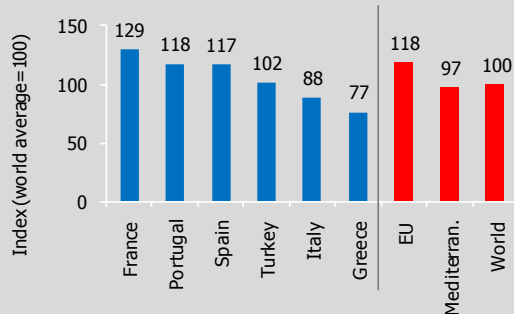
## ii. Business Environment Index

Regarding the role of the business environment, we focus on three main factors affecting the decision of an investor:

- ✓ *Property rights index*: The protection of property rights is positively correlated with the attractiveness of a country for capital investments. Greece's property index is almost half of the EU average (see analysis on p.10).
- ✓ *Business impact rules on FDI*: The rules governing FDI in Greece appear to be rather discouraging for investors, ranking 30 per cent lower than the EU average, based on perceptions recorded by the World Economic Forum.
- ✓ *Availability and affordability of financial services*: The extent

<sup>11</sup> The Mediterranean average excludes Malta which has just 3 such monuments but they are concentrated in a very small area of 320 sq.km.

### Business Environment Index\*



\* The Business Environment Index takes into account the relative attractiveness of each country based on impact of business rules on FDI (weight 25%), availability and affordability of financial services (weight 25%) and protection of property rights (weight 50%).

Source: Heritage Foundation, World Economic Forum, Eurostat, NBG estimates

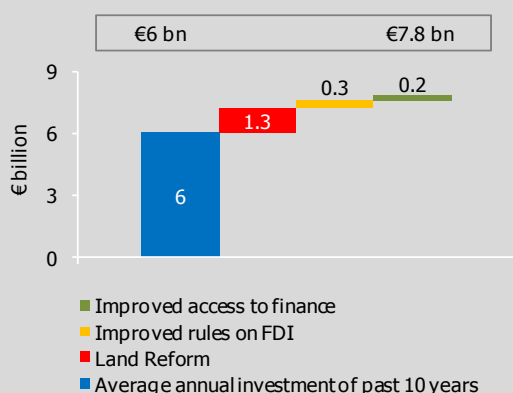
### Assumptions for estimating the potential for tourism investment in Greece

	Current level of indices*	Level of indices after the reforms (close to the european average)
Business Environment Index	67	93
caused by:		
Property rights index	50	77
FDI rules index	80	108
Availability and affordability of financial services index	89	111
Land Index	247	247

\*Previous decade's average

Source: NBG estimates, Heritage Foundation, World Economic Forum

### Estimates of potential annual capital investment in tourism



Source: World Travel and Tourism Council, NBG estimates

to which financing needs are met is of great significance for an investment both in the early stages and throughout the operation/exploitation of the establishment. Based on indices of the World Economic Forum, the availability of financial services in Greece, as well as the relevant terms and conditions, are about 20 per cent lower than the EU average, with the current state of banks making things worse.

Combining these characteristics, we have constructed the Business Environment Index, according to which the existing regulations in Greece do not encourage investment. Specifically, Greece ranks lower by about 30 per cent compared with other countries worldwide as well as competitors in the Mediterranean.

### Estimating Greece's potential for tourism investment

According to NBG Research's model (see Appendix), Greece should have attracted around €431,000 of tourism investment per sq.km over the previous decade, which is very close to its realized level (€437,000) and higher than the EU average (€305,000). Therefore, our model appears to capture Greece's relatively high share in world tourism investment based on the attractiveness of the natural and cultural environment, counterbalancing the inefficient business environment.

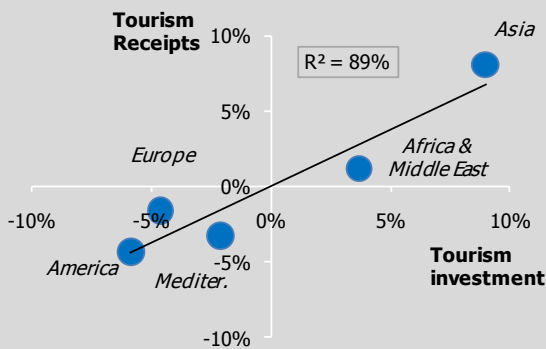
On the assumption that the Greek property market will gradually become more efficient (with the property rights index approaching the EU average), NBG Research's model suggests that tourism investment could reach €7.3 bn per year, up from €6 bn<sup>12</sup> (i.e. the average annual level during the previous decade). In addition, if other business environment rigidities (FDI rules and access to finance) were to be gradually removed (again approaching the EU average), tourism investment could increase to €7.8 bn per year.

### Step Two: Tourism Investment and Tourism Receipts

The return on capital invested in the tourism sector is an important source of income for a country since investments in infrastructure or tourist services can increase both the level of tourist arrivals as well as the potential receipts per tourist. In fact, the regions that achieved a higher market share in world tourist

<sup>12</sup> We note that during the previous decade, tourism investment in Greece has reached a high of 2 per cent of world share or €5.5 bn in 2003 (reflecting the momentum of the Olympic Games period) and a low of 0.6 per cent of world share or €3.1 bn in 2012 (reflecting the environment of high uncertainty of the past couple of years).

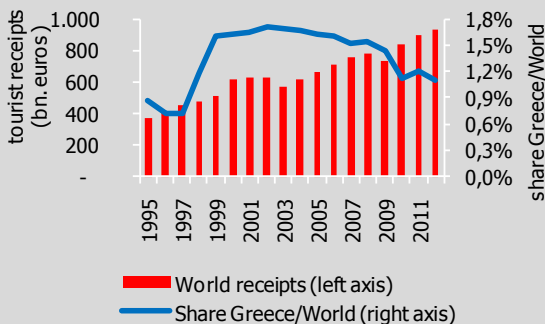
### Tourism investments and receipts\*



\* change in world market share in the past decade (2002-2012)

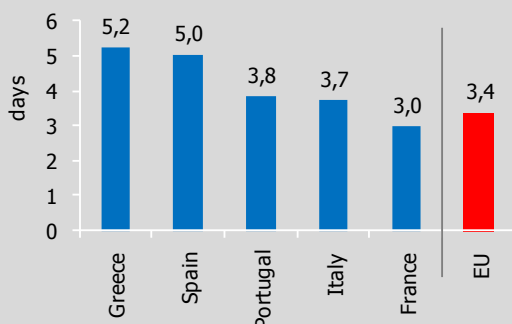
Source: World Bank, World Travel and Tourism Council, NBG estimates

### International tourism receipts



Source: World Bank, NBG estimates

### Average length of stay of international tourists (2011)



Source: Eurostat

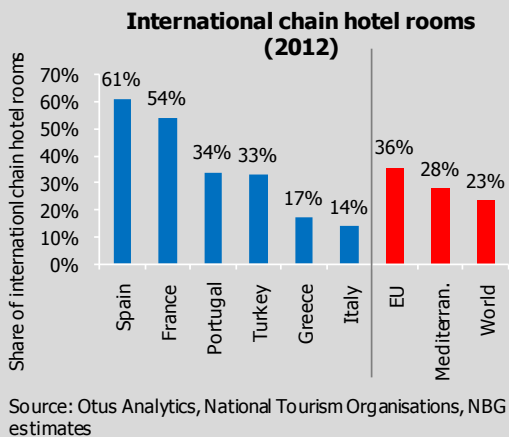
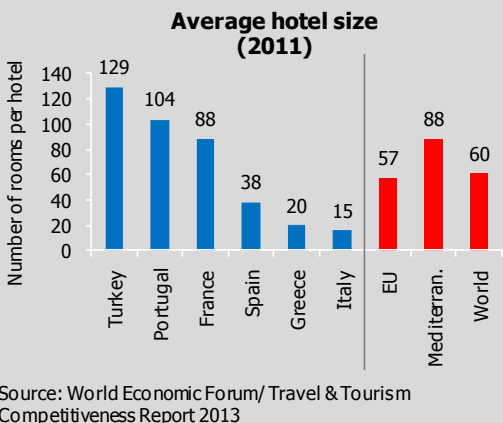
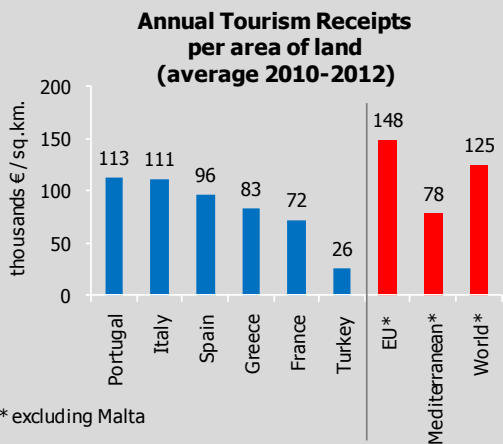
receipts during the past decade were those that noted a greater increase in tourism capital investments during the same period (see figure). Specifically, Asia and Africa & the Middle East were the regions that increased their market share in both world tourist receipts and capital investment in the tourism sector. In particular, Asia gained market share in the world tourism market, absorbing 33 per cent of tourism receipts in 2012 (from 24 per cent in 2002) while attracting 31 per cent of world tourism investments in 2008-2012 (from 23 per cent in 1998-2002).

Reflecting the momentum of the Olympic Games period tourism investment in Greece has reached a high of 2 per cent of world share, while reflecting the environment of high uncertainty of the current crisis period tourism investment has bottomed to a low of 0.6 per cent of world share. At the same time the Greek share in world tourism receipts dropped from 1.7 per cent in 2003 to 1.1 per cent in 2012. This was a result of:

- i) the drop in the Greek share of Mediterranean tourist receipts from 6.1 per cent in 2003 to 5 per cent in 2012. We note that most European countries of the Mediterranean lost market share, while non-EU countries (mainly Turkey and Syria), achieved a significant increase in receipts which allowed them to increase their share in the region by 6.4 per cent (from 15.3 per cent in 2003 to 21.7 per cent in 2012).
- ii) the slight decrease of the Mediterranean share in world tourist receipts, due to the larger increase in the region of Asia, which increased its market share by about 9 per cent (from 23 per cent in 2003 to 32 per cent in 2012).

### *An econometric model for tourism receipts*

Annual international tourist arrivals in Greece averaged about 15.5 million tourists during the past 3 years before rising to 17.5 million in 2013 in view of the significant recent gains in cost competitiveness. Daily receipts per tourist arrival are 60 per cent lower than the EU average. However, the extended stay of tourists (5 days on average, compared with 3 in the EU) brings receipts per arrival just 30 per cent lower than the EU average. Moreover, annual tourism receipts per area of land in Greece reached €10.8 billion on average during the past 3 years – i.e. €83,000 per sq.km. of available land (45 per cent lower than the EU average).



Besides the level of capital investment (which determines the level of tourism infrastructure in a country), there are several factors which could lead to higher tourism receipts, such as the quality of tourism services, country characteristics, price competitiveness and seasonal factors. In order to evaluate the fundamentally competitive position of Greece as a tourism destination, NBG Research has constructed a cross-sectional model of tourism receipts (see Appendix) for the main tourist destinations of the world<sup>13</sup> based on the level of tourism infrastructure (as reflected in the level of tourism investment over the past 10 years in real terms) and other four explanatory variables:

- i) a Quality Index,
- ii) a Country Index,
- iii) a Price Index,
- iv) a Seasonality index

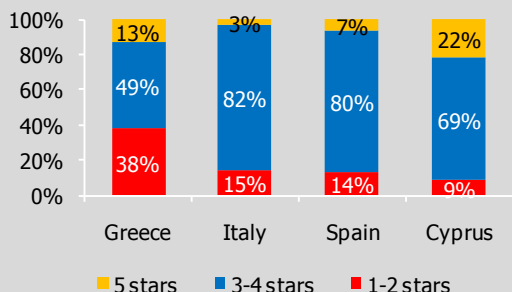
#### i. Quality Index

Although the level of tourism investment per sq.km. of land in Greece appears to exceed the EU average (see page 14), in terms of the quality of the existing infrastructure, there is still room for improvement. Specifically, we have used two variables in order to gauge the quality of tourism services in a country:

- ✓ *Hotel size:* Investments in the tourist sector appear adequate in terms of accommodation capacity, with 9 hotel beds per sq.km. of available land, which is similar to the EU average of 11 beds per sq.km. However, these beds are dispersed in a large number of small hotels, usually leading to a medium or low quality of accommodation services. Specifically, the Greek hotel sector consists mainly of small establishments with 20 rooms on average, compared with 60 rooms per hotel on average in the EU and in the world.
- ✓ *Branding:* Apart from the small size of Greek hotels, the accommodation market is characterized by a low penetration of international chains, whose brand name could attract more tourists and expand the range of targeted source markets. Specifically, 17 per cent of hotel rooms in Greece are part of international chain hotels, lower than the main competitors in the EU (36 per cent on average) and the world (23 per cent on average). Indicative of the quality of accommodation services in Greece is the high share of hotel beds in 1-2 star

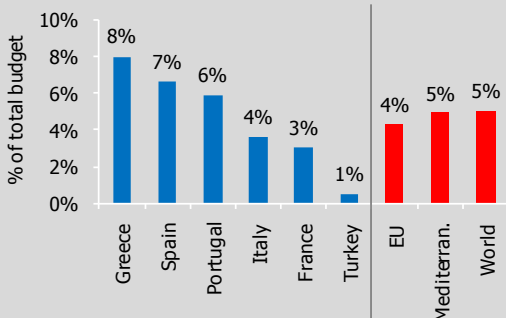
<sup>13</sup> The sample of 92 countries is the same with the tourism investment's model.

### Available hotel beds by type of establishment (2012)



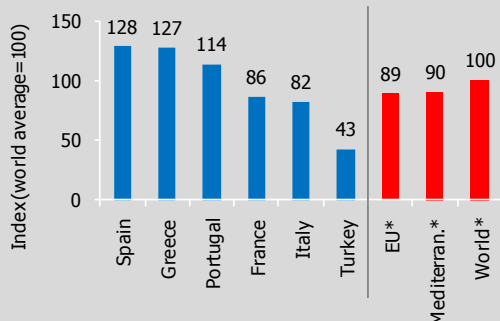
Source: National Tourism Organisations, NBG estimates

### Government budget on Travel & Tourism (2011)



Source: World Economic Forum/ Travel & Tourism Competitiveness Report 2013, World Travel and Tourism Council/ Tourism Satellite Accounting Research (2012)

### Country Index\*\*



\* The Country Index takes into account the relative attractiveness of each country based on transport infrastructure (weight 20%), availability of air transport connectivity (weight 40%) and state budget on tourism (weight 40%).

\*\* excluding Malta

Source: World Economic Forum, NBG estimates

hotels (about 40 per cent of available hotel beds, compared with less than 15 per cent in competitor countries such as Italy or Spain), compared with mainly medium quality infrastructure (3-4 star hotels) for the competitor countries.

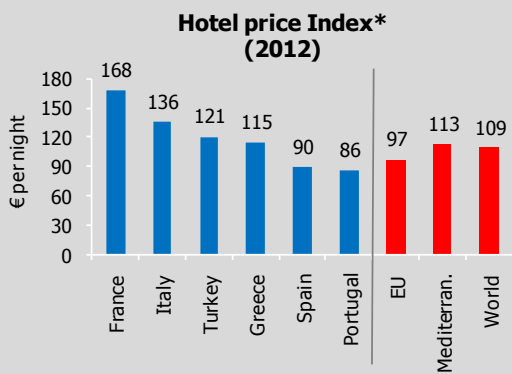
At this point, it is important to note that the presence of international brands in the accommodation sector appears more extensive in countries where property rights are better protected (e.g. North European countries). Specifically, the share of hotels that are part of international chains shows a correlation of 55 per cent with the property rights index. Therefore, a low property right index lowers not only the level of tourism infrastructure but also its quality.

Note that the quality of infrastructure also depends on the Property Rights Index (described above). According to our estimates, the elasticity of this relationship is 0.6.

### ii. Country Index

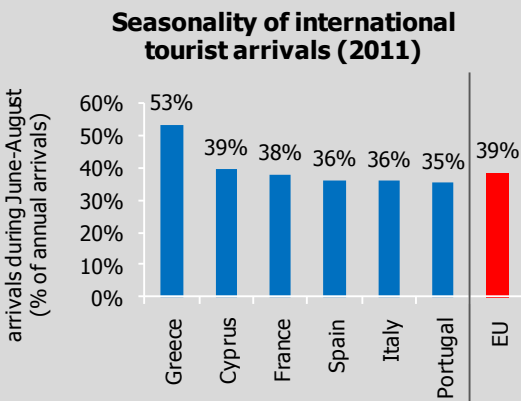
Apart from the tourism infrastructure per se, important country characteristics also affect the attractiveness of any tourist destination. Specifically we consider the following parameters:

- ✓ *Transport infrastructure:* Based on the WEF indicators, the quality of existing transport infrastructure in Greece is perceived to be similar to the world average, but 17 per cent lower than the EU average.
- ✓ *Availability of airline seat-kms:* Air transport connectivity between sources of demand and tourist destinations is another crucial factor for the realization of the potential of the tourism sector. Based on the capacity of air transport departures (adjusted for the size of available land), connectivity in Greece is 47 per cent lower than the EU average and 65 per cent lower than the world average. In fact, Greek destinations lack direct airline connections with distant sources of demand (such as America and the growing market of Asia).
- ✓ *State budget on tourism:* The great importance of the tourism sector for the Greek economy is reflected in the allocation of a relatively high share of the total government budget for the support of travel and tourism (8 per cent of the total budget in Greece in 2011, compared with 4 per cent on average in the EU).

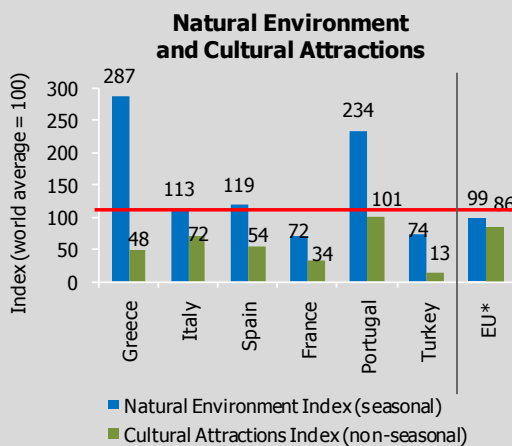


\* Average overnight rate in first class branded hotels

Source: World Economic Forum/ Travel & Tourism Competitiveness Report 2013



Source: Eurostat



\* excluding Malta

Source: Eurostat, World Economic Forum/ Travel & Tourism Competitiveness Report 2013, NBG estimates

### iii. Price Index

Hotel prices affect both the demand for tourist services as well as the total tourism receipts. Based on a hotel price index comparing average room rates for first class branded hotels, the cost of accommodation in Greece is 18 per cent higher than the EU average. Note that during the last 5-years, hotel prices has decreased by 18 per cent in Greece (versus a price hike of 8 percent in the EU).

### iv. Seasonality Index

Seasonality during summer months is one of the main characteristics of Greek tourism. Specifically, non-resident tourist arrivals in hotel establishments during June-August comprise more than ½ of annual arrivals, compared with about 40 per cent in Europe. Destinations with a highly seasonal tourist product obviously have a disadvantage concerning annual tourist receipts.

In order to gauge this seasonality effect, we estimate the ratio of the Natural Environment Index to the Cultural Attractions Index (see page 12). Based on our global sample, we find that countries with a greater advantage in cultural (non-seasonal) attributes achieve higher annual receipts per sq.km. of available land, compared with countries depending mainly on natural environment attributes which are usually seasonal. That distinction helps explain the seasonality of Greek tourism, as its comparative advantage lies in natural attractions (with the natural environment index almost 3 times higher than the EU average), while in terms of culture related attributes (cultural attractions index), Greece ranks about 50 per cent lower than the EU average.

### *Estimating Greece's potential for tourism receipts from business environment reforms*

Based on our model, Greece – with its special characteristics, its current business environment and infrastructure – should attract tourism receipts of around €10 bn per year, which is not far from its realized annual average tourism receipts during the past three years. However, land reform is estimated to increase tourism receipts through two channels:

- ✓ Based on our tourism investment model (see page 14), the removal of the business environment rigidities (mainly regarding the property market) would result in higher investment, which in turn would lead to annual tourism



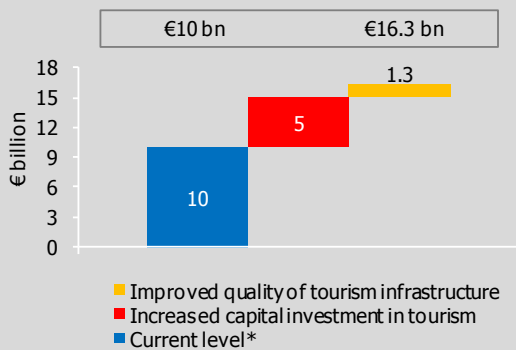
### Assumptions for estimating the potential for tourism receipts in Greece

	Current level	After the reforms level
Annual tourism investment*	€6 bn	€7.8 bn
Quality index	39	52
Country index	127	127
Price index	115	115
Seasonality index	12	12

\*The current level refers to the previous decade's average

Source: NBG estimates, Heritage Foundation, World Economic Forum

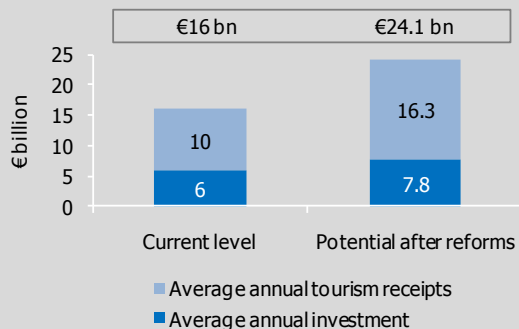
#### Estimates of potential annual tourism receipts



\* The current level concerns the average annual tourism receipts during the past 3 years (2009-2011).

Source: World Bank, NBG estimates

#### Estimates of total annual revenues from the tourism sector



Source: World Bank, World Travel and Tourism Council, NBG estimates

receipts of €15 bn per year.

- ✓ Based on our estimated elasticity of the quality index to the property rights index (see p. 16), land reform would also increase the quality index by 35 per cent, thus adding to the tourism receipts another €1.3 bn and thus leading them to €16.3 bn per year.

This fair value estimate corresponds to tourism receipts of €135,000 per sq.km. (from €85,000 currently), which in fact remains lower than the EU average (€150,000) as Greece's higher investment is more than counterbalanced by its seasonality problems, inadequacies in transport and low (despite the projected improvement) quality of tourism infrastructure. However, this analysis points to the significant conclusion that business environment initiatives (such as the completion of the cadastral map and the simplification of the spatial planning regime) could increase tourism receipts by 63 per cent (€16.3 bn per year from €10 bn currently).

### Summing up – Reforms in the Greek land market could attract additional tourism revenue of €8.1 bn per year

Although research so far has pointed to land attributes in order to attract tourists, NBG Research's model suggests that land attributes firstly attract investors, who build infrastructure which in turn attracts tourism receipts. In other words, if land attributes cannot attract investors (due to business environment complexities), then tourist arrivals will mainly consist of low-budget travelers staying only for a few days and only during the peak season – thus constraining significantly tourism receipts.

In fact, our analysis suggests that critical reforms in the Greek land market could lead to additional tourism revenue of €8.1 bn per year (€6.3 bn in extra receipts and €1.8 bn in extra investment). Most importantly, these additional revenues are only a fraction of the full potential of land reforms. This total effect to the Greek economy is obviously much larger, as in our analysis we have not taken into account the indirect effects of the increased tourism activity, and more importantly the direct effects of the more efficient functioning of the land market for other sectors of the Greek economy.



## WHAT NEEDS TO BE DONE FOR THE POTENTIAL OF GREEK LAND TO BE MATERIALIZED

To reach the above-mentioned potential from the exploitation of Greek land, the issues concerning land ownership and land use need to be resolved.

### For the issue of land ownership to be resolved, a coherent national cadastre needs to be a policy priority

A major cause of delay regarding the investment process in Greek land is the lack of transparent, clear and complete information. A national cadastre would guarantee ownership and land use from an easily accessible source guaranteed by the State, thus providing security for investors.

Specifically, a fully-functional cadastre would provide the relevant information for each land plot (exact location and borders, past and current ownership status, land use possibilities and limitations) and it would provide proof of ownership. Under the current registration process for the cadastre, initial records of properties are created based on the declaration of owners (providing the necessary contracts and licenses for review) combined with spatial data collected by specialized companies assigned to the project. Corrections and objections are allowed for a given period of 5 years (7 years for owners living abroad), after which the recorded information is finalized and no further ownership claims can be made. Undeclared properties recorded as “of unknown owner” are then considered public property, and there will be no right to a building license or other transactions for properties that are not registered in the cadastre (so usufruct law will not be allowed in the future for acquiring legal property titles).

This whole procedure has two main obstacles to overcome – the clarification of what constitutes public land and the determination of a national spatial planning strategy. Note that although since the mid-1990s there have been several efforts to form a cadastre, the process is still incomplete, with only 7 per cent of land area registered (10 per cent in terms of land parcels). The main difficulties arise due to legal conflicts concerning land ownership between the private and the public sector (as was described above). In fact, when the state activated a law that defined forest land according to the aerial photos of 1945, about ½ of the properties already recorded in the cadastral records were claimed

### Greek Cadastre

	Total	Recorded in Cadastre	% of completion
Total land area (sq.km)	131,621	8,738	7%
Total land parcels	18,000,000	1,748,795	10%
Property rights	37,200,000	6,728,839	18%
Municipalities	5,775	336	6%

Source: QKEN plenary meeting (05/2012), Potsiou: International Forum (10/2010)

## Progress of the Greek Cadastre Project

Regions	Targeted Area	Targeted Coverage
<i>First generation surveys (1995, 1999)</i>		
mostly rural areas all over Greece (pilot)	8,400 sq.km.	6.5% of land 17% of property rights
<i>Second generation surveys (2008)*</i>		
mostly metropolitan and urban areas	3,100 sq.km.	2.5% of land 20% of property rights
<i>Third generation surveys (2011)*</i>		
mostly rural areas in North Greece and Thessaly	34,100 sq.km.	26% of land 20% of property rights
<i>Fourth generation surveys (2013)*</i>		
mostly rural areas, rest of Greece	86,000 sq.km.	65% of land 43% of property rights

\* The cadastre project in the areas registered under the second, third and generation of surveys is still in progress.

Source: Press conference with the Minister of Environment, Energy and Climate Change (October 2013), Dr. Chryssy Potsiou presentation "The need for smart land management regularization - The case of Greece/ International Forum: Property transactions in the digital age, Germany (10 Sept.-1 Oct. 2010).

by the State as public forest land, although private interests have claimed ownership for this same land for several decades. An important step towards the acceleration of the project was the recent reform which facilitates the completion of reliable forest maps and accelerates procedures in all stages (law 4164/2013, which provides for spatial surveys, registering property, corrections and objections).

From the above analysis, it is clear that in order to capitalize on the valuable asset of Greek land, Greece needs to clarify the ownership issues.

One possible solution would be to determine public land according to the 1945 aerial photographs. As a large share of this area is no longer forest (and to a significant extent is occupied by private owners), this solution would lead to dramatic wealth reduction for many citizens (and in many cases demolitions of residences). The economic and social effect of this solution makes it unpractical.

Another solution would be to depict the current condition of forest lands (through a clear definition for forests and recent aerial photos) and finalize the public land based on this information. The legalization of land obtained following the catastrophic wild fires of the past decades and the illegal encroachment on environmentally valuable areas makes this solution also unacceptable.

A third possible solution would be to complement the forest areas that are depicted on the 1945 with current aerial photos. For the areas that appear to be forest lands in 1945 but not currently, a special regime could be established. For instance, the state could extend the usufruct law in order to also apply for these grey area lands, thus providing legal property rights to private owners in case they exploited it for a period of, say, 20 years or more. Important exceptions should be made in case the area is determined of high environmental importance. In any case, the regime for the grey areas should be final and clear, but it should also balance the need to protect property ownership with the need for natural resource conservation and environment protection.

As these reforms will be implemented on a medium-term horizon, an intermediate solution should also be applied. By centralizing available information from the mortgage registers – basically

## Tourism investment projects under the Fast Track framework

Project Description	Estimated investment cost
<b>Approved projects</b>	
"ITANOS GAIA" in Cavo Sidero, Crete Development of five luxurious hotels of total capacity of 1,936 beds, along with a golf course and an international level spa. Area: 25 sq.km.	€ 267.7 mil.
"PRAVITA ESTATE" in Polygyros, Chalkidiki Development of a golf, eco leisure, luxury resort. Area: 12.6 sq.km.	€ 911 mil.
"KILADA HILLS" in Kilada, Prefecture of Argolis Development of a luxury leisure-integrated residential resort comprising a 5 star hotel, a championship golf course and club house, a beach club and luxurious holiday residences. Area: 2 sq.km.	€ 418 mil.
<b>Submitted project</b>	
"ITHACA RESORT" on Ithaca island, Ionian Sea Development of a luxury leisure - residential integrated resort development, comprising 5 star hotels, a prime golf course and club house, Marina, conference facilities and luxurious residences. Area: 12 sq.km.	€ 400 mil.

Source: Invest in Greece, various publications

digitally copying all deeds records - the state (combined with the information from owners stating their claims) could develop a temporary cadastral map aiming at collecting evidence to prove boundaries and complete information on owners rather than on settling all ownership cases and spatial land use. Thus, this temporary cadastre could at least present which areas are clear (with undisputed property rights) and thus can be used for investment purposes, and which areas have overlapping claims. Final verification of the cadastral map could be made at a later stage, with input from the forest map or court intervention, if required.

### For the land use to be clarified, difficult political decisions must be made

During the past months, important legislative initiatives that aim to improve the business environment have been approved (with most of them in principle constituting exemption law, see Box 2). The recent fast track laws (L.3894/2010, L.3986/2011 and L.4062/2012), while they aim to bypass most of the legal and administrative obstacles, do not address the root of the problem – the specification of land uses throughout Greece.

As this issue is pending for almost a century and a half, the political decisions to resolve it are understandably difficult but also a necessity for Greece to realize its growth potential. Since this problem has many repercussions for different groups, we distinguish three cases:

- ✓ For about half of Greek territory where there are no private property rights, the state could determine without difficulty land uses, carving out specific land for development (obviously by far the largest share would be forest lands).
- ✓ For the other half of Greek territory where there are already private property rights, the state could provide building licenses for the parcels that have already been built (i.e. legalize them) – except for buildings that are in environmentally sensitive areas (coastal zone, NATURA, archaeological sites etc.), which would need to be demolished (as part of the above-proposed land ownership reform).
- ✓ For the privately-owned parcels that have no buildings, the state could determine land uses according to economic and environmental criteria, with the aim of limiting development to specified areas, as well as increasing the density of

development in such areas, while leaving the protected areas free of any development. For the private landowners that will sustain losses in terms of wealth (e.g. owners of parcels larger than 0.4 ha that previously were suitable for building and that will be left outside the limits of the areas for residential or tourism development), a land exchange arrangement could be proposed for new parcels within the limits of the areas for residential development. The proposed swap parcel, while it could be in a less attractive location, should have slightly larger building rights – thus compensating for the exchange along with the value created by providing land development rights.

- ✓ Another thorny issue is the areas that would supply the land for the exchange. The most reasonable choice for such developments would be public grassland plots in zones where building is permitted. In fact, a legal precedent for such a scheme is the recent law 4178/2013 that allows for land exchanges between privately-claimed land plots of building cooperatives<sup>14</sup> situated in forests and public land plots in areas for residential development.

The best possible solution could be to begin with a pilot land exchange program in specific areas, obtain feedback from its practical implementation. These exchanges are likely best implemented at the level of regional authorities who have better knowledge of specific land issues, under general guidelines of a national framework.

In the above analysis, we have proposed possible directions for the solutions of the land problems in Greece. It is clear that the political decisions are difficult, that the stakeholders have conflicting interests and the administrative and legal reforms that must be made are enormous. However, our analysis also makes clear that these reforms should be accelerated in order for Greece to gain the returns from its unique land characteristics – gains that only for the tourism sector amount to more than €8 bn per year (nearly 4 per cent of GDP).

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<sup>14</sup> Building cooperatives (which represent around 150,000 members) are associations with the aim to help their members to acquire land plots with building licenses through small annual payments. These associations claim that they hold the legal property rights for land plots of around 250 sq.km. (0.2 per cent of the Greek territory) – however, with the majority of those land plots also claimed by the state as forest lands.

## APPENDIX: Econometric models

### A. Global tourism investment model

NBG Research estimated a global tourism investment model in order to assess the underlying potential of Greece's tourism infrastructure. The model is based on cross-section data for the world's main tourist destinations.

Our sample consists of 92 countries, which either attract more than 1 million tourist arrivals per year or attract more than 100 tourist arrivals per sq. km, accounting for about 90 per cent of international tourist arrivals. In order to take account for the effect of the different size of each country, we have expressed the variables in terms of their level per sq.km. The explanatory variables are the following two indices constructed for each country:

- ✓ a Land Index, which consists of two sub-indices: (i) a Natural Environment Index (based on the size of the coastline, the number of blue-flag beaches and the hours of sunshine); and (ii) a Cultural Attractions Index (based on the number of UNESCO world heritage cultural sites, the number of international exhibitions and the sport stadiums' seats).
- ✓ a Business Environment Index, which consists of three sub-indices: (i) a Property Rights Index (source: Heritage Foundation); (ii) an FDI Rules Index (source: World Economic Forum); and (iii) an Access to Finance Index (based on the availability and the affordability of financial services indices, source: World Economic Forum).

Based on our model, the Land Index and the Business Environment Index determine 75 per cent of the global distribution of tourism investment per country during the past 10 years.

$$\text{inv}_i = 2.43 \text{ land}_i + 3.34 \text{ be}_i - 242.09$$

*(14.91)      (2.57)      (2.84)*

$$R^2 = 0.75, \text{ DW} = 2.05$$

where:

inv: gross fixed capital formation in travel and tourism sector over the period 2003-2012 for the country i (in thousand euros per sq.km., source: WTTC),

land:  $\frac{1}{2}$ \* natural environment index of country i +  $\frac{1}{2}$ \* cultural attractions index of country i

be:  $\frac{1}{2}$ \* property rights index of country i +  $\frac{1}{4}$ \* FDI rules index of country i +  $\frac{1}{4}$ \* access to finance index of country i

i: Albania, Argentina, Australia, Azerbaijan, Bahrain, Barbados, Botswana, Brazil, Cambodia, Canada, Cape Verde, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Georgia, Guatemala, Haiti, Hong Kong SAR, China, India, Indonesia, Iran, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kyrgyz Republic, Lebanon, Malaysia, Mauritius, Mexico, Montenegro, Mozambique, New Zealand, Nicaragua, Oman, Peru, Philippines, Qatar, Russian Federation, Saudi Arabia, Senegal, Seychelles, Singapore, South Africa, Thailand, Uganda, Ukraine, United Arab Emirates, United States, Uruguay, Vietnam, Zimbabwe, Belgium, Bulgaria, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom, Norway, Switzerland, Turkey, Algeria, Egypt, Israel, Morocco, Syria, Tunisia

T-statistics in parentheses below coefficient estimates.

### *B. Global tourism receipts model*

NBG Research estimated a global tourism receipts model in order to assess the prospects of Greek tourism. The model is based on cross-section data for the main tourist destinations.

Our sample consists of 92 countries, which either attract more than 1 million tourist arrivals per year or attract more than 100 tourist arrivals per sq. km, accounting for about 90 per cent of world international tourist arrivals. In order to take account for the effect of the different size of each country, we have expressed the variables in terms of their level per sq.km. The explanatory variables used are the following five indices constructed for each country:

- ✓ a Infrastructure Index, expressed as the level of tourism investment over the previous decade in each country (deflated using the Penn World Tables)
- ✓ a Quality Index, which consists of two sub-indices: (i) a Hotel Size Index (based on the average number of beds per hotel in each country); and (ii) a Branding Index (based on the share of branded hotels in each country).
- ✓ a Country Index, which consists of three sub-indices: (i) a Transport Infrastructure Index (source: World Economic Forum); (ii) a Availability of Airline seat-kms Index (expressed in terms of per sq.km, source: World Economic Forum); and (iii) a Tourism Budget Index (government expenditure on tourism as a percentage of the total government budget).
- ✓ a Price Index (average room rates in each country, source: World Economic Forum)
- ✓ a Seasonality Index, which is the ratio of the Cultural Attractions Index to the Natural Environment Index in each country

Based on our model, those five indices determine 75 per cent of the global distribution of tourism receipts per country during the past 3 years.

$$\text{rec}_i = 300.57 \text{ inv}_i + 527.95 \text{ q}_i + 1511.72 \text{ country}_i - 1938.09 \text{ p}_i + 891.85 \text{ seas}_i + 113466.1$$

(6.56)
(2.26)
(2.01)
(3.43)
(4.39)
(1.81)

$$R^2 = 0.74, \text{ DW} = 1.97$$

where:

rec: average annual tourism receipts during 2010-2012 in country i (in thousand euros per sq.km., sources: Eurostat and World Bank),

inv: deflated gross fixed capital formation in tourism over the period 2003-2012 in country i (in thousand euros per sq.km.)

q:  $\frac{1}{2}$ \* hotel size index +  $\frac{1}{2}$ \* branded index in country i

country:  $\frac{1}{3}$ \* transport infrastructure index +  $\frac{1}{3}$ \* availability of airline seat-kms index +  $\frac{1}{3}$ \* tourism budget index in each country

p: hotel price index in country i

seas: cultural attractions index/natural environment index in each country \*100

i: Albania, Argentina, Australia, Azerbaijan, Bahrain, Barbados, Botswana, Brazil, Cambodia, Canada, Cape Verde, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Georgia, Guatemala, Haiti, Hong Kong SAR, China, India, Indonesia, Iran, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kyrgyz Republic, Lebanon, Malaysia, Mauritius, Mexico, Montenegro, Mozambique, New Zealand, Nicaragua, Oman, Peru, Philippines, Qatar, Russian Federation, Saudi Arabia, Senegal, Seychelles, Singapore, South Africa, Thailand, Uganda, Ukraine, United Arab Emirates, United States, Uruguay, Vietnam, Zimbabwe, Belgium, Bulgaria, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom, Norway, Switzerland, Turkey, Algeria, Egypt, Israel, Morocco, Syria, Tunisia



# SECTORAL REPORT

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## NATIONAL BANK OF GREECE

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