The Impact of the Athens 2004 Olympic Games on Real Estate Values in Greece

BY PANAGIOTIS ZENTELIS AND TASSOS LABROPOULOS

In the summer of 2004, Greece hosted the XXVIII Olympic Games. The focal point of the Games was the Prefecture of Attica, where the city of Athens, the capital of the Hellenic Republic, is located.

Ever since September 5, 1997, the day Athens was selected to be the site of the Games, the Prefecture of Attica has been changing. Many public works projects were in progress and others had just been approved, virtually turning the greater Athens area into a work site. Olympic venues, infrastructure, and housing facilities changed the existing urban and land planning schemes of every local authority involved directly or indirectly in the Games, re-defined real estate values, and created a considerable (sometimes even enormous) net gain in values to land.

In the first part of this paper, the terms "value" and "net gain in value"

are analyzed and corresponded to the Hellenic real estate market data, while an extensive description of the evolution of the net gain in values and the taxation status in Greece is attempted.

In the second part, the "Olympic Venues" are grouped geographically in order to study their influence on the local real estate market. Based on data collected over the past few years for residential properties, professional establishments, and land parcels (market values, building construction standards, urban planning regulations, etc.), the corresponding net gain in values has been calculated. The resulting influence is graphically presented through buffer zones using the ArcMap GIS software, and is accompanied by analysis of market trends.

Finally, the last, but not least, part contains an analysis of the future of the Hellenic real estate market and its

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institutional evolution, the demand for certain property categories and the financial adjustments to others, the levels of values and of the net gain in values through 2006, and a nationwide outlook with a view toward increasing real estate values.

Real Estate Values and Net Gain in Values

The Value of Real Estate Properties

Every part of our space has a certain value. In terms of use, space can be separated into publicly used and privately owned, and by financial terms into commercial transaction enabled and disabled. Transaction-disabled properties such as streets and public parks are properties of the State and as such cannot be bought or sold. Properties with transaction-enabled status are specifically located and have certain attributes which produce their Market Value (MV), or simply their Value (V). The Value of real estate is dynamically defined and arises from the consideration of every positive or negative aspect of the property. Market Value is defined as the most probable sales price under the condition that the contracting parties are well informed of the property's potential and the market's conditions.

The Net Gain in Value of Real Estate Properties

"Net Gain in Value" stands for the increase of a property's value through time in constant prices. Thus, it functions as an investment acceleration lever, providing a motivation for future legal, legitimate, and attractive profits and supporting an overall development policy. In a particular economy with specific resources, enterprise level, technology, population, and other special features, the usefulness of land should be maximized for present and future times. This

can be achieved through the financial acts of people who aim to realize a net gain in value and collect their corresponding share.

Factors that have an impact on the net gain in value depend on the overall financial, political, and social status of a country and contribute to the increment of property values. The main factors are:

- Increase in per capita income at a higher rate than inflation
- The security that investing in real estate offers in unstable economies or during stock market crises
- Land policy applied by the state through civil planning regulations, developmental public works and infrastructure, and modification of legislation on real estate taxation
- Steadily growing housing needs, considering the finite Earth size as opposed to the infinite Earth value
- Urbanization of a significant number of the provincial population
- Intensification of competition due to the increasing availability of real estate capital, leading property values to an extremely high level

In addition, some special factors that have a considerable impact on the net gain in values are:

- The application of the Law of Supply and Demand in special real estate markets with local, qualitative, financial, and time features
- Special qualities and services that a specific property may provide to a specific future owner

FIGURE 1. The Olympic Works Master Plan



• Alteration of the land use, the building use, or the terms of building regulation

Finally, even more specific factors, such as the architectural style or the maintenance of a property, can contribute to the creation of net gain in value.

Taxation of the Net Gain in Value

Net gain in value has been subject to taxation since 1919 (Law 1642/1919), but has encountered many difficulties over the years, mainly in calculating its logistic value.

Nowadays, a reduction of the taxation on the net gain in value for real estate is used by the Greek state as a means to encourage development of real estate investing companies. In particular, the net gain in value that is produced each year by the properties of a company with an appreciable real estate portfolio is not

added to the company's gross income but rather becomes individually subject to taxation with a 2% coefficient (instead of the current 35%).

Net Gain in Value as a Result of Investing

Net gain in value that exists in a property or is produced through investing in real estate creates a positive Net Present Value (NPV). Every action in real estate is related to an expectation for NPV > 0, where:

NPV = expected income present value - expected expenses present value

In order to achieve this, the investor must select the highest and best use, which is the legitimate, possible, and profitable use that meets existing demand and brings in the highest present value for the maximum period of time. The Evolution of the Net Gain in Value Macroeconomically, the value of a given group of properties in a certain area is bound to increase over time

TABLE 1. Olympic Works Geographic Distribution

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Athletic facilities	Residential premises	Infrastructure works			
Ag.Kosmas	Ag.Andreas	Athens Tram			
 Sailing Olympic Center 	Press Village	■ 24 km., 48 stations			
Athens	Amygdaleza	Attiki Odos			
 Ethnikos Premises Panathianiko Stadium 	Press Village Mercussi	• 65.3 km, 32 main			
i dilatilalilito otadialili	Maroussi Press Village	interchanges			
Galatsi Olympic Center	- 11033 Village	Attiko Metro 17 3 km 23 stations			
 Olympic Center Goudi 	Olympic Village 124 hectares	- 17.5 Km, 25 Stations			
	2,292 residences	ISAP (electric railways)			
Olympic HallDekelia	Pallini	 25.6 km, 23 stations International Airport 			
 Olympic Training Center 	Press Village	16 mil. passengers			
Faliro	National Technical	220,000 tons cargo			
Peace and Friendship	University of Athens	Varis-Koropiou Ave.			
Stadium renovation	Campus	■ Widening			
Coastal zone reformation	■ Press Village	Vari settlement deviation			
Karaiskaki stadium	National & Kapodistrian	Kifissias Ave.			
Fencing Hall	University of Athens	 Multi-level interchanges 			
Olympic Center	Campus	(Psychiko, St.Barbara,			
Helliniko	■ Press Village	Filothei)			
Olympic Complex	1 1035 village	Kifissos Ave.			
Olympic Canoe-Slalom		Multi-level interchanges			
Center		(Posidonos, Pireos, Iera			
Liossia		Odos, P.Ralli)			
Olympic Hall		Watercourse regulation			
Markopoulo		Motorway construction			
Olympic Shooting Center		from Pireos to Posidonos)			
Olympic Equestrian Center		Kymis Ave.			
Athens Horse Racing		 Connection to the Olympic 			
Course		Village			
Maroussi		Marathonos Ave.			
 Renovation/Upgrade/ 		 Classic Marathon route 			
Unification of Athens		Pallini deviation			
Olympic Sports Complex		Papandreou Ave. (Pireaus)			
 International Broadcasting 		■ Connection to Pireaus			
Center		port			
 Main Press Center 		 N.Faliro-Schisto Highway 			
 Olympic Tennis Center 		Posidonos Ave.			
 Olympic Aquatic Center 		 Alimos multi-level 			
Nikaia		interchange			
 Olympic Weightlifting Hall 		 Olympic Venues 			
Peristeri		connection			
 Olympic Boxing Hall 		Souliou Ave.			
Schinias		 Construction 			
 Olympic Rowing and 		Schinias Ave.			
Canoeing Center		 Construction 			
		Stavros-Rafina Ave.			
		 Construction 			
		Marcopoulo			
		 Access from Lavriou Ave. 			
		Suburban Railrway			
		 Athens Railroad Center 			
		 17 stations 			

because of the development and the improvements on the land, technological evolution, and the augmentation of real estate investments.

Based on data from the National Statistical Service of Greece (1956-1997, 1977-1996, 1980, 1988-2001) regarding the value (declared in the contracts) of properties that were sold in 1961-1980 and 1981-2000, recent research conducted by the National Technical University of Athens (n.d.) has proved that the value of every kind of real estate property in every region of the country has increased by a greater percentage than inflation has. Other parameters affect the system as well causing a value oscillation in certain areas or even a "launch" of values in others. Knowing the behavior pattern of the real estate values differentiation for various types of properties, periods of time, and areas can be critical for rational land policy, successful financial and social decision making, and efficient control of the net gain in value of land.

According to an annual report of the Council for Monetary Policy of the Bank of Greece (2003), the total value of real estate properties possessed by Greeks in the year 2002 was 572.77 billion euros, compared to 264.61 billion euros in the year 1995. The above produced a net gain in value (dV) in 2002 constant prices of 213.77 billion euros, or a 59.55% net gain in value for a 7-year period.

The Olympic Venues

Olympic venues will significantly facilitate everyday life for the citizens and visitors to the region of Attica (figure 1) and help to develop new residential and commercial areas, rearranging the local real estate market and producing great net gain in values. They can be divided into athletic venues, infrastructure, and residential premises (table 1), though

they altogether have a positive impact on the value of real estate properties.

Attiki Odos

This is perhaps the most important of the infrastructure works in terms of its impact on the real estate market. Attiki Odos is a high-speed toll motorway, one of the most modern in Europe. It consists of two main motorways: the Elefsina-Stavros-Spata A/P Motorway, which extends 52.4 km and the Imittos Western Peripheral Motorway, which is 12.9 km. With 32 multi-level interchanges and hundreds of overpasses and underpasses, it connects 30 municipalities (figure 2), constitutes the backbone of ground transportation in the region of Attica, and provides a unique opportunity for urban and civil reevaluation and replanning of the greater Athens area.

Attiki Odos has had a positive impact on land values throughout all of its length, affecting open spaces and built-up areas from one side of Attica to the other, primarily because of the great opportunity it provides for decentralization of business and residences. Areas around interchanges, properties in the western suburbs of Athens, and the surroundings of the new Athens International Airport in the eastern suburbs of Mesogeia are in the most intense demand.

In the western suburbs of Athens, Attiki Odos together with the Attiko Metro extensions have turned a rather downgraded area into one of the most wanted. Further on, at the beginning of Attiki Odos in western Attica, the demand for commercial land plots and the development of storage areas, logistics facilities, and retail shops, as well as residences, is rapidly increasing. The prices in the area are still low, estimated at about 30-90 euros/m² for commercial land plots, compared to the corresponding prices in Mesogeia, which have experienced the major effect of Attiki Odos. Here the cost of similar property exceeds 175 euros/m².

Excellent opportunities for the development of residential and commercial

FIGURE 2. Attiki Odos

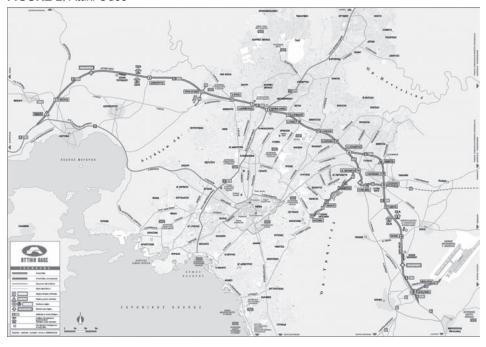
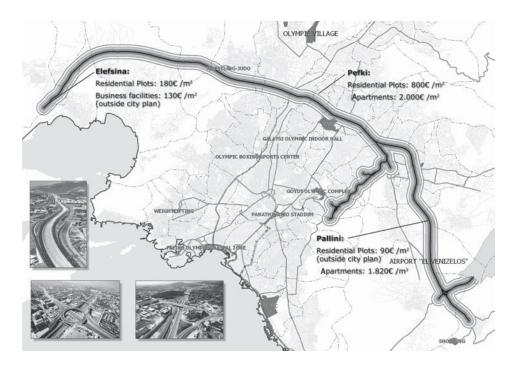


FIGURE 3. Attiki Odos Value Buffer Zones



properties occur in the already highly valued northern suburbs of Athens, due to easy access to the local and national road networks. A further revaluation of the local properties will shift the demand for real estate even more to the north of the prefecture of Attica.

Around Attiki Odos, new kinds of land use, as well as more specialized ones than those already existing, are highly requested. Industrial and storage premises, freight-handling facilities, theme parks, entertainment and amusement premises, multi-purpose venues, and massive parking lots have now become more attractive and profitable than in the recent past.

In figure 3, we can see the Attiki Odos value buffer zones, along with approximate market values in selected areas.

Athens International Airport and Mesogeia

The new Athens International Airport (Eleftherios Venizelos) and the surrounding essential infrastructure projects, which conclude with the opening of the suburban railroad, along with the Olympic Shooting Centre, the Olympic Equestrian Centre, and the new Athens horse-racing course, have dramatically affected the real estate market in the "golden" Mesogeia Valley.

A whole new "town" is expected to be developed in Mesogeia given that scheduled and other supplementary infrastructure projects will indeed be carried out, while a great number of people are already moving east, sparking new investments and new opportunities. Nineteen hundred hectares are currently appended to the existing city plan to serve as main and holiday residences and to prevent arbitrary development.

The biggest demand until now was for main-residence use and for large-scale business facilities. Local real estate investing companies and others from abroad have shown special interest, while well-known commercial firms, chains of retail shops, shopping malls, supermarkets, airlines, tourism agencies, and entertainment firms are setting up in the area. Additionally, large-scale investments such as a 60-hectares entertainment and shopping park, a 10-hectares medical park, and a 15-hectares business park indicate the future of Mesogeia.

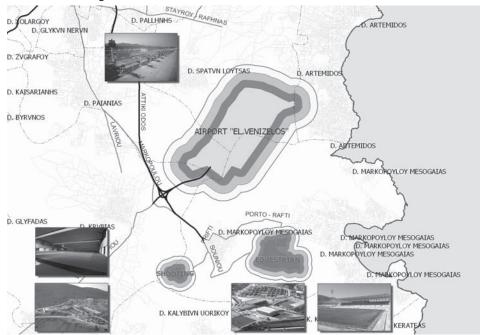
Indicative market values for land plots within and outside the city plan, as well as those for apartments can be found in table 2.

As a typical example of the influence of Olympic works on land values and the net gain in values in the area of Mesogeia, the values for commercial land parcels outside of the municipalities of the Koropi and Peania city plan have exceeded 175 euros/m² providing an average net gain in value of 60% and in specific cases, a maximum net gain in value of 150% in the last five years. In the industrial zone, the corresponding net gain in values fluctuates between 100% and 200%, while considerable net

TABLE 2. Mesogeia Market Values

Area	Not within City Plan	Within City Plan	0-10 year old apartments
Gerakas	110-175	260-420	1,600-1,800
Glyka Nera	70-90	225-325	1,700-2,000
Koropi	60-90	190-290	
Loutsa	60-90	190-290	1,500-1,800
Peania	90-130	260-325	
Pallini	60-120	260-325	1,600-1,800
Pallini-Kantza			1,800-2,200
Rafina	30-100	225-360	2,200-3,000
Spata	140-175	190-260	1,600-1,800

FIGURE 4. Mesogeia Value Buffer Zones



gain in values is also expected to occur in areas where the legislated land use is scheduled to change.

In figure 4, we can see the Mesogeia value buffer zones.

Municipality Of Maroussi

Maroussi is the municipality where the Athens Olympic Sport Complex (OSC) is situated. The main works in the municipality of Maroussi directly connected to the Athens 2004 Olympic Games are: the Main Press Centre (4.2 hectares); the International Broadcasting Centre (7.5 hectares); the Press Village; and the renovation, upgrade, and unification of the OSC individual premises. Some of these venues might obtain a significant net gain in value, since after the Olympic Games, they are programmed for a change of use. For example, the Press Village will serve as a residential complex, while the International Broadcasting Centre will be used as a contemporary office complex.

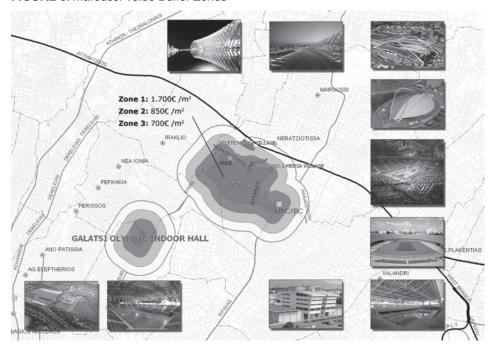
The area's vacant spaces have attracted investors, since Maroussi is considered a business centre for greater Athens, rather than a residential area.

Consequently, land values have increased and pressure has been applied for the development of the remaining big land parcels as contemporary office and shopping complexes, hotel units, luxury residence buildings, and underground parking spaces.

The significant rise in the value of land which caused a subsequent rise in the values of the other properties resulted from selectively increasing the building factor (i.e., the total-floor-space-to-parcel-area ratio) in certain blocks, from giving the option to transfer unused building factor to other constructions, from land use alteration, and from introducing new areas to the city plan.

Land values on Kiffissias Avenue, for example, have reached 1,700 euros/m² increasing disproportionately for bigger land parcels. Near Kiffissias Avenue, land costs 850 euros/m², while in the rest of the municipality, market value is estimated at between 450 to 700 euros/m², depending on the exact location and the existing building factor. For the last five years, net gain in value on land has been estimated to fluctuate between 65% and 100%, while older office establishments

FIGURE 5. Maroussi Value Buffer Zones



have depreciated about 30%.

In figure 5, we can see the Maroussi value buffer zones, along with approximate market values in selected areas.

Faliro Bay

The Olympic Complex, Karaiskaki Stadium, and the reformation of the Faliro Bay constitute the seaside Faliro Park. Initially, the premises will host the

FIGURE 6. Faliro Coastal Zone Value Buffer Zones

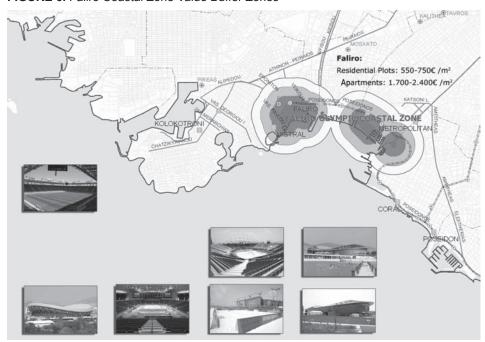
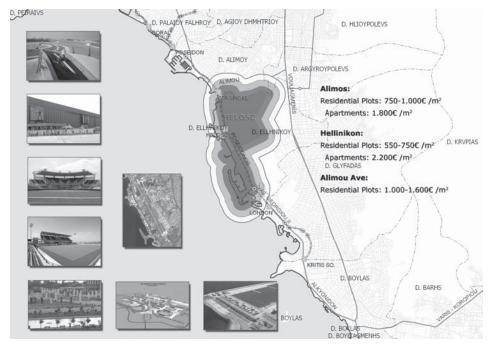


FIGURE 7. Helliniko Value Buffer Zones



Beach Volleyball, Handball and Tae Kwon Do games, and after the Olympics, they will become a nautical-sports centre for Athens.

This concept, in addition to the improvement in access to the area, has already positively affected the local market values, even without any future increases. The demand focuses on the few remaining residential properties. Land values fluctuate between 550 and 750 euros/m², while values for apartments are estimated at 1,700 to 2,400 euros/m². The net gain in value for the last five years does not exceed 25%. In particular, commercial land parcels have already been affected by the crucial improvements on Pireos Street presenting a net gain in value of approximately 50% according to the plot size, while residential properties provide a net gain in value of 10% to 25% according to the age of the building.

In figure 6, we can see the Faliro Coastal Zone value buffer zones, along with approximate market values in selected areas.

Helliniko Olympic Complex

The completion of the Olympic premises in Agios Kosmas and the Helliniko area, along with the development of the 650 hectares of the former Athens International Airport and its transformation to a metropolitan park (as a result of a relatively international architectural contest) has already positively affected local market values notwithstanding any further increase.

The mostly favoured areas are Alimos, where residential land parcels cost 750 to 1,000 euros/m² and Helliniko where the corresponding value is 550 to 750 euros/m², corresponding to a 35% net gain in value for the last five years. In both areas, new apartments are valued from 1,800 euros/m² to 2,200 euros/m², presenting an 18% net gain in value for the last five years as well. Many companies look for commercial land parcels in the area and are willing to pay 1,000 to 1,600 euros/m² depending on the building factor (0.60 - 1.20) in order to be located on the upgraded Alimos Avenue. Values of residential properties though are in a downward trend, since residential is no longer the highest and best use.

In figure 7, we can see the Helliniko value buffer zones, along with the approximate market values in selected areas with a little differentiation in demand due to existing special land uses (i.e. night clubs, etc.)

Athens Coastal Front

The development of the Athens coastal zone is in full progress, stretching about 40 km along the coast from Faliro Bay to Santa Marina and covering about 700 hectares in 11 different municipalities and 3 different prefectures. Among others, the project involved the construction of Olympic Games infrastructure; the building of tourism, sports, and entertainment facilities as well as hotels, marinas, and a camping site; and the development of organized coasts.

The whole coastal zone is in public use and belongs to the state, but its development was assigned to private-sector investors through Private Finance Initiative (PFI) investing projects.

The land-use alterations, the assignment of building factors to communal spaces, and the favorable regulations for new investments produced huge net gain in values, which would normally belong to the state, but is now offered to the investment administrators.

The development of the coastal zone has also had a positive side effect on the properties across the street. The residential properties have presented a net gain in value of about 40% in the last five years but are now stabilizing in their market value, while commercial properties and apartments continue to appreciate.

Residential Premises and the Rest of the Athletic Infrastructure

Press Villages have been placed inside and around Athens and will be available for various other purposes after the Olympic Games. For example, the Press Village in Maroussi was developed through a Public-Private Partnership (PPP) project and it was agreed that it would be converted to residential use after the Games and be sold by the investor in the open market. This legalized transition appends a con-

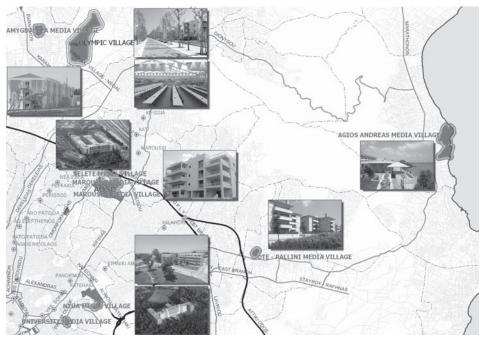


FIGURE 8. Residential Infrastructure Value Buffer Zones

siderable amount of net gain in value to these properties, since building capacity and other conditions in the specific blocks were increased because of its shortterm use in the Olympics. This effect has had limited influence on neighboring areas, however.

In the Olympic Village, 2,292 residences have been constructed within an 124-hectare area. These will be given to workers and low-income residents by the state-run Worker's Housing Organization after the Games. The development of the surrounding area has also produced a certain net gain in value to the village, although it has not much affected the surrounding neighborhoods.

The rest of the Olympic athletic infrastructure, the Weightlifting Centre, the Boxing Centre, the Pentathlon Complex, and all the other peripheral Olympic facilities have had a minimum impact on the local market values.

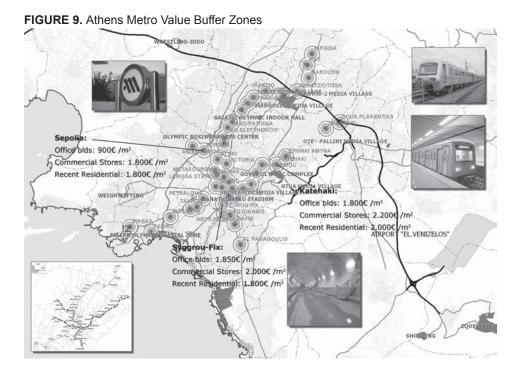
In figure 8, we can see the corresponding value buffer zones.

The Athens Metro

Since the construction and opening of the two new lines and 20 stations of the Athens Metro, which was combined with the 23 stations of the existing Athens electric railways (ISAP) line, values in Athens have changed significantly. The average increase in market values for properties situated near the Metro stations is estimated at 30% with a maximum of 50%. Near the terminal stations of line 2 (Dafni and Sepolia), values increased from 1,350 euros/m² to 2,000 euros/m², which is the biggest increase attributed to one particular factor ever observed.

The demand for commercial properties near existing or even scheduled stations has also been great, since most of the companies and the offices located in Athens want to reduce travel time to their premises by their staff or visitors. Additionally, the Metro system produced another need in the densely built and populated urban areas: passengers need more and more parking lots next to the stations in order to leave their cars and use the Athens Metro.

In figure 9, we can see the Athens Metro value buffer zones, along with approximate market values in selected areas.



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The Olympic Road Network

The Olympic road network is defined by the Olympic transport lines and by road axes delimiting some Olympic premises and complexes. The Olympic transport lines will be used for the transportation of athletes, supporting teams, volunteers, and everyone else involved in the Games.

The infrastructure work for the peripheral Olympic transport lines produced a net gain in value adjusted to each area they crossed. On the other hand, the improvement of the main road axes in Athens has indirectly appended a considerable amount of net gain in value to the properties on both sides of them. The extensions of the Athens metro lines, the construction of the Athens tram and of the suburban railroad along the axis of the main roads in Athens, as well as the improvement of the other means of public transportation, have raised the demand (and consequently the market values) for both residential and commercial properties on these axes. The renovation of Athens' major hotels and the construction of new ones, the development of entertainment theme parks, and the promotion of important archaeological sites and their integration with parks and open spaces have increased market values up to 35%. The impressive improvements in (until recently) poor and downgraded areas have encouraged the private sector to invest, producing a huge net gain in values. For example, on Pireos Street (connecting Athens' center to the port of Pireaus) where properties used to cost 230 euros/m², they now cost 1,000 euros/m²; or on parts of Thivon Avenue (the main road in the western suburbs) where land values were once 90 euros/m², they have now reached 440 euros/m²; and especially around Village Park (a Village Roadshow theme park), land values have increased eight times in the last three years.

In figure 10, we can see the Olympic Road Network value buffer zones.

Predictions for the Hellenic Real Estate Market Until 2006

Real estate values in Greece have shown upward movement during the past three years, and this trend is expected to



FIGURE 10. Olympic Road Network Value Buffer Zones

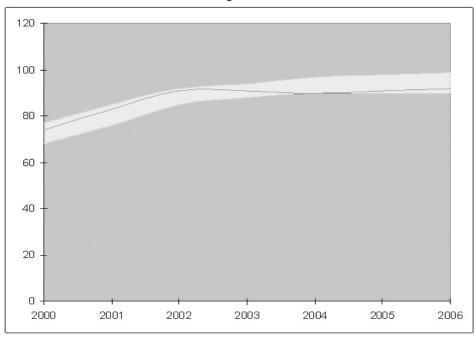


FIGURE 11. Estimate of Land Value Change in Constant Prices

continue for at least the next five years, because of:

- The planning for registration and development of the real estate property used by public services and the public sector in general
- The creation of real estate investing companies and of real estate mutual funds, which will significantly aid in the development of the properties of big public and private companies and will introduce serious foreign institutional investors to the local real estate market
- The option of real estate development through PPP or PFI projects

The Hellenic real estate market will continue to mature in the next few years as:

 Specialized investors and real estate companies propose development projects which will attract international institutional investors

- Real estate investment assets are released, either from local or foreign sources
- The demand for various property types will balance, aiming to fulfill every housing, recreational, or professional need

The demand for real estate within the region of Attica will mainly focus on:

- Residential, in the areas with rapidly growing population until 2010
- Vacation residences, on the coasts of Attica
- Office complexes with high construction standards
- Organized entertainment venues
- Theme parks
- Properties for tourism purposes
- Storage buildings and logistics
- Parking lots

The "evolution zone" in figure 11 presents an estimate of the change in land values in Attica in constant prices through 2006 and contains the corresponding average net gain in the increasing values of the region. This "evolution zone":

- Refers to high-demand land parcels in every investment category. Smaller parcels will appreciate more slowly, while bigger parcels (being hard to find) will appreciate more quickly and produce higher net gain in values.
- Involves every kind of real estate property. Land parcels within a city plan though will evolve more inflexibly, compared to the parcels outside it. This development, however, is directly dependent on the infrastructure works programmed for the area and the time of their completion.
- Does not include properties within the city plan which (by exemption) enjoy a favourable alteration of use and properties not within a city plan which get (by exemption) urbanized, are assigned building factors or land use designations, and do not become subject to money or land contribution for their integration into the city plan. The particular net gain in value is relevant to the privileges these properties enjoy.
- Will take place depending on how fast the real estate market matures.
- Might include brief corrections to the course of specific land-parcel values (dark line), though they will stay within the "zone."

Predictions for the remaining types of real estate properties are subject to stratification of demand in the same area. More specifically, office complexes with high construction standards ready to accommodate contemporary companies, residences in the centers of development in Attica, and special buildings already mentioned will present similar market-value evolution to the corresponding land-parcels'. In contrast, conventional office buildings and poor quality residence buildings, being excessively supplied, present decreased demand and will be led to correction of their market values equal to a part of the net gain in value that they (or the corresponding land) have already received during the last five years.

Concluding this paper, we foresee an optimistic course for the Hellenic real estate market during the next several years, given that economic growth rates will maintain their ascending course and that the local real estate market will eventually mature. To achieve this, modernization and stabilization of real estate legislation, simplification of investing procedures and civil-planning legislation, reduction of property taxation, combined investing possibilities, and the institution of certain, a priori, "transparent" rules of the game are essential.

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