

McKinsey&Company, Athens Office

Greece 10 Years Ahead

Defining Greece's new growth model and strategy

Executive summary

September 2011

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Introduction

Greece 10 Years Ahead is a study that aims to define a new growth model and strategy for economic development in Greece for the next 5 to 10 years, founded on the principles of **competitiveness, productivity, extroversion, investment stimulation, and employment opportunities**.

To fulfill this purpose, **Greece 10 Years Ahead** analyzes the structure and development prospects of key economic sectors, and studies fundamental cross-sector macroeconomic drivers, challenges, and opportunities of the Greek economy. Thereafter, the study focuses on the five largest (in terms of gross value added) 'production' sectors ('major sectors') and eight smaller but high potential areas of the economy ('rising stars') that have significant potential to fuel the country's economic growth in the coming years, clearly recognizing that there might be additional growth opportunities in other sectors or sub-sectors that have not been covered by the scope of **Greece 10 Years Ahead**.

Greece 10 Years Ahead proposes a new **National Growth Model** for Greece for the next decade and outlines a 'blueprint' to reignite growth that contains more than 100 specific proposals on possible cross-sector and sector specific priorities and measures for the Greek state and market participants to consider.

The **Greece 10 Years Ahead** study was conducted by the Athens Office of McKinsey & Company. It took place between December 2010 and September 2011 and was jointly sponsored by the Hellenic Federation of Enterprises (SEV), the Hellenic Bank Association (HBA) and McKinsey & Company. The outcome is an independent report that solely reflects the results of analyses conducted and insights gathered and substantiated by McKinsey & Company.

This document is the Executive Summary of the **Greece 10 Years Ahead** study and contains an overview of the major conclusions.

The Executive Summary has been issued in this original English version and has also been translated to Greek (the document in English is the original one and supersedes the one in Greek). Both documents can be found on McKinsey & Company, Athens Office website (www.mckinsey.gr).



1. Overview

1. Overview

Greece entered a deep recession three years ago from which it is struggling to emerge. Investment by both the private and public sectors has ground to a halt. Public sector debt has increased substantially as the state had to rely on official support loans to fund social payments, payroll expenses and the fiscal deficit. In addition to a fiscal and debt crisis, the country is facing competitiveness and employment challenges. It has lagged its European peers in key measures such as foreign direct investment (FDI), labor input productivity and workforce participation, and it suffers from low labor mobility and flexibility. At the same time, the recession is rapidly morphing into a jobs crisis, with the official unemployment rate edging towards 17%.

A combination of economic, political and social factors has contributed to Greece's poor competitiveness, foreign investment, productivity and employment record. The Greek economy has grown on an unsustainable demand structure, driven almost entirely by public and private consumption while chronically suffering from unfavorable conditions for business. There are substantial hurdles in investment planning with adverse effects on operational cost. It is one of the most regulated economies in Europe, creating 'red tape' that affects businesses, from the development of land to the competitive intensity of several regulated markets and professions. A complex administrative and tax system creates legal, bureaucratic and procedural disincentives to set up and expand businesses and fails to collect an estimated €15-20 billion in annual tax revenue, which would be sufficient to almost close the fiscal deficit.

As a result, Greece attracts insufficient investment capital to build job-creating businesses. Foreign inward investment relative to GDP in Greece is just a fraction of the amount flowing to Spain and Italy, two of the country's Mediterranean economic rivals. This offers some explanation as to why Greece cannot create or sustain jobs in production sectors of the economy, such as manufacturing, and must rely instead on imports for many of its needs, contributing to a €19 billion trade deficit in 2010.

Productivity is also far behind the rest of Europe across economic sectors. One of the main reasons productivity is so low is that the country lacks large-scale enterprises, which maximize worker output through economies of scale and scope (e.g., through specialization, focused investment and innovation). For example just 27% of manufacturing firms have more than 250 employees, compared with 34% in the Netherlands and 54% in Germany.

Investments did not follow the sharp rise in private and public consumption, each rising by approximately four percentage points of GDP between 2000 and 2008. Consumption accounted for 97% of cumulative GDP generation for the period, compared with countries like Austria, France, Germany and the Netherlands, where the respective figure was more than 70%, and was accompanied by much higher levels of investment.

The recent debt crisis has led to the adoption by Greece of several harsh, multi-billion euro austerity packages, to urgently tackle its fiscal imbalances as part of the fiscal stabilization program. The Greek government has already legislated important reforms geared towards cost cutting in the public sector and has launched measures to liberalize markets and aimed to further contain informality and tax evasion. For Greece, however, to achieve lasting economic recovery, the implementation of the fiscal stabilization program needs to be complemented by the design and implementation of a robust and sustainable new **National Growth Model** and strategy.

Greece 10 Years Ahead aims to exactly address this need. It proposes a new **National Growth Model**, which could lead within 10 years to the creation of 520,000 new jobs and €49 billion in new

Gross Value Added¹ (€55 billion in GDP terms) in five major (the five largest production sectors of the economy) and eight emerging, 'rising star' sectors, alone. This means that even if the rest of the economy would grow at a moderate annual rate of 1.5% over the next decade, this upside could double annual growth to 3%.

This new **National Growth Model** puts forward several broad economy-wide priorities across-sectors and sets out strategic growth measures that can be taken in the selected 'major' and 'rising stars' sectors of the economy. To materialize the new **National Growth Model**, the Greek state, the private sector enterprises, and investors would have to act decisively.

Greece 10 Years Ahead proposes that the Greek state embark immediately on a systematic, economy-wide and sector specific effort to remove competitiveness and productivity barriers in the economy and promote growth and investment, with emphasis on stimulating export income. This could involve cross-sector reforms such as simplifying and accelerating investment approval and licensing by revisiting and improving the fast-track approach leveraging also on proven Athens 2004 Olympic Games practices to remove bureaucracy. Revisiting the public investment program to focus on growth relevant, high local GVA infrastructure (e.g., land, sea) projects. In addition, it could formulate plans for the deregulation of product and labor markets and remove the current congestion from the judicial system to expedite clearance of stalled investments. Examples of other priorities include introducing private sector management talent to the public sector, in a systematic and transparent manner, creating tangible opportunities for women and young employees to join the workforce, and fighting corruption and tax evasion with advanced detection, audit and collection tools. An Economic Development and Reform Unit (EDRU) could be established as an institution under the Prime Minister to support the design, facilitate the execution and monitor the progress of growth-relevant reforms, benefiting also from input from business and academia.

Businesses need to develop scale through consolidation, build healthier and more productive operating models, and be more proactive in promoting Greek-branded products and services in core export markets. Examples of the possible sector specific priorities outlined include making a strategic shift in tourism towards larger, untapped and emerging markets (while defending the core ones), attracting higher-income visitors, and encouraging investments in large integrated resorts, high-end vacation homes, marinas and cruise embarkation points. Agriculture and food manufacturing can be re-oriented towards export markets, where specific food products such as olive oil and selected fresh and processed fruits and vegetables could reach international markets at scale. Energy can be used more efficiently, with a focus on domestic conservation. Such moves could have a beneficial spillover effect in other sectors such as the construction, real estate, and financial services sectors and create substantial export capacity and FDI flows. In emerging sectors (e.g., aquaculture, generic pharmaceuticals), a gradual and growth-oriented deregulation of the industry could be implemented in areas where there are substantial unique advantages in either know-how or resources that can be scaled up. Collectively, this strategic re-orientation can create healthier demand in the economy benefiting the primary sectors, stimulating investment and creating jobs in manufacturing and the heavy industry, where the alleviation of undue complications and the establishment of a steady and predictable business environment is the most important requirement for companies to thrive and contribute to growth and job creation.

This Executive Summary outlines the obstacles that Greece needs to overcome to establish the new **National Growth Model**. It then outlines the new model in macroeconomic terms and lays out the possible cross-sector and sector specific priorities and measures to be considered by the Greek State and market participants to stimulate growth and employment. We consider these measures crucial in the process of moving Greece out of austerity and onto a sustainable economic development path.

¹ GVA = GDP - Taxes + Subsidies



2. Greece's unsustainable economic model to date

2. Greece's unsustainable economic model to date

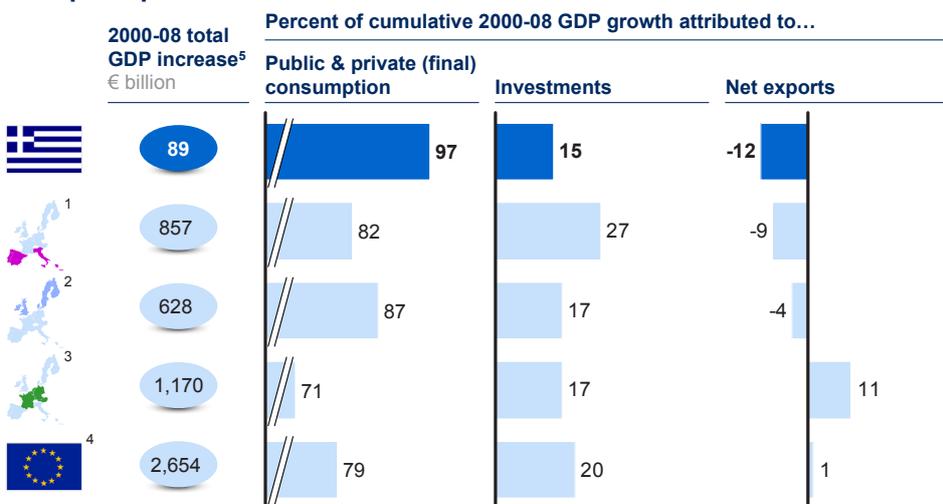
Until the recent economic crisis, Greece was actually a growth champion. In fact, it outgrew most other European nations and even the US, especially after Greece joined the single European currency in 2002. But it turned out that almost all of that growth was the result of government and consumer spending fuelled by low cost credit. In 2009, Greece's economy suffered a crash landing when it became clear that the fiscal deficit was more than 15% of GDP. Between 2008 and 2010, Greece lost 1.75% of its output per year, which, combined with persistent fiscal deficits and emergency loans from the EU, the ECB and the IMF, caused the public debt pile to shoot up to more than 160% of GDP in 2011.

It became clear from the debt crisis that Greece had a flawed economic model. Chronic overconsumption in the public sector spilled over into the private sector, revealing major structural gaps in competitiveness and productivity. Greece's burgeoning private and public spending between 2000 and 2008 (97% of the cumulative GDP growth was driven by consumption) created a deteriorating trade balance, as demand could not be met by foreign and domestic investment. In contrast, most of Greece's EU peers managed a much more favorable trade balance and invested around 20% of their GDP in their economies (Exhibit 1).

As a result of this, even before the crisis, Greece's debt burden was very high (214% of GDP in 2008) with public debt and consumer lending being the highest in Europe (111% of GDP and 15% of GDP respectively) (Exhibit 2).

Exhibit 1

Overreliance on consumption and underinvestment versus European peers



1 Southern Europe: Greece, Italy, Portugal, Spain

2 Northern Europe: Denmark, Finland, Ireland, Sweden, UK

3 Continental Europe: Austria, Germany, Belgium, France, Netherlands, Luxembourg

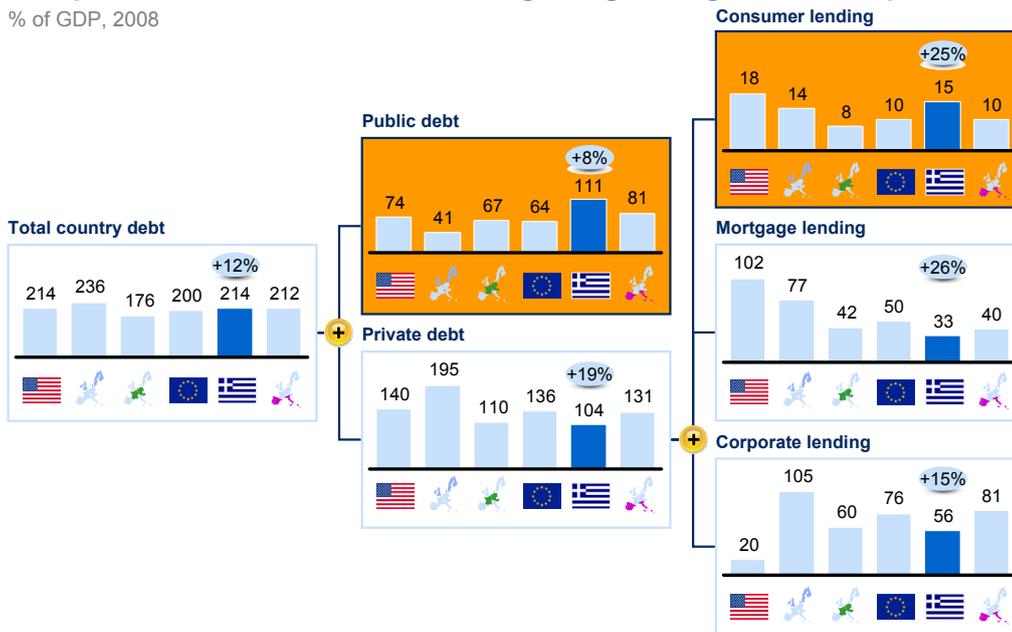
4 EU-15

5 Cumulative growth, delta 2000-08, amounts in PPP standards

Even before the crisis, Greece's debt burden was very high, with public debt and consumer lending being the highest in Europe

% of GDP, 2008

x 2001-08 Debt Volumes CAGR



SOURCE: McKinsey Global Banking Pools (April 2011); Bank of Greece, <http://www.treasurydirect.gov>; US Federal Reserve; McKinsey & Company

Despite having joined the European Economic Community already in 1981, Greece never managed to increase its external orientation and fully reap sustainable economic benefits from membership in such an international community. Exports fell far short of paying for imports. The bulk of the relatively small investments made were financed primarily by the Greek private sector through Greek public and private debt. In fact only 4% of total capital formation between 2000-2008 was driven by foreign direct investment. This figure is only a fraction of the European average (Exhibit 3).

Private consumption in Greece was very high – almost 20 percentage points of GDP higher than in most European countries – and demand predominantly domestic. Even export-oriented sectors of the economy such as tourism were heavily skewed towards demand generated by Greek consumers (Exhibit 4). Simply put, the Greek growth engine was fuelled by few domestic investments and high domestic demand, artificially inflated by ample credit and an overleveraged public sector.

Government spending had to increase by ~6.5 pp of GDP between 2000 and 2009 to keep up with accruing expenses, mainly mandated increases in public employees' salaries and pensions (Exhibit 5). Over the same period, government income declined by ~5 pp of GDP, because the bulk of new revenue was due from sales taxes (e.g., VAT), which were vulnerable to evasion and difficult to audit. As a result, the government had no choice but to borrow money on the international markets and later from official emergency facilities, creating one of the most indebted public sectors globally.

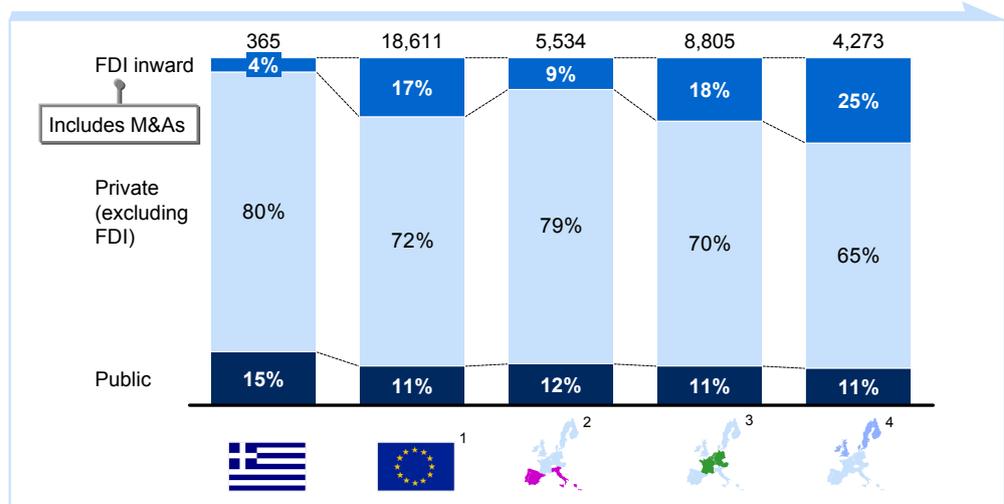
This flawed model and the unexploited opportunity to restructure Greek economy are also evident in the breakdown of the Greek economy. Tradable sectors contribute 3-4 pp of GDP (6-7 pp of GDP excluding direct shipping contribution) less than they do in other European countries. In core tradable sectors such as manufacturing and business services, the gap is even wider. Meanwhile, specific non-tradable sectors are far larger, with retail and wholesale for example accounting for 18% of Greek GDP, compared to 11% in south and central Europe (Exhibit 6).

Exhibit 3

Capital formation in Greece has been driven mainly by domestic private investment

ESTIMATES

2000-2008 Cumulative gross capital formation; EUR billion



1 EU-15 excluding Luxembourg (due to its special economy structure); 2 Southern Europe: Greece, Italy, Portugal, Spain; 3 Continental Europe: Austria, Germany, Belgium, France, Netherlands; 4 Northern Europe: Denmark, Finland, Ireland, Sweden, UK

SOURCE: Eurostat; UNCTAD for FDI figures; Banque Nationale de Belgique for Belgium FDI 2000-01

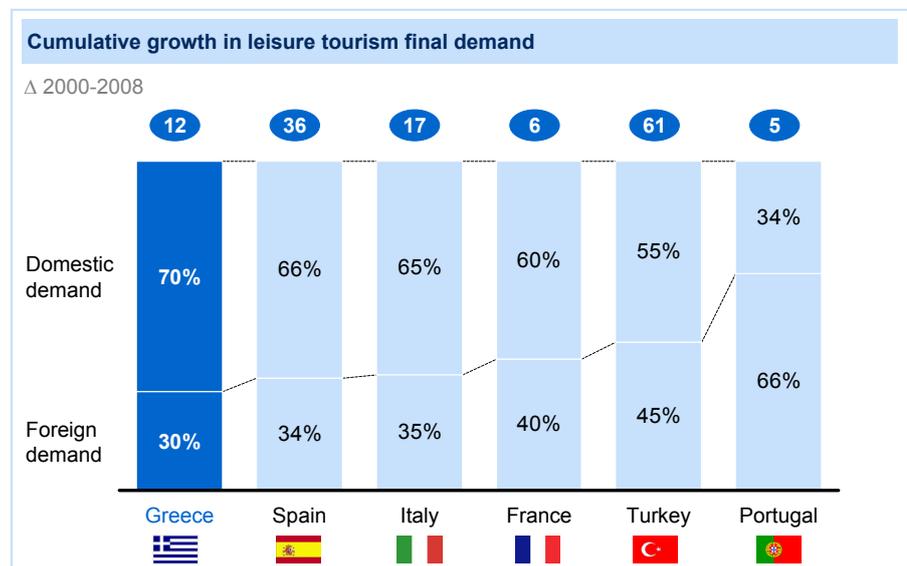
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Exhibit 4

Domestic consumption driving growth even in tradable sectors like Tourism

TOURISM EXAMPLE

€ billion; nominal

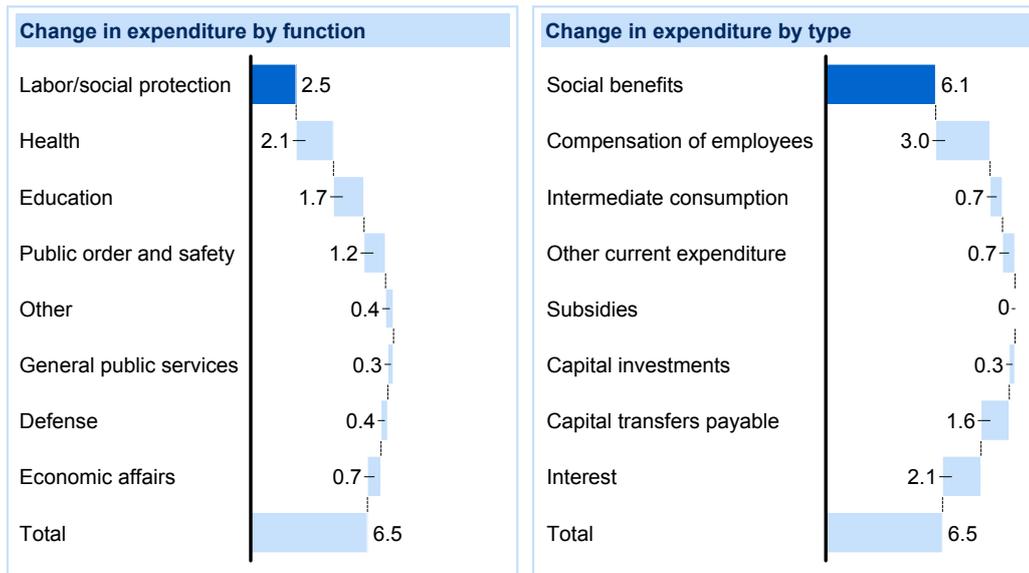


SOURCE: World Travel and Tourism Council

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Public expenditure growth was mostly allocated to social benefits

Change in p.p. of GDP 2000-2009



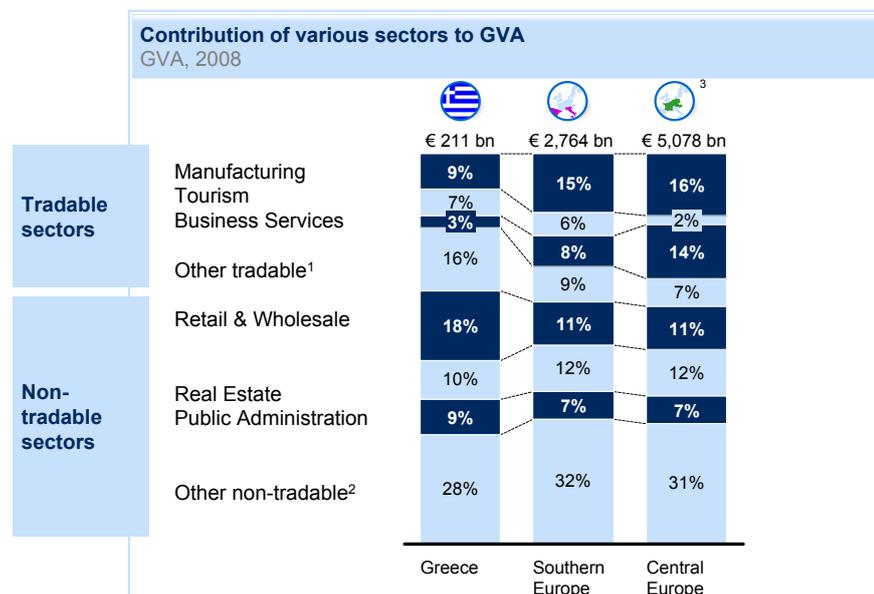
Note: includes government expenditure on final goods and services plus interests, social benefits, capital transfers

SOURCE: Eurostat, ELSTAT; IMF 3rd Review March 2011

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Debt-fueled consumption creating imbalances between tradable and non-tradable sectors

ESTIMATES



1 Agriculture, shipping, energy, other ; 2 Health, education, post & telco, utilities, financial services, construction, land transport; 3 Excluding Luxembourg

SOURCE: Eurostat; WIS Global Insight

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2.1. Persistent productivity and labor participation deficits

Not only was Greece growing its debt stock leading up to the crisis, but it also continued to lag behind in terms of economic wealth generation, despite having been a growth champion in the past. Even before the crisis in 2007, for example, Greece's GDP per capita was lagging behind the EU-15 and the US by 15% and 35% respectively² (11% and 33% in 2009). This 'wealth gap' is primarily due to lower productivity and secondarily labor participation rates than in other European countries (Exhibit 7).

Despite the substantial growth (in the previous decade, between 1999-2009, productivity in Greece grew by 2.4 CAGR vs. 1.1% for EU 15), Greece's productivity was still a major problem. It lagged the US by 40% and the EU-15 by 29% in 2009 (Exhibit 8). Greece's productivity at \$35 per hour worked (adjusted by purchasing power parity) compares with \$49 in EU-15, \$42 in south Europe and \$55 in central Europe.

When comparing Greece and the different European regions (in terms of their GDP per capita gap) with the US, we see that Greece's productivity gap is in fact larger than the GDP per capita gap itself. The remaining of the economic wealth (GDP per capita) gap can be explained by the low participation rate which, however, is more than fully offset by Greece's longer hours per employee (Exhibit 9).

Importantly, the productivity deficit is not due to an unfavorable mix of sectors in total output, but is primarily due to productivity shortcomings across sectors, affecting the entire economy. Less than 15% of the shortfall (compared to the US) is due to the sector mix (Exhibit 10).

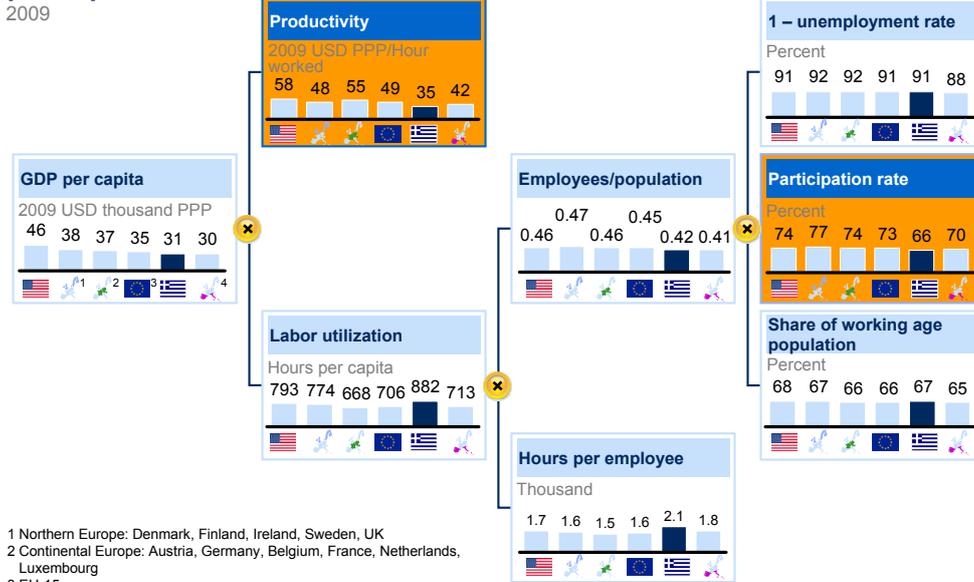
On top of this productivity deficit, Greece has Europe's lowest workforce participation rate – the number of employed and unemployed as a percentage of the entire workforce – at just 66% of the employable population. That compares with 73% in EU-15 as a whole, and 70% in southern Europe. In Greece, the labor participation deficit is most prominent among youth and women. While both youth and female unemployment was similar to other countries in 2009, non-participation was (and remains) very high, reaching 69% for youth and 38% for women (Exhibit 11).

The combination of low labor force participation (i.e., a narrow employment base) with higher implicit hours worked per employee leads to one inescapable conclusion about Greece's employment challenge: a relatively smaller percentage of Greeks works longer than their European peers to support a generally unproductive economic system.

There is an important distinction, however, between the 'deficits' in productivity and labor participation. While low productivity is a primary, structural barrier to wealth creation and growth, that can and should be directly acted upon, the labor participation issue is a symptom and the result of long-standing distortions that prevent mobility and employee turnover, especially in the broader public sector. In the absence of labor supply constraints, the participation issue cannot be addressed before an adequate amount of new jobs is created in the economy. This underlines first and foremost the need for a massive productivity boost. This boost can no longer come from debt- and consumption-driven output growth in non-tradable sectors, but rather from investments and a substantial shift of output and employment towards tradable sectors. In other words, to avoid a so-called '**jobless recovery**', the economy needs to generate jobs primarily in tradable private sectors at least as fast as the contraction in public and private consumption reduces output and jobs in consumption-heavy non-tradable sectors.

2 Source: The Conference Board; IMF

Greece's GDP per capita gap driven by productivity and labor participation deficits

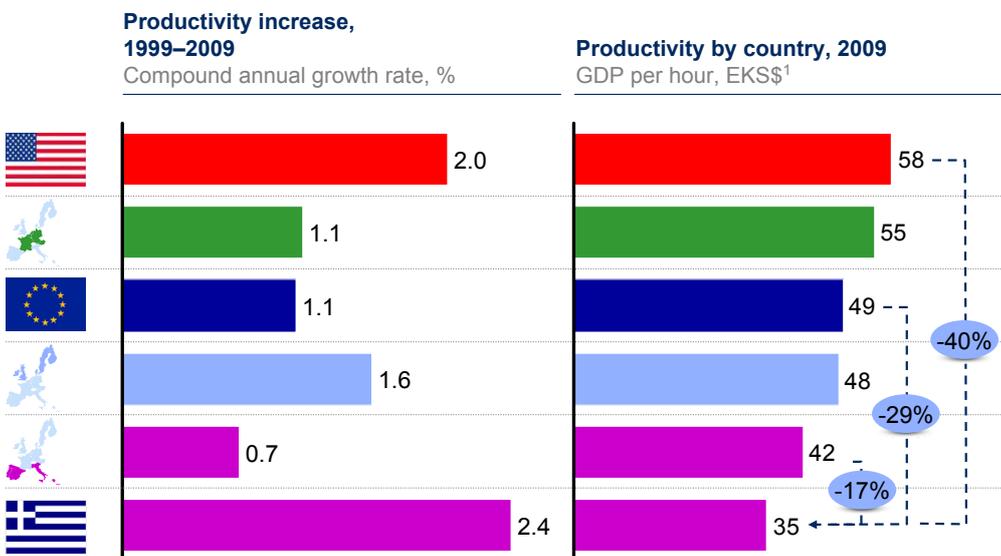


1 Northern Europe: Denmark, Finland, Ireland, Sweden, UK
 2 Continental Europe: Austria, Germany, Belgium, France, Netherlands, Luxembourg
 3 EU-15
 4 Southern Europe: Greece, Italy, Portugal, Spain

SOURCE: IMF; Global Insights; Eurostat; The Conference Board Total Economy Database

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Persistent productivity gaps even after years of strong growth



1 Elteto-Koves-Szulc method to derive transitive multilateral purchasing power parities

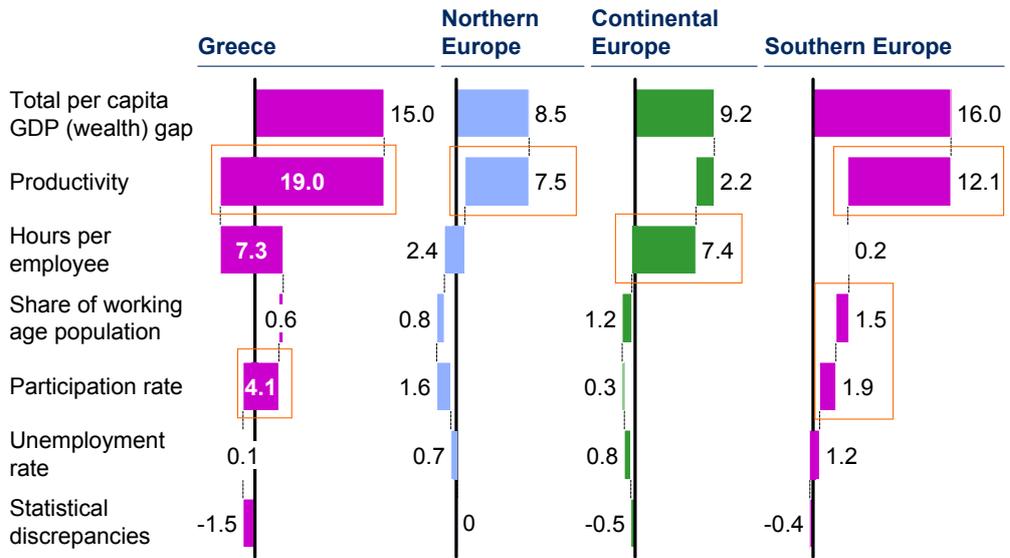
SOURCE: The Conference Board; International Monetary Fund; McKinsey Global Institute

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Exhibit 9

Low productivity accounting for (more than) the entire wealth gap ESTIMATES

Contribution to per capita GDP gap vs. United States by key drivers
 2009 PPP, \$ thousand



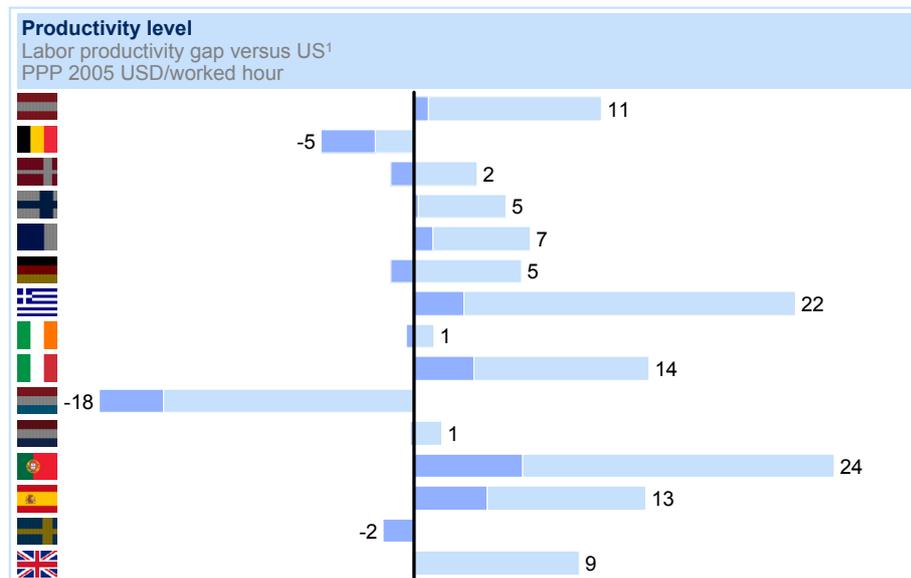
SOURCE: The Conference Board; International Monetary Fund; Eurostat; Global Insight; OECD; McKinsey Global Institute

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Exhibit 10

Low productivity within sectors rather than sector mix driving Greece's productivity gap ESTIMATES

■ Sector mix effect ■ Low sector productivity contribution effect

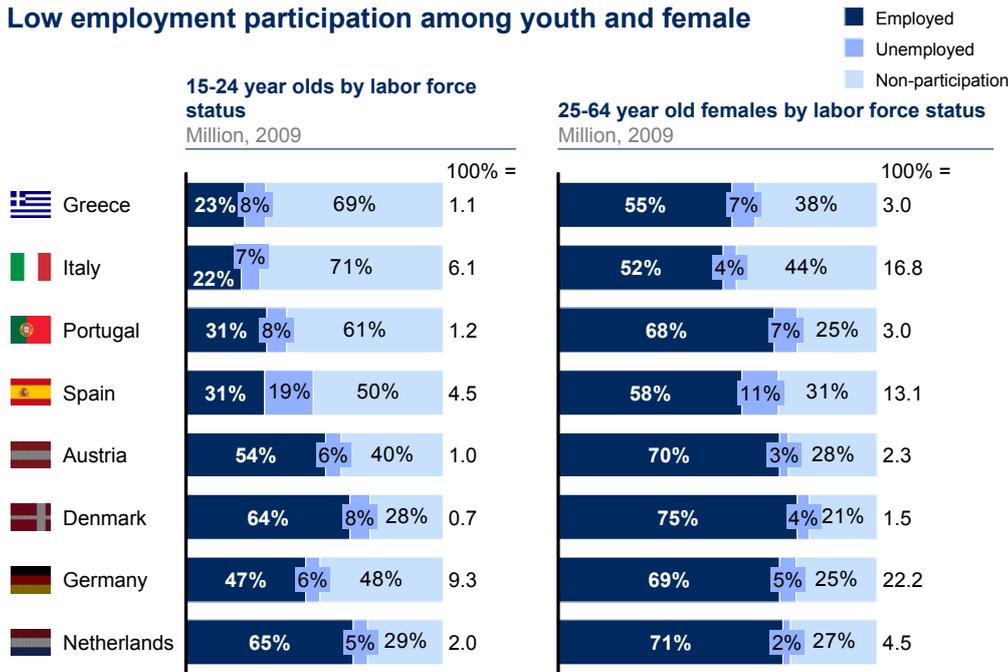


¹ Excluding mining, real estate, education, health and other public goods

SOURCE: EU KLEMS; McKinsey Global Institute

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Low employment participation among youth and female



SOURCE: OECD

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2.2. The underlying problems of the Greek economy

The gaps in productivity and competitiveness have five principal causes; (a) the structure of the economy discourages investment and business scale; (b) the public sector is large and inefficient; (c) labor force utilization stifles flexibility and job mobility; (d) the legal and judicial system is cumbersome and deters investment; and (e) informality is widespread (Exhibit 12).

a. Investment and business scale discouraged

As in many Mediterranean countries, where family-owned businesses are still predominant, the backbone of the Greek economy comprises mostly small and micro enterprises. For example, around 30% of the manufacturing employment in the country is in firms with nine or fewer employees. In contrast, Italy has just 15% of employees in this segment and Germany has only 5%. These small firms typically operate at less than 40% (based on EU-27 average figures) of the productivity of larger companies with 250 or more employees (Exhibit 13).

In addition to family ownership, a number of scale disincentives have resulted in the lack of large businesses. These include several overregulated areas of economic activity (where prices, competitive conduct, number and required ‘credentials’ of market participants are regulated), a frustrating bureaucracy that must approve investments, tax laws and administration practices that hinder scale (e.g., different requirements for tax-related documentation), and labor restrictions on larger enterprises. In terms of regulation, for example, Greece exhibits one of the highest degrees of product markets regulation among OECD countries, an index that has proven to have a strong inverse correlation with productivity (Exhibit 14).

Exhibit 12

Productivity and growth barriers in the Greek economy

SUMMARY

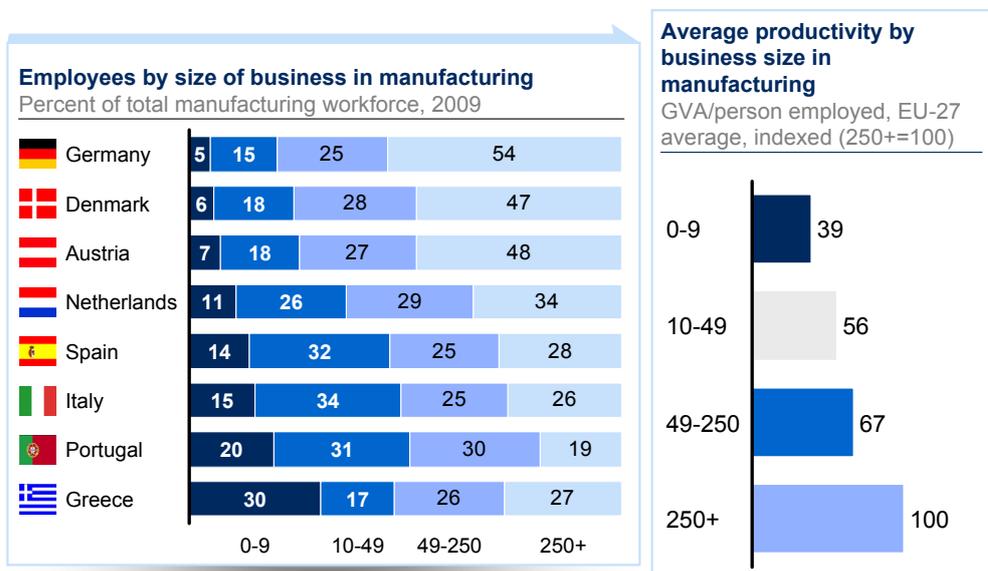
A Investment and scale discouraged	1	Fragmentation and small scale of businesses across sectors
	2	Over-regulation of markets and professions
	3	Complex and restrictive licensing and operating processes
	4	Lack of integrated and systematic zoning and real estate planning
	5	Highly complex and volatile tax framework creating scale disincentives
B Large, inefficient public sector	6	Large, expensive public sector with low quality outputs
	7	Very low efficiency driven by highly fragmented and overlapping tasks
	8	Lack of mechanism to inject market-sourced management & technical talent
	9	Low performance clarity and accountability; limited use of double entry system
C Rigid and 'narrow' use of human resources	10	Low employment participation of youth and female
	11	Limited flexibility (e.g., part-time, mobility) and employment turnover
	12	Binding and inflexible collective agreement framework
	13	Disconnect between market and education; lack of innovation support
D Cumbersome legal and judicial system	14	Over-abundance of laws; sometimes conflicting and with unclear applicability
	15	Heavy administrative burden in courts resulting to long lead times
E Widespread informality	16	Extensive tax-evasion; detection and collection reforms still emerging
	17	Substantial wealth creation and transaction outside formal economy

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Exhibit 13

Fragmentation and small scale impacting productivity

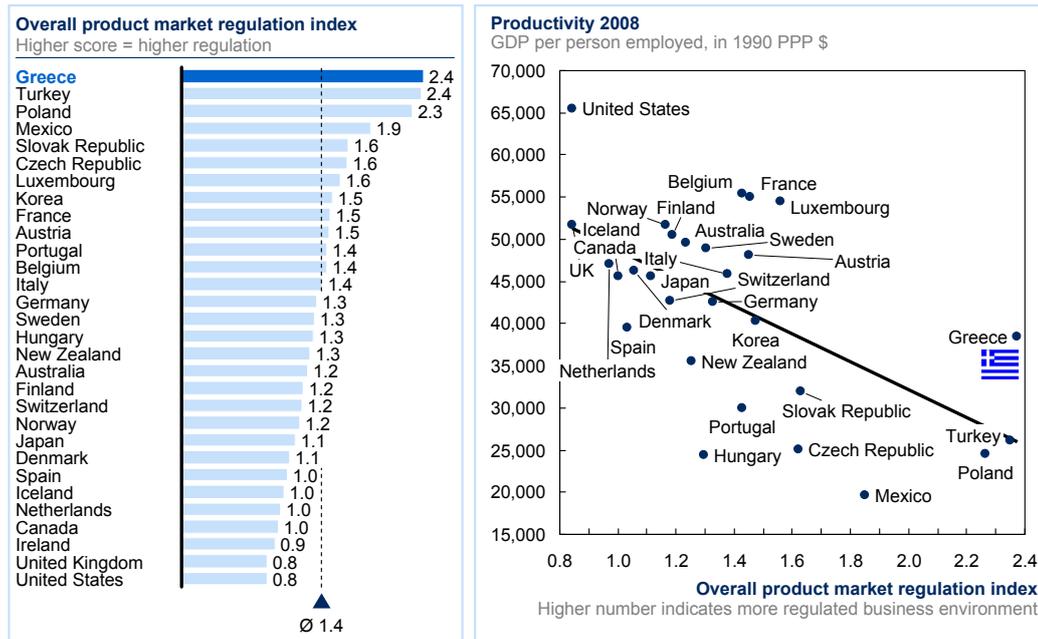
EXAMPLE: MANUFACTURING



SOURCE: Eurostat Structural Business Indicators; EL STAT

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Overregulation impacting productivity



SOURCE: OECD; IFC; ILO; World Bank; McKinsey Global Institute

McKinsey & Company

b. Large and inefficient public sector

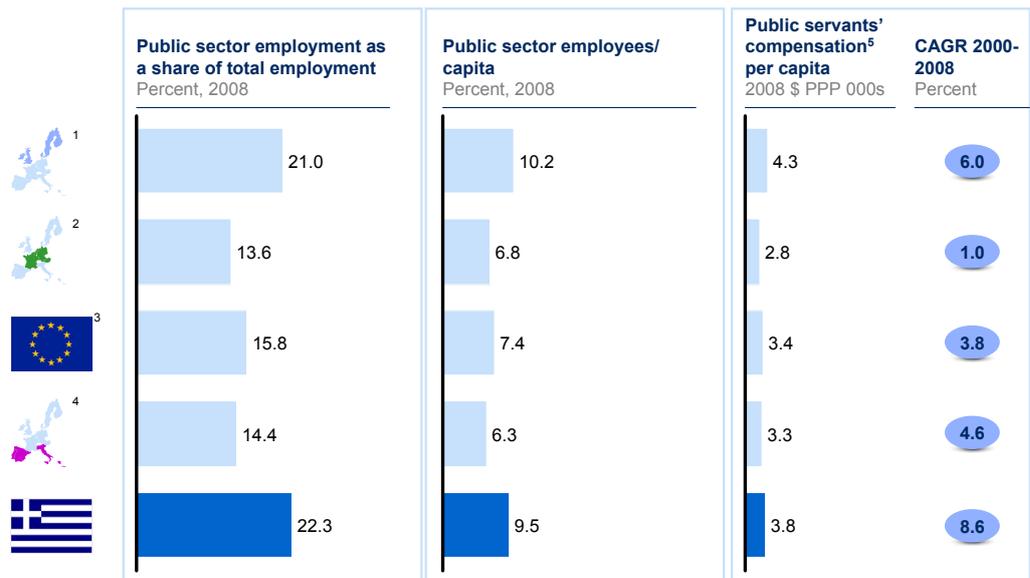
Greece's public sector, relative to the size of the country and its economy, is clearly large, and ranks at the upper end of European benchmarks. It is eclipsed only by Northern European countries, where, however, social service delivery and overall quality of output is recognized as clearly superior. In fact, the World Economic Forum ranked Greece extremely low in public sector outcomes. Combined with high government expenditure, this demonstrates the underperformance of the Greek public sector (Exhibits 15-16).

At the same time, Greek public sector suffers from significant fragmentation and overlap of responsibilities, between the various Ministries and multiple other authorities, creating additional burden and delays to business operations and allowing for informality to flourish. An example of this is that a total of 13 Ministries are involved in 27 tourism related activities and responsibilities.

On top of the 'core' public sector, there is a multitude of large and mid-sized corporations across sectors that are directly or indirectly controlled by the state (even if formally recorded in the private sector), exhibiting very similar structural inefficiencies in resource utilization. Moreover, the lack of performance clarity and accountability on public spending (e.g., lack of double-entry system) and procurement practices has created substantial competitive distortions in the pure private sector, with many enterprises being strongly dependent on financial transactions with the public sector. This underscores a vital need for the Greek economy to both reduce its reliance on the public sector and to step-improve its efficiency.

Exhibit 15

Benchmarking the Greek public sector



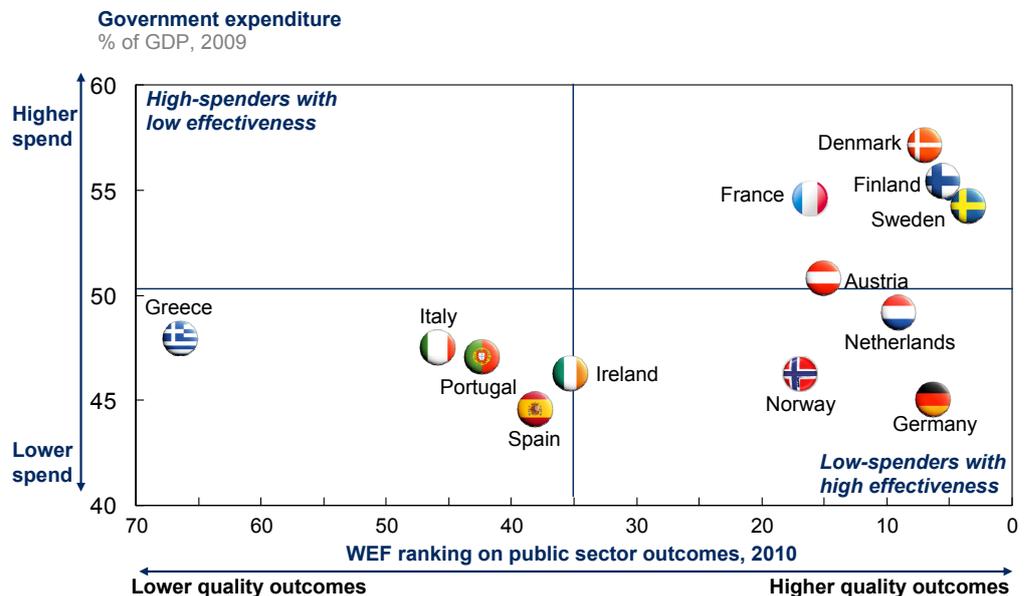
1 Northern Europe: Denmark, Finland, Ireland, UK, 2 Continental Europe: Austria, Germany, Netherlands, Luxembourg, 3 EU 15 (excluding Belgium, France, Sweden due to data unavailability), 4 Southern Europe: Greece, Italy, Portugal, Spain, 5 As reported in State Budget
 Note: Public sector employees include both core and broader public sector entities

SOURCE: LABORSTA Labour Statistics Database; Eurostat, IMF

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Exhibit 16

An expensive and ineffective public sector



Note: Excluding interest; including government expenditure on final goods and services, social benefits and capital transfers

SOURCE: OECD; WEF Global Competitiveness Report 2010-2011

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c. Rigid and 'narrow' use of human resources

Greece has not capitalized on its human resources and labor force potential. Although recent reforms have taken important steps towards proven European models and practices, employers are still hesitant to hire more workers because of inflexible legal requirements, the cumulative effect and inflexibility frequently associated with collective labor agreements and the skewed functioning of arbitration.

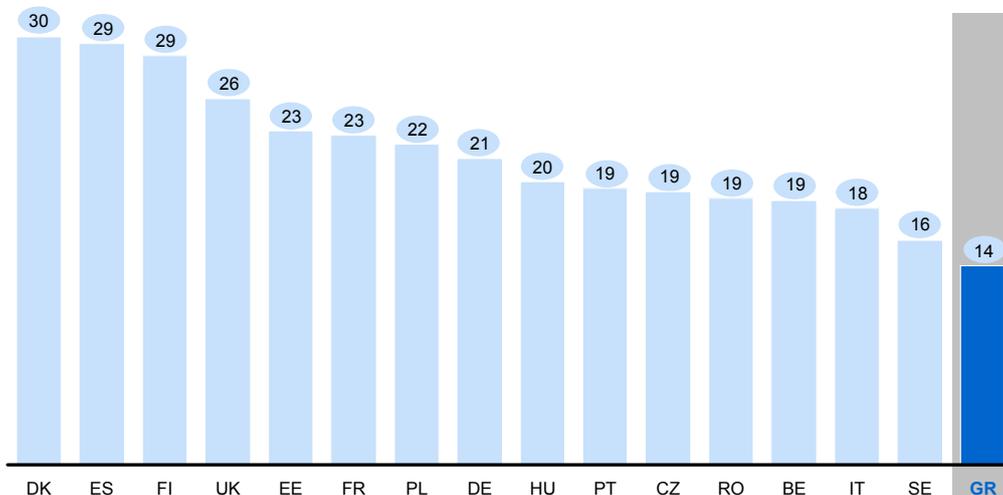
As a result of such distortions, Greece has the lowest employment turnover rate (14%) in Europe and the highest average tenure in the current job (14 years) among OECD countries (Exhibit 17). Labor force mobility is a crucial indicator of 'health' for the Greek economy, the lack of which is also clearly reflected in the low observed levels of labor participation. For example, there is clear international evidence that part-time employment is strongly correlated with unemployment and female employment participation (Exhibits 18-19).

There is also poor placement of young university graduates in the workforce, a problem reflecting the largely severed link between universities and the business world. Beyond its impact on employment the lack of collaboration between academia and business is seriously hindering innovation and entrepreneurship (Exhibit 20).

Exhibit 17

Greece has the lowest employment turnover in Europe

Labor turnover¹
% of employment



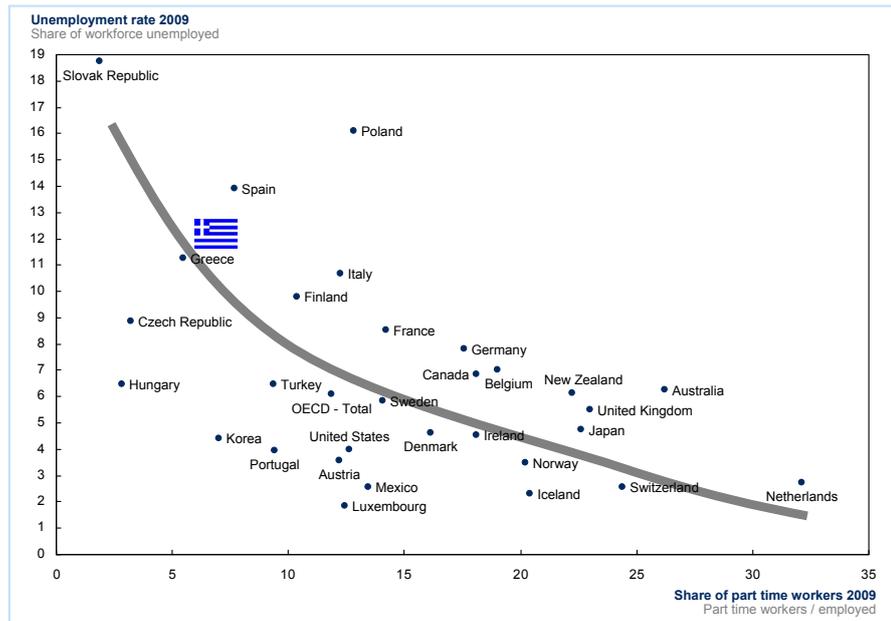
¹ Labor turnover = (Hirings+Separations)/total employment
Note: Annual averages across 2002-07, 2002-04 for Sweden

SOURCE: "Employment in Europe 2009"; DG EMPL calculations using EU LFS data

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Exhibit 18

Link between unemployment and part-time employment options

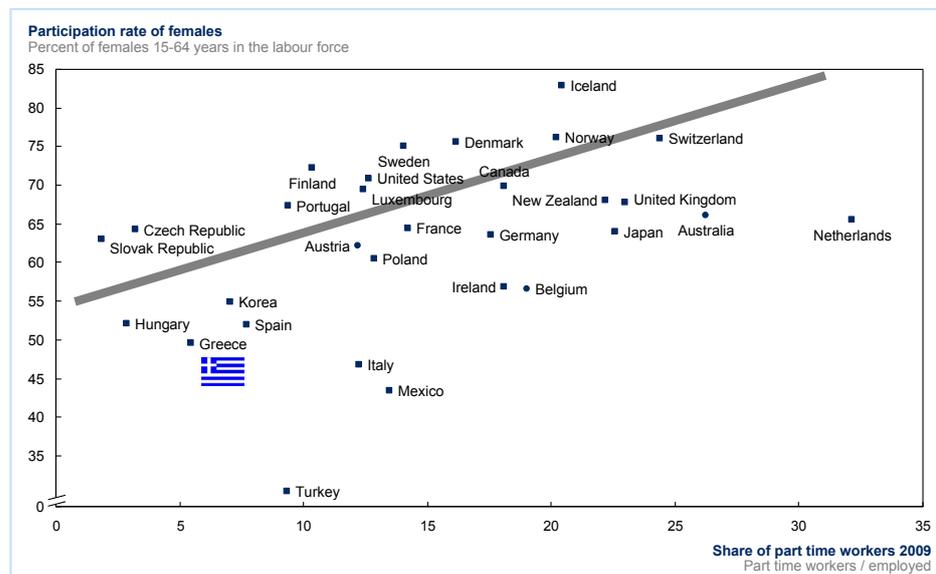


SOURCE: OECD

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Exhibit 19

Link between female employment participation and part-time employment options

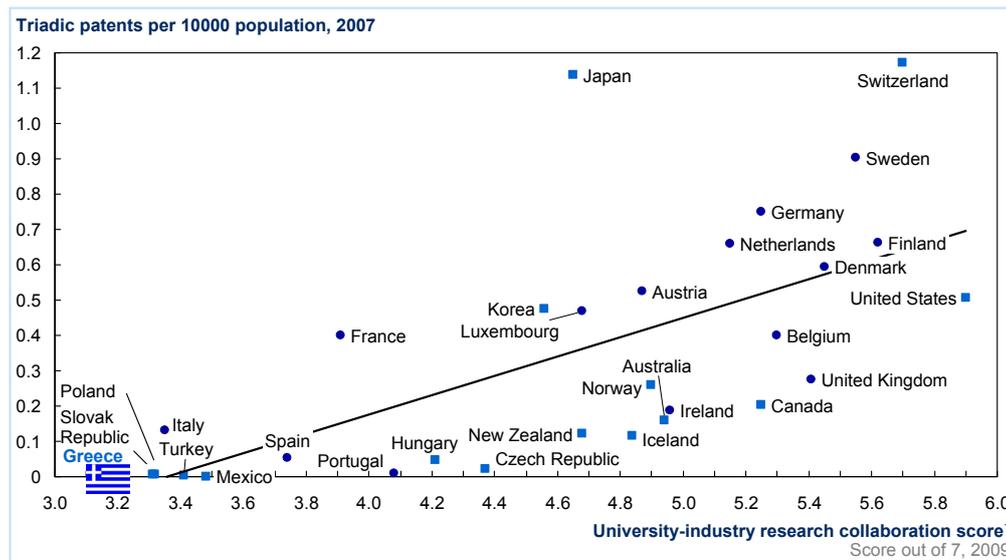


SOURCE: OECD

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The lack of collaboration between academia and business hinders employment, innovation and entrepreneurship

• EU-15
■ Other OECD²



¹ Based on responses from 13,000 business leaders on a scale from 1 = minimal or non-existent to 7 = intensive and ongoing
² Sample of 30 OECD countries

SOURCE: OECD; WEF; McKinsey Global Institute

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d. Cumbersome legal and judicial system deterring investment

Business in Greece is impeded by a cumbersome legal system, which comprises a large number of laws, sometimes ambiguous, obsolete or contradictory (e.g., in environmental legislation), with multiple overlaps and frequently revised (e.g., in the case of tax legislation). The resulting complexity creates a rigid and inefficient administration, responsible for delays, confusion and frequent friction with businesses and citizens.

Largely as a result of this, the Greek judicial system is overburdened with cases waiting to be tried. Indicatively, the Council of State –the country's supreme administrative court– appears to receive 8,000-9,000 new cases per year, and only decides on 3,000 of them, creating an ever-increasing backlog and lengthening decision lead-times, now ranging from 2-6 years. At the same time, preliminary evidence suggests that there is a lack of clear criteria for case prioritization and administrative resources to execute time-consuming bureaucratic tasks. The increasing backlog is also evident in lower levels of administrative courts that occasionally seem to suffer from a limited capacity of judges.

e. Widespread informality

According to reports from the Bank of Greece and other institutions, the informal sector in Greece accounts for approximately 30% of total economic activity. This translates to a very significant gap in tax receipts: in 2009, it was estimated that between €15-20 billion of personal, corporate and sales taxes was lost, with more than half of this foregone revenue attributed to VAT evasion. That is equivalent to 7%-9% of the country's GDP and 60%-80% of 2010 fiscal deficit.

The traditional inability to effectively collect taxes is to a large extent driven by the lack of sophisticated processes and practices in the registration, evasion detection, case segmentation, evader contact strategy and collection approaches. Ongoing reforms and attempts to professionalize the process are clearly in the right direction. However, there is still a substantial gap versus international practices across the tax value chain. Most notable are deficiencies in the automated detection of potential tax offense perpetrators (based on advanced statistical tools), the ability to efficiently and effectively audit large amounts of cases and the tactical orchestration and escalation of intervention methods to maximize collection of tax revenue (Exhibit 21).

Beyond outright tax evasion, there is also a substantial informal labor market (especially among the self-employed and micro businesses) where income taxes and social contributions are not collected and other untaxed areas such as illegal imports and unreported gaming.

Exhibit 21

Tax evasion counter measures emerging; still major gaps with international best practices

PRELIMINARY

	Indicative best practices (non-exhaustive)	Current status		
 <p>1 Detection</p>	<ul style="list-style-type: none"> ▪ Pro-active deterrence – targeted and relevant outreach/awareness programs as well as pre-filing certification to pro-actively assist taxpayers to comply ▪ Sophisticated detection – definition of the probability of 'hit' and likely 'yield/audit outcome/payout' based on selected key taxpayers parameters ▪ Prioritization and segmentation – use of the above as well as other parameters (e.g., likelihood/ability to pay) to segment taxpayers and prioritize segments and cases ▪ Continuous calibration – detection, segmentation, prioritization parameters calibrated with continuous inflow of contact and audit results and data 	<p>✗</p> <p>✓</p> <p>✓</p> <p>✗</p>		
	 <p>2 Contact/ Collections</p>	<ul style="list-style-type: none"> ▪ Contact strategies – definition of the most suitable contact and audit strategy based on segment/cases characteristics and available audit resources; use of variable approaches (e.g., letter, call centre, audits of variable 'intensity') ▪ Auditors deployment/'rostering' – complexity and fraud prevention based case allocation ▪ Audit guidance and monitoring – on-line audit direction, workflow audit recording ▪ Debt settling strategies – flexible payment arrangements where applicable ▪ Demand management – dynamic pay-as-you-earn system and pre-due date contact ▪ Tight performance management – 'closed files' reviews and frequent tax audit controls 	<p>✗</p> <p>✓</p> <p>✗</p> <p>✓</p> <p>✗</p> <p>✗</p>	
		 <p>3 Taxpayer service</p>	<ul style="list-style-type: none"> ▪ High e-filing rates – reduction of processing costs, clear taxpayers benefits ▪ Efficient processing of paper returns – digital technology as productivity driver ▪ Claims/liabilities clearance – robust offsetting mechanism for open positions ▪ Query resolution – efficient/effective delivery using demand/triaging expertise ▪ Channel management – increased use of self services; targeted in-person channels ▪ Taxpayer education/assistance – targeted education/assistance campaigns ▪ Tax auditors capabilities and training – robust selection/termination, rotation, training 	<p>✓</p> <p>✗</p> <p>✗</p> <p>✗</p> <p>✗</p> <p>✗</p>

SOURCE: Tax administrations; Interviews



3. A new National Growth Model

3. A new National Growth Model

It has become obvious that the flawed economic and growth model of the past needs to be replaced by a drastically different pattern of development and sense of purpose. Consumption-driven growth in Greece has come to an end as it has been proven unsustainable and as credit becomes scarce and expensive. Greece needs to adopt a new **National Growth Model**, featuring five major pillars:

- The economic model should become much more **outward**, focused on foreign markets both for producing export goods and services and importing foreign capital. Tradable sectors like tourism, agriculture, manufacturing and business services should get a large share of resources and investments, allowing them to build scale, expertise and competitiveness at an international level.
- Funding of the economy needs to transition from public debt to private sector equity and debt. This requires higher levels of foreign and domestic **investment**. Greece needs to construct a business-friendly environment that will attract local and foreign investment, to generate new jobs and the economic growth required to gradually reduce the country's reliance on debt.
- The **productivity and efficiency** of the public and private sector needs to be improved. This could be accomplished by eliminating redundant or obsolete public sector entities that do not contribute to the public good and step-improving the operating efficiency of the public sector overall. The private sector should be activated to pursue business and investment opportunities that would enhance the country's extroversion and international competitiveness and build larger, more efficient organizations that better utilize resources, investment capital and technology.
- Greece needs to eventually create a culture of **tax compliance**. Tax evasion should be effectively addressed and loopholes that allow or even incentivize it removed. Official corruption should also be rooted out, by minimizing transactions and interfaces between the private sector and state agencies, both in tax administration and other areas relevant for business and investment activity.
- The country also requires new **employment opportunities and culture**. Employees, including women and young people, should be encouraged to join the workforce. There should be meritocracy, particularly in the public sector, with individual effort and skill adequately rewarded. Part-time work needs to be incentivized to broaden the employment base, increase flexibility and reduce unemployment. Employment mobility is a sign of a robust economy that creates new opportunities for employees and should not be discouraged. Education should be revamped both in terms of its academic distinctiveness in existing and new (e.g., agriculture, tourism) fields as well as increasing the link between academia and business to boost innovation and entrepreneurship.

The new **National Growth Model** could achieve a number of **performance improvements**, including much lower private and public consumption as a percentage of GDP, increasing exports and generating substantially higher levels of investment. Productivity could significantly increase while, in addition, the **National Growth Model** could also reach a set of important **economic 'health'** milestones, such as closing the tax gap and increasing employee turnover. Achieving such milestones means reaching average EU levels on most indicators, though in certain aspects—for instance in FDI inflow or the increase in tradable sectors' output—Greece would need to outperform European peers in the coming years, to bring the economy back on track in the longer term (Exhibit 22).

How will this be accomplished? The recession and the ongoing government efforts for fiscal stabilization have already set in motion some of the necessary macro developments. Private consumption is already declining as a result of the downturn in the economy and the deleveraging by consumers. Eventually total private and public consumption needs to decline from its current level by 15-20pp of GDP, to reach sustainable levels observed in the rest of Europe.

The private sector needs to drastically alter the orientation of the economy away from domestic consumption and also systematically target export markets. This has already started to happen because of the crushing effect the recession has had on domestic demand, and it creates the opportunity for lasting changes.

Greece also needs to materially increase the amount of investment flowing into the country to levels above the EU average. The privatization program can help accomplish this by attracting international investors for acquisition of key assets, strategic partnerships with Greek enterprises and consequent sustained investment activity. Given that valuations of Greek assets are currently depressed as a result of the crisis, each transaction should be viewed against mid- to long-term benefits including the elimination of incurred losses and subsidy outflows for the state, as well as the important benefit of bringing in long-term local and foreign investors and opening up state-controlled business to competition, that will also eventually create investment and employment opportunities while stimulating competitiveness.

Exhibit 22

The new 'National Growth Model' based on competitiveness and extroversion

INDICATIVE ASPIRATIONS

	From (2010)	To (2021)	References
Performance	GDP per capita USD thousand PPP ¹	31	<ul style="list-style-type: none"> Average GDP growth of ~3% p.a.; realizing the €49 billion growth upside in the sectors studied while rest of economy growing at 1.5% p.a. GDP growth as above Average employment growth of 1.0-1.3% p.a. Consumption adjustment to sustainable levels and increased extroversion in the economy Trade balance improvement validated from 'bottom-up' analysis of selected sectors' trade balance evolution Matching Southern European peers' performance (Italy ~20% and Spain ~23%) Matching international benchmarks; typical impact from intensive counter tax-evasion programs Converging to average European practices
	Productivity USD PPP/hour worked ¹	35	
	Private and public (final) consumption over GDP	94%	
	Net Exports over GDP	-8.5%	
	Investments over GDP	14.5%	
Health	Tax gap	30%	
	Employment turnover²	14%	

1 In 2009 terms

2 Hirings plus separations over total employment

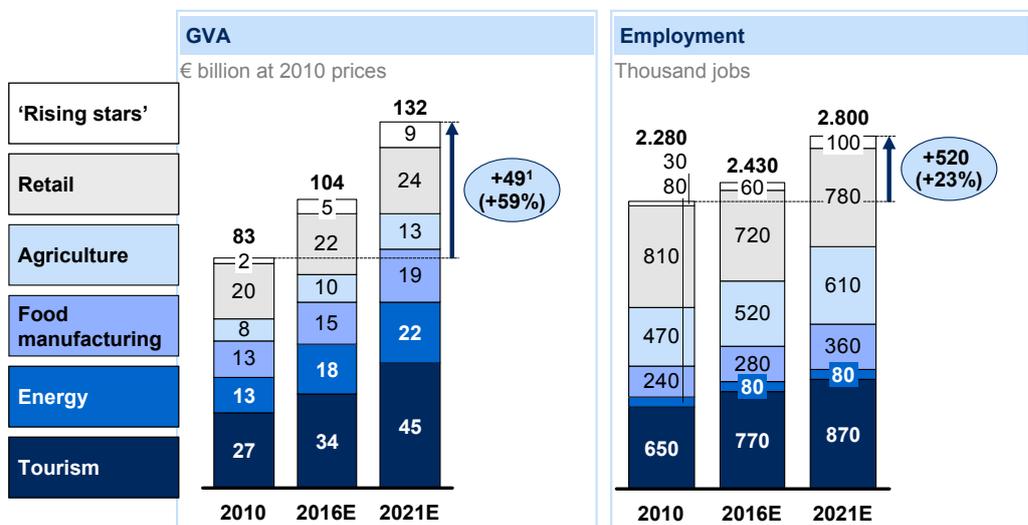
The 'bottom-up' analysis of the five major sectors and the eight 'rising stars' demonstrates that there is potential for raising annual GVA levels by €49 billion (€55 billion in GDP terms) by 2021 through measures taken in these sectors alone (including direct and indirect GVA effects, netting out overlaps among sectors) coupled with the implementation of important cross-sector growth measures and reforms. That would create an estimated 520,000 new jobs. The largest increase is likely to originate from the tourism sector, which could add €18 billion in GVA per year, followed by the energy sector, which could add another €9 billion, food manufacturing and agriculture, contributing €6 and €5 billion respectively. Retail is estimated to add €4 billion (following a relative decline in the short to medium term as a result of the crisis and the consumer deleveraging), and 'rising stars' such as aquaculture, medical tourism and generic pharmaceuticals may generate as much as €7 billion in new output (Exhibit 23).

Assuming an underlying 10 year annual growth trajectory of 1.5%, this would mean that Greece's growth rate could double to 3% per year on average over the next decade. This positive impact reflects only the cumulative effect of actions taken in the sectors examined by **Greece 10 Years Ahead**, with other sectors assumed growing at the baseline rate of 1.5%. Even if that baseline assumption were to be proven optimistic (e.g., due to externalities negatively affecting global demand) the estimated impact in GVA and employment would only take longer to materialize rather than being jeopardized in absolute terms. This would also mean a substantial boost to productivity – an important pillar of the new **National Growth Model** – by almost 20% (Exhibit 24).

The new **National Growth Model** could also have a significant impact on the country's fiscal and trade balances. Greece could have a positive impact on the fiscal balance in excess of €7 billion and on the trade balance in excess of €16 billion in these sectors by 2021, going a long way towards curbing the large deficits currently crippling the economy (Exhibit 25).

Exhibit 23

Potential for €49 billion new economic output and 520 thousand new jobs in the next decade ESTIMATES

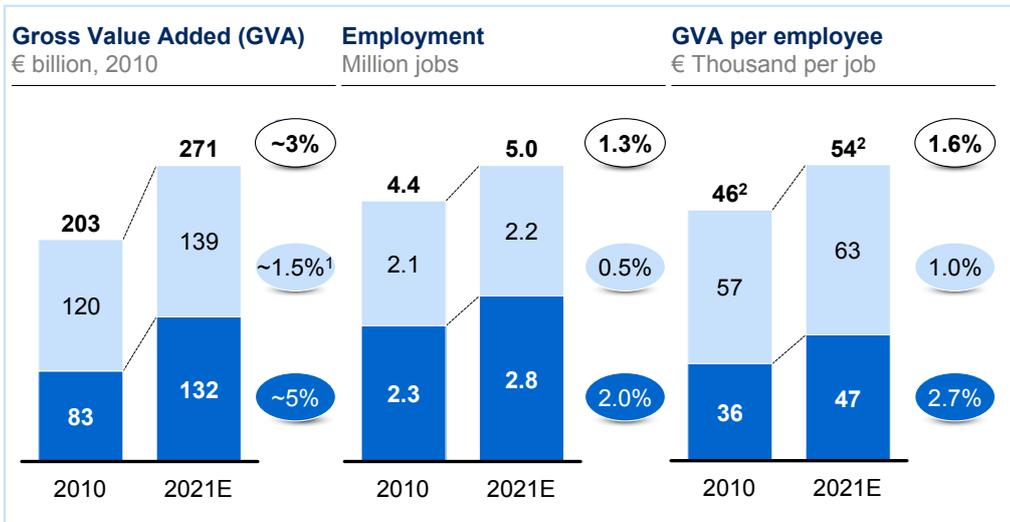


Note: Tourism and Retail are depicted in 2009 figures instead of 2010
 1 – € 55 billion in GDP terms

Potential to double growth and increase productivity by almost 20%

ESTIMATES

■ 'Greece 10 Years Ahead' focus sectors ■ Rest of economy ○ 10 year CAGR



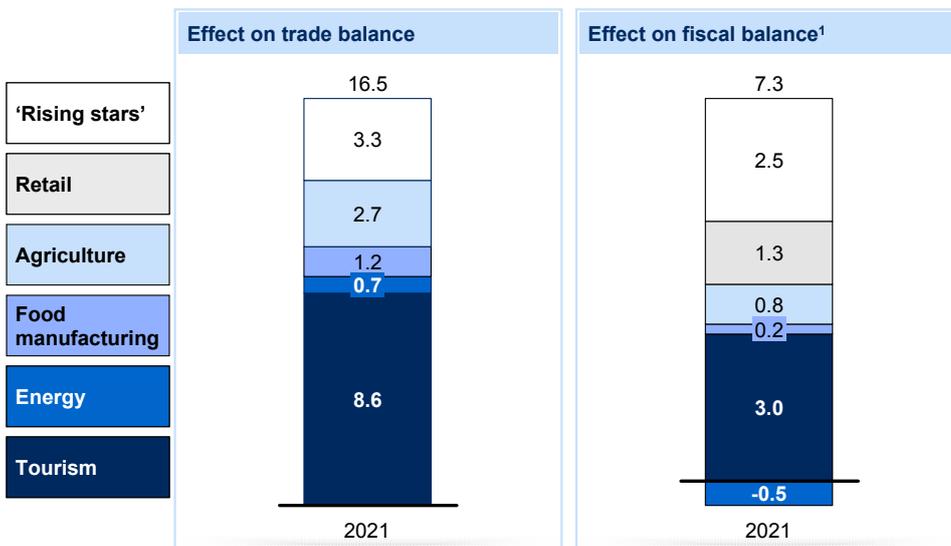
1 Assuming baseline growth for the Greek economy at an average annual rate of 1.5%
 2 Weighted average

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Potential impact in closing the twin deficit gaps

ESTIMATES

€ billion, 2010 prices



1 Effect on fiscal balance includes corporate tax, personal tax, and VAT revenues (with exception of Retail where personal tax revenues were not included); not taking into account social security contributions effect on state-controlled pension and health insurance funds, import/export duties, or other similar revenues

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Greece 10 Years Ahead details more than 100 possible growth priorities and measures both across and within sectors. In terms of **cross-sector** and macro level priorities we have identified 20 possible measures and reforms to be considered by the Greek state in effectively removing growth, productivity and competitiveness barriers and unleashing the country's growth potential. These priorities include both new initiatives, as well as initiatives underway, which, however, could benefit from acceleration and/or revision (Exhibits 26-27).

- Re-prioritizing public infrastructure investments with high growth relevance local employment potential and high local GVA (e.g., major high speed road and cargo train network, 3-4 cruising embarkation ports, 30-35 new marinas, cargo gateway and transshipment ports), leveraging EU funds and PPPs (Exhibit 28).
- Simplifying and accelerating investment approval and licensing, improving the fast-track approach and leveraging proven Athens 2004 experience and practices. This could involve the reinforcement of the current organization managing strategic investments (i.e., Invest in Greece), including the introduction of a dedicated legal pre-clearance team and the replacement of the 'induced deadline' principle with legislated simplified processes (Exhibit 29).
- Revising the environment and zoning framework, adjusting specifications for land usage and adapting development standards to real market context and growth imperatives, while preserving Greece's environmental legacy.
- Developing an effective and transparent mechanism to attract and recruit local and international market talent for contract based deployment into pivotal technical and managerial positions in the public sector.
- Optimizing tax evasion counter-measures by applying proven international best practices in detection and collection (Exhibit 30), and reducing the informal economy by focusing on high impact areas (e.g., undeclared labor, illegal imports, unreported gaming). Also, consolidating all public sector auditing functions (e.g., tax, licensing) into a Central State Auditing Unit.
- Upgrading the capacity of the court system, starting with the Council of State, where a dedicated 7th department dealing with strategic investments and growth reforms could be created. Setting priorities to get casework through the court system in a more efficient manner. Also, selectively adding judges at first and second degree level of administrative courts to address the current backlog.
- Improving the relationship between Greece's universities and business to also promote innovation, research and entrepreneurship. The country needs dedicated undergraduate and graduate university degrees, in growth relevant areas such as Tourism and Agriculture. Introducing obligatory internships in the third year of studies to ease the transition of students into the job market. Universities and industry need to cooperate to stimulate innovation and ensure that young graduates can find opportunities in their chosen field.
- Establishing an independent Economic Development and Reform Unit (EDRU) as an institution directly reporting to the Prime Minister. The EDRU, which, as a concept, has been effectively adopted in various cases internationally (e.g., UK, Singapore), would be critical to support the Greek state in coordinating, facilitating, and monitoring the implementation of growth reforms. We consider the establishment and effective operation of the EDRU a critical condition for the successful execution of the growth reforms (Exhibit 31).

Possible cross-sector priorities and measures to unleash growth (1/2) ■ High priority

	Possible cross-sector priorities and measures	Priorities/measures to accelerate and/or revisit
A Igniting and sustaining growth	<ol style="list-style-type: none"> 1 Introduce the Economic Development & Reform Unit (EDRU) as an institution under the Prime Minister to support the government in coordinating, facilitating and monitoring the implementation of growth reforms 2 Launch a phased 'Lean Processes' program to simplify licensing processes and reduce lead times 3 Incentivize investment and facilitate scale <ul style="list-style-type: none"> – Remove <i>counter-incentives</i> and <i>barriers</i> to scale (e.g., legal and labor restrictions, SME taxation) – Introduce sector output specific <i>incentives</i> for investments and extroversion (e.g., manufacturing capacity locally and abroad, technology, R&D) 4 Establish the 'Greece 10 Years Ahead' Investment Fund (private or PPP) to pursue growth relevant investments 	<ol style="list-style-type: none"> 5 Revise the environmental and zoning framework to better balance growth and environmental priorities <ul style="list-style-type: none"> – <i>Adjust specifications for land usage and zoning</i> for specific activities (e.g., tourism, industrial, commercial) – <i>Adapt development standards</i> (for each land use) to real market context and growth imperatives 6 Revisit the 'Fast Track' framework for investments using proven <i>Athens 2004 Olympics</i> practices – i.e., <ul style="list-style-type: none"> – Introduce dedicated legal pre-clearance team and set-up the appropriate organization/capability to manage strategic investments – Replace the 'deadline induced approval' principle with legislated simplified process (first phase of #2) 7 Re-prioritize public Investments and rapidly launch growth relevant, high domestic GVA infrastructure projects (e.g., land/sea) leveraging EU funds and PPPs 8 Re-design the University-Business R&D and patenting framework to promote innovation and entrepreneurship
B Reforming the Public Sector and limiting its size	<ol style="list-style-type: none"> 9 Develop an effective and transparent mechanism to recruit local and international market-sourced talent for contract based deployment into pivotal technical and/or managerial positions in the public sector; pre-define allowance/limits for state entities 10 Consolidate all state entities' IT architecture design and strategic management into a central IT unit 	<ol style="list-style-type: none"> 11 Expand IPSAS / IFRS double-entry standards across all state entities; establish a financial reporting consolidation system to monitor and manage performance centrally 12 Broaden scope and role of the State Assets Management Fund to maximize the impact of the privatization program and Greek State TRS (Total Return to Shareholders)

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Possible cross-sector priorities and measures to unleash growth (2/2) ■ High priority

	Possible cross-sector priorities and measures	Priorities/measures to accelerate and/or revisit
C Stimulating employment and capability building	<ol style="list-style-type: none"> 13 Launch 'Ellada & Ergasia' as a cross-ministerial program <ul style="list-style-type: none"> – Incentivize and facilitate youth and female participation (e.g., social security, support for working mothers) (MoL) – Consolidate employment databases and develop a national employment communication portal (MoL) – Create central public sector employment coordination function to manage supply/demand (MoL) – Launch a labor re-skilling/specialization program (MoE) 14 Revamp technical, undergraduate and graduate education <ul style="list-style-type: none"> – Upgrade technical school curriculum to better reflect modern academic and professional requirements – Introduce university programs in highly relevant areas (e.g., tourism, crops agricultural and aquaculture production) – Introduce obligatory internships in the penultimate year and establish links (e.g., exchange programs) with international universities 	<ol style="list-style-type: none"> 15 Complete flexibility and efficiency-related labor reforms: <ul style="list-style-type: none"> – Enforce unified compensation scheme across the public sector – Introduce 'cap' in employment discontinuation reimbursement for fixed-term contracts – Broaden part-time employment (public/private sector) – Shift from tenure to tenure/performance based advancement in the public sector
D Improving the effectiveness of judicial operations	<ol style="list-style-type: none"> 16 Accelerate decision making in Council of State (CoS) and earlier degree courts <ul style="list-style-type: none"> – Introduce a 7th CoS department dedicated to strategic investments and economic reforms while establishing a funneling and prioritization approach – Selectively add capacity (e.g., judges in earlier degrees, support staff in CoS) 	
E Enforcing compliance and limiting informality	<ol style="list-style-type: none"> 17 Consolidate all internal auditing functions of core public sector (e.g., tax, licensing, HC authorities) into a Central State Auditing Unit 18 Launch dedicated projects ('SWAT teams') to investigate possible informalities in different fields of economic activity (e.g., un-declared labor, illegal imports, unreported gaming) 	<ol style="list-style-type: none"> 19 Further optimize tax evasion counter measures leveraging international practices in detection, segmentation, and contact/collection 20 Establish a Central Procurement Unit to define procurement strategy, monitor procurement practices across state entities and procure major common categories

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Exhibit 28

Potential re-focus of public or PPP investment funds to support priorities of new growth model

INDICATIVE

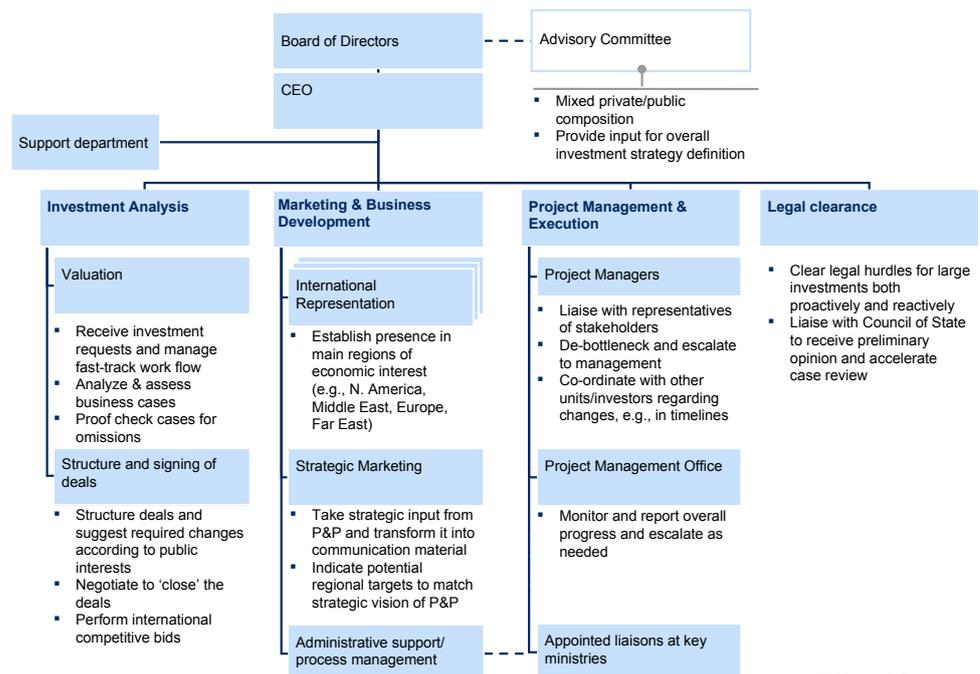
Examples of high priority investment areas (public or PPP)

Cross-sectoral investments	<ul style="list-style-type: none"> ▪ Completion of the South-North and East-West high speed road network ▪ Development of high-speed cargo train-line (Patras – Athens – Thessaloniki – Evzoni/Kipi) ▪ Expansion/upgrade of major ports for cargo gateway (e.g., Piraeus, Thessaloniki, Patras) and/or transshipment (e.g., Piraeus) ▪ Selective expansion of regional airports ▪ Development of residential and industrial waste processing facilities ▪ Further expansion of broadband penetration
Sector-specific investments	<ul style="list-style-type: none"> ▪ Tourism <ul style="list-style-type: none"> – Upgrade of 3-4 cruise ship embarkation ports to increase share of embarkation – Development of 30-35 new marinas to support nautical tourism – Development of 3-4 new major conference facilities to reinforce 'City-Break' and 'MICE' value proposition – Upgrade of cultural sites' infrastructure to improve visitor's experience ▪ Energy <ul style="list-style-type: none"> – Development of a smart grid to reduce T&D losses and enable accurate billing – Interconnection of specific islands with the national grid to reduce electricity costs – Prioritization of high local GVA renewable investments (e.g., hydro) – Building of gas pipelines to function as a gas hub – Acceleration of the exploration of domestic oil and gas reserves to substitute energy imports

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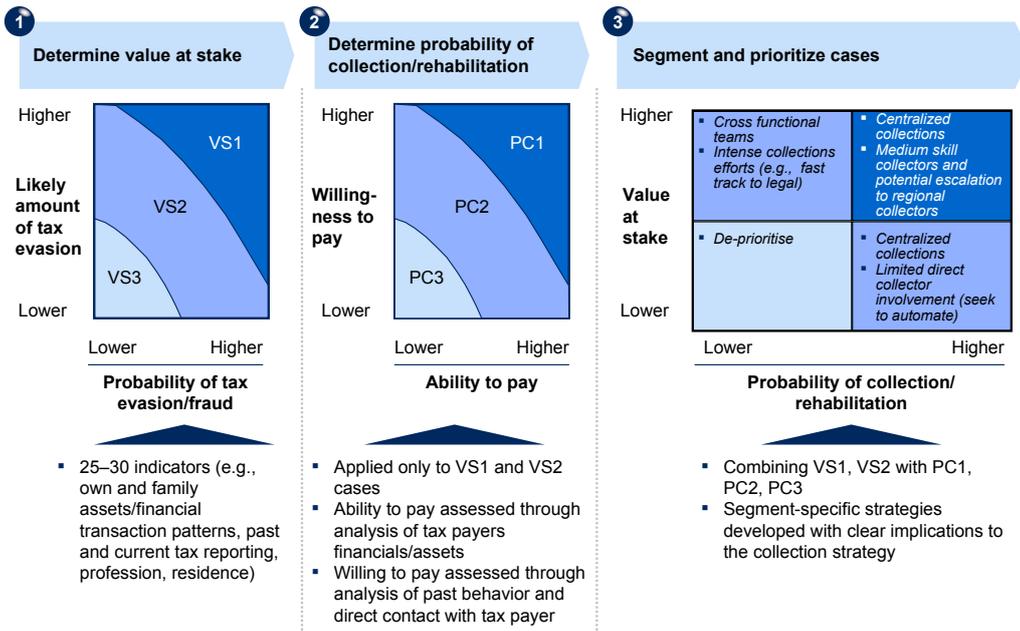
Exhibit 29

Suggested organizational structure to accelerate investment pipeline



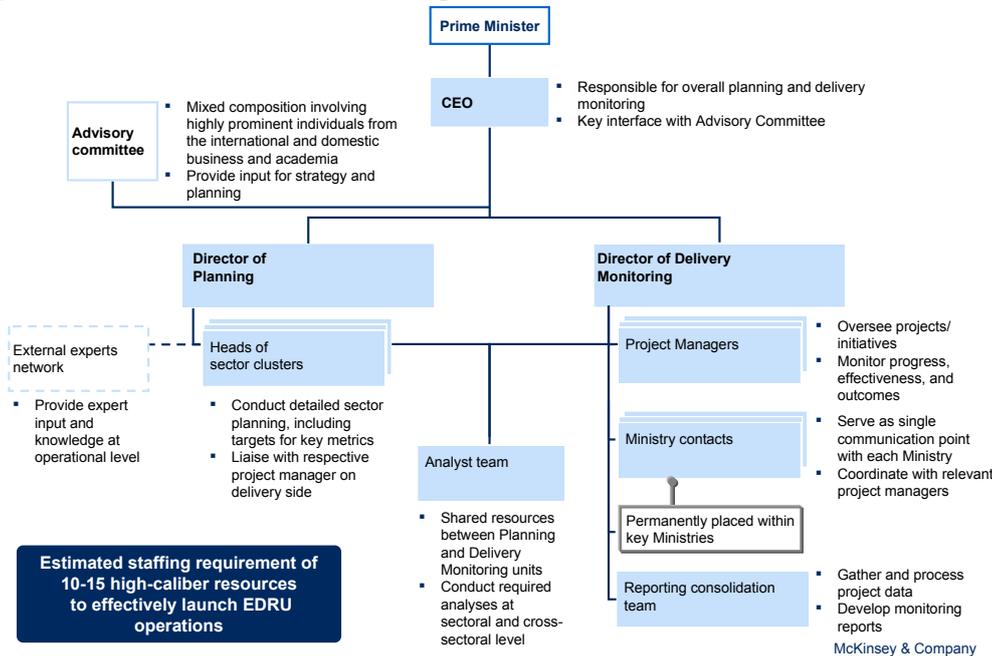
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International best practices for effective tax-evasion detection, segmentation and prioritization SIMPLIFIED



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The EDRU will be instrumental in supporting the Greek state to effectively plan, coordinate and monitor the growth reforms



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4. Laying the foundations in key economic sectors

4. Laying the foundations in key economic sectors

The cross-sector macroeconomic reforms outlined in the previous section are critical to lift the barriers mentioned earlier and to develop the necessary conditions for the country's economic sectors to grow. A top-to-bottom examination of the Greek economy shows that the best opportunities for growth would most likely occur in sectors where output can be enhanced by measures to maximize competitiveness, productivity and extroversion.

The study identifies these as 'production' sectors (Exhibit 32). They collectively generate €125 billion in GVA (approximately 60% of total GVA in the Greek economy) and employ more than 3 million people (approximately 70% of total employment). The five largest sectors among those – tourism, retail, energy, manufacturing and agriculture – which have been studied in detail account for 42% of economic output. They are collectively the largest employers (51% of total employment) and 'tax payers' in the country, while they stand to benefit the most from investment spillover effects between sectors. Manufacturing, for instance, accounts for 8% of direct output and 11% of employment and can grow strongly on the back of demand generated in several other 'production' sectors. Indicatively, out of €18 billion in identified new output originating in tourism, almost €3 billion would be formally recorded as direct GVA in manufacturing and heavy industry sub-sectors.

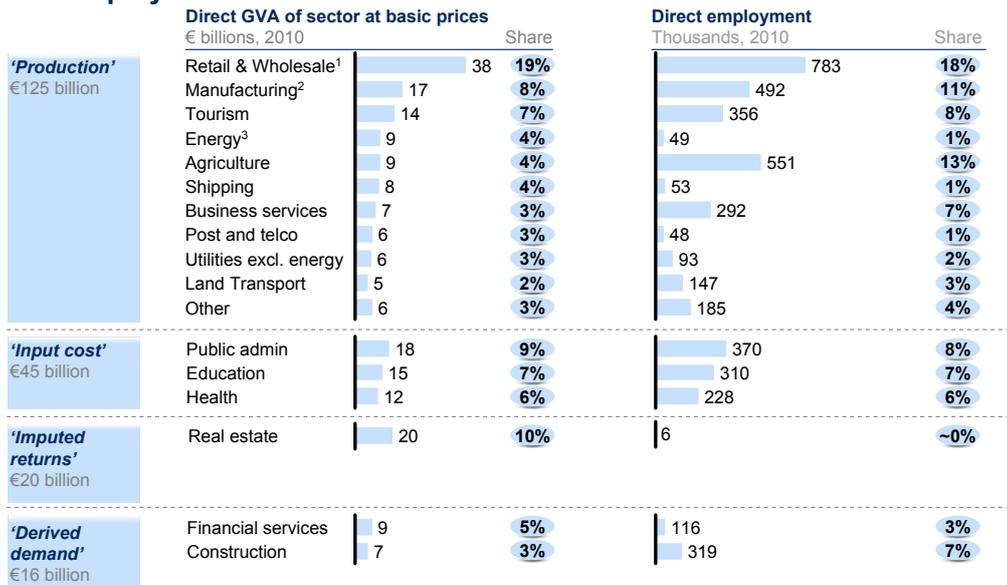
Greece 10 Years Ahead also identifies eight 'rising stars' in the economy (six primary and two secondary ones), which, though they are not yet sizeable, nonetheless offer the possibility of significant future growth. These 'rising stars' include **manufacturing of generic pharmaceuticals, aquaculture, medical tourism, elderly care, regional cargo hub development, waste management, specialized food categories, and development of graduate classical education programs**. They were selected among a long-list of more than 20 candidate subsectors, based on the relative intrinsic capabilities of Greece (e.g., in terms of primary resources, know-how, infrastructure, proximity to key markets) and the dynamics of supply and demand internationally (e.g., in terms of size and growth, labor versus knowledge intensity, local versus regional versus global reach) (Exhibit 33).

The estimates of 520,000 new jobs and €49 billion in additional annual GVA (€55 billion in GDP terms) in new **National Growth Model** are based on the detailed sector analysis conducted and reflect the application of well-established proven international practices to the Greek business landscape, taking into account the local economy's particular needs.

The remainder of this Executive Summary outlines the major conclusions and growth priorities for the five 'major sectors' and eight 'rising stars' within the scope of the **Greece 10 Years Ahead** study. As already mentioned in the introduction of this document there are clearly growth opportunities in other sectors and sub-sectors of the Greek economy that have not been covered by the scope of this study.

Mapping the economic sectors of Greece in terms of GVA and employment

ESTIMATES



1 Excluding fuel retail; 2 Excluding pharma manufacturing and ship building; 3 Extraction, processing and retail of fuels; electricity
 Note: Figures include only direct GVA and employment of each sector and are therefore not comparable with figures that include indirect effects

SOURCE: WIS Global Insight; EU KLEMS 2009; Eurostat

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'Rising Star' growth opportunities prioritized and relevant selection criteria

Prioritization criteria for 'Rising Stars'

- | | |
|---|--|
| Greece's intrinsic assets and capabilities | <ul style="list-style-type: none"> Availability of indigenous resource inputs and/or raw materials Specific know-how availability Existing infrastructure that could be leveraged and/or scaled-up Geographical proximity to destination markets |
| Market profile and success conditions | <ul style="list-style-type: none"> Market size and growth Nature and scope of competition <ul style="list-style-type: none"> Labor vs. knowledge vs. capital intensive Local vs. regional vs. global reach Success parameters in each value chain step |

- | | |
|--|--|
| 'Rising Stars' prioritized | <ol style="list-style-type: none"> Manufacturing of generics pharmaceuticals Aquaculture Medical Tourism (mainly outpatient) Elderly care Regional cargo hub Waste Management Specialized food categories Graduate/postgraduate Classics education hub |
| 'Rising Stars' analyzed; not prioritized (non-exhaustive) | <ul style="list-style-type: none"> Regional HQ hub Pharmaceuticals/medical research/clinical trials Mobile health diagnostics Outsourcing hub (e.g., software, engineering) |

4.1. Major sectors

4.1.1. Tourism

Tourism accounts for approximately 15% of the Greek economy when both direct (7%) and indirect (8%) GVA contribution is measured. The sector has been growing for a decade, but 70% of that growth has been fuelled by domestic demand. A traditional 'sun and beach' holiday destination, Greece competes with Italy, Spain, France and – recently – Turkey for tourist revenue. It gets most of its foreign visitors from Germany and the UK, with market shares around 3%-4%.

Greece faces a deteriorating competitive position in its traditional markets and has had limited success in attracting visitors from emerging markets such as China and Russia (Exhibit 34). The tourist season is too concentrated in the summer months (52% of arrivals in Q3) and tourists spend relatively less money in Greece than tourists visiting competing destinations (€146/day versus 200 in Italy and 162 in Turkey).

These challenges result from a number of underlying issues. In terms of its **commercial strategy** Greece offers a 'sun and beach' product with broad mass-market appeal, yet with low average quality, very limited differentiation in 'themes' and doubtful economic viability in the absence of large-scale accommodation and high value added infrastructure. In terms of **real estate planning, infrastructure and investment framework** several restrictions prevent developments that would cater more effectively to modern demand patterns and growing market segments (e.g., integrated resorts, vacation homes, cruise embarkation ports, marinas), while cumbersome licensing processes and a volatile tax framework discourage investments. **Connectivity** to emerging and long-haul markets is limited, while specific entry points (especially Athens) are very costly for air carriers. In terms of **capabilities**, Greece is under-performing in talent quantity, quality and status of academic institutions, while it lacks an effective market-driven organization for managing and promoting its tourism 'product'.

Greece 10 Years Ahead synthesizes 13 possible priorities for tourism grouped into four strategic themes (Exhibit 35):

- **Re-defining and re-focusing Greece's commercial strategy.** Greek tourism needs to focus its source market targeting, aiming to maintain market share in core European markets (Top Tier: Germany, UK, Scandinavia; Tier 1: Italy, France, Netherlands), while achieving a meaningful penetration in emerging (e.g., Russia, China) and long-haul (USA) markets. The commercial strategy should aspire to also shift the mix of visitors towards higher-income segments (from 62/38 to approximately 55/45 mass/affluent mix) through a quality upgrade of the core 'sun and beach' product with specific 'extensions' – in developing cruises and nautical tourism, developing a network of large integrated resorts (15-20) and vacation homes (approximately 50,000), and establishing Athens and Thessaloniki as attractive 'City Break' destinations (Exhibit 36).
- **Developing quality infrastructure while accelerating investments.** This involves investments in 2-3 larger-scale conference centers in Athens and Thessaloniki, as well as the development of the necessary infrastructure to support nautical tourism, especially marinas (to reach 60-65 from 32 today) and 3-4 cruise ship-friendly embarkation ports since there is clear evidence that embarkations are critical in revenue generation for the country (Exhibit 37). Policy priorities should revolve around the selective lifting of restrictions and bureaucracy in vacation home and integrated resort development, as well as enable the productive utilization of dormant tourism assets.

- Facilitating access and transportation.** Greece needs to actively promote better connectivity with emerging and long-haul markets by attracting more direct flights from these source markets, as well as lowering entry barriers (facilitating Schengen Visa processes) and airport charges.
- Revamping Greece's Tourism capabilities and know-how.** Greece needs a distinctive Tourism University degree (undergraduate and graduate) with strong international links, as well as revisiting and upgrading of the existing academic curricula to cover the necessary technical capabilities. Moreover, it is critical to set up eight functions (i.e., tourism strategic planning, source market and product management, marketing execution, channel/sales support, accreditation, sector intelligence, fast-track for large tourism investments, tourism operation facilitation / local tourism KEPs). Leveraging and revamping existing capabilities (e.g., within the Ministry and the Greek National Tourism Organization – GNTO) while injecting additional talent and setting up a PPP to further develop some of these functions such as source market/product management and marketing execution (Exhibit 38).

Based on our 'bottom-up' estimations the impact of Greece's new tourism strategy could be more than €10 billion incremental annual tourism demand in a 5 year horizon and more than €25 billion in a 10 year horizon. We expect the growth of visitors demand to be primarily from foreign visitors (approximately 62%) driven by a parallel increase in both number of visitors and (+48% by 2021) and average daily spent (+32% by 2021) (Exhibit 39).

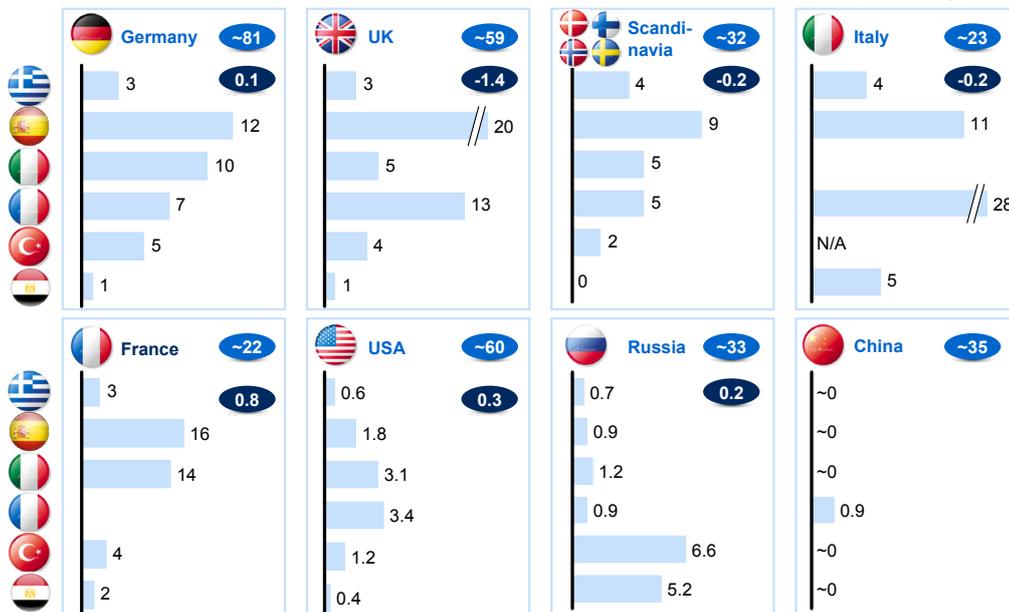
This incremental tourism demand would result to a €18 billion increased annual GVA (by 2021) and an increase in employment by approximately 220,000 jobs. The positive impact on Greece's trade and fiscal balance could reach approximately €9 and approximately €3 billion respectively.

Exhibit 34

A challenging competitive position for Greek tourism

Market share, %, 2009

● Millions of departures
 ● Δ percentage points market share, 2004-09



SOURCE: Euromonitor

McKinsey & Company

Exhibit 35

Possible priorities and measures to further develop Tourism ■ High priority

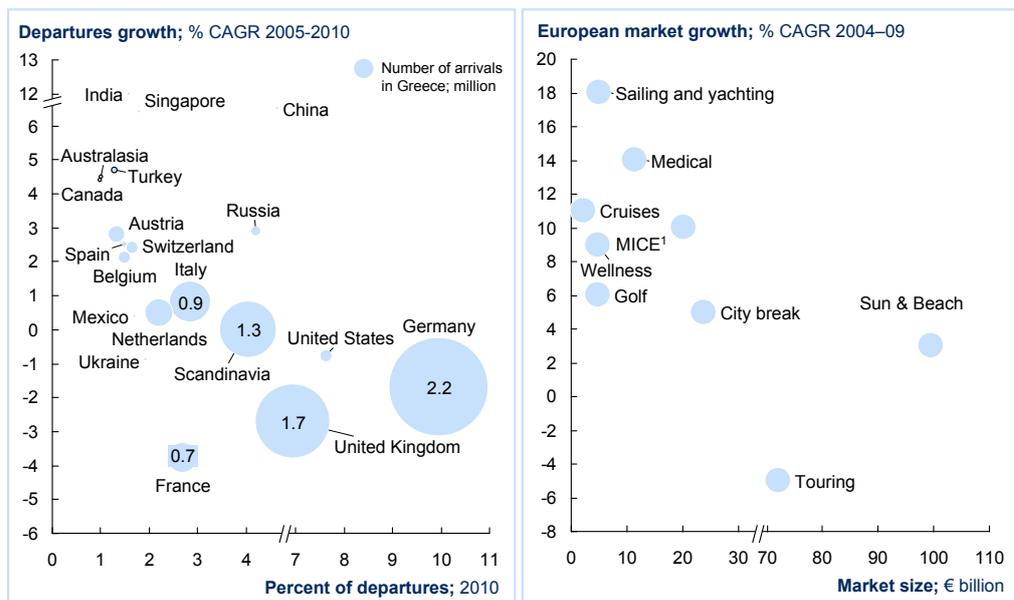
Possible priorities and measures	
A Re-defining and re-focusing the commercial strategy	1 Systematically target core mature and emerging markets while improving the mass-affluent mix — Defend and reinforce share (>3.5-4%) in mature markets: Top Tier - UK, Germany, Scandinavia, Tier 1 - France, Italy, Netherlands — Aggressively penetrate and gain share in North America (>1%), Russia (>1%), and China (>0.5%)
	2 Upgrade and selectively expand the product portfolio — Upgrade 'Sun & Beach' to increase value for money and establish a 'healthier' mass/affluent mix (~55/45) — Develop 'City Break' themes in Athens/Thessaloniki with global events, MICE ¹ , culture and leisure offers — Aggressively build 'Cruises' and 'Sailing/Yachting' themes for European leadership (25% embarkation and visits share compared to 10% and 21% share today)
	3 Develop a systematically planned network of LIRs ² and vacation homes (15-20 LIRs, ~50K homes) Deepen destination marketing sophistication, while bringing Greece's brand 'back-to-basics'
	4 Introduce multi-channel platforms for a distinctive pre-visit experience (e.g., 'Visit Greece' portal)
B Developing quality infrastructure while accelerating investments	5 Revamp Tourism zoning and planning legislation and lift excessive restrictions — Facilitate the development of quality accommodation, including LIRs and vacation homes — Enable the productive utilization of existing dormant tourism assets
	6 Pursue growth-relevant public infrastructure investments: upgrading 3-4 ports (for cruise embarkations), building 30-35 new marinas (to reach 60-65); investigate regional airport expansions
	7 Upgrade cultural sites' infrastructure (prioritized by cultural importance and traffic) while developing 2-3 new major conference facilities to reinforce 'City-Break' and MICE value proposition
C Facilitating access and transportation	8 Leverage the 'fast-track' framework (including the introduction of leaner licensing processes and the introduction of a legal pre-clearance team) to accelerate tourism investments
	9 Increase flight connectivity with US, Russia and China; facilitate Schengen procedures
D Developing capabilities and know how	10 Re-plan and re-schedule capacity, connectivity and quality/cost offering for island transportation; consider the development of 2-3 local hubs (e.g., in Cyclades, Dodecanese, Ionian islands)
	11 Review pricing at access points (ports and airports) against demand elasticity
	12 Build Greece's University Department for Tourism Studies (undergraduate and graduate); upgrade existing curriculum for technical education; introduce extensive international exchange programs
	13 Step-improve central sector planning and management capabilities; establish eight critical functions (e.g., strategic planning, product/customer management, marketing execution, channel/sales support); inject talent into the Ministry and GNT0; create a market driven PPP for selected critical functions

1 Meetings, Incentives, Conferences, Exhibitions; 2 Large Integrated Resorts

McKinsey & Company

Exhibit 36

Greece's source market and product focus driven by fundamentals



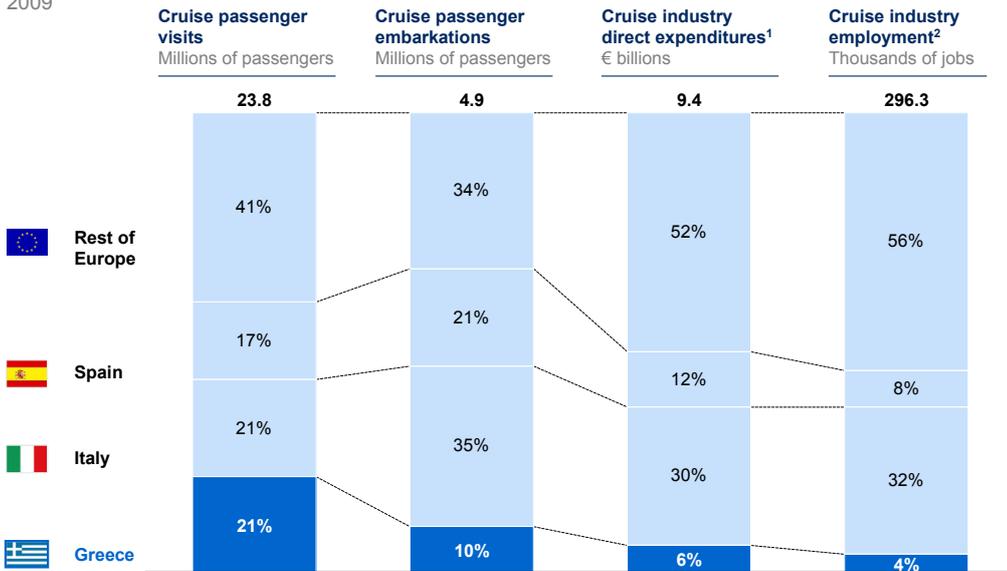
1 Meetings, Incentives, Conferences, Exhibition

SOURCE: Euromonitor; WTCC

McKinsey & Company

Opportunity for boosting revenues and employment in the cruise industry by capturing a 'fair leadership share' in embarkations ESTIMATES

2009



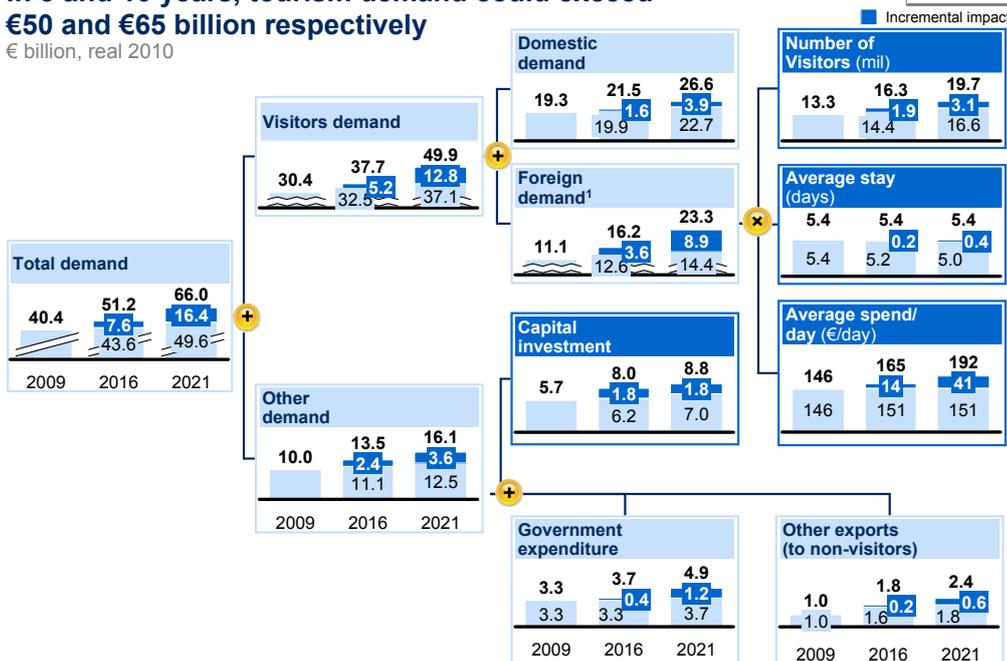
1 Excluding shipbuilding
2 Including shipbuilding

SOURCE: G. P. Wild

McKinsey & Company

In 5 and 10 years, tourism demand could exceed €50 and €65 billion respectively ESTIMATES

€ billion, real 2010



1 Foreign demand includes cruises spend on top of regular international visitors spend (Baseline: € 0.6 billion for 2009, €1.3 billion for 2016, €1.9 billion for 2021/Incremental impact: € 0.4 billion for 2016 and €1 billion for 2021)

McKinsey & Company

Exhibit 39



¹ Three options available for the "Sales and know how support" function: Depending on capability levels and aspired levels of control the function could either be under GNTO or the PPP. Alternatively the "Sales Support" and the "Know How" sub-functions could be potentially separated between GNTO and the PPP
² Local Tourism Offices administratively under regional authorities but guidelines and procedures to be instructed by the Ministry of Tourism
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4.1.2. Energy

Energy accounts directly for 4% of Greece's GVA and plays a key role in the competitiveness of domestic industrial players. The sector in Greece has a higher contribution to the GVA of the economy compared to other countries, for example in south Europe and Germany. The GVA of the Greek energy sector was growing between 2000 and 2008, contrary to other economies where the sector's GVA was declining throughout most of the past decade. Both the higher contribution and the recent growth are largely driven by sector inefficiencies.

High energy consumption (Exhibit 40), low fuel efficiency, low labor and capital productivity and an expensive energy mix characterize the Greek energy sector. Compared to other south European markets and Germany, electricity consumption in the residential and commercial segments is up to 40% higher and fuel consumption for transportation is up to 10% higher. The current energy mix is dependent on petroleum products versus lower cost gas compared to other economies and targets for the future mix include an increased share of renewables that may increase costs. These inefficiencies are partially offset by regulated low electricity tariffs and good energy efficiency in the industrial sector, which keep the cost of energy low compared to European peers. Clearly acting on these efficiency challenges could further reduce the cost of energy for Greece.

In addition, the sector is characterized by limited 'extroversion', as there is relatively limited activity of Greek energy players abroad, and narrow activity across the value chain, with practically no oil and gas upstream activity – despite the potential domestic reserves – and relatively small participation in the manufacturing of infrastructure for the sector. Both the limited extroversion and the narrow scope in the sector's value chain currently limit the potential for growth of the Greek energy sector.

To tap the opportunities for productivity and growth, **Greece 10 Years Ahead** outlines 14 possible priorities across four areas that sector players and the Greek state should consider (Exhibit 41):

- **Improving energy efficiency.** Involves initiatives to streamline energy consumption mainly in buildings (Exhibit 42) and transportation. A number of technical levers are available in this direction, several of which require upfront investment and effective incentive schemes to accelerate implementation. Pursuing an effective building energy efficiency program would require the adjustment and increased specificity of relevant standards and could result to a substantial ‘spillover’ impact in the output of the manufacturing and construction sectors (estimated GVA upside of approximately €1.5 billion per year until 2021).
- **Boosting productivity.** We estimate that in electricity, efficiency and productivity improvements could help reduce unit costs by at least 10%-15%. Similarly in the petroleum sector, unit costs could be improved by at least 5%-10% (estimate of 6%). Actions include availability, operating efficiency (fuel, labor and third party costs) and capital productivity improvements, reducing power transmission and distribution losses (e.g., by installing smart meters, and minimizing informality/illegal imports in petroleum retail).
- **Optimizing the energy mix** by assessing fuel and technology substitution alternatives in terms of security of supply, financial impact and environmental implications. A comprehensive energy strategy for the country would be needed, in the context of which the plan towards the EC 2020 targets should be revisited to ensure that both environmental and economic sustainability (in terms of CAPEX and OPEX implications) are properly balanced (Exhibit 43). Finally, it will be critical to review and develop an economically viable and sustainable plan for the interconnection of the islands.

Exhibit 40

Comparative per capita energy consumption levels

ESTIMATES

2008, Energy consumption by segment

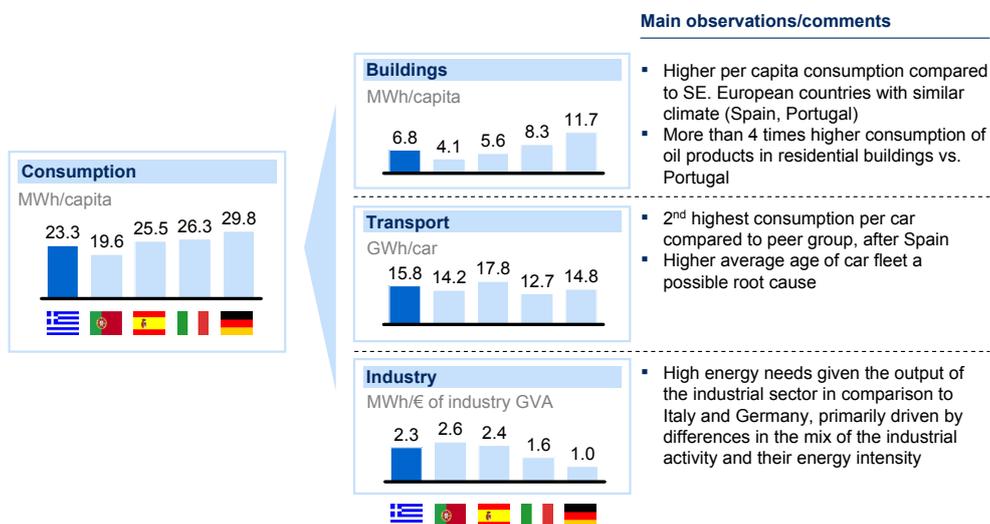


Exhibit 41

Possible priorities and measures to further develop the Energy sector

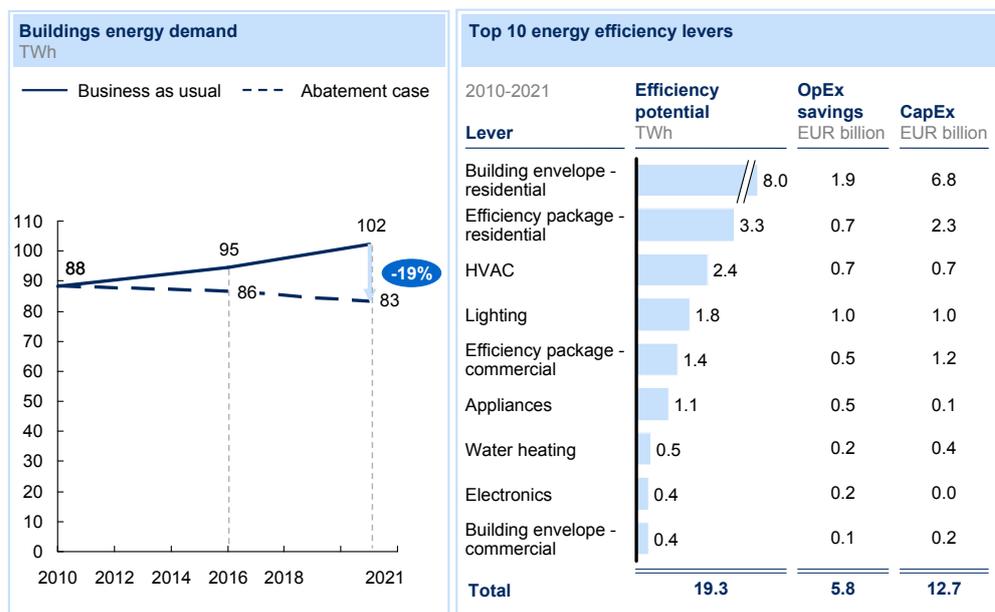
■ High priority

	Possible priorities and measures	Priorities and measures to accelerate and/or revisit
A Improving energy efficiency	<ol style="list-style-type: none"> 1 Introduce parametric and progressive electricity pricing to incentivize energy conservation 2 Launch awareness campaigns on energy efficiency benefits, levers, costs for buildings and transportation 	<ol style="list-style-type: none"> 3 Improve the specifications of energy policies for energy efficient buildings (new-builds, retrofits) and introduce strict auditing procedure and penalties 4 Revisit incentives for retrofits (e.g., tax rebates instead of subsidies); ensure 'critical mass' of buildings eligibility
B Boosting productivity and efficiency	<ol style="list-style-type: none"> 5 Introduce smart metering (short term) to reduce T&D losses (to EU levels), enable accurate billing and support energy efficiency 6 Revisit the regulatory framework in electric power and consider introducing a 'price and cap' system to ensure fair returns across the value chain that provide appropriate incentives for investments 	<ol style="list-style-type: none"> 7 Accelerate critical productivity improvements <ul style="list-style-type: none"> – Improve lignite plants <i>fuel efficiency and availability/uptime</i> – Intensify <i>labor productivity and non-labor cost improvement programs in power and petroleum</i> – Implement capex management best practices (<i>mainly lignite and hydro</i>) – Speed-up petroleum retail <i>network consolidation</i>
C Optimizing the energy mix	<ol style="list-style-type: none"> 8 Carefully review the options and trade offs for meeting the 2020 environmental targets and the share of renewables in power and other sectors, considering system costs, required capex, EU renewable compliance and system security/stability 	<ol style="list-style-type: none"> 9 Accelerate the completion of a robust and comprehensive national energy strategy 10 Accelerate the implementation of financially viable island interconnections (i.e., Cyclades, Dodecanese, Crete) to reduce costs and emissions
D Increasing extroversion and sector impact	<ol style="list-style-type: none"> 11 Investigate the feasibility/viability to locally manufacture renewable energy parts and equipment (e.g., bilateral agreements with OEMs for wind towers); explore potential for emerging technologies (e.g., solar CSP) 	<ol style="list-style-type: none"> 12 Make Greece a gas hub and participate in other regional infrastructure projects (e.g., power plants); expand the regional presence of Greek players 13 Intensify tactical exports of oil products and power 14 Accelerate the National Hydrocarbons entity; accelerate efforts for the exploration of domestic oil & gas reserves (expected lead time of 7-10 years)

McKinsey & Company

Exhibit 42

Almost 20% energy efficiency opportunity in buildings



SOURCE: McKinsey Greenhouse gas abatement cost curve for Greece

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Impact of different levels of renewables penetration in power generation on investment needs and cost of power

✓ Meets target
✗ Does not meet target
■ Legally binding

Description	Power generation mix scenarios	
	Renewables penetration as per current 2020 targets	Moderate penetration of renewables
2020 EU requirements / targets ▪ 21% of ETS emissions ¹ vs. 1990 ▪ 4% of non-ETS emissions vs. 1990 ▪ 20% of energy from RES (18% binding) – 40% RES of total electricity consumption – 20% RES of heating and cooling – 10% RES of transportation	▪ Implement energy efficiency measures to reduce demand for power ▪ Increase share of renewables in power generation mix as suggested by the latest National Renewable Energy Action Plan to 40% from current 15%	▪ Implement energy efficiency measures to reduce demand for power ▪ Increase share of renewables in power generation mix to 25% from current 15% ³ ▪ Increase gas-fired capacity and allow up to 30% lignite capacity in the generation mix
	✓ 40%	✓ 22-34%
	✓ 36%	✓ 36%
	✓ 20%	✗ 15-16%
	✓ 42%	✗ 25%
	✓ 24%	✗ 18%
	✓ 10%	✓ 10%
CapEX required in period 2011 - 2020 EUR bn	18	9
Indexed cost of power² 100%= 'Business as usual'	~115%	~105%

¹ Assuming equal share of ETS emission reduction between member countries

² Not reflecting possible CO2 charges

³ Limit the penetration of high cost renewable technologies, e.g., onshore wind beyond a certain capacity (low load factors and high grid costs), offshore wind

SOURCE: EU Directive 2009/28/EC, EU Decision 406/2009/EC, Law 3851/2010, Greek Greenhouse Gas Abatement cost curve 2010

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- **Increasing 'extroversion' and participation in the sector's value chain.** Priorities include leveraging the geographical position of Greece to create a hub for gas, increasing the participation of Greek players in gas infrastructure and power generation projects in the region, promoting exports of energy products mainly in the next five years, and leveraging the upstream potential in oil and natural gas.

The potential growth upside by 2021 from the energy sector could be an incremental (versus 2021) GVA of approximately €9 billion (direct and indirect GVA) and measures in the sector could lead to a trade balance improvement of approximately €1 billion.

4.1.3. Manufacturing – Food processing

During the last 20 years both Greece and the EU-15 have been 'de-industrialized' with the GVA contribution of manufacturing diminishing from 21% to 15% in the EU-15 and from 13% to 8% in Greece. Although since 2000 manufacturing GVA has declined in real terms the sector remains the second largest GVA contributor and the third largest employer among Greece's 'production' sectors. Moreover, it remains the largest contributor in the Greek economy in terms of contribution to tax revenues and social security contributions.

Among sectors, manufacturing includes the highest number of larger (>100 employees) companies in the economy (Exhibit 44). It also includes numerous large scale modern internationally competitive companies with significant export activity. For the sector overall and for the large extrovert companies in particular the removal of cross-sector macroeconomic barriers and the development of a

Exhibit 44

30% of the larger companies (>100 employees) are in the Manufacturing sector

	# of companies, 100+ employees	Share of total companies with 100+ employees Percent	Share of sector's total companies Percent
Manufacturing	513	29.8	0.6
Retail & Wholesale	376	21.9	0.1
Tourism	199	11.6	0.2
Business services	179	10.4	0.1
Post & Telco	108	6.3	0.6
Construction	105	6.1	0.1
Transport	88	5.1	0.2
Financial services	41	2.4	1.0
Health	37	2.2	1.0
Other	23	1.3	~0
Education	23	1.3	0.3
Agriculture	20	1.2	0.1
Real Estate	5	0.3	0.1
Energy	3	0.2	0.3

Note: Tourism includes hotels & restaurants and entertainment; Post&telco includes media; Manufacturing includes mining; Public admin and utilities not included
SOURCE: EL.STAT, latest relevant report, 2006

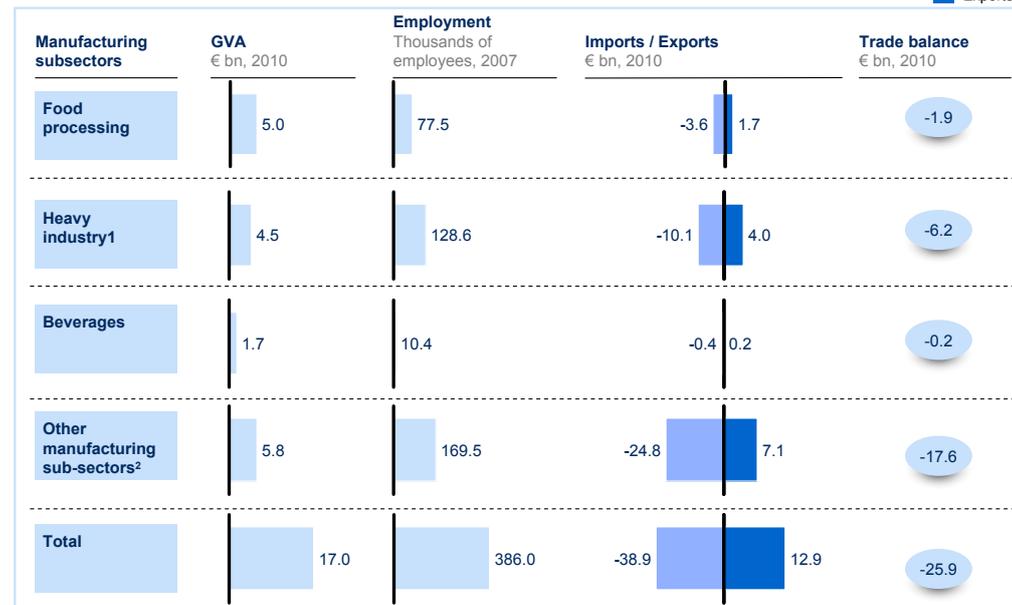
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business friendly environment will be critical in their effort to further enhance their local and international competitiveness.

The manufacturing sector comprises four broad sub-sectors: (a) **food processing**, accounting for approximately 30% of manufacturing GVA and approximately 20% of employment, (b) **heavy industry**, accounting for 26% of manufacturing GVA and 33% of employment, (c) **beverages**, accounting for 10% of manufacturing GVA; and (d) a set of **smaller size subsectors** with a diverse set of activities that represent the remaining 34% of the GVA of the manufacturing sector (Exhibit 45).

Food processing is the largest sub-sector and continues to grow both in Greece and the EU driven by the demand shift to packaged foods and the more regional competitive nature of the sector. It is examined in detail as part of the **Greece 10 Years Ahead** study, not only because of its size, but also because it lends itself to the application of both the cross-sector recommendations as well as to specific recommendations at the micro sector level. Heavy industry includes a smaller number of typically 'mature' players in fields such as metals, cement and mining, with established international presence. Key actions for supporting the competitiveness of these players include the reforms and measures identified at the cross-sector macroeconomic level, as well as measures relevant to the reduction of energy costs covered in the analysis of the energy sector. Similarly, beverages primarily include large multinational and some local players who could also benefit significantly from the cross-sector reforms. The rest of the manufacturing sector ranges from publishing to communication equipment and is highly diverse and fragmented. As such, recommendations on growth priorities and measures for the individual sub-sectors – beyond the cross-sector ones – would only have limited applicability and have not been explored.

Manufacturing sector includes food processing, heavy industry, beverages and a number of other smaller subsectors



¹ Fabricated metal products, mineral based products, manufacturing of basic metals, rubber and plastic products, machinery equipment, chemicals and fertilizers
² Printing and publishing, furniture, jewelry, specialty chemicals, drugs, wearing apparel, electrical machinery, paper and pulp, transport equipment, textiles, tobacco products, motor vehicles, wood products, communication equipment, leather goods and medical equipment

Source: Global Insights for real GVA and import/export figures; Eurostat for employment figures

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In food processing, due to the availability of high quality raw materials and produce, specialized know-how and reasonable cost levels (in some categories), Greece has significant potential to increase its output, boost exports and contain imports, especially in four major high-potential categories, namely **oils & fats, fruits & vegetables, dairy, and bakery products.**

Exploiting these opportunities would require Greece to address a number of issues related to the lack of large scale modern and productive capacity, product innovation and international market access. As an example, Greece is the 3rd largest olive oil producer worldwide and exports 60% of its output to Italy in bulk, yet in doing so allows Italy to capture an extra 50% premium on the price of the final packaged product (Exhibit 46). The fact that Greece holds only a 28% share of the global 'Greek Feta' cheese market and 30% of the US 'Greek Style' yogurt markets, further reinforces a clear commercial opportunity for Greece.

Greece 10 Years Ahead outlines 12 possible priorities and measures for market players and the Greek state to consider, grouped in four major strategic directions (Exhibits 47-48):

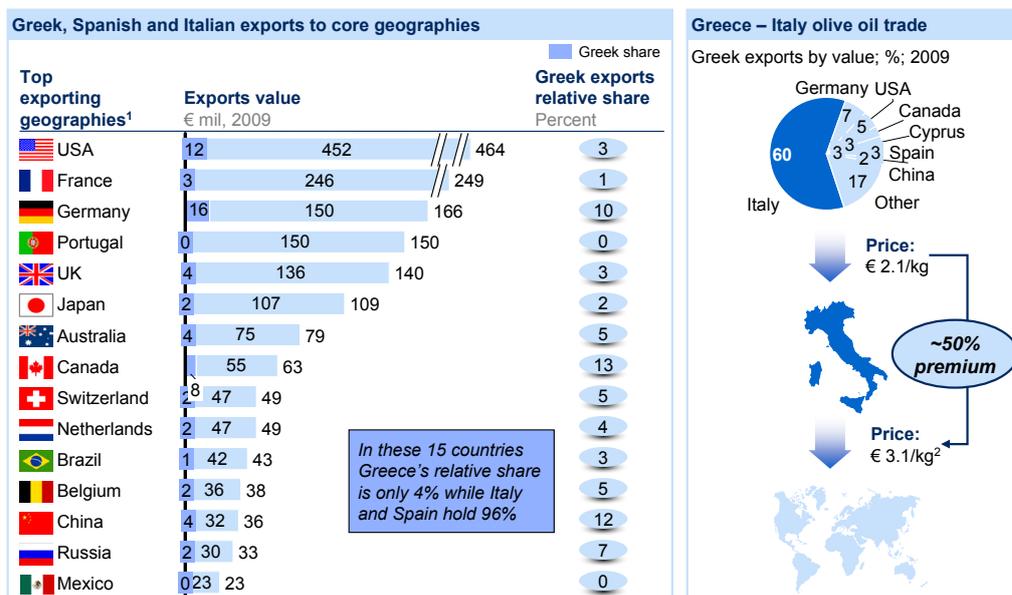
- Prioritizing target export markets.** This would first involve the clustering of foreign markets based on common retailer presence and commercial synergies and a subsequent prioritization of these markets based on their size, growth potential and receptiveness to Greek products (proxied by Greek diaspora and tourist origination). Top priority markets include North America, UK, Germany/Austria, and the Balkans. Priority markets include Italy, France/Belgium, Scandinavia, Russia, Australia, and selected CEE countries (Exhibit 49).

- Step-improving product value proposition and innovation.** Initiatives include the introduction of a globally visible and recognizable certification mechanism for original Greek products and product-specific actions, such as packaging and branding olive oil and substituting imports of other oils (i.e., sunflower, palm) –mainly for wholesale use–, further driving product innovation and advertising of place of origin for Greek flagship dairy products (strained yoghurt and feta cheese), and selectively marketing high-potential, non-feta cheese categories.
- Increasing Greece's processing capacity and efficiency.** Examples of important initiatives here would be the development of 4-6 modern large scale processing and packaging units (for priority products such as olive oil, olives, tomatoes and potatoes) strategically located close to raw material supply.
- Securing strong commercial access to priority target markets.** An important action would be to establish the **'Greek Foods Company'** (private company or Public-Private Partnership - PPP), to provide competitive Greek products and manufacturers extensive access to priority target markets by building up and managing wholesaler and retailer networks, coordinating marketing and trade marketing campaigns and developing and managing a limited retail **'Greek Products Corner'** store network in high traffic locations in top priority markets.

By 2021, the annual incremental (versus 2010) direct and indirect GVA could be approximately €6 billion, approximately 120,000 jobs could be added and the trade balance could improve by approximately €1.2 billion.

Exhibit 46

Greece does not capture its 'fair share' in olive oil exports and foregoes significant opportunities, especially with regards to Italy



1 Excluding Italy which is considered peer country
2 Average price per kilo for total Italian exports
SOURCE: UN Comtrade

Possible priorities to further develop Food Processing (1/2)

■ High priority

Possible priorities and measures	
A Targeting high potential export markets	1 Cluster export markets based on common retailers presence and prioritize based on size and growth: <ul style="list-style-type: none"> – Top priority: North America, UK, Germany and Austria, Balkans – Priority: Italy, France and Belgium, Australia, Scandinavia, Russia, selected CEE countries
B Improving product strategy and value proposition of Greek products	2 Convert exports of bulk olive oil to branded packaged and substitute imports of other oils <ul style="list-style-type: none"> – Aggressively campaign in core markets to build brand awareness and equity of Greek olive oil versus Italian and Spanish; create the necessary processing/packaging capacity (see #7) – Substitute - to the extent possible - palm and sunflower oil imports with local olive oil and competitively priced corn oil in the local HO.RE.CA and retail markets 3 Add value to the Fruits & Vegetables offer while reinforcing presence in priority markets <ul style="list-style-type: none"> – Produce higher value added variations and packaging (e.g., ready-to-cook, ready-to-eat, convenience and or premium packaging) focusing both on local champions (e.g., tomatoes, olives, peaches) and specialty/ gourmet product categories (e.g., saffron, asparagus) – Communicate clearly associated health benefits (in the context of the campaign suggested in #10) 4 Extending the dairy products portfolio, emphasizing origin <ul style="list-style-type: none"> – Continue growing and capture increasingly larger share of Greek feta and yogurt by introducing greater product innovation (e.g., in packaging, variations) and communicating the Greek origin – Create a compelling (high value) Greek PDO offer locally and internationally promoting other high quality and popular cheeses (e.g., graviera, kaseri); include in broader promotion campaigning – Introduce new variations of yellow cheeses to compete against low-cost imports 5 Reposition bakery through deeper geographic coverage and product innovation <ul style="list-style-type: none"> – Leverage know-how, products and establish partnerships in growing developing markets (e.g., ME, Africa) – Introduce new product variations also emphasizing the Greek heritage and Mediterranean identity; innovate in packaging to address needs for ease of use and convenience 6 Install an internationally visible certification mechanism for Greek products origin; complement with clustered markets dedicated awareness campaigns and diligent protection of existing PDO products

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Possible priorities to further develop Food Processing (2/2)

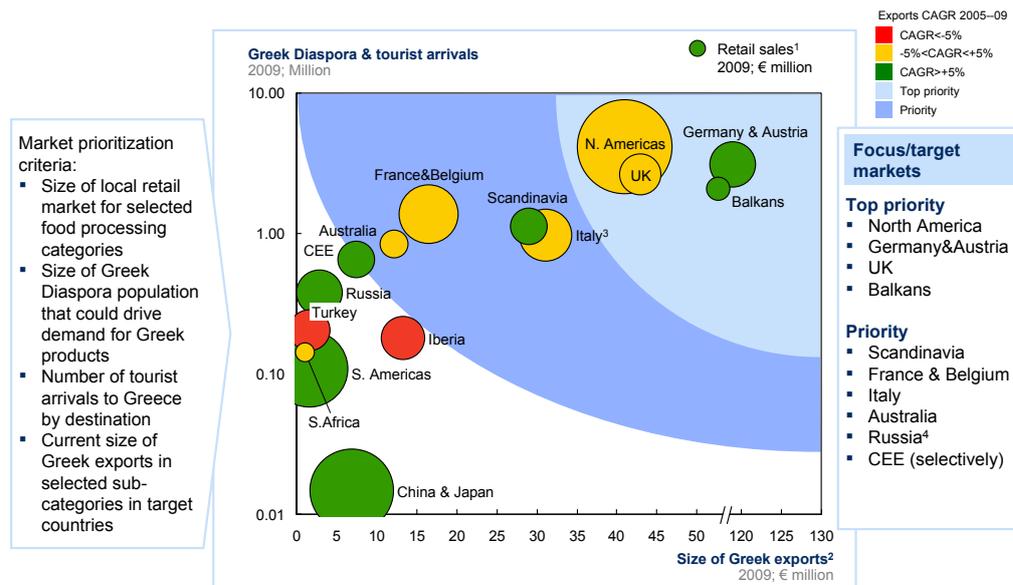
■ High priority

Possible priorities and measures	
C Increasing processing capacity and scale	7 Investigate the development of 4-6 large scale competitive processing and packaging units – e.g., <ul style="list-style-type: none"> – Two to three units for olive oil and olives (possibly in Peloponnese and Crete with 100-150 thousand tons of total olive oil processing capacity) – Two to three units for potatoes, tomatoes and selected fruits (e.g., peaches, apples, grapes, oranges) (possibly in Central Greece, North Greece, Peloponnese) 8 Develop a dedicated proposition and increase production and processing scale in fragmented 'niche' (PDO or non PDO) categories (e.g., Mastiha, Saffron, Asparagus)
D Securing strong access in key export markets	9 Continue and reinforce the consolidation to form larger modern local milk farms (to the extent possible); investigate the viability for processing capacity for concentrated and powder milk to reduce imports
	10 Launch a major Greek Food Products campaign in top priority markets for processed and non-processed products
	11 Establish the 'Greek Foods Company' (private company or PPP); key tasks to involve <ul style="list-style-type: none"> – Pooling the production of small and medium primary production units – Operating capability building programs for local small and medium production/processing units – Planning, establishing and operating the suitable commercial and market presence model – Managing the logistics within and outside Greece including exporting – Developing the wholesaler and retailer networks in export markets 12 Differentiate commercial strategy and country coverage model (for processed and non processes categories) <ul style="list-style-type: none"> – Top priority markets (see #1): Strong local Key Account Manager (KAM) support to build up presence in large grocery retailers and expand the wholesaler network; creation of small retail network in very high traffic areas to drive awareness and trial for Greek food products – Priority markets (see #1): Local Key Account Manager (KAM) support to build up presence in larger grocery retailers and expand the wholesaler network – Other markets: Greece-based team of Key Account Managers (KAMs) to work with large retailers/wholesalers

McKinsey & Company

Exhibit 49

Markets for Greece to target its food processing exporting strategy



1 Local retail sales for dairy, oils and fats and bakery
2 Greek exports on dairy, oils and fats and bakery
3 Excluding exports of oils and fats which represent 83% of selected category exports
4 Due to the growing number of tourist arrivals and Russian market relevance for agricultural products exports

SOURCE: UN Comtrade; Euromonitor; websearch

McKinsey & Company

4.1.4. Agriculture – Crops Agriculture

Agriculture has been historically important to Greece, accounting for approximately 13% of employment (approximately 500,000 individuals). Agriculture contributes approximately 4% to Greece's GVA (almost triple that of the EU-15), being the fifth largest contributor to the country's economic output. The sector's importance becomes more evident when considering its additional effects on sustainable rural and environmental development and its impact on other sectors such as food manufacturing.

The overall sector (crops, livestock and fishing) is characterized by low productivity. Based on Eurostat pre-crisis GVA per person employed was 44% below EU-15 (€17,200 versus €30,900 for the EU-15 average). Between 2000-2008, labor costs have almost doubled, suggesting a further relative loss of competitiveness; in the same period, the increase in Germany, Italy and France was 3%, 23% and 38%— respectively.

Crops agriculture is the largest sub-sector accounting for 62% of GVA and 80% of agriculture employment. Pre-crisis, crops agriculture has been seriously challenged; overall production had declined by more than 15% while production costs seem to have increased by approximately 40% and prices by approximately 25%; at the same time the trade balance kept deteriorating with imports growing faster than exports (44% versus 28% respectively).

Greece's penetration of core European markets is very low (<2% share versus Italy and Spain at approximately 10% and 13% respectively) and the country lacks a holistic and focused product and export strategy. Labor input and land productivity lags behind most south European peers (Exhibit 50), while its fragmented production is sub-scale for international competitiveness. In Greece Agricultural units are on average almost

5 times smaller compared to EU-15 levels (Exhibit 51). Despite these challenges, Greece has categories whose quality and cost fundamentals suggest potential for higher competitiveness, extroversion and import substitution.

To address these issues and further develop the crops agriculture sector, **Greece 10 Years Ahead** has identified nine possible priorities and measures grouped in four major strategic themes (Exhibit 52):

- **Differentiating and focusing Greece's product and market strategy.** This involves clustering products into four distinct groups – i.e., **'consumption majors'; 'domestic/processed-focused'; 'emerging traders'; 'export engines'** – and tailoring their production and commercial strategies to their fundamentals (Exhibit 53). In addition, Greece should focus on developing a dedicated proposition and scale in 'niche' (PDO and non-PDO) categories (e.g., mastiha, safran, asparagus), further assessed as secondary 'rising stars'.
- **Improving competitiveness through scale, productivity and quality.** This involves revisiting arable land allocation to products, potentially utilizing publicly-owned land (e.g., with long term leasing) to increase scale and introducing modern methods to boost land productivity while providing relevant incentives that are output and result based (e.g., proven capacity and production, investments in modern methods). The launch of a new standardization and certification mechanism for agricultural products and methods (including biological farming) would also be critical.
- **Securing international market access and presence.** This involves establishing the **'Greek Foods Company'** (private company or PPP) to pool production, coordinate, establish and manage distribution networks abroad (same platform as in the food processing sector), while **launching an aggressive Greek agricultural products campaign.**
- **Revamping capabilities.** This involves establishing an **Agriculture University degree** focusing on both business and practical agricultural aspects, and creating an **'Agricultural Development Institute'** to disseminate and promote know-how and innovation to agricultural units and cooperatives. Finally, introducing incentives for new farmers focused on scale and exports oriented farming so as to rejuvenate the labor force and create additional employment opportunities.

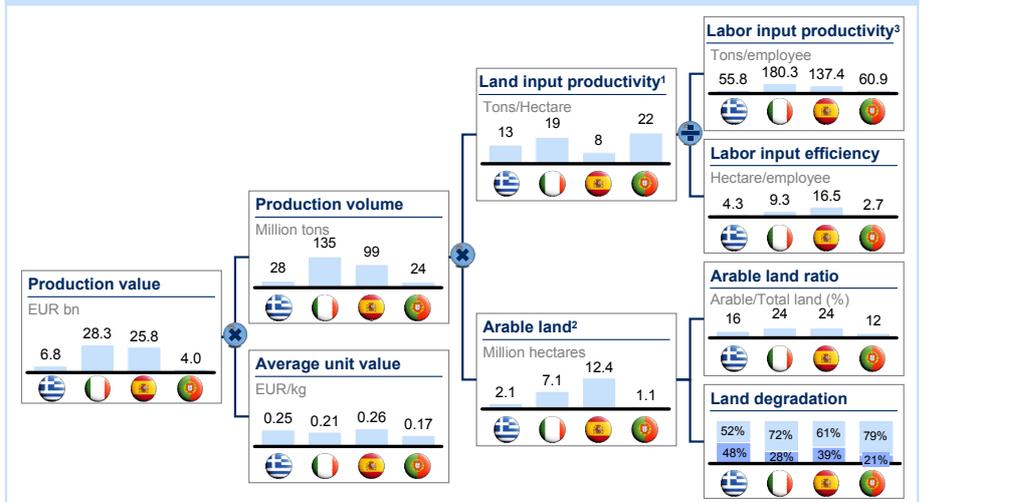
By 2021, the annual incremental (versus 2021) GVA could be €4.5 billion (direct and indirect), employment could increase by approximately 140,000 jobs and the trade balance could improve by approximately €2.7 billion.

Exhibit 50

Lower land and labor input productivity and lower land quality versus Italy

ESTIMATES

Evolution of supply side drivers; 2008



Note: 2008 data are the latest available
1 Not including un-declared labour
2 Land utilized for agricultural crops production
3 Estimate due to unavailability of employment split by crop and livestock production

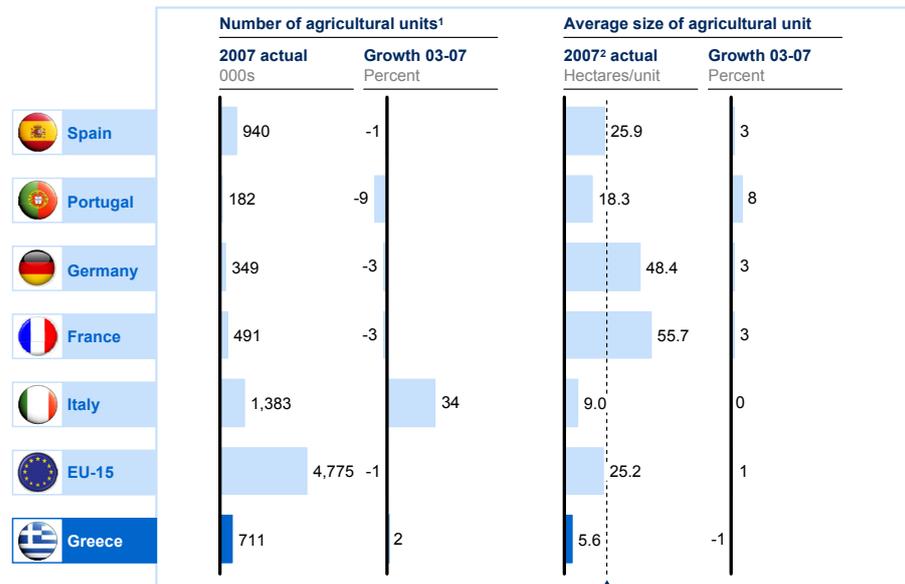
SOURCE: FAO; Eurostat; Terrastat

McKinsey & Company

Exhibit 51

In Greece, agricultural units are almost 5 times smaller compared to EU-15 average

ESTIMATES



Note: 2007 data are the latest available
1 With at least €1,200 of standard gross margins monthly

SOURCE: Eurostat

McKinsey & Company

Possible priorities to further develop crops agriculture

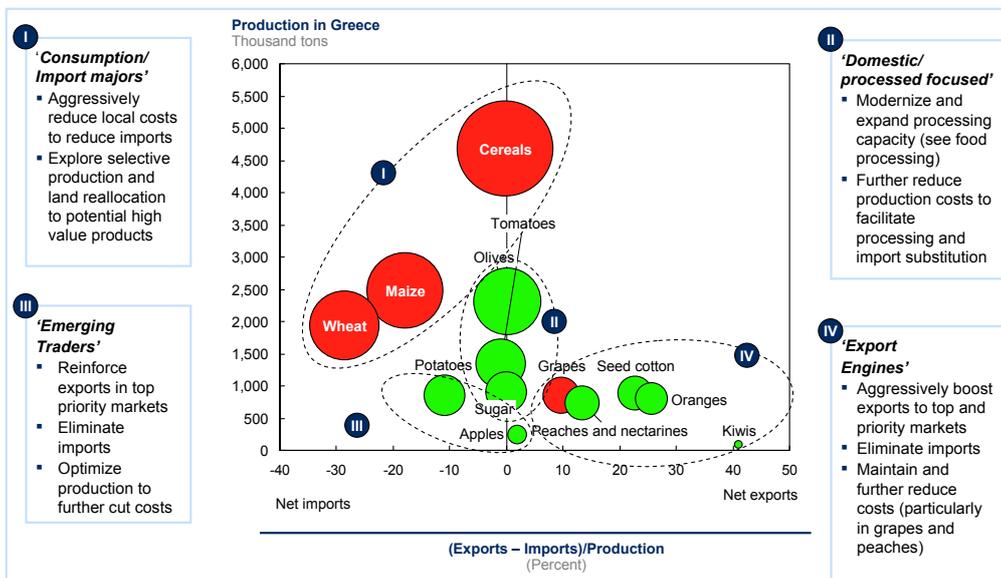
■ High priority

Possible priorities and measures	
A Differentiating and focusing Greece's market and product strategy	1 Prioritize target export markets (e.g., US, France, UK, Germany, Russia) 2 Pursue a differentiated product strategy based on four product clusters – 'Export Engines' & 'Emerging Traders': Focus export efforts on products with competitive pricing and superior quality/brand vs. competitors (e.g., oranges, peaches, kiwis, apples, grapes) – 'Domestic-focused processed foods': Reduce costs to facilitate processing and import substitution – 'Consumption and import majors': Aggressively reduce costs to substitute imports while exploring selective arable land reallocation to higher potential – higher value added products
	3 Stimulate scale, extroversion and productivity – Revisit land allocation in line with product and market development strategy; explore the use of publicly owned land (with long terms leasing); scale-up production units in suitable geographies – Provide performance incentives (e.g., export rebates) to stimulate production scale and consolidation – Incentivize and introduce modern land and agriculture production management methods 4 Introduce a new standardization and certification mechanism for agricultural products and methods (including biological farming) at unit- and cooperative-level
B Improving competitiveness through scale, productivity, quality	5 Launch a Greek Agricultural Products campaign in priority markets (for processed and non-processed) 6 Establish the ' Greek Foods Company ' (private company or PPP); key tasks to involve – Pooling the production of small and medium primary production units – Planning, establishing and operating the suitable commercial and market presence model – Managing the logistics within and outside Greece including exporting – Developing the wholesaler and retailer networks in export markets
	7 Build a dedicated Agricultural (and Aquaculture) University Degree (undergraduate and graduate) while upgrading and aligning existing curricula in other relative courses and degrees (e.g., Botanical University) 8 Establish the ' Agricultural Development Institute ' to engage in the central know-how dissemination and promotion of productivity and innovation improvements to small and medium Agricultural units and cooperatives while leading and operating the standardization and quality certification mechanism (see # 4) 9 Introduce incentives for new farmers to rejuvenate workforce and labor input productivity
C Ensuring market access and local presence	
D Developing capabilities and supporting mechanisms	

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Specific priorities and strategies that could apply for different categories of products

■ Lower costs vs. import prices
 ■ Higher costs vs. import prices
 ○ Size of domestic consumption



1 Using 2008 figures due to unavailability of more recent data

4.1.5. Retail and wholesale

Retail and wholesale is the largest sector in the Greek economy accounting for 19% of total GVA and 18% of employment. Moreover, it has been one of the most dynamic sectors, growing at more than double the rate of the economy as a whole. The study has examined the grocery, apparel, and electronic appliance subsectors, which jointly account for more than 50% of retail sales.

There is significant room for improvement in the productivity (measured both in terms of GVA per hour and GVA per m²) of the Greek retail sector, which lags by 30% to 40% compared to EU-15 averages; moreover, productivity gaps are evident across sub-sectors (Exhibits 54-55). To understand the drivers of performance we examined four core dimensions (Exhibit 56):

- **Format mix.** International experience indicates that, especially in grocery, larger formats are generally more productive. However, the Greek market, especially in grocery and apparel, has almost double the number of stores per capita compared to Europe and a relatively larger share of fragmented trade (Exhibit 57). This format mix is driven by consumer preferences, regulatory costs and restrictions, and sector informality. Online retailing penetration is also low in Greece compared to peers.
- **Operating model.** Greek retailers are challenged by the limited usage of innovative IT and supply chain management solutions, high transportation costs to remote areas, lower transportation operating productivity (Exhibit 58), and lower labor flexibility compared to peers.
- **Upstream value chain.** Wholesalers in Greece appear to be less productive than in other countries due to lower scale, driven by heavy category specialization and observed lower levels of sophistication in terms of inventory management, customer service levels and warehouse management.
- **Market competition.** While retailers concentration is similar to, or below that of other EU countries, supplier concentration, specifically for selected categories within grocery, is higher. This is partly driven by the lower penetration of private label products (12% versus an average of 24% for selected European countries) and the lower penetration of discounters (6% versus average of 13% for some other European countries).

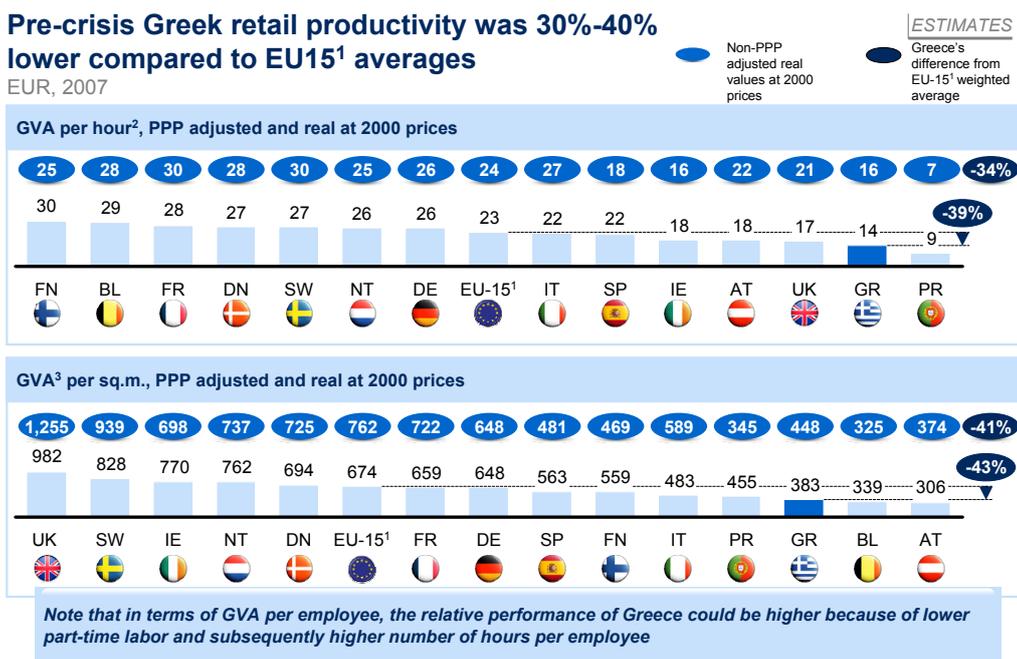
We have identified 10 possible priorities to be considered by the Greek state and market participants, grouped in two major strategic directions (Exhibit 59):

- **Further reinforcing competition, investment and regulatory compliance.** This involves proactively defining commercial zones in urban and suburban areas to facilitate commerce investments (preliminary evidence suggests that larger single store formats are likely to have a more positive GVA contribution compared to larger multi-store formats). Also lifting constraints for retailers to sell currently restricted product categories (e.g., OTC drugs, baby food) and further improving price transparency, by increasing the awareness of existing tools such as the Price Observatory, and creating platforms for comparing price/performance such as Germany's Stiftung Warentest. Increasing the capacity of the Competition Committee and extending informality controls on unlicensed traders would also improve competition and regulatory compliance.

- Boosting retailer and wholesaler productivity.** This involves expanding the scale of existing players through further consolidation and partnerships (e.g., purchasing clusters) among small & medium enterprises, while pursuing targeted investments in IT, logistics and e-commerce to step-change value chain efficiency. It is also important to eliminate remaining retail-specific labor rigidities (e.g., employee mobility across stores, split daily shifts), accelerate the full liberalization of public road transport and simplify unnecessary reporting requirements.

In terms of upside, by 2021, productivity could increase by approximately 22% and incremental retail sales by approximately €1.5 billion. At total economy level, the incremental (versus 2010) GVA uplift could reach approximately €4 billion (€2.5 billion direct and €1.5 billion indirect), while tax revenues could increase by approximately €0.6 billion.

Exhibit 54



Note: Retail sector as per NACE 52 according to Rev 1.1
 1 EU-15 weighted average excluding Luxembourg; 2 Not including undeclared employment and unreported output; 3 Not including unreported output
 SOURCE: Eurostat (employment, GVA, average working hours); EU KLEMS (Deflators, PPP); Euromonitor (selling space) McKinsey & Company

Exhibit 55

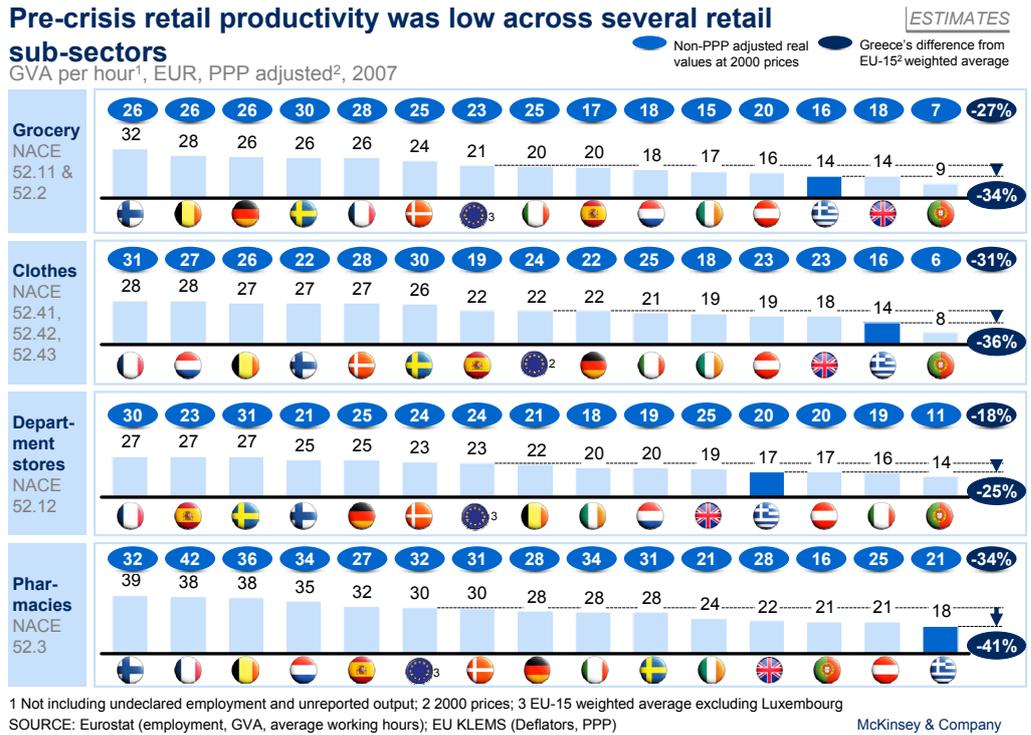
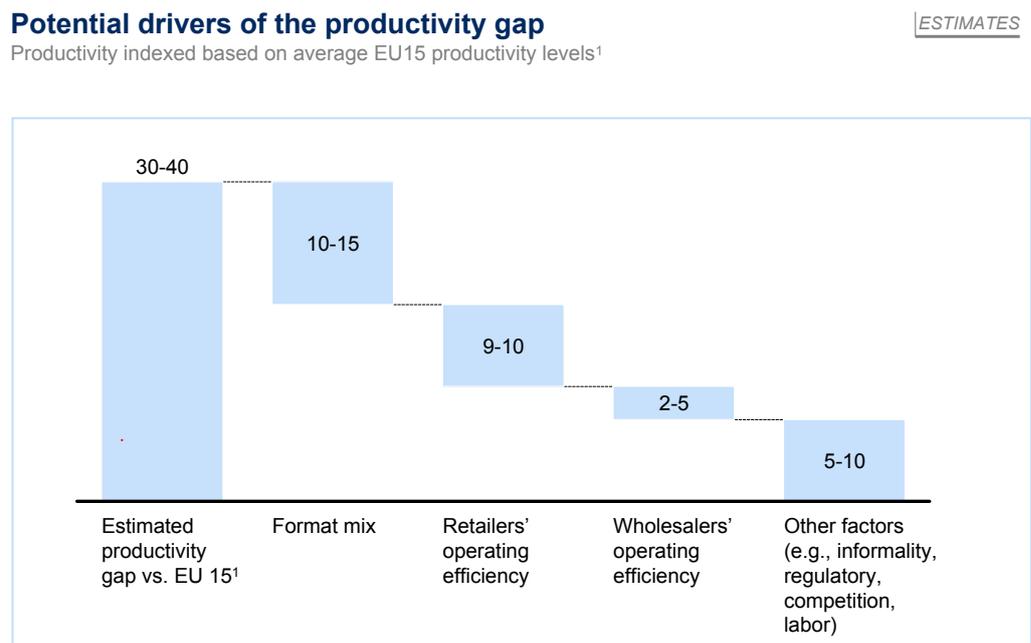
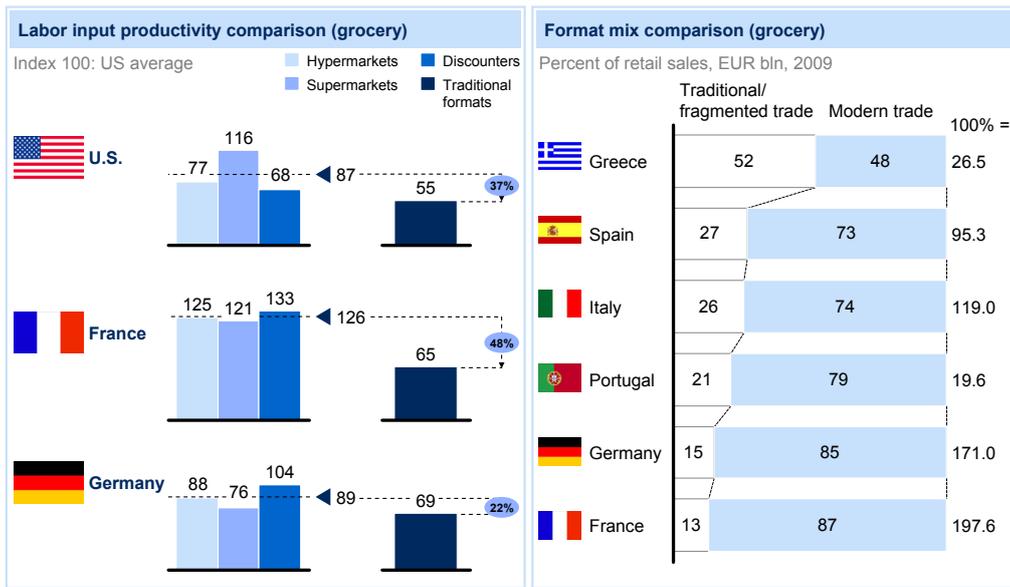


Exhibit 56



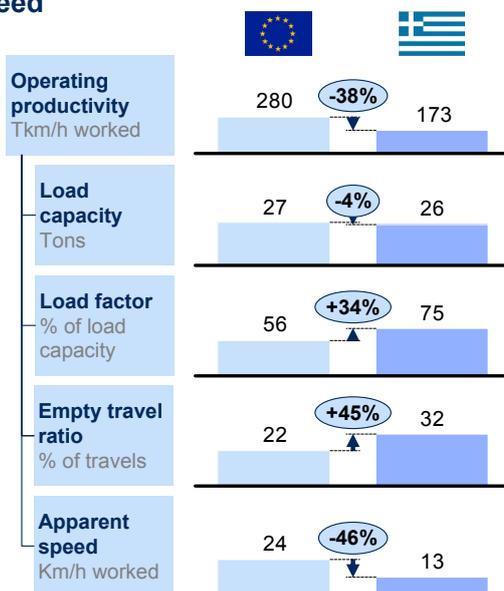
International productivity and format mix references in grocery ESTIMATES



SOURCE: Euromonitor; Eurostat; Global Insight (WMM),

McKinsey & Company

Transportation operating productivity in Greece seems to be ~40% lower vs. EU 15 driven primarily by high empty travel ratio and low speed ESTIMATES



SOURCE: Eurostat; McKinsey Global Institute

McKinsey & Company

Exhibit 59

Possible priorities and measures to increase the competitiveness of the retail sector

■ High priority

	Possible priorities and measures	Priorities/measures to accelerate and/or revisit
A <i>Further reinforcing competition, investments and regulatory compliance</i>	<ol style="list-style-type: none"> 1 Proactively define commercial zones in urban and suburban areas to facilitate and accelerate retail and wholesale investments 	<ol style="list-style-type: none"> 2 Lift constraints on the sale of currently restricted product categories by grocery retailers (e.g., bake-off bread, press, OTC drugs, baby food) 3 Further increase price transparency: <ul style="list-style-type: none"> – Launch campaigns to increase awareness of existing price benchmarking tools (e.g., the price observatory) – Launch platform comparing product – price performance (e.g., Stiftung's Wahrentest) 4 Extend informality controls to limit unlicensed trading 5 Improve the Competition Committee's ability to secure fair competition <ul style="list-style-type: none"> – Increase talent capacity for cases review – Allow for greater prioritization of cases based on case importance for the public interest
B <i>Boosting retailers and wholesalers' productivity</i>	<ol style="list-style-type: none"> 6 Expand scale of current retailer operations <ul style="list-style-type: none"> – Consolidation/M&A – Operational clusters/partnerships to capture synergies (e.g., procurement, distribution) 7 Pursue targeted investments in IT, logistics and e-commerce to step-change value chain efficiency 8 Eliminate remaining retail related labor rigidities (e.g., continuous daily shift) 	<ol style="list-style-type: none"> 9 Accelerate the full liberalization of the public trucks transportation market 10 Simplify unnecessary retailer-specific reporting and regulatory compliance requirements (e.g., end of year stock reporting, paper copies of delivery notes)

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4.2. Rising Stars

Greece 10 Years Ahead identifies eight 'rising stars' in specific niche areas of growing economic activity, where Greece possesses or could develop a relative competitive advantage. Although most of these areas are currently relatively small in size, they could both contribute meaningfully to the GVA and employment growth of the Greek economy, and also assume a symbolic 'visionary' role of dynamism and entrepreneurialism in Greece's new **National Growth Model**. They are grouped as **primary or secondary**, depending on the size and timing of their expected contribution to GVA.

The six primary 'rising stars' that could contribute to the Greek economy's growth in a 5-10 year horizon include **manufacturing of generic pharmaceuticals, aquaculture, medical tourism, elderly care, regional cargo hub development and waste management**, while the two secondary ones, which are expected to assume a more symbolic role include **specialized food categories** and the **development of graduate and post-graduate classics education programs**. Collectively, the identified 'rising stars' could contribute approximately €7 billion of incremental GVA and more than 70,000 new jobs in a 10-year horizon.

As also mentioned in the introduction of this document, these 'rising stars' are indicative of the overall possible growth opportunities available in Greece. Clearly there could be other emerging sub-sectors with growth potential that have not been studied within the scope of **Greece 10 Years Ahead**.

Exhibits 60-61 provide a very brief outline of the opportunity rationale and of the possible growth priorities for each one of the six primary 'rising stars'.

Primary rising stars - Opportunity indicators and possible priorities (1/2)

BRIEF SUMMARY

Sector	Opportunity indicators	Outline of possible growth priorities (indicative)
Generics manufacturing	<ul style="list-style-type: none"> Significant market growth expected both in Greece and internationally (5-9% p.a.), supported by government actions Sizeable established industry already in place (~€ 1.3 bn sales in 2010), dominated by Greek players) Successful, yet sporadic, exporting activities of domestic players 	<ul style="list-style-type: none"> Selected consolidation and scale-up; radical optimization of operations to maintain margins in a lower price context Targeted expansion in new geographies Gradual reduction of floor price in synch with domestic competitiveness improvement Major awareness campaign targeting doctors, pharmacists, patients as well as opinion leaders and medical organizations Remove delays in licensing, pricing and reimbursement
Aquaculture	<ul style="list-style-type: none"> Steady production growth, with high share of exports (~80% of total) and relevant share in Europe (~50% production share in two focus products) Cost competitiveness vs. most competitors (4-18% lower cost) 	<ul style="list-style-type: none"> Enforcement of a nation-wide zoning plan and a national capacity plan and allocation mechanism among players Establishment of a national observatory for supply/demand and prices in Greece and key markets Establishment of effective international representation and state sponsorship for entry in new markets Acceleration of current consolidation trend following a focused product strategy
Medical tourism	<ul style="list-style-type: none"> High number of specialized doctors (e.g., ~3 times more dentists compared to Hungary - a popular destination for dental procedures) Lower cost compared to high-end destinations (e.g., ~20% lower cost vs. UK in dental procedures and ~10% in laser eye surgery) Good offering of supporting tourism infrastructure Favorable regulatory regime for some treatment types (e.g., medically assisted reproduction) 	<ul style="list-style-type: none"> Development of national strategy to position country in 'middle-market' segment with specific product/market focus Adoption of international accreditations (e.g., JCI) and partnerships with global institutions Establishment of strict quality assurance and control process Revision of requirements for surgery eligibility (e.g., scale of unit, same day surgery centers)

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Primary rising stars - Opportunity indicators and possible priorities (2/2)

BRIEF SUMMARY

Sector	Opportunity indicators	Outline of possible growth priorities (indicative)
Elderly care	<ul style="list-style-type: none"> Fast ageing of Greek population (32% expected share of 65+ population in 2050 in Greece compared to 19% in 2010) implying also higher prevalence of Long Term Conditions Stressed macro situation in Greece demanding preventive policies to lower healthcare costs 	<ul style="list-style-type: none"> Create a patients registry, a care quality accreditation and performance management system for out-of-hospital services Expand local industry players' service offering and area coverage Build awareness and incentivize patient participation Facilitate funding release and public contribution
Regional cargo hub	<ul style="list-style-type: none"> Greek ports are positioned along one of the two major shipping trade routes worldwide (~19 million TEU¹ – going through East Med region in 2009 with a 9% annual growth in trade between 2004 and 2008), indicating significant opportunity to act as both gateway and trans-shipment hub Existing infrastructure and deals with international operators (e.g., Cosco) provide a good starting point and critical mass for further expansion 	<ul style="list-style-type: none"> Optimization of administrative requirements (e.g., custom clearance) and decrease of port handling time to lower indirect cost to international operators Review of relevant legislation to ensure a smooth and continuous operation of the ports Improvement of the infrastructure to further develop connectivity with the main ports (e.g., high-speed cargo train lines)
Waste management	<ul style="list-style-type: none"> Greece still uses landfilling for 80% of its municipal solid waste vs. 40% of EU-27 and less than 10% for several Western European countries instead of more value-adding options, e.g., incineration and recycling Increasing pressure from EU Directives to move away from landfilling 	<ul style="list-style-type: none"> Development of 'advanced' waste management facilities of a viable scale, (e.g., incineration and recycling facilities for municipal waste, consolidated facilities for industrial waste) Development of regulatory framework for industrial waste as a critical enabler for overall growth of the industrial sector Leverage of energy recovery opportunity from waste, e.g., convert waste in RDF and use as alternative fuel in cement plants, incinerate waste in gasification plants

¹ Twenty-foot-container Equivalent Units

McKinsey & Company

4.2.1. Manufacturing of Generics Pharmaceuticals

The distressed current state of the Greek economy and the commitment of the state to increase the currently low penetration of generic drugs (only 32% of unprotected pharmaceutical sales, compared with over 60% in Germany, Italy and the UK) (Exhibit 62) suggest a potentially promising future for the local generic drugs (Gx) market, which could grow their domestic and export sales up to €2.2 billion by 2021 from approximately €1.2 billion in 2010. This creates an important window of opportunity for the domestic industry to leverage this wave of growth (also in adjacent export markets) and move towards the development of scale generic manufacturing companies with sufficient local and international presence, differentiated product portfolio and efficient operations that will generate significant value-added and employment in the sector.

The key levers that would enable the local industry to capture this growth upside can be grouped in the following four strategic themes:

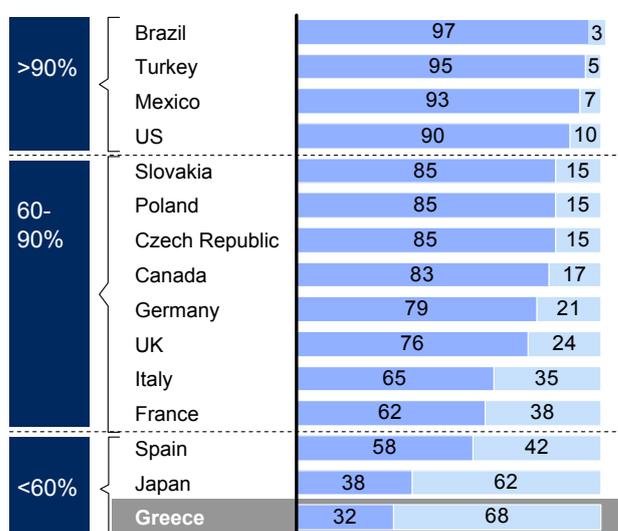
- Promoting generics attractiveness and penetration.** The industry would benefit from a campaign that would provide quality guarantees and stress the positive trade-offs from usage of generics. In parallel, the Greek state should develop a comprehensive generics strategy for growth in cooperation with the industry, including the detailing of specific incentives for key stakeholders, such as physicians, pharmacists, reimbursement funds, but also patients (e.g., the establishment of absolute margin per subscription for pharmacists, and co-payment model of incentives for patients). In addition, the restructuring of the generics companies' sales force would be an imperative both to reduce their cost base and protect their margins, as well as to better approach new decision makers for drug dispensing and respond to more sophisticated

Exhibit 62

Generics: Greece exhibits low levels of generics penetration

Unprotected¹ market segmentation by volume, percent, 2009

■ Generics (Gx)
■ Originals (Rx)



• Gx penetration in Greece significantly lower compared to international markets and with other systems displaying volume penetration of >60%
 • Difference partly explained by the Gx pricing regime:
 – Gx prices fixed by law at 90% of Rx price
 – Internationally, Gx are typically priced at 30-80% lower levels vs. respective Rx

¹ Off-patent drugs market

buying processes by hospitals and funds. Moreover, an important state measure would be the definition of a plan of gradual price reductions (not large step-wise reductions) in order to –on the one hand– fuel the growth of the generics market and force the industry to optimize operations and reduce costs, while on the other hand allowing sufficient time for the local industry to adapt and consolidate and be more efficient in dealing with strong international competition. The industry optimization could also be promoted through the removal of unnecessary regulatory and legal obstacles, such as the approval process for generics and biosimilars to help companies reduce time-to-market and cost, as well as the provision of quality guarantees (e.g., through certifications) for physicians and consumers.

- **Competing through scale, focus and innovation.** As of 2009, the top-10 generics companies in Greece accounted for only 35% of the total generics market, indicating significant levels of fragmentation. The local industry requires extensive consolidation in order to attain the scale and efficiency required in a global context, allowing the operational optimization and implementation of value-chain synergies that would enable cost competitiveness versus international players. In addition, the industry should focus on the right product niches and higher value-add R&D to leverage existing experience and skills, concentrate the relatively few expert resources, and pursue innovation – e.g., new formulations, new devices and drastic molecules combinations. The Greek state could facilitate these moves by providing incentives such as tax rebates based on local and foreign capacity development, R&D, and export activity, while also intensifying quality control mechanisms to increase real and perceived quality of the generic products.
- **Penetrating high potential export markets.** The Greek pharmaceutical sector has been significantly extrovert, and is placed in the top-5 of manufacturing sub-sectors in terms of exports. With generics exports already estimated at €250 million, Greek generics companies could further increase their activities abroad, both in neighboring countries and selected mature Western healthcare systems, where niche opportunities exist (e.g., Balkans, UK, Germany, France, Russia). This would help them safeguard and increase their revenue levels and increase scale and capacity utilization, while also adding an element of diversification to their activities. While some of this can be achieved through organic growth, reaching the necessary scale and market access might also require a plan of targeted acquisitions.
- **Securing access to alternative financing sources.** Most of the priorities pertaining to the requirements described above will require significant capital that is currently lacking in the sector, given the difficulty of obtaining bank lending, the current debt levels of government towards pharmaceuticals companies and the current state of the local capital markets. Greek companies could thus consider Private Equity or Venture Capital financing. The Greek state should consider supporting the funding challenges through reviewing the current settlement of pending debts in VAT reimbursement or other repayments to pharmaceutical companies, in order to increase – to the extent possible – the liquidity available to the industry and decrease its financing cost and working capital requirements.

4.2.2. Aquaculture

Although still relatively small in size, with GVA of €400 million in 2010, aquaculture is growing at approximately 3% per year, with around 80% of production exported. About 90% of the domestic's aquaculture production is just two products – sea bass and sea bream – for which Greece produces almost half of the global output. Due to the nature of the products (small size of fish) and relative lack of sophisticated processing skills by local players, the Greek products are exported primarily in bulk or lightly processed form, while the high certification costs and the resulting low adoption of such certification by players have not allowed the effective branding of Greek production in international markets.

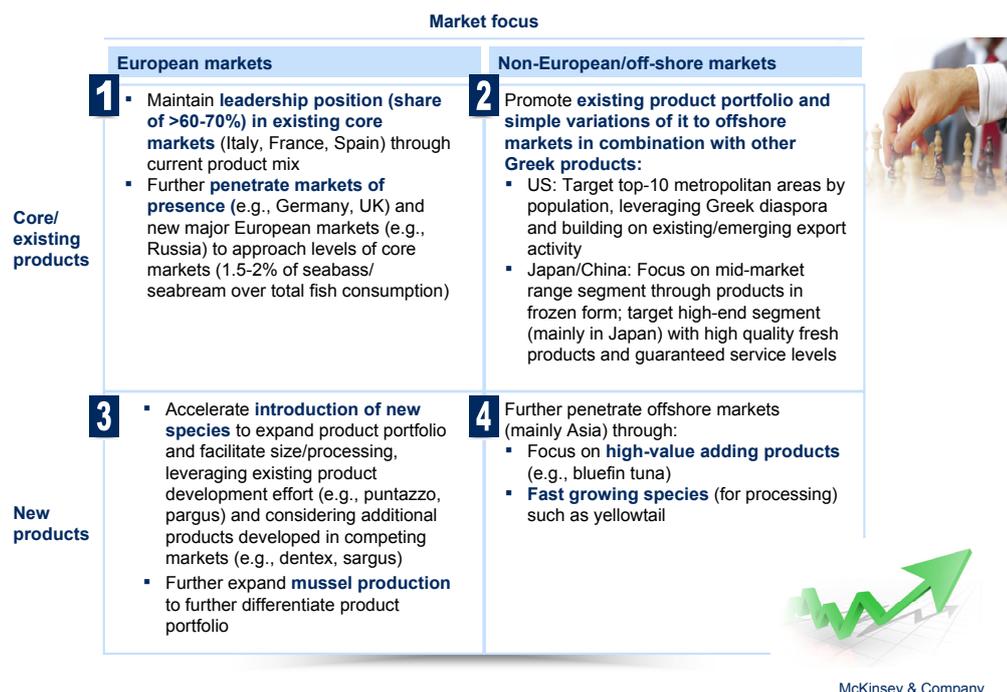
At the same time, despite the competitive cost position of Greek players overall – also due to increased vertical integration – the sector is already facing stiff competition from lower labor cost countries such as Turkey. Furthermore, local players have not managed to effectively balance the supply and demand cycles, leading to massive price fluctuations (+/- 33% between 2000 and 2009) and uncontrolled consolidation.

In addition to the above, an unstable regulatory environment, the lack of clear licensing procedures and the absence of a clear zoning plan for the sector threaten the industry's growth prospects. At the same time, Turkey is ramping up production and threatens to exceed Greek output in the next two years.

In order to strengthen the competitiveness of the Greek fish farming industry and further boost exportation, Greek players and the Greek state should consider focusing on the following key priorities:

- **Pursuing a phased product and market strategy**, in order to: (i) defend leadership position in sea bass and sea bream in core European markets (e.g., Germany, Italy, Spain, France, UK); (ii) expand geographic coverage (existing products) in Europe (i.e., Holland, Russia, Ukraine, Poland), US and Japan; and (iii) broaden product portfolio into mussels and larger-size, higher-value-added fish categories leveraging current know-how (Exhibit 63). To facilitate entry in new markets, the Greek state could support effective international representation and sponsorship (e.g., road-shows in Russia, US and Japan similar to Norway's case example of promoting salmon for sushi to Asia in the 1980s), as well as the introduction and enforcement of an effective and commonly accepted certification procedure, initiative to be jointly pursued by the state and market participants.
- **Building competitiveness through scale, product focus and labor efficiency**, through the acceleration of current consolidation trend following a focused product strategy for the core business and introduction of labor efficiency improvement measures to offset cost disadvantage versus strong competitors such as Turkey. In this area, a nation-wide zoning plan is critical in order to clearly indicate eligible areas for aquaculture activity, while focused incentives could be developed to promote targeted R&D and higher export activity.
- **Ensuring systematic planning and regulatory compliance**, in order to avoid excessive oversupply and major price volatility. This requires the development of a robust national capacity plan and allocation mechanism agreed among players and its enforcement through effective auditing mechanisms.

Aquaculture: Phased product & market strategy and priorities for Greece



4.2.3. Medical Tourism

Medical Tourism has been a fast growing sector internationally over the last fifteen years. Among its two segments the out-patient segment (e.g., dental care, certain cosmetic procedures, selected eye surgery) is the largest being 3-4 times the value size of the in-patient segment (e.g., cardiovascular interventions, orthopedic procedures) (Exhibit 64).

Medical Tourism has created opportunities for very diverse countries in positioning themselves as medical tourism destinations, ranging from the traditional high quality/high-tech destinations (e.g., North America) to developing health markets combining low cost at good quality in niche areas (e.g., plastic surgery, dental treatments, cardiovascular care).

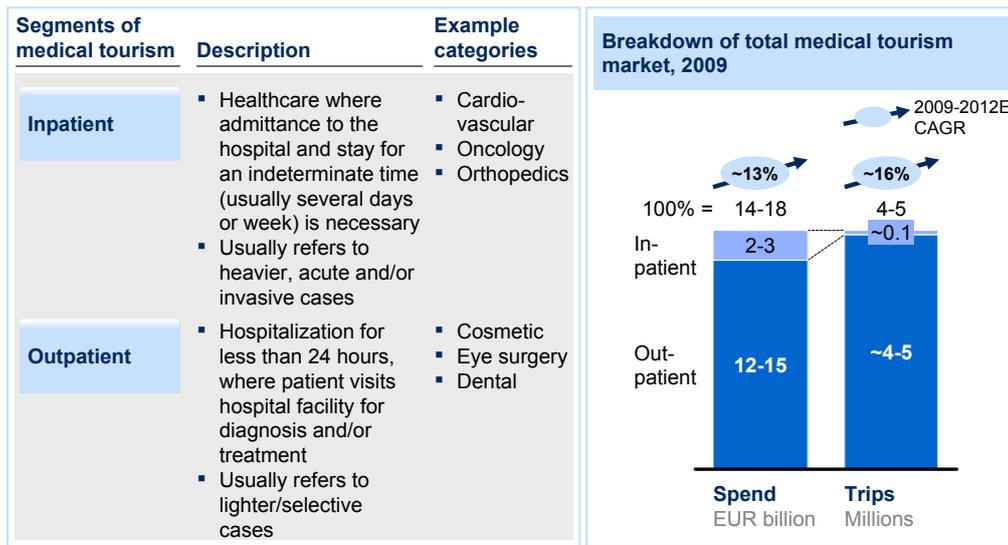
While Greece has potential for competing in the rapidly growing 'middle market' of medical tourism, the country lacks a comprehensive national sector growth strategy and the necessary infrastructure. Indicatively, it has only one inpatient facility that is accredited by the JCI or Joint Committee International (an international monitoring body), compared with 43 in Turkey, 21 in Italy and 14 in Thailand. At the same time, Greek hospitals lack collaborative agreements with leading international medical institutions, which would raise the country's profile internationally. In outpatient segments, although the country has available resources, know-how and occasionally a competitive price advantage (e.g., in fields such as reproductive fertility), it still needs to establish a reputation as a quality destination.

In line also with the new strategic direction in tourism, there are five levers that would enable the local industry to capture the growth opportunity:

- **Developing a national strategy to position Greece in the 'middle market' with specific product/market focus.** This could include a primarily outpatient product focus, (e.g., eye surgery, cosmetics, fertility, obesity, haemodialysis), with only a focused inpatient offer (e.g., cardiovascular surgery, hip replacement), and geographic focus on Russia/CEE, Balkans, Middle East, and selected higher-cost EU countries (e.g., UK, Germany). This should also entail securing international accreditations (e.g., JCI) and partnerships with global medical centers/organizations and leading international medical institutions (such as the Johns Hopkins Hospital, the Cleveland Clinic, Sloan Kettering and the Harvard Medical School, or institutions focusing in east Mediterranean, such as the Japanese-built Tokuda Hospital in Sofia), to significantly raise the profile of Greek hospital operators abroad. Medical tourism should be promoted in target countries (i.e., Balkans, Russia, Middle East, costly EU countries), including the sponsoring of participation in relevant medical tourism conferences, but also the signing of bilateral agreements with foreign payors (public for non-EU, private for EU and non-EU) to support the new market. Creating a strong brand and reputation for Greece as a medical tourism destination would be key to the success of the new strategy.
- **Establishing modern quality assurance and licensing and control frameworks,** in particular for outpatient services, including a registry to track patients and procedures (e.g., for fertility). Implementing a quality assurance system would satisfy the requirements of EU directives, improve the quality perception of Greek clinics and potentially facilitate the reimbursement of cross-border treatments in Greece. Likewise, the current restrictive regime of licensing facility and surgery eligibility procedures (e.g., allowing surgeries only in hospitals of over 60 beds) could be updated to allow more flexibility (e.g., facilities in islands, same-day surgery centers) and reduce cost for procedures that require up to one day of hospitalization.
- **Pursuing and maintaining 'offer' specialization to reduce costs through scale** in key procedures. There are multiple examples of specialization and focus on efficient delivery of high throughput procedures at good quality and low cost. An example here is Turkey's World Eye Hospital, that handles over 5,500 eye surgeries a month, including over 2,000 international patients.
- **Leveraging networks to attract inbound volumes.** The presence of Greek healthcare providers abroad provides a good basis to promote the Greek healthcare offering. Other international examples from leading medical centers show that there is an opportunity to attract patients for specialized treatment into the country by enhancing alliances with medical providers and funds in key countries and non medical partners (e.g., specialized tour operators).
- **Complementing the offer with the necessary auxiliary** services for medical tourists, such as multilingual support, logistics support, informatics/online consultations and electronic patient record sharing, and closer links to the travel industry ('wellness' tourism). This could also include the development of integrated 'health resorts', where multiple treatments can be offered to individuals and groups across the spectrum of health and wellbeing services.

Medical tourism: Promising size and growth prospects for the out-patient segment

PRELIMINARY ESTIMATES



SOURCE: Deloitte; McKinsey Quarterly

McKinsey & Company

4.2.4. Elderly care

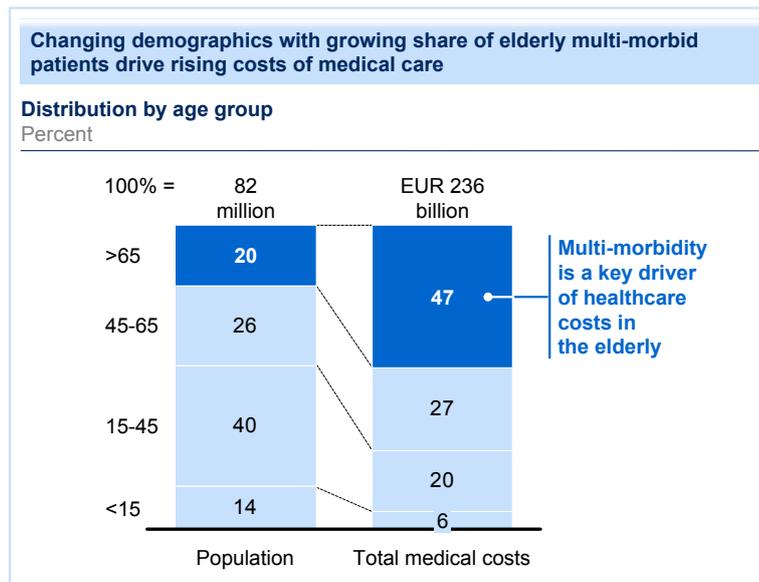
Internationally, LTC (Long Term Conditions) and elderly care costs already comprise a disproportionately large part of healthcare expenses (Exhibit 65), with similar trend expected in Greece in the mid-term, due to the continuously ageing population (65+ year-old share of population is expected to increase from 19% in 2010 to 32% in 2050, while OECD average is expected to be 25%) and the implied higher prevalence of LTCs (in 2006, approximately 80% of 65+ year-olds needed regular medication versus 37% among the total population).

International examples indicate that out-of-hospital programs for the elderly population and patients with LTCs can yield major savings. For example, in a specific case in the UK, an investment of approximately GBP 4 million within 5 years led to approximately GBP 23 million of savings in acute treatment expenses. Distressed macroeconomics and the tight fiscal situation in Greece render the adoption of such programs an imperative. There is already a nascent domestic industry that would need to scale up and cover the portfolio of relevant services (e.g., LTC case management, care at home, telemedicine, medication adherence programs), while materially upgrading its service offering. Necessary funding could be released through savings from the social security funds, conversion of existing 'informal' out-of-pocket spend, high-margin packages for elderly tourists, etc. In order to facilitate such developments, the Greek state would need to create a patients' registry, install quality accreditation and performance management systems for care programs and medical professionals, and launch pilot programs at the community level, which could then be rolled-out across the country.

Exhibit 65

Ageing population creates a disproportionate cost to healthcare systems

GERMANY EXAMPLE



SOURCE: Milliman; German Federal Statistics Office; 11th coordinated population forecast, 2006 data

McKinsey & Company

4.2.5. Regional Cargo Hub Development

The East Mediterranean region offers good intrinsic for the development of a cargo port hub as it is located on one of the three largest intercontinental routes worldwide with approximately 19 million TEU (Twenty-foot-container Equivalent Units) going through the region in 2009 and a significant growth in trade of approximately 9% annually between 2004 and 2008 (Exhibit 66).

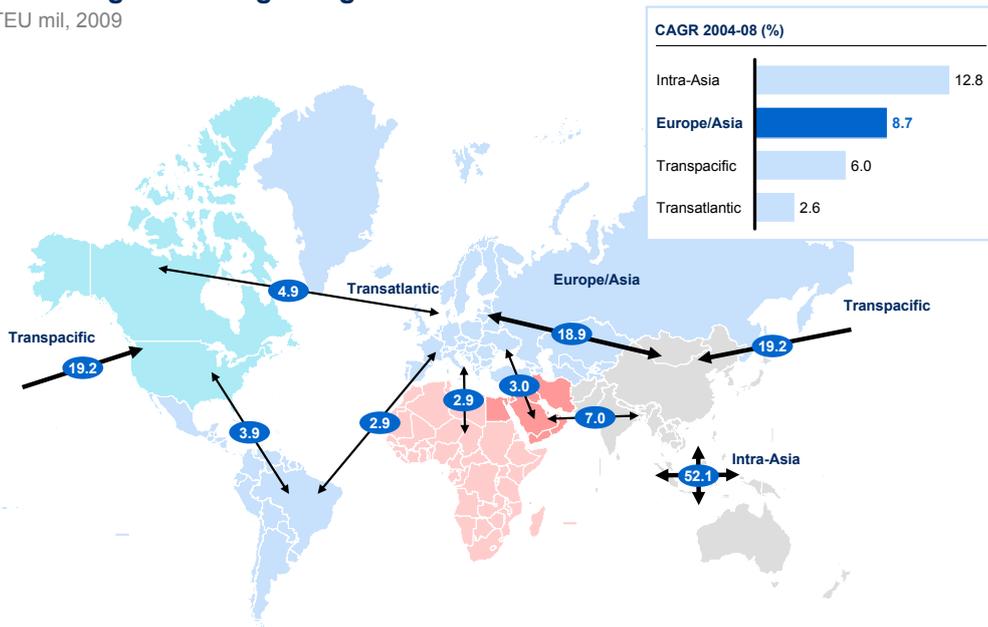
Greece is well positioned to benefit from both relevant types of trade, namely **transshipment and gateway trade**. In transshipment trade, where there is an intermediate stop before the subsequent seaborne shipment of goods to their final destinations, Piraeus' vicinity to the major maritime trade lanes is comparable to major competing ports like the port of Gioia Tauro in Italy. In gateway trade, where goods are transferred directly to local and other hinterland markets, both Piraeus and Thessaloniki are well located to cater for the Eastern European market which has experienced a trade growth of 10% to 15% annually for the last 10 years.

Yet the Greek ports face stiff competition from neighboring ports like Varna (Bulgaria), Ambarli (Turkey) and Costanza (Romania), which offer better infrastructure, higher operational stability (e.g., fewer non-operating days due to strikes), and improved services with up to 50% lower time spent in unloading and custom clearance. At the same time, neighboring countries offer better hinterland infrastructure, which allows cargo to be quickly and efficiently shipped towards its final destination, an area where especially Piraeus falls short.

Greek ports could significantly improve their position both in transshipment and – the more valuable to the economy – gateway trade, by reducing administrative requirements and optimizing loading and unloading as well custom processes, **reviewing and enforcing legislation** to ensure a smooth and continuous operation of the ports and **improving the infrastructure** that could help develop connectivity with the main ports (e.g., necessary port infrastructure, high speed cargo train lines).

There are 3 major container trade flows globally, with Asia-to-Europe exhibiting the 2nd highest growth

TEU mil, 2009



SOURCE: Drewry

McKinsey & Company

4.2.6. Waste management

Waste volumes in Greece have been growing strongly in the past years, with 62% consisting of municipal waste between 1990 and 2007. Despite the strong growth, Greece generates approximately 15% less waste volumes per household compared to EU-27 and has waste levels comparable to Portugal and several Eastern European countries.

Greece relies on landfill as the primary way to manage its municipal waste; indeed 80% of the total municipal waste in Greece goes to land-filling versus 40% for EU-27 and less than 10% for several Western European countries (Exhibit 67).

Moving away from land-filling and introducing higher value-add waste management methods (e.g., incineration, recycling, composting) can have significant environmental and financial benefits for the country, and is becoming an imperative driven by EU Directives.

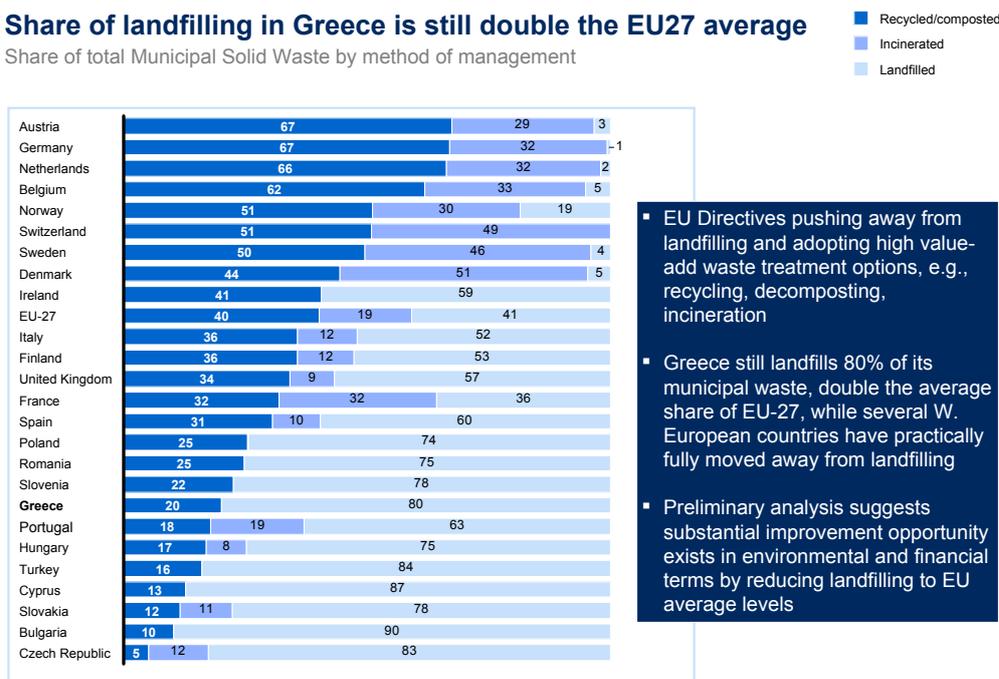
Similar to several other European countries, Greece could introduce incineration, increase the rate of recycling/composting and recover more energy from waste. Indicatively, no more than 40% of non-organic material (representing 54% of total municipal waste) is being recycled currently, while the EU mandated recovery rate and/or the full potential is in the order of 60%-95%.

Finally, effectively addressing the issue of industrial waste is extremely important for environmental sustainability and the effective operation of the manufacturing and industrial sectors.

Exhibit 67

Share of landfilling in Greece is still double the EU27 average

Share of total Municipal Solid Waste by method of management



- EU Directives pushing away from landfilling and adopting high value-add waste treatment options, e.g., recycling, decomposing, incineration
- Greece still landfills 80% of its municipal waste, double the average share of EU-27, while several W. European countries have practically fully moved away from landfilling
- Preliminary analysis suggests substantial improvement opportunity exists in environmental and financial terms by reducing landfilling to EU average levels

SOURCE: Eurostat Structural Indicators, Mavropoulos et al.

McKinsey & Company

4.2.7. Secondary Rising Stars

Further to the six primary ‘rising stars’, **Greece 10 Years Ahead** outlines opportunities in two additional sub-sectors, which are expected to yield relatively smaller impact in terms of GVA and employment, but could constitute a ‘symbolic’ ‘ambassador’ role for the new extrovert model of the Greek economy. More specifically, these two sub-sectors include:

- **Specialized food categories** - Over and above the food categories analyzed in detail in the food processing and agricultural sectors, Greece is fortunate to have in excess of 50 products (raw or processed) which hold a PDO (Protected Destination Origin) or PGI (Protected Geographical Indication) certification (e.g., Krokos Kozanis, Fava Santorinis, Mastiha Chiou, Avgotaraho Mesolongiou).

This product portfolio provides a considerable opportunity that has not been leveraged as in the case of other international examples which have been consistently promoted abroad (e.g., Turkey’s “miracle” hazelnuts and Spain’s Chorizo).

The opportunity lies in ensuring the necessary scale and develop an end to end promotion strategy that communicates the value proposition for these products in domestic, as well as foreign established and emerging markets. In that direction, the proposed measures in the food processing and crops agriculture sectors are particularly relevant (e.g., establishment of the 'Greek Foods Company', implementation of a systematic Greek foods campaign in priority export markets).

- **Development of targeted classical education programs** - Greece possesses both the national history and heritage as well as the proximity to the historical sites to be considered a 'natural owner' of such programs.

However, international universities such as Stanford and Harvard in the USA as well as Oxford and Cambridge in the UK are at the forefront of developing and successfully marketing such programs. These universities, leveraging the benefits they enjoy of high reputation, of better access to funding and teaching personnel, have been successful in promoting these programs (sometimes offering part-time courses in Greece) so as to attract the highest caliber students.

In this context the opportunity for Greece lies in establishing a world class program curriculum fully exploiting its intrinsic advantages at a graduate and/or postgraduate scale capturing a niche segment of the market, offering these studies in other languages based on demand (e.g., English, Chinese), ensuring and strengthening links with international high caliber educational institutions, and finally promoting such studies as part of an overall tourism strategic value proposition to ensure full visibility to source markets.

