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GREECE MACRO MONITOR

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Greece needs neither wage deflation nor more fiscal austerity; what is needed is an emphasis on structural reforms to boost (non-price) competitiveness

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Introduction

This note looks beyond the present state of negotiations with official creditors in the context of the four month extension of Greece's Master Financial Assistance Facility Agreement (MFFA) that was decided at February 20th Eurogroup.. It even looks beyond the pending completion of the program review to argue that the emphasis of any succeeding arrangement between the Eurogroup, the institutions and Greece should aim to boost the medium-term growth prospects of the domestic economy. This would in turn require a strong emphasis on structural reforms to boost the non-price competitiveness of the Greek economy so as to facilitate the needed transition to a new development model emphasizing increased investment and extroversion. On the other hand, the absence of structural reforms along with a renewed focus on draconian fiscal austerity and wage deflation would increase the chances of a self-defeating fiscal adjustment with severe consequences for fiscal sustainability, social cohesion and the long term growth prospects of the Greek economy. The rest of this document is structured as follows: *Part 1* provides as brief assessment of the socioeconomic costs and benefits of the huge fiscal consolidation and wage adjustment implemented in Greece in the context of the two consecutive bailout programs; *Part 2* explains why a strong emphasis on structural reforms is need to boost Greece's non-price competitiveness; and *Part 3* concludes.

Part 1 - Greece's fiscal consolidation and wage adjustment: a brief cost-benefit analysis

1.1 The risk of self-defeating fiscal consolidation

The specter of self-defeating fiscal consolidations was initially raised in Gros (2011), where a simple framework was utilized to show that fiscal austerity could increase the public debt ratio in the short-run. Separately, Delong and Summers (2012) argue that in a depressed economy even a small amount of *hysteresis*[1] implies, by simple arithmetic, that expansionary (contractionary) fiscal policy is likely to be self-financing (self-defeating). The authors clarify that their argument "does not justify unsustainable fiscal policies, nor does it justify delaying the passage of legislation to make unsustainable fiscal policies sustainable". Yet, it is clear that the notion of hysteresis is of particular relevance for fiscal consolidations undertaken during deep economic downturns, where multipliers are likely to be both high and persistent *i.e.*, their recessionary effects stretch well beyond the year that the fiscal adjustment is implemented.

1.2 Cost and benefits of fiscal adjustment

Since 2010, Greece has implemented a massive fiscal adjustment that has been unprecedented by recent historical standards (IMF, 2013). As per the estimates presented in Greece's 2015 Budget, the ESA2010 General Government fiscal deficit has been reduced by more than 14ppts-of-GDP in the past 5 years to c. -1.3%-of-GDP in 2014. Over the same period, the General Government primary balance improved by around 11.5ppts-of-GDP, generating small surpluses in both 2013

[1] Here, "hysteresis" is defined as the impact of the economic downturn on potential output.

and 2014, after recording a deficit of c. 10.5%-of-GDP in 2009. In cyclically-adjusted terms, the improvement in the primary structural balance over the last five years has been even greater, amounting to more than 19ppts-of-GDP. Around two-thirds of this adjustment has come from cuts in both discretionary and non-discretionary expenditure on *e.g.* social transfers, public wages and government intermediate consumption. The remaining one-third has come from the revenue side, mainly as a result of higher income and wealth taxes (*Figure I.1 – Appendix I*). In what follows, we present a brief analysis on the potential costs and benefits resulting from the aggressive fiscal consolidation and the significant wage adjustment implemented in recent years.

1.2.1 Costs of fiscal consolidation: *exacerbation of domestic recession and rise in the debt ratio*

It can be argued that the most severe costs of the aggressive, front-loaded fiscal consolidation implemented in the last 5 years relate to: i) the exacerbation of the domestic recession; and ii) the large increase in the public debt ratio since 2009, despite the restructuring of the privately-held Greek debt (PSI), the debt buyback (DBB) operation implemented in 2012 and the debt relief package agreed at the November 2012 Eurogroup (*i.e.,* further maturity extensions and lower interest rates on EU loans provided under the two consecutive bailout programs).

Fiscal consolidation impact on domestic GDP

This section examines the macroeconomic effects of the fiscal consolidation program implemented in the last 5 years. To do so, we first assume three alternative values for the *impact* multiplier: -1.5 "high multiplier"; -1 "intermediate multiplier"; and -0.5 "low multiplier". The interpretation of these values is as follows: for the "high multiplier" value, we assume that a fiscal contraction (*i.e.,* decrease in government expenditure or rise in tax revenue) of 1 euro that is implemented in a given year leads *to* a decrease *in* nominal *GDP* by 1.5 euro in that year. A similar interpretation applies to the other two impact multiplier values. Furthermore, in order to incorporate multiplier persistence and hysteresis effects, we follow Boussard et al. (2012) and European Commission (2012, 2013) and assume that fiscal multipliers follow the convex, autoregressive decaying path analyzed in *Appendix II*. As a next step, we utilize available fiscal data to get an appropriate metric for the thrust of fiscal austerity policies implemented in Greece over the period 2010-2014. In the study presented herein, this metric represents the annual change in the structural primary fiscal balance based on the relevant data presented in the IMF Fiscal Monitor (October 2014).[2] *Table I.1* of *Appendix I* portrays the macroeconomic effects of the fiscal austerity policies implemented in Greece over the period 2010-2014. In more detail, it shows the estimated GDP impact under different scenarios regarding the value of the impact multiplier, the degree of multiplier persistence and the existence or not of hysteresis effects. In *Table I.1* we actually present the results for two such scenarios, which incorporate the "intermediate" and "low" impact multiplier values assumed in this study.[3] As it is implied by the results presented in the said table, the aggressive fiscal consolidation program implemented in Greece over the period 2010-2014 has indeed taken a heavy toll on domestic economic activity.

Fiscal consolidation impact on the debt ratio

In what follows, we examine the "paradox" of the sharp increase in the debt ratio since 2009, despite the aggressive fiscal consolidation and the debt relief operations implemented over the last several years. Greece's gross public debt ratio has increased by c. 48ppts-of-GDP between end-2009 and end-2014 to stand to an estimated 177%-of-GDP at the end of that period. As per the most recent European Commission estimates (AMECO), the cumulative snow ball effect on Greek public debt[4] over the aforementioned period was c. 70ppts-of-GDP, which implies that the large increase in the debt ratio since 2009 was exclusively due to the domestic economic recession. This development comes as no major surprise, especially taking into account the steep GDP contraction over that period (denominator effect) and its impact on key fiscal metrics (numerator effect)[5]. The possibility of an initial rise in the debt ratio following an aggressive fiscal adjustment constitutes a topic that has been analyzed, to some extent, in the recent empirical literature[6]. In fact, in a recent study we demonstrated that, taking into account Greece's present debt-to-GDP ratio, the critical value of the fiscal multiplier that prevents a (contemporaneous) rise in the debt ratio following a fiscal adjustment

[2] A well-known methodological issue in the empirical estimation of fiscal multipliers relates to the identification of purely exogenous fiscal shocks. For the purpose of our analysis, we assume that fiscal shock in year *t* is represented by the annual change in the structural general government primary balance (from year *t-1* to year *t*).

[3] Multipliers tend to be higher in deep economic downturns. However, some recent empirical studies have demonstrated that heightened fiscal sustainability concerns tend to, ceteris paribus, reduce the value of the fiscal multiplier.

[4] The snowball effect denotes the automatic decrease (increase) in the debt ratio when nominal GDP growth in year *t* rises above (falls below) the average effective interest rate in that year. In mathematical terms, the snowball effect is defined as the difference between the average effective interest rate and nominal growth.

[5] For instance, in a deep recessionary period, the government may face higher costs for unemployment benefits. Furthermore, a sharp decline in economic activity may see the incomes of a higher number of tax payers falling below the tax-exempt threshold than in normal economic times.

[6] See e.g. European Commission (2012).

implemented in a given year is around 0.5.[7,8] In other words, a fiscal adjustment undertaken in year t would lead to an initial rise in the debt ratio if the size of the fiscal multiplier in that year is equal or greater than 0.5. For Greece, the existing literature and our earlier empirical findings suggest that, in deep economic contractions, the size of the fiscal multiplier may well exceed the aforementioned threshold and, in certain instances, be even higher than 1.[9]

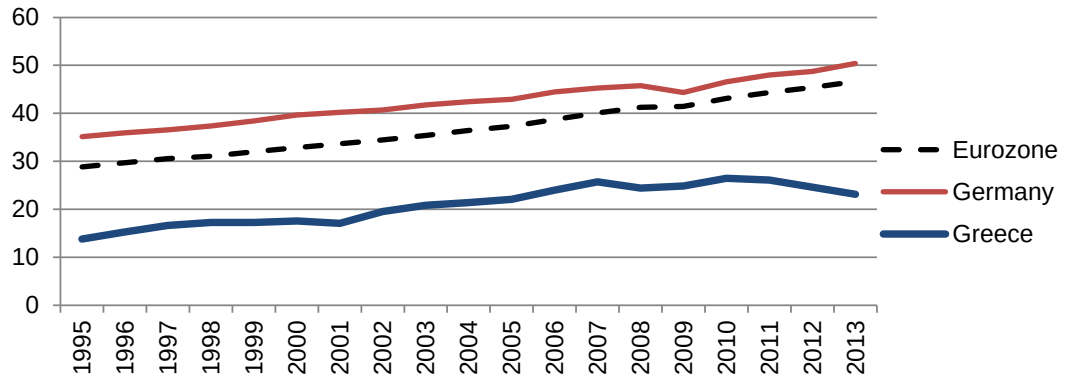
1.2.2 Benefits of the fiscal consolidation program: *elimination of unsustainable fiscal deficits, provision of unprecedented amounts of official-sector financing and decline in debt rollover risks*

Since its euro area entry, Greece accumulated huge macroeconomic imbalances which could not be sustained in the new period following the outbreak of the global financial crisis. Against this backdrop, the two consecutive adjustment programs agreed with official creditors (in May 2010 and in March 2012, respectively) have been instrumental in correcting huge deficits accumulated in the country's fiscal and external accounts. Moreover, the provision of an unprecedented amount of official sector financing to replenish collapsing State cash reserves and to inject much-needed liquidity (and fresh capital) in the domestic banking system has prevented a much more dramatic deleveraging of the domestic economy, which could instigate even more severe economic and social costs. In addition to all these, the debt relief operations implemented in the context of the two adjustment programs (PSI, DBB, maturing extensions and reductions in interest rates on EU loans) have greatly improved the serviceability of Greek public debt. Indeed, over the coming 5-year period, the average effective interest rate on Greek debt is expected to be not much higher than 3% (i.e., remaining amongst the lowest in the euro area), while the overall annual interest expense is expected to average between 4% and 4.5% of GDP compared to levels around 9% or 10% of GDP that would prevail in the absence of the aforementioned operations.

1.3 Wage adjustment

The implementation of the two consecutive adjustment programs has restored wage competitiveness, with Greece's ULCs-based REER having already declined to levels prevailing in mid-90s. This has already benefited Greece's export performance as confirmed by the results of a special econometric study summarized later in this document (see section 2.2), which documents a -0.26 long-term elasticity of real Greek goods exports with respect to the real effective exchange rate. Yet, Greece's wage adjustment over the last few years has probably been too aggressive and, in any case, was not accompanied by a similarly aggressive decline in domestic consumer prices. The latter is true despite the huge output gap and primarily reflects lingering rigidities/existence of oligopolistic structures in domestic product and services markets. Undoubtedly, these developments have put additional pressure on disposable incomes, further exacerbating the domestic recession (Figures 1 & 2).

Figure 1- Nominal compensation in manufacturing (EUR thousand)

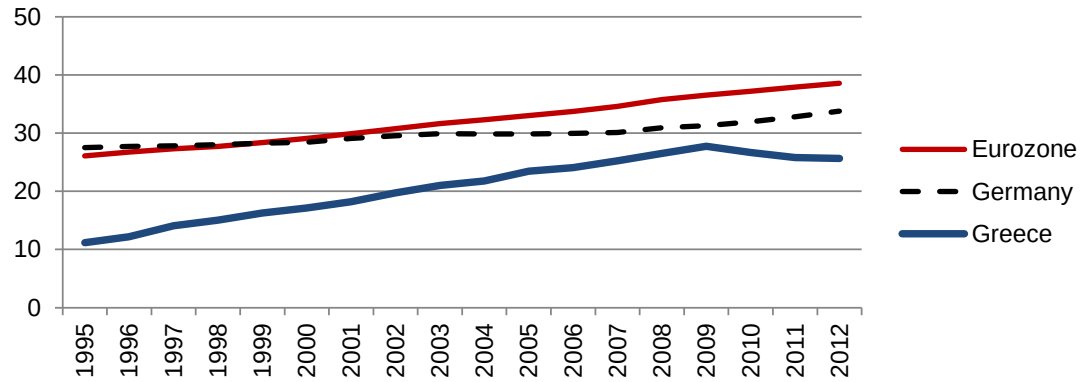


[7] The fiscal multiplier is defined as the ratio of a change in output to an exogenous change in the fiscal deficit with respect to their baselines.

[8] *"The Challenge of Restoring Debt Sustainability in a Deep Economic Recession: The case of Greece"*, Platon Monokroussos, GreeSE Paper No.87, Hellenic Observatory Papers on Greece and Southeast Europe, October 2014
http://www.lse.ac.uk/europeanInstitute/research/hellenicObservatory/CMS%20pdf/Publications/GreeSE/GreeSE-No87.pdf

[9] Monokroussos, Platon and Thomakos, Dimitris, 2012, *"Fiscal Multipliers in deep economic recessions and the case for a 2-year extension in Greece's austerity programme"*, Economy & Markets, Global Markets Research, Eurobank Ergasias S.A.
Monokroussos, Platon and Thomakos, Dimitris, 2013, *"Greek fiscal multipliers revisited – Government spending cuts vs. tax hikes and the role of public investment expenditure"*, Economy & Markets, Global Markets Research, Eurobank Ergasias S.A.

Figure 2- Nominal compensation in services (EUR thousand)



Source: AMECO

Part 2 – Why a strong emphasis on structural reforms is needed to boost competitiveness

The material included in this section is based on the key findings of a special study we presented at a major Eurobank event that was organized in Athens in November 2014. The study consisted of three main sections. The first one analyzed the intertemporal evolution of Greek exports of goods and services and examined Greece's export performance vis-à-vis its main trade partners. The second presented the results of an empirical study on the main drivers of Greek manufacturing and non-manufacturing goods exports, based on monthly data spanning the period Jan. 1998 – Dec. 2013. Finally, the third section presented the main findings of a poll we conducted among 222 (large and medium-sided) domestic exporters with the purpose of getting a better understanding of the industry's view as regards the main factors hindering export performance as well as current trends and prospects. In what follows, we summarize some of the main results of the aforementioned study, which highlight the need for a strong emphasis of structural reforms in the domestic product and services markets with a view to further boost Greece's non-exports competitiveness. Additional analysis on the said results is provided in *Appendix III* at the end of this document.

2.1 A brief overview of the progress made in recent years to improve Greece's competitiveness

Dynamic bounce in investment and improved export performance are needed to boost medium-term growth

- Final consumption expenditure (private and public) continues to account for a disproportionately high share of Greek GDP (c 90% vs. 75% in the euro area). This implies that a key prerequisite for a return to positive and sustainable growth rates going forward is a stronger exports performance coupled with a notable recovery in domestic investment activity.

- The latter is especially relevant taking into account the still negative saving rate of households (-6% of average nominal disposable income) and the need to maintain significant primary fiscal surpluses in the following years.

- The performance of Greek goods and services exports has improved in the last couple of years, but continues to lag behind that of other EU countries in the period following the outbreak of the global financial crisis. As a percent of GDP, Greek exports remain significantly lower than the euro area average (c. 33% vs. 47%).

Lingering structural problems hindering Greece's competiveness and export performance…

- Greece remains a small and closed economy with limited gains in world market shares, even following the huge wage adjustment in the past several years that has reduced Greece's ULCs-based Real Effective Interest Rate (REER) to levels prevailing before the EUR adoption.

- With the exception of maritime shipping and mineral fuels, lubricants & related material all other main categories of goods and services exports have seen their share (as % of total Greek exports) shrinking over the last two decades.

- The technological content of Greek manufacturing exports remains low relative to that of the main EU trading partners.

- Greece features a *competitive advantage* in more traditional manufacturing sectors which, to a large extent, are of low technological content and low added value.

- Greece lags behind its main EU trading partners in merchandise trade specialization

– Greece continues to lag behind its main trading partners in business R&D expenditure and foreign direct investment.

– The average size of Greek manufacturing companies remains significantly lower relative to EU trading partners. This hinders the generation of economies of scale and prevents a better integration into global supply chains.

…thought significant progress in several important areas has been attained in recent years

– Significant progress has been made in recent years as regards the diversification of Greek exports in terms of structure and geographical destination.

– The technological content of Greek exports has increased significantly over the past decade and a higher share of domestically-produced manufacturing goods is now exported to high growth foreign economies.

– Greece's manufacturing exports have rebounded in the last couple of years.

– Significant progress has been attained in recent years in a number of international indicators for Greece's competitiveness, governance as well as the functioning of the domestic business and regulatory environment. However, additional improvements are needed to bridge the gap with the rest of the Eurozone

2.2 Summary of results of empirical study on the main drivers of Greek exports

Data and methodology

The study utilizes monthly-frequency, time-series data for the value of Greek goods exports (SITC classification). The source of the data is EL.STAT and the period under examination is January 1998-December 2013. The data have been seasonally adjusted and deflated by the producer price index for exports. Initially, the series were examined for their statistical properties, so as to determine the appropriate modeling strategy. Then, a number of model specifications were created to explain the volatility of the real value of exports based on a number of explanatory variables.

The explanatory variables include, among others:

– alternative **proxies of foreign demand** *e.g.* weighted GDP volume index of 37 trading partners; EU-28 merchandise import demand index; OECD merchandise import demand index; OECD-Europe industrial production index; 37 trading partner merchandise import demand index (EU28, Australia, Canada, Japan, Mexico, N. Zealand, Norway, Switzerland, Turkey, US)

– alternative **proxies for price competitiveness** *e.g.* real effective exchange rate (REER) indices for Greece based on relative ULCs and consumer price inflation rates against different trade partner groups.

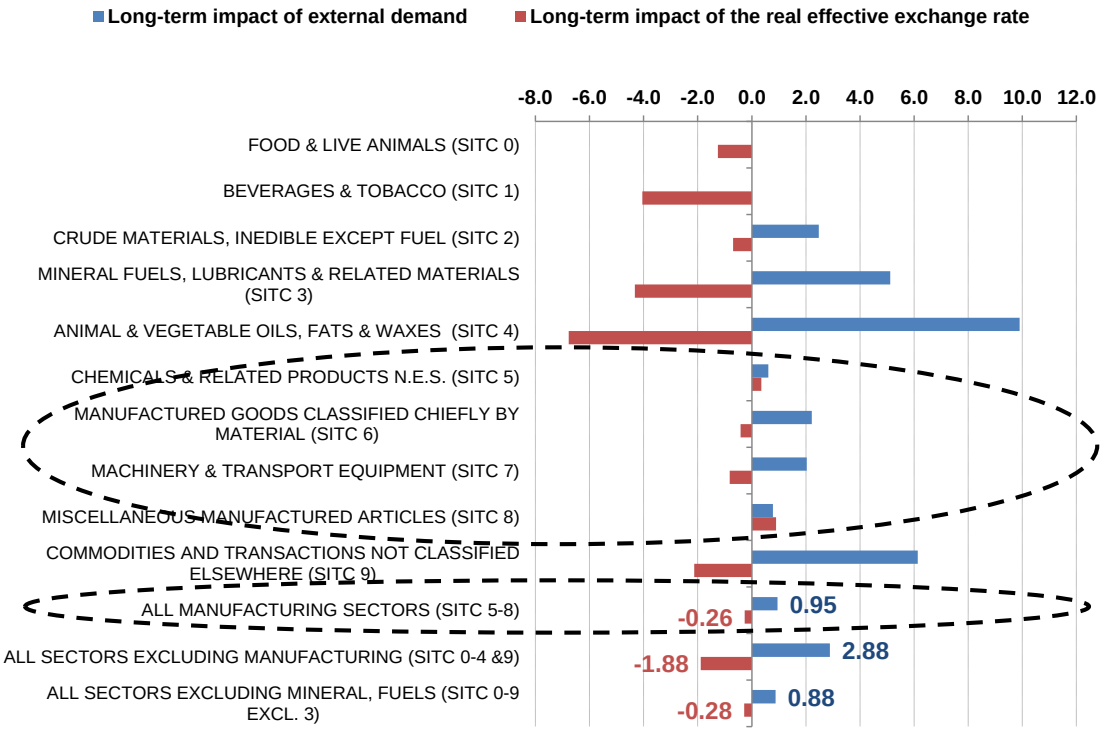
– more than 20 **non-price competiveness indicators** measuring various important aspects of the domestic business, institutional and regulatory environment, such as: technological content of Greek exports; degree of market size, concentration and average exporting firm size in the Greek manufacturing sector; degree of Greek exports concentration (Herfindahl – Hirschman concentration index); relative performance (vs. main trade partners) as regards Business R&D and FDI; ease in starting a business, ease in getting credit, corporate tax burden and ease of paying taxes; enforcement of contracts; quality of regulatory environment etc.

Empirical results

Figure 1 below provides a graphical depiction of the estimated long-term elasticities of Greek goods exports with respect to external demand and price competitiveness indicators. Another important result of our study is the statistical significance of some of the non-price competitiveness indicators under examination, when they enter (either individually or jointly) as explanatory variables

along with foreign demand and the real effective exchange rate in a number of model specifications. (Full set of empirical results is available upon request).

Figure 1 - Long-term effect of external demand and REER on Greece's real goods exports
Estimated long-term elasticities (% Increase/decrease of exports for every 1% increase/decrease of explanatory variables



Source: EL.STAT, Eurobank Economic Research

Explanatory note
The estimated long-term elasticities presented in Figure 1 are based on the following proxies
External demand: weighted GDP volume index of 37 trading partners on the basis of share of exports of Greece towards respective markets;
Real effective exchange rate of Greece against 138 trading partners based on the relevant CPI (total economy);
Real effective exchange rate of Greece against 30 trading partners on the basis of relative cost per unit of output (business sector)

Part 3 - Concluding remarks

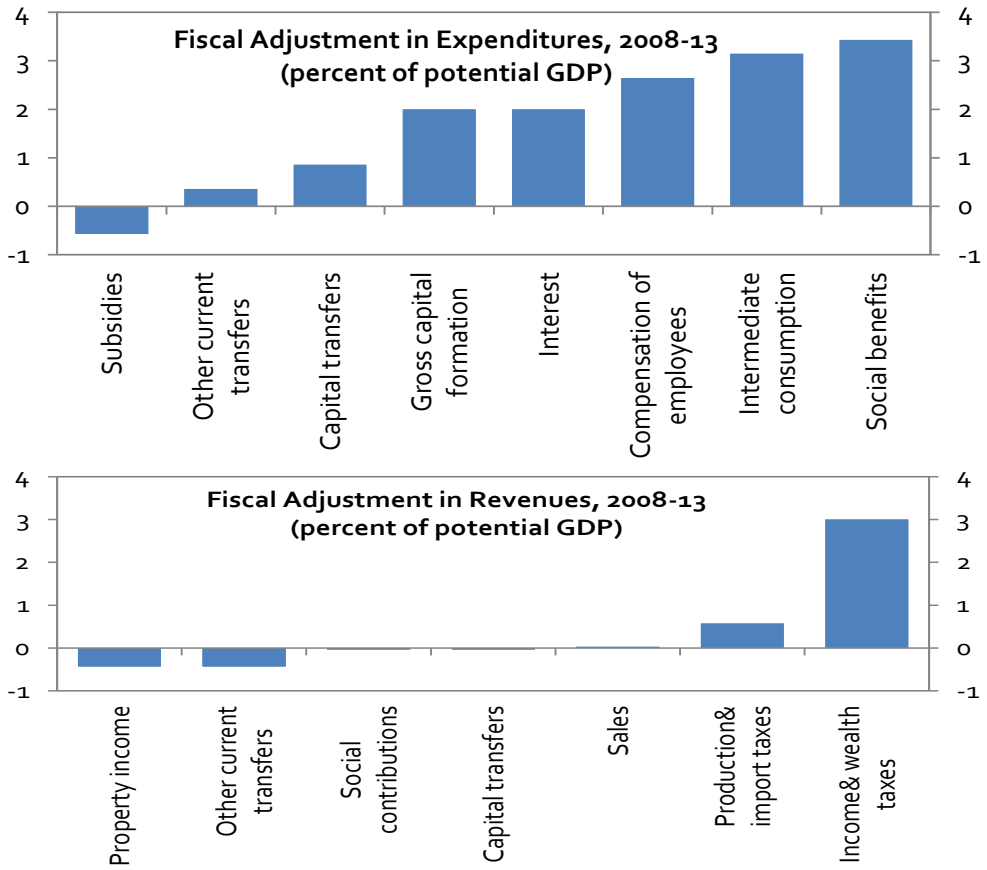
The two consecutive adjustment programs implemented in Greece over the last 5 years have been instrumental in correcting huge fiscal imbalances accumulated in the period leading to the global financial crisis and in improving the serviceability of Greek public debt. The concomitant provision of an unprecedented amount of official-sector financing has also prevented a more aggressive deleveraging in the domestic economy that could further exacerbate the domestic recession. However, the horizontal and front-loaded nature of the applied fiscal adjustment conspired with an inadequate degree of focus on structural reforms to instigate sizeable macroeconomic and social costs. With domestic authorities having already managed to stabilized the fiscal balance (and to even generate small primary surpluses in 2013 and 2014), any succeeding arrangement agreed with official lenders should aim to maintain the sizeable improvement attained in Greece's fiscal account in recent years. Yet, as we have argued in a in one of our recent research notes[10], the provision of additional debt relief (OSI) coupled with a certain relaxation of the primary fiscal target and an increased emphasis on structural reforms could go a long way towards facilitating a return to positive and sustained economic growth rates.

[10] "*Why a relaxation of the primary fiscal target may prove to be a self-financing policy shift*", Greece Macro Monitor, Eurobank Economic Research, February 26, 2015, http://www.eurobank.gr/Uploads/Reports/GREECEMACROFOCUSFebruary262015.pdf.

Appendix I

Figure and Table for *Part I*

Figure I. 1 - Structure of Greece's fiscal adjustment in 2008-2013



Source: EC, IMF, Eurobank Research

Table I.1 - Estimated impact of fiscal austerity on nominal GDP, ceteris paribus basis (in EURbn)

	2010	2011	2012	2013	2014
Low multiplier/low persistence/"no hysteresis"	**-8.4**	**-9.3**	**-8.1**	**-6.6**	**-3.6**
Intermediate multiplier/low persistence/"no hysteresis"	**-16.8**	**-18.6**	**-16.3**	**-13.2**	**-7.2**
Memorandum items					
Annual change in nominal GDP (EURbn)	-10.7	-18.8	-13.7	-12.0	-3.5
Annual change in structural primary balance in ppts-of-GDP / + sign for improvement	7.4	4.9	3.6	2.8	0.3
Annual change in structural primary balance in EURbn / + sign for improvement	16.8	10.2	7.0	5.1	0.5

Source: IMF (Oct 2014), EL.STAT. Eurobank Research

Appendix II

Impact multipliers, multiplier persistence & hysteresis assumptions (Part I)

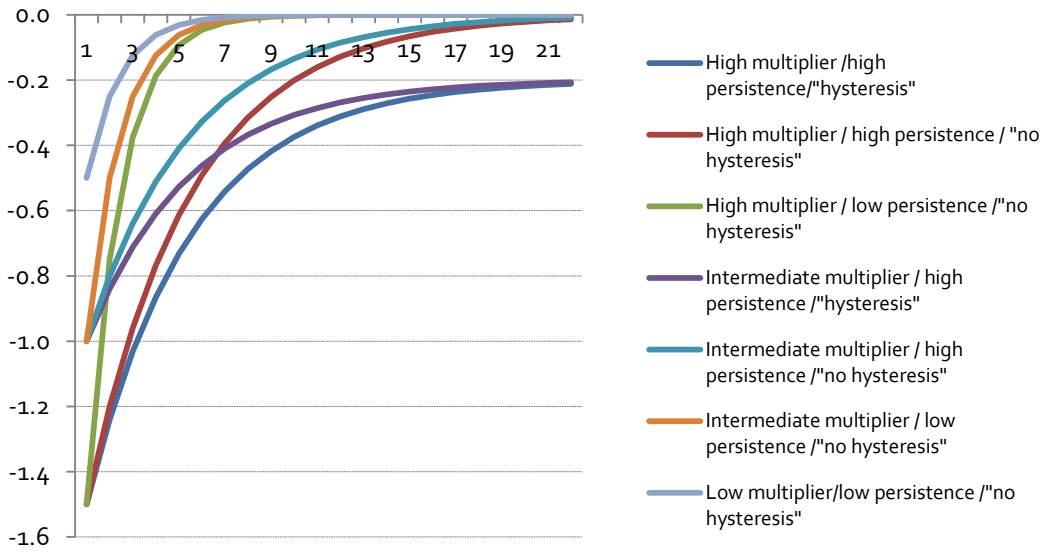
In order to incorporate multiplier persistence in our simulation exercise we follow Boussard et al. (2012) and European Commission (2012, 2013) and assume that fiscal multipliers follow the following convex, autoregressive decay path[11]:

$$m_{t,i} = (m_1 - \beta)\alpha^{i-t} + \beta$$

where, m_1 is the impact (*i.e.,* first year) multiplier, $m_{t,I}$ is the fiscal multiplier applying in year *i* following a permanent fiscal shock in year *t*, $0 < \alpha < 1$; and β *is* the long-run impulse response of GDP to fiscal consolidation. A negative value of β indicates that "hysteresis" effects are present (see *e.g.* de Long and Summers, 2012). A positive one represents a situation in which a consolidation today boosts long term growth by *e.g.* reducing the interest rate and by lessening the crowding out on private investment.

The figure below depicts the decaying path of the fiscal multiplier assumed in the simulation exercise presented in this study. Here, the initial value of the (impact) multiplier is assumed to take one of the following three values: **-1.5** "high multiplier"; **-1.0** "intermediate multiplier" and **-0.5** "low multiplier". Moreover, "high persistence" corresponds to the following parameter value: α=0.8 and "low persistence" corresponds to α=0.5. Finally, for the presence of "hysteresis" effects we assume β=-0.2, while the case of β=0 corresponds to "no hysteresis" effects.

Figure: Response of GDP to one-off cyclical adjustment



Source: EC (September 2013); Eurobank Global Markets Research

Note: Response of GDP in years t=1,…,21 per one unit cut in cyclically adjusted primary balance in year t=1. Assuming that the same logic applies, then a unit increase in the cyclically adjusted primary balance in year t=1, would lead to a GDP response that could be portrayed by inverting the above figure.

[11] This decay function reproduces relatively well the shape of the impulse-response function by typical DSGE models for most of the permanents fiscal shocks.

Appendix III - ***Why competitiveness and extroversion constitute the cornerstones of a new economic development model for Greece***

Continuing fiscal prudence and domestic household dissaving suggest long-term growth must necessarily come from higher exports and investments (figures 1&2)

Figure 1 – Final consumption expenditure continues to represent a disproportionally high share of Greek GDP; investment spending (as % of GDP) has collapsed due to the domestic recession and currently stands well below the respective euro area average

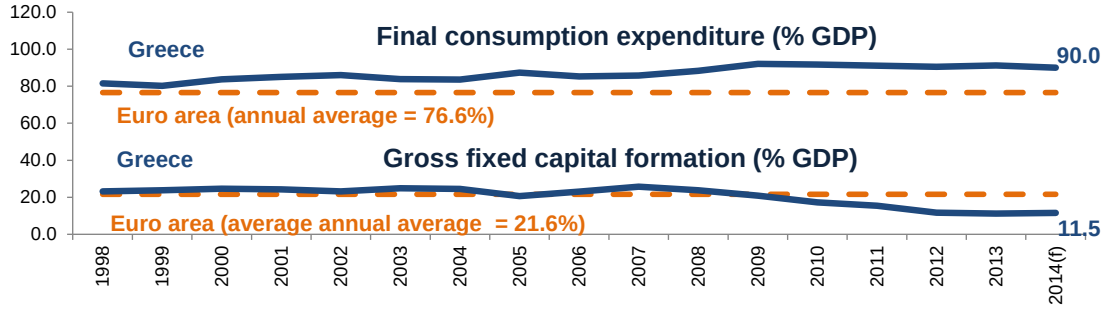
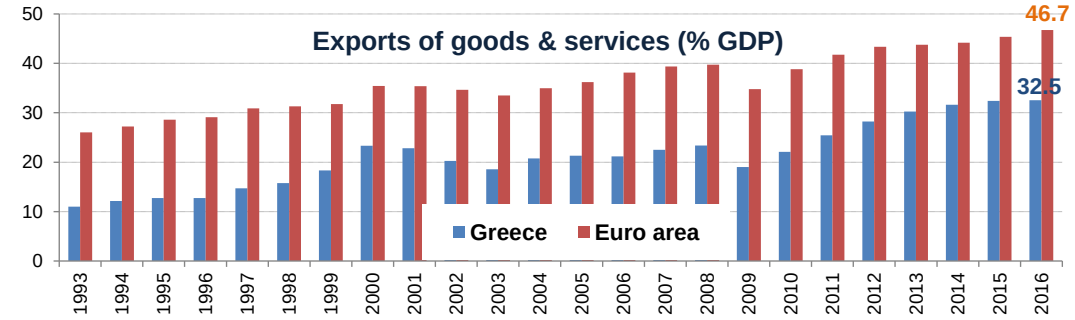


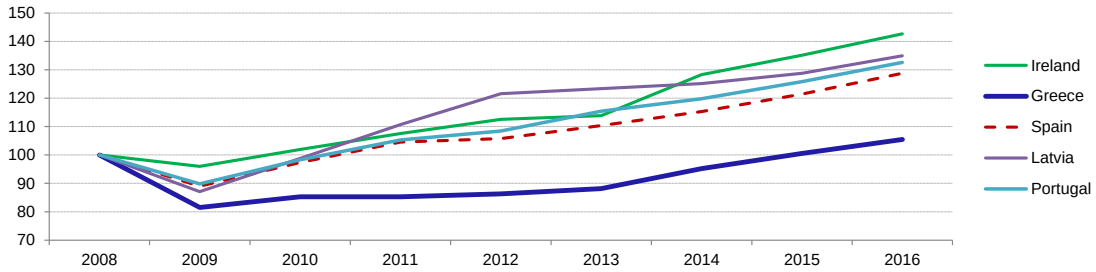
Figure 2 – Greek exports of goods and services (as % of GDP) remain significantly lower than the respective euro area average



Source (Figures 1 & 2): EMECO, Eurobank Economic Research

Greece's exports performance has broadly lagged behind that of other euro area countries throughout the crisis period...

Figure 3 – Exports of goods & services in 2010 prices (2008=100)



Source (Figure 3): EMECO, Eurobank Economic Research

…despite the huge adjustment in wages and, to a lesser extent, in relative inflation rates vis a vis main trading partners

Figure 4 – Greece's REER relative to 37 trading partners (cumulative annual change)

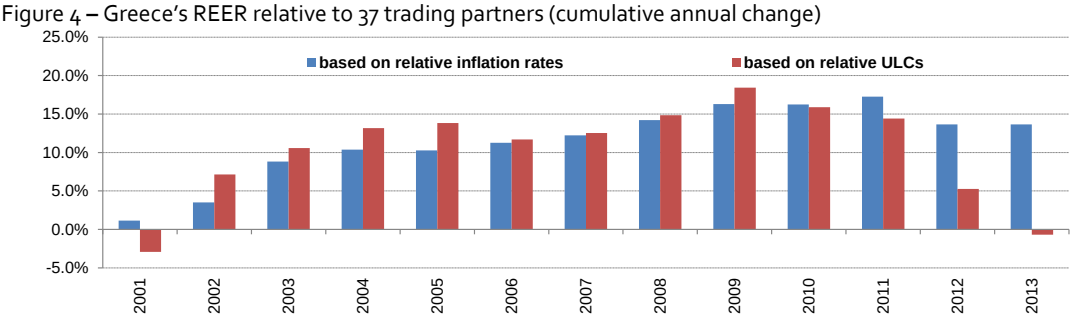
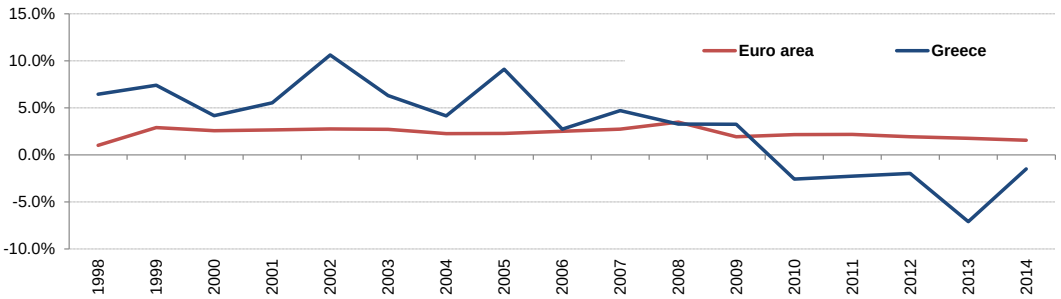


Figure 5 – Nominal wage expenditure per employee (annual change)



Source (Figures 4 & 5): EMECO, Eurobank Economic Research

Greece remains a small closed economy with limited gains in world market shares over the last two decades

Figure 6 – Average ratio of Greek exports of goods & services to GDP (1995-2013)
(Bold columns indicate size of economy smaller than the median)

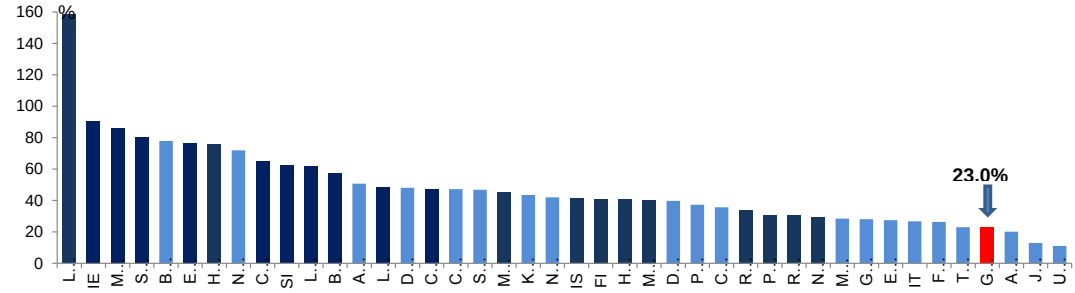
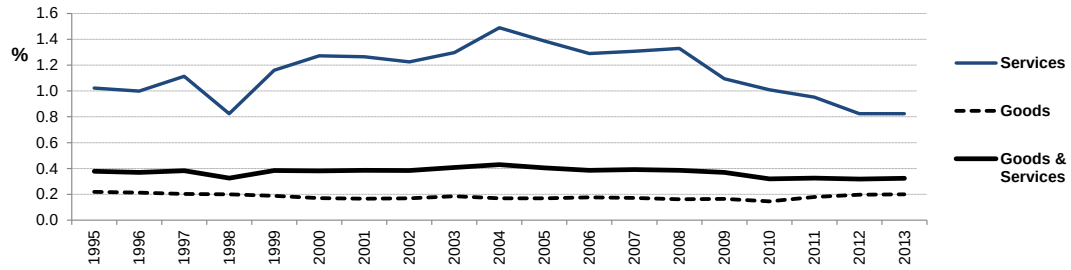


Figure 7 – Greece: exports as % of world imports



Source (Figures 6 & 7): OECD, UNCTAD, Eurobank Economic Research

Declining share of manufacturing exports and increasing share of shipping services exports (as % of total respective Greek exports)

Total value of exports in 2013 (USD billions)
Goods = 27.57bn /Services = 27.9bn

Figure 8 – Goods exports - main categories as % of total

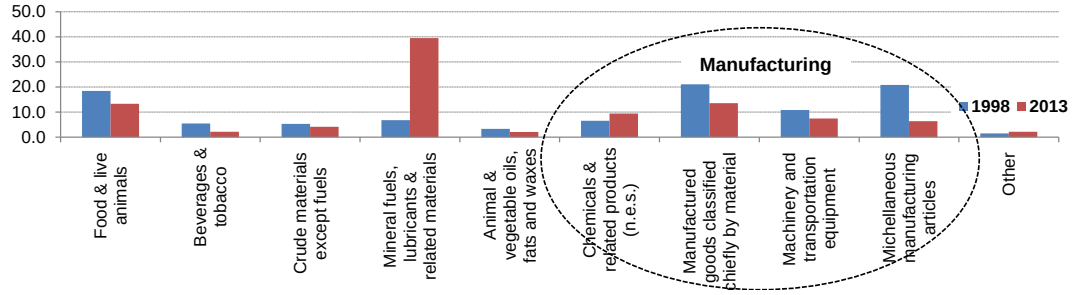
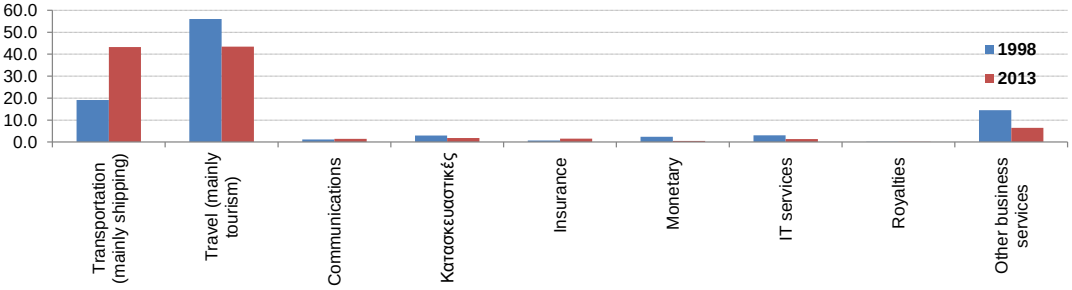


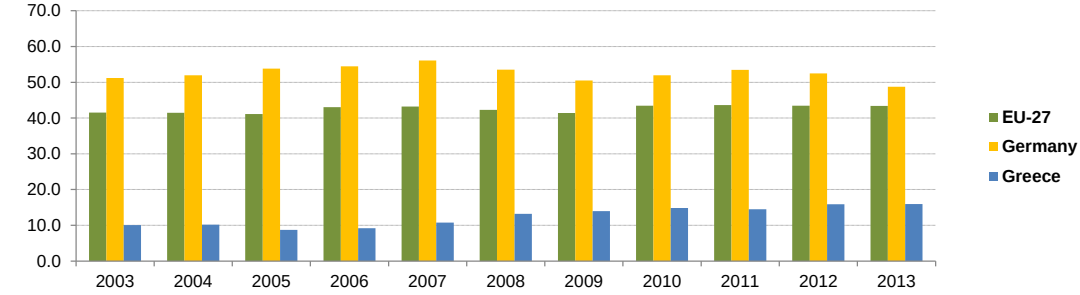
Figure 9 – Services exports - main categories as % of total



Source (Figures 8 & 9): EL.STAT. BoG, Eurobank Economic Research

The technological content of Greek manufacturing exports remains low relative the main EU trading partners

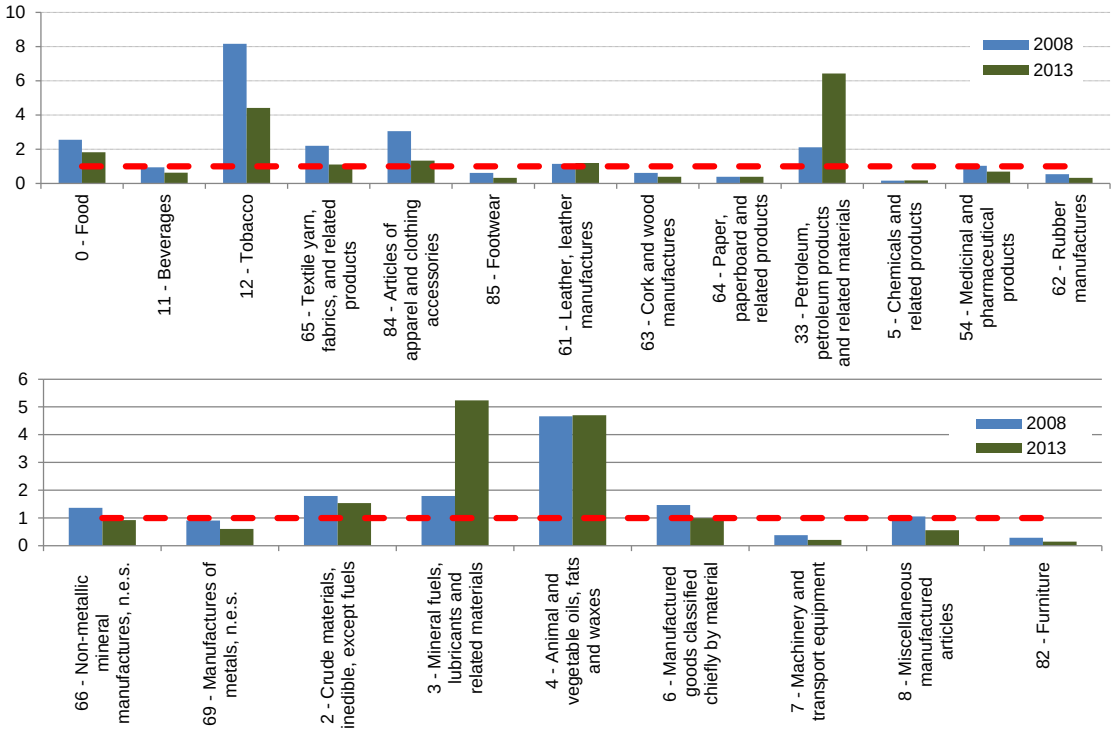
Figure 10 – Production of manufacturing goods of high & medium-high technological content (% total manufacturing output)



Source (Figure 10): UNCTAD, Eurobank Economic Research

Greece features a competitive advantage in more traditional manufacturing sectors which, to a large extent, are of low technological content

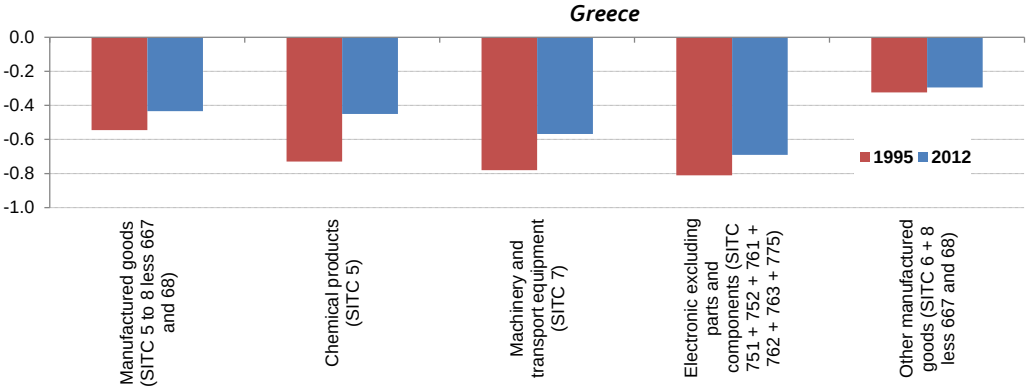
Figure 11 – Greece - Revealed Comparative Advantage[12] (SITC, Rev.4)
(A comparative advantage is "revealed" if RCA>1)



Source (Figure 11): UNCOMTRADE, Eurobank Economic Research

Greece lags its main EU trading partners in merchandise trade specialization

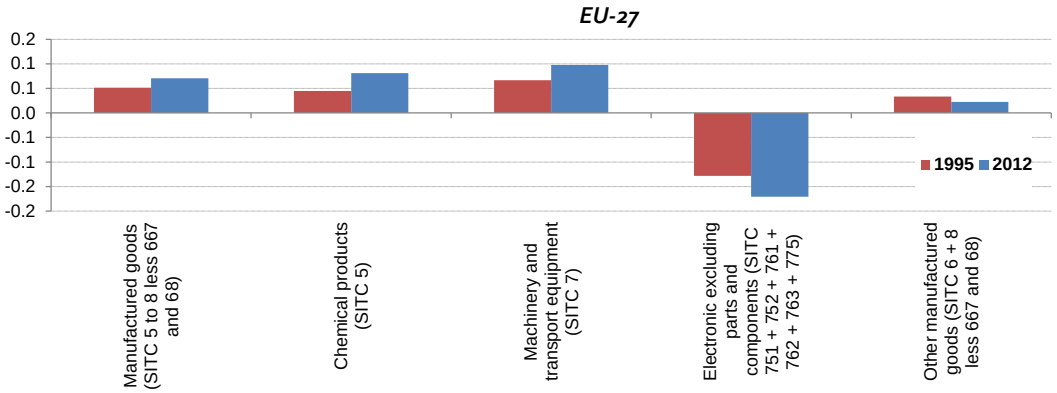
Figure 12 – Merchandise trade specialization index[13] (Greece vs. EU-27)



[12] The *Revealed Comparative Advantage* Index is contracted as the ratio of a product's share of exports (or category of exports) as % of a country's total exports to the corresponding ratio of a trading partner or group of trading partners. A comparative advantage is "revealed" if RCA>1

[13] The Merchandise Trade Specialization index compares the net flow of goods or groups of tradable goods (exports minus imports) to the total flow of the respective product or tradable product group (exports plus imports) The range of values is between -1 and 1. A positive value indicates that an economy has net exports (hence it specializes in the production of that specific product) and a negative value means that an economy imports more than it exports (net consumption).

Figure 12 continued – Merchandise trade specialization index[14] (Greece vs. EU-27)



Source (Figure 12): UNCTAD, Eurobank Economic Research

Greece: significant underperformance in R&D expenditure and foreign direct investment relative to main trading partners

Figure 13 – Inward and outward foreign direct investment stock, annual (% GDP)

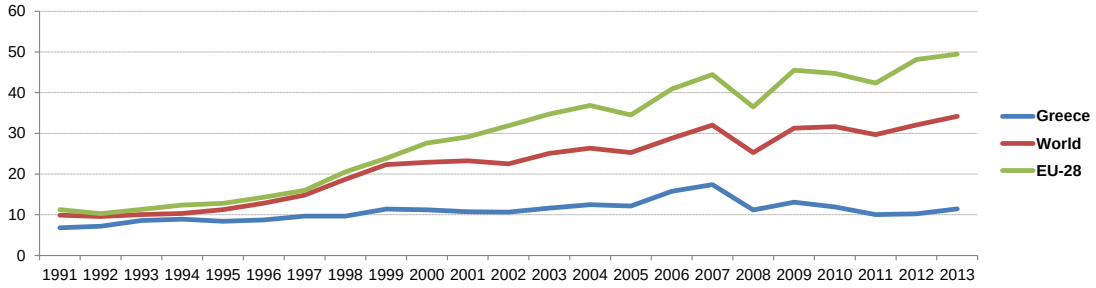
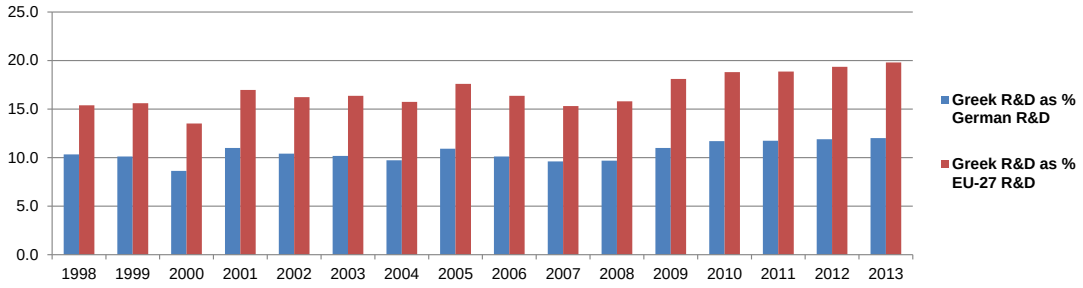


Figure 14 – Business R&D expenditure (% GDP)



Source (Figures 13 & 14): UNCTAD, Eurostat, Eurobank Economic Research

[14] The Merchandise Trade Specialization index compares the net flow of goods or group of tradable goods (exports minus imports) to the total flow of the respective product or tradable product group (exports plus imports). The range of values is between -1 and 1. A positive value indicates that the economy has net exports (hence it specializes in the production of that specific product) and a negative value indicates that the economy imports more than it exports (net consumption).

However, not all trends are problematic. Significant progress has been made in recent years in relation to the diversification of Greek exports in terms of structure and geographical destination

Figure 15 – Greek exports of goods towards main geographical destinations (bn US dollars)

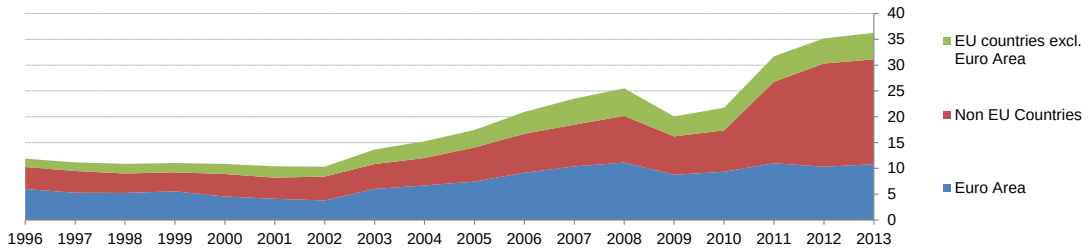
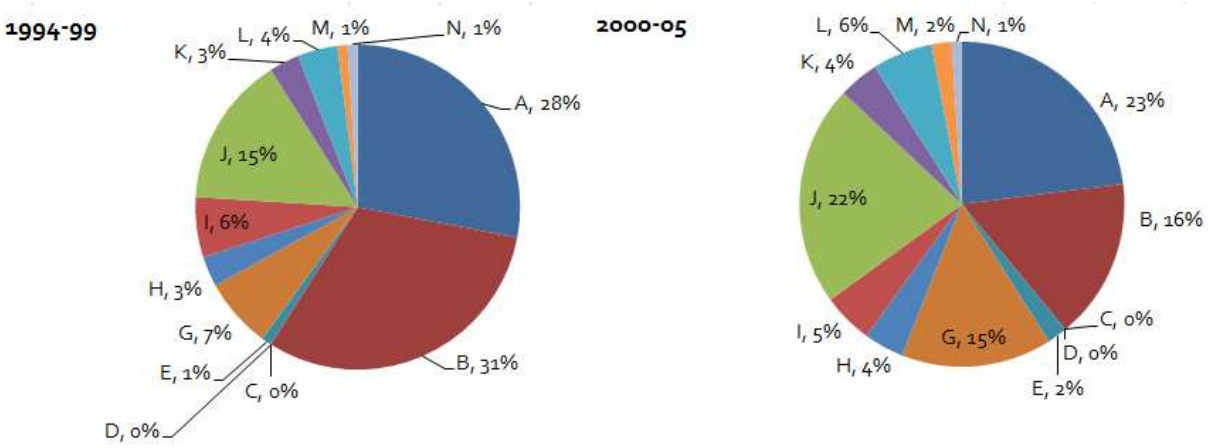


Figure 16 – Share of exports of major branches of Greek manufacturing industry (% of total)

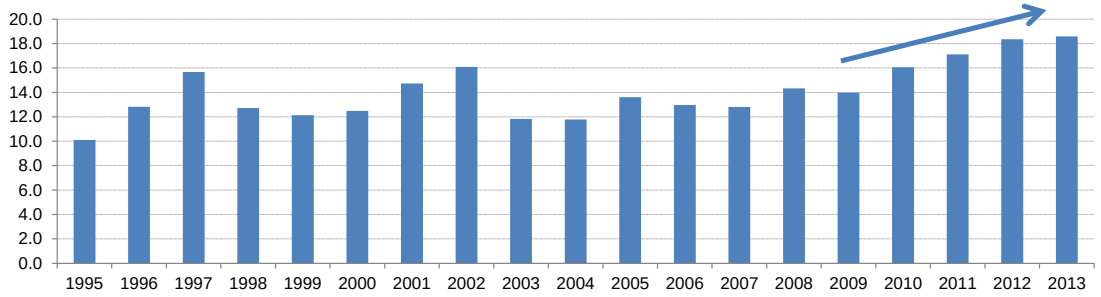


A	food, beverage; and tobacco	I	other and plastic mineral products
B	textiles and textile products	J	basic metals and fabricated metal products
C	leather and leather products	K	machinery and equipment nor elsewhere classified
D	wood and wood products	L	electrical and optical equipment
E	paper and paper products	M	transport equipment
G	chemicals and chemical products	N	not elesewhere classified
H	rubber and plastic products		

Source (Figures 15 & 16): OECD, IMF, Eurobank Economic Research

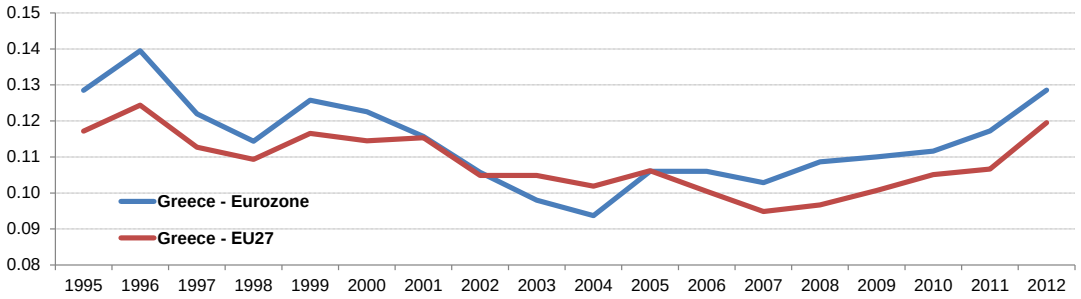
Increase in exports of the Greek manufacturing industry to rapidly developing economies in recent years, albeit at a slightly lesser extent than the rest of the Eurozone

Figure 17 – Greece's manufacturing industry exports to the 27 fastest growing economies as % of total exports of the Greek manufacturing industry[15]



To the extent that the recent increase in the concentration of Greek exports enhances the degree of market power in export businesses, this process must be continued and intensified through eg. mergers & acquisitions in key manufacturing sectors

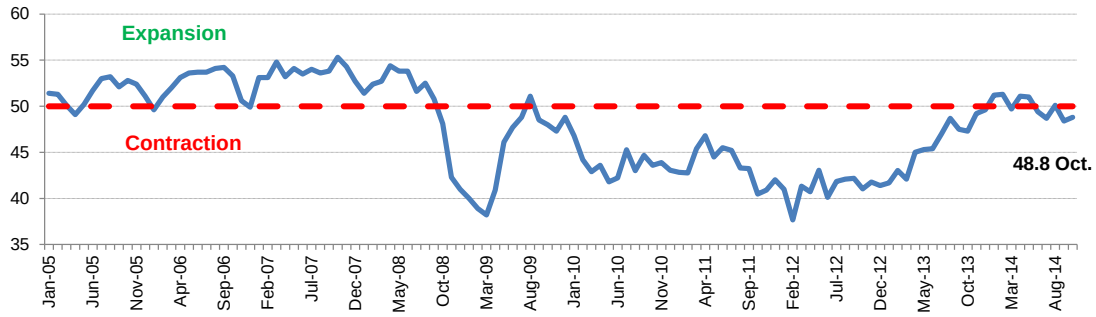
Figure 18 - Concentration index of Greek merchandise exports to EU27 and the euro area (Herfindahl-Hirschmann bilateral concentration index)[16]



Source (Figures 17 & 18): UNCTAD, Eurobank Economic Research

Visible signs of recovery in domestic industrial and manufacturing activity

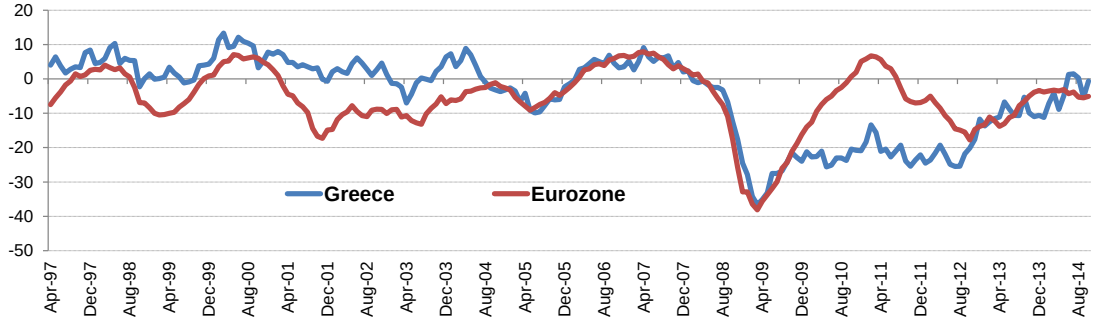
Figure 19 - Greece's Purchasing Manager's Index



[15] Fastest growing economies are defined here as those that featured average annual GDP growth of more than 4% over the last 10 years and nominal GDP higher than $100bn in 2013.

[16] The Herfindahl-Hirschmann index measures market concentration. It indicates whether the exports of a country or group of countries are concentrated on certain products or alternatively distributed more homogeneously among a range of products. It takes values from 0 (zero concentration) to 1 (maximum concentration).

Figure 20 – Business expectations in manufacturing



Source (Figures 19 & 20): EC, Markit, Eurobank Economic Research

Greece - Significant progress in a number of international indicators for competitiveness, the domestic business environment and governance, although further improvement is needed to bridge the gap with the rest of the Eurozone

Figure 21 – Greece - World Bank Doing Business Report; Key indicators

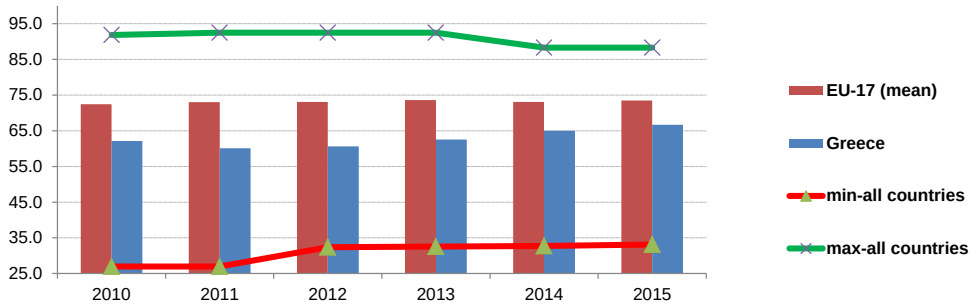


Figure 22 – OECD Sustainable Governance indicators, 2014

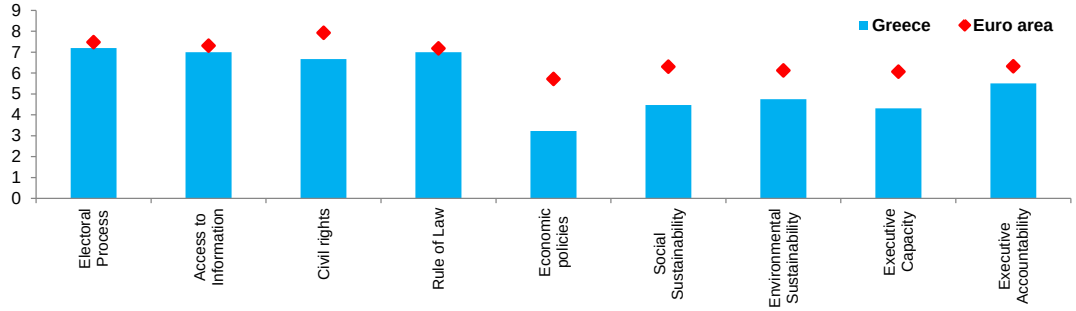


Figure 23 – Greece: World Bank Doing Business Report; Key Indicators

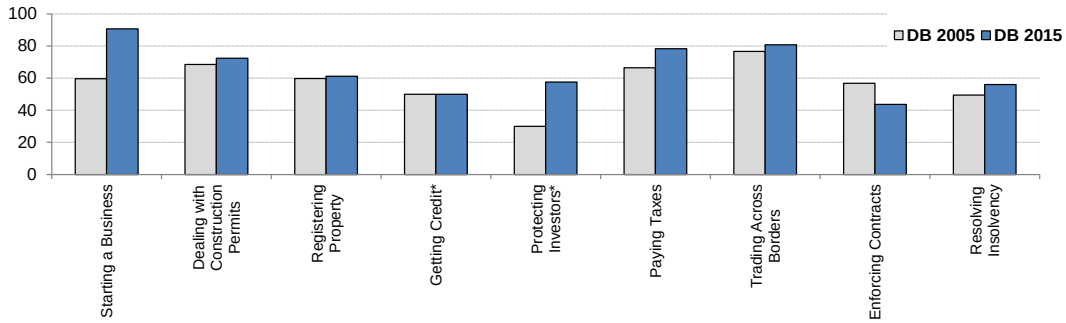
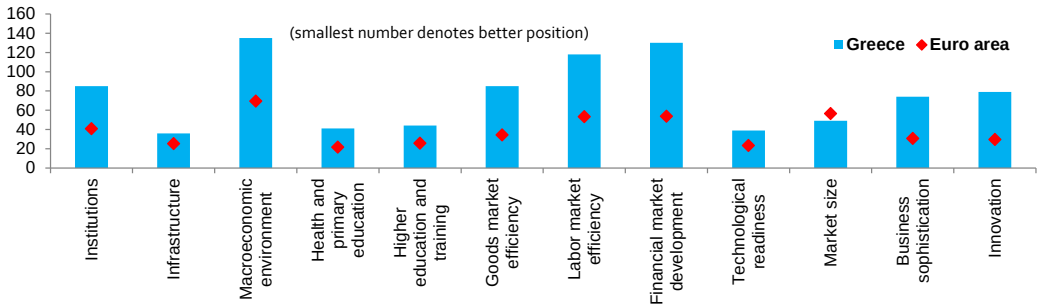


Figure 24– WEF: Global Competitiveness Indicator, 2014 Rankings



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