

GREECE MACRO MONITOR

October 22, 2014

Greek GDP Nowcasting model update

Real GDP estimated to have increased by around 1.0% YoY in Q3 2014 (ESA95 terms); first positive annual growth reading since mid-2008

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This note presents a preliminary estimate of Greek GDP for the third quarter of this year, based on a range of monthly data released up to October 17, 2014. Our Nowcasting model produces high frequency, real-time estimates of Greece's gross domestic product by applying an econometric methodology that can properly handle data reporting lags, revisions and other important aspects characterizing the daily flow of macroeconomic information. Our mid-point estimate of real output growth in Q3 is for a switch into a positive territory, to c. 1.0% YoY, from -0.3%YoY in Q2 and -1.1%YoY in the first quarter of 2014. As we explain in the present document, the flow of macro data pertaining to Q3 2014 will continue in the following couple of months. Moreover, Greece's stats agency (EL.STAT.) is due to release on November 14 new quarterly GDP series, following the recent publication of revised annual data for national accounts pertaining to the period 1995-2013. These revisions integrate new and updated data from various sources. They also reflect the transposition of Greek data into the European System of National and Regional Accounts (ESA2010) that has replaced ESA95. Taking into account the aforementioned developments, our GDP estimate for Q3 2014 should be considered as strictly preliminary and subject to revisions. We will update our analysis following the publication of the revised quarterly series but, for the time being, we maintain our earlier forecast of slightly positive GDP growth for the full year. On a less constructive note, domestic economic activity in the current (4th) quarter is likely to face a number of headwinds, including a worsening stream of macroeconomic data from the euro area and prevailing domestic political uncertainty ahead of the presidential election.

GDP Nowcasting model estimate for Q3 2014

This report presents our Nowcasting model estimate for Greek GDP in Q3 2014. A technical description of the model and its output can be found in our *Greece Macro Monitor* of November 18, 2013.¹ Figure 1.1 below depicts the realized YoY GDP growth rates as well as our model estimates and short-term forecasts. Based on ESA95 accounting standards, our estimates for the 3rd quarter of this year are as follows, GDP in 2005 prices: €43.3bn in Q3 2014 vs. €40.7bn in Q2 2014; QoQ seasonally adjusted GDP growth (2005 prices): +1.25% in Q3 2014 vs. 0.6% in Q2 2014; YoY GDP growth (2005 prices): 1.0% in Q3 2014 (mid-point estimate) vs. -0.3% in Q2 2014.

Impact of national accounts revisions

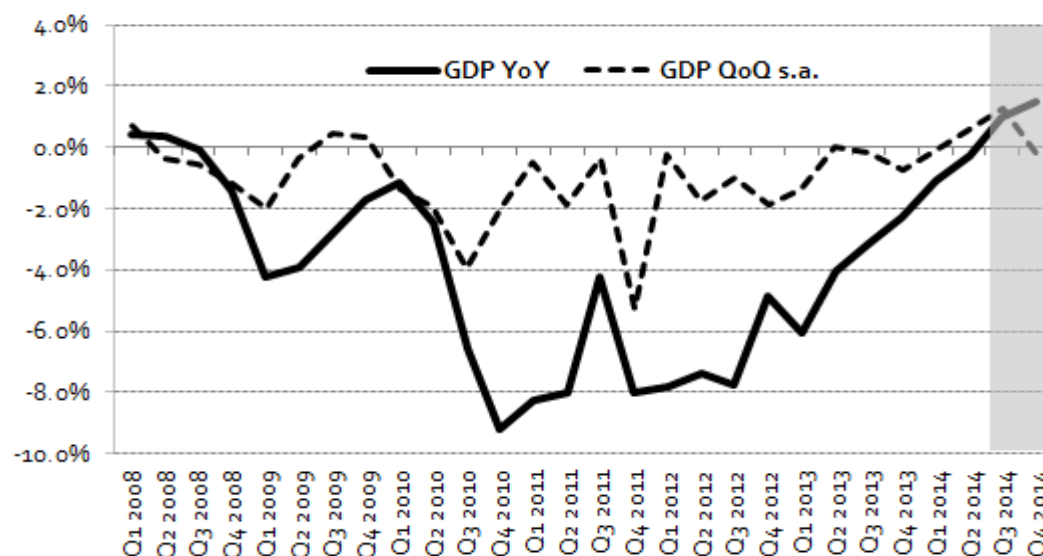
Earlier this month, EL.STAT. released revisions to Greek annual national accounts for the period 1995-2013. The revised series integrate new and updated data from various sources. They also reflect the transformation of Greek data into the European System of National and Regional Accounts (ESA2010). Annex I at the end of this document details the main sources of the statistical and methodological changes to Greek national accounts as well as their impact on

¹[http://www.eurobank.gr/Uploads/Reports/GDP%20Nowcasting%20-%20Greece%20-%20Macro%20Monitor%20\(18%20November%202013\).pdf](http://www.eurobank.gr/Uploads/Reports/GDP%20Nowcasting%20-%20Greece%20-%20Macro%20Monitor%20(18%20November%202013).pdf)

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Greek GDP in the benchmark year 2010. EL.STAT. is also expected to publish in November 2014 revised *quarterly* GDP series (along with the flash Q3 national accounts report), which will incorporate the aforementioned revisions.² At this point, we are uncertain as to the impact these revisions will have on quarterly GDP dynamics and, for that reason, the Nowcasting model estimates presented herein have been derived from data compiled in ESA95 terms. Yet, judging from the *new* annual series for national accounts released earlier this month, we suspect that the respective quarterly data may contain some upward revisions, especially as regards QoQ real GDP growth over the first three quarters of 2014.

Figure 1.1
Greece's real GDP growth YoY and QoQ seasonally adjusted - realizations & forecasts (ESA95)



Source: EL.STAT., Eurobank Global Markets Research

Impact of recent national accounts revisions to past GDP data

Some of the most important implications of the recent national accounts revisions for past GDP data (Table 1) are the following:

- ✓ The cumulative decline in real GDP over the period 2008-2013 is now estimated at c.-29% compared to -26.2% calculated previously.
- ✓ Yet, nominal GDP for the new base year 2010 is now estimated at €226.2bn *i.e.*, some €4bn higher than that calculated earlier according to ESA95.
- ✓ In a similar vein, the 2013 nominal GDP level was c. €182.4bn vs. €182.1bn estimated previously.
- ✓ The pace of real annual decline in household consumption in 2013 (c. 69% of GDP) has been revised upwards, to -2% from -6% reported in ESA95 terms. An upward revision has also been implemented in the 2012 data, while the respective growth rates for the prior two years were revised downwards.
- ✓ Similar upward revisions were implemented in the data for gross fixed capital formation. Specifically, real annual GFCF growth in 2013 was re-estimated at -4.6%, from -12.8% reported under ESA95.
- ✓ Finally, the 2013 annual growth rate for goods and services exports was revised to 2.1%, from 1.8% reported earlier, while the pace of annual contraction of goods and services imports was revised to -1.6%, from -5.3% reported in line with ESA95 accounting standards.

² The outcome of all these will be the compilation of continuous (*i.e.*, without breaks) time series for 1995-2013 under ESA2010, which will effectively address the earlier lack of a long enough data history, including for the years before

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Table 1 – Greek real GDP YoY growth before and after the recent revisions (in ppts)

	2008		2009		2010		2011		2012		2013	
	ESA95	ESA2010	ESA95	ESA2010	ESA95	ESA2010	ESA95	ESA2010	ESA95	ESA2010	ESA95	ESA2010
Household consumption	4.7%	3.1%	-1.9%	-1.4%	-6.4%	-7.3%	-7.9%	-10.9%	-9.3%	-8.1%	-6.0%	-2.0%
NPISH consumption	-14.6%	-2.9%	17.9%	17.8%	0.6%	0.5%	0.7%	-0.7%	-9.3%	0.8%	-6.0%	-0.1%
General Gvnt consumption	-2.6%	-2.1%	4.9%	1.6%	-8.7%	-4.3%	-5.2%	-6.6%	-6.9%	-5.0%	-4.1%	-6.5%
Gross fixed capital formation	-14.3%	-6.6%	-13.7%	-13.2%	-15.0%	-20.9%	-19.6%	-16.8%	-19.2%	-28.7%	-12.8%	-4.6%
Exports of goods and services	1.7%	3.5%	-19.4%	-18.5%	5.2%	4.6%	0.3%	0.0%	-1.7%	1.2%	1.8%	2.1%
Imports of goods and services	0.9%	2.6%	-20.2%	-19.6%	-6.2%	-5.5%	-7.3%	-9.0%	-13.8%	-9.1%	-5.3%	-1.6%
Real GDP	-0.2%	-0.4%	-3.1%	-4.4%	-4.9%	-5.4%	-7.1%	-8.9%	-7.0%	-6.6%	-3.9%	-3.3%

Source: EL.STAT., Eurobank Global Markets Research

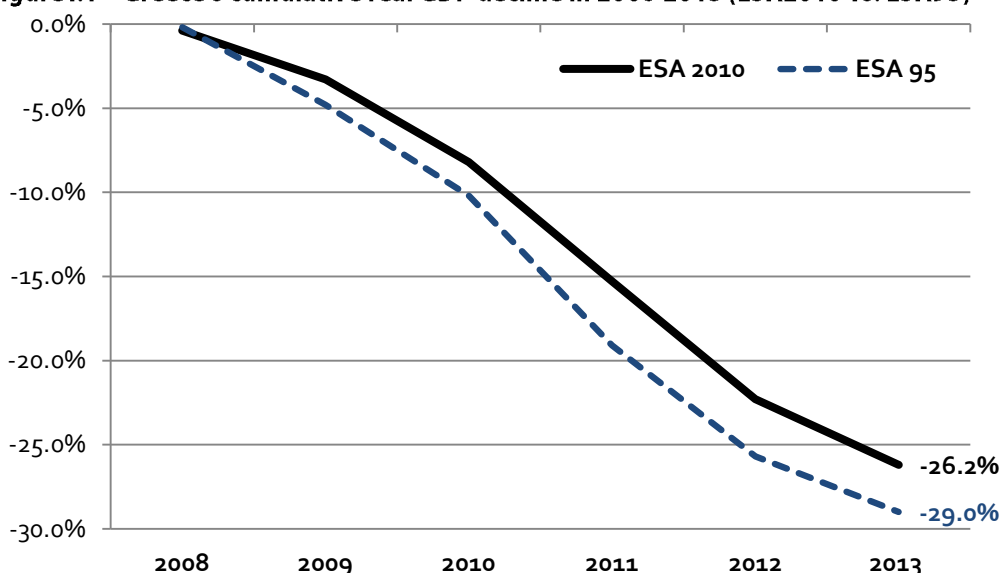
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Appendix I – Revisions to Greece’s national accounts

Recent revisions to Greece’s national accounts

Greece’s stats agency released earlier this month revisions to Greek annual national accounts data for the period 1995-2013. The revised series constitute the outcome of a long standing effort to integrate *new* and *updated* data from various sources in the production of annual national accounts. It also reflects the transposition of Greek data into the European System of National and Regional Accounts (ESA2010) that has replaced ESA95. The outcome of all these is the compilation of continuous (*i.e.*, without breaks) time series for 1995-2013 under ESA2010, which effectively addresses the earlier lack of a long enough data history, including for the years before 2000. As a result of these changes, nominal GDP for the new base year 2010, is now estimated at €226.2bn *i.e.*, some €4bn higher than that calculated earlier according to ESA95. In a similar vein, the 2013 nominal GDP level was c. €182.4bn vs. €182.1bn estimated previously. Nonetheless, the cumulative decline in Greek real GDP over the period 2008-2013 is now re-estimated at c.-29% compared to -26.2% calculated previously (Figures I.1). Note that EL.STAT has not yet released *quarterly* time series for Greek national accounts according to ESA 2010. These data will be released on November 14, along with the flash Q3 2014 GDP report.

Figure I.1 – Greece’s cumulative real GDP decline in 2008-2013 (ESA2010 vs. ESA95)



Source: EL.STAT., Eurobank Global Markets Research

Methodological and statistical changes

In the remaining part of this section, we provide some details as to the main sources of the statistical and methodological changes to Greek national accounts as well as their quantitative impact on Greek GDP in the benchmark year 2010.

Changes due to the implementation of ESA 2010

- Calculation of R&D as a fixed asset
- Calculation of military weapons as Gross Fixed Capital Formation
- Classification of institutional units in public and private sector with updated ESA 2010 criteria
- Change in the statistical recording of goods sent abroad for manufacturing/processing
- Change in statistical recording of merchanting
- Change in the calculation of Financial Intermediation Services Indirectly Measured (FISIM) between resident and non-resident Financial Institutions(Fis)

Other methodological changes

- New estimation of capital stock and Consumption of Fixed Capital (CFC) for the total economy S.1 and for the General Government sector S.13

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- New estimation of expenditure for new dwellings and work in progress
- Calculation of production of own account software
- Incorporation of Social Transfers in the General Government Final Consumption and deduction from the Final Consumption of Households
- Elimination of holding gains and losses from changes in inventories

Statistical Changes

- Incorporation of results of the structural business surveys for the years 2010-2011
- Incorporation of the results of the 2011 Population Census
- Use of updated business register for the year 2010
- Estimates of the final consumption expenditure of households based on the results of the Household Budget Surveys for the years 2010-2013
- Incorporation of the results of the Survey conducted by the National Accounts Division on the data of the sub-sectors of the Financial Corporations sector (S12).
- Estimates for Non-Profit Institutions Serving Households (NPISH) on the basis of updated register
- Estimates of dwelling services (statistical treatment of repair and maintenance expenses for self-occupied dwellings by owners)
- New method for calculating the deflator of the final consumption of General Government
- Incorporation of imports data on military weapons from a new data source
- Incorporation of updated data of oil and supplies

Source: EL.STAT.

Table I.1- Changes in Greek GDP for the benchmark year 2010

	2010 ESA95	2010 ESA2010	Difference	% Change
Current prices, in million €				
PRODUCTION APPROACH	222,151	226,210	4,058	1.8%
Output of goods and services (at basic prices)	351,385	356,749	5,364	1.5%
Intermediate consumption (at purchasers' prices)	156,163	157,104	941	0.6%
Gross value added (at basic prices)	195,222	199,645	4,424	2.3%
Taxes on products	27,368	26,912	(456)	-1.7%
Subsidies on products	438	348	(90)	-20.6%
EXPENDITURE APPROACH	222,151	226,210	4,058	1.8%
Final consumption expenditure of Households	159,440	154,146	-5,294	-3.3%
Final consumption expenditure of NPISH	3,614	4,294	680	18.8%
Final consumption expenditure of General Government	40,749	48,900	8,151	20.0%
Final consumption expenditure (Total)	203,803	207,340	3,537	1.7%
Gross fixed capital formation	39,185	39,056	-129	-0.3%
Changes in inventories	-230	-786	-556	-
Exports of goods and services	49,414	49,984	570	1.2%
Imports of goods and services	70,020	69,384	-636	-0.9%
INCOME APPROACH	222,151	226,209	4,058	1.8%
Compensation of employees	80,493	81,035	542	0.7%
Gross operating surplus / mixed income	117,071	120,553	3,482	3.0%
Taxes on production and imports	27,926	27,891	-35	-0.1%
Subsidies	3,339	3,270	-69	-2.1%

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Figure I.2 - Impact of methodological & statistical changes on Greece's 2010 nominal GDP (in ppts)

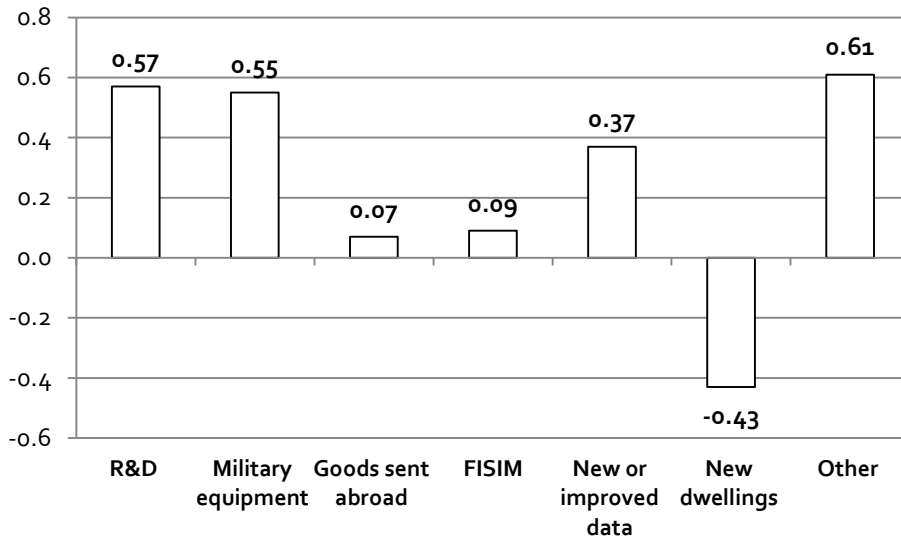
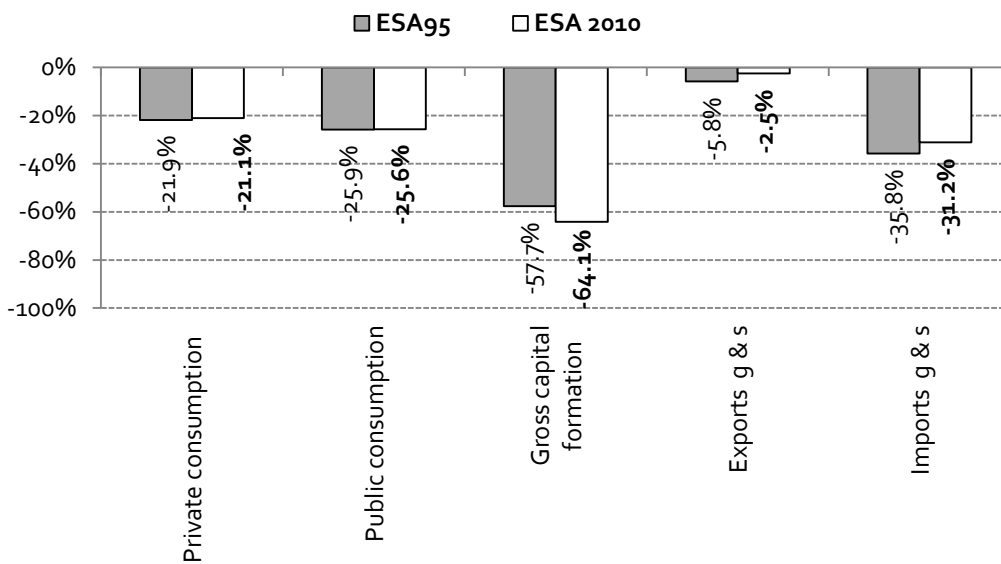


Figure I.3 - % nominal change in expenditure-side GDP components in 2008-2013



Source: EL.STAT., Eurobank Global Markets Research

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Appendix II – Greek Q2 real GDP revised to -0.3% YoY, fully in line with our GDP Nowcasting model predictions

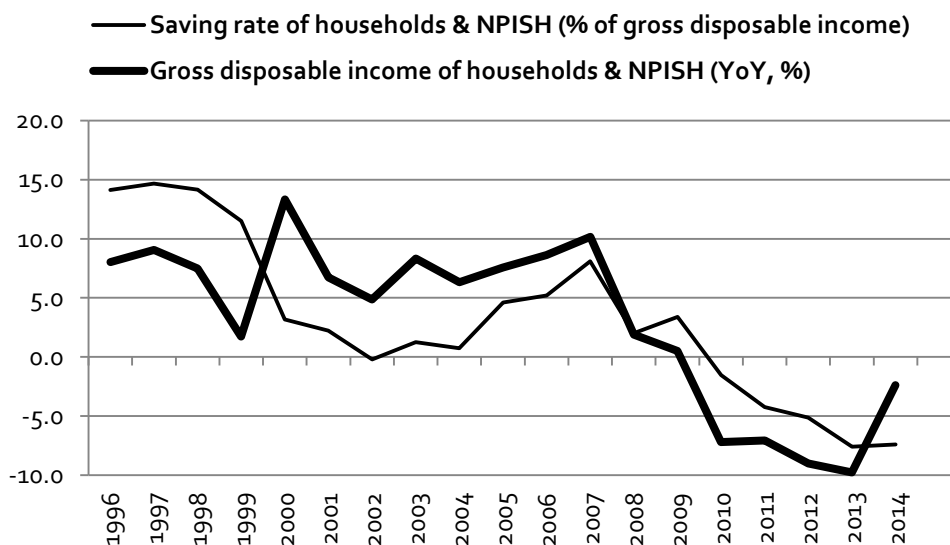
(Excerpt from our September 2, 2014 Greece Macro Monitor)

Greece's statistics agency (EL.STAT.) released on September 2 revised national accounts for the second quarter of 2014. According to provisional data, the pace of annual real GDP contraction eased for the 5th consecutive quarter, coming in at -0.3% YoY, from a *downwardly revised* -1.1% YoY in Q1 and the -0.2% YoY figure reported in the Q2 flash report. The revised reading was in line with our GDP NOWcasting model estimate of -0.3% published in early July.³ EL.STAT. does not currently release seasonally adjusted (s.a.) data, but according to our ARIMA X-12 filter, Greek real GDP grew by 0.6% on a quarter-on-quarter s.a basis in Q2 2014, after declining by ca 0.1% in the prior quarter. The breakdown of the Q2 GDP data revealed improvements in most expenditure-side components. *In more detail:*

Real private consumption recorded flat year-on-year growth against a marginal contraction (-0.1% YoY) in the prior quarter following 16 consecutive quarters of negative annual growth. The improvement came despite overextended household balance sheets, a still negative saving rate and a further expected decline in disposable incomes, though to a much lesser extent than in 2013 (Figure II.2).

On a more positive note, pent-up demand following the steep economic recession in the prior years, improving consumer sentiment and a record-strong tourism season have facilitated stabilization in private consumption outlays in H1 2014, albeit at much lower levels than in the pre-crisis period.⁴ Separately, real public expenditure growth remained broadly flat in Q2 2014, after declining by 0.9% YoY in the prior quarter.

Figure II.2 – Greece: household gross disposable income and saving rate



Source: AMECO, Eurobank Global Markets Research

Real investment outlays edged down by just 0.8% YoY in Q2 2014, from -7.9% YoY in Q1 and following (mostly) double-digit declines over the period Q4 2008-Q4 2013. The breakdown of the data revealed positive annual growth in real investment expenditure for transportation equipment (+26% YoY) and metal products & machinery (+5.7% YoY), while construction and other investment remained in the red, falling by -14.6% YoY and -0.8% YoY, respectively (Figure II.3). The share of construction in total investment expenditure has retreated significantly from its pre-crisis levels, but it was still around 40% in H1 2014, with metal products & machinery and transportation equipment representing the bulk of remaining outlays. The steep fall in residential

³ Greek GDP NOWcasting model update, Eurobank Global Markets Research, 3 July 2014

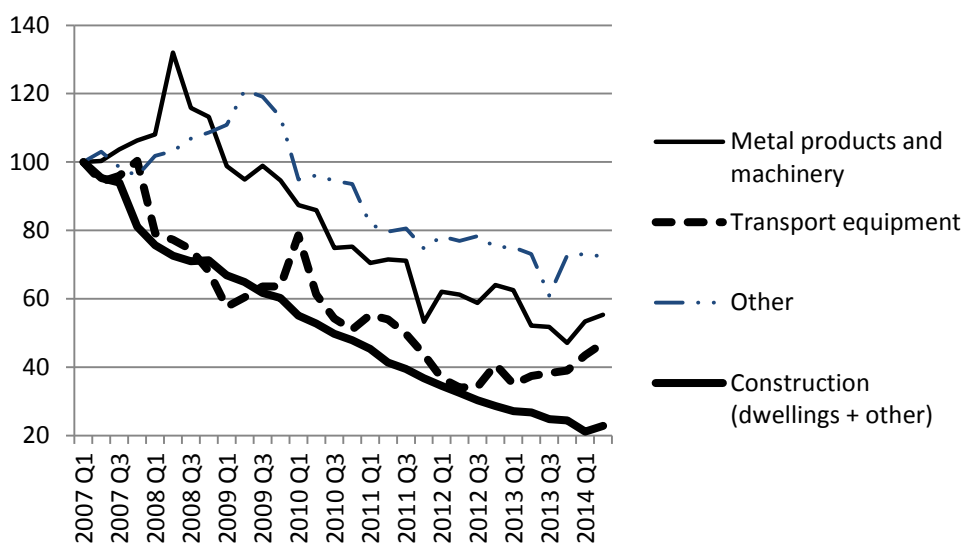
link: http://www.eurobank.gr/Uploads/Reports/GREEC_MACRO_FOCUS_July_3_2014_GDP_NOWCASTING.pdf.

⁴ H1 2014 real consumption expenditure of households and non-profit institutions serving households (NPISH) was lower by ca 28% relative to its levels in the first half of 2008.

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housing investment since early 2008 explains more than 60% of the cumulative decline in total investment over that period, but some comfort is taken from the most recent stabilization in building permits and the rebound in construction confidence (currently at a 5 1/2-year high). Note that residential housing prices - based on Bank of Greece's Index of Prices of Dwellings (historical series) - have declined by 36.8% cumulatively over the period Q2 2008-Q2 2014, with the corresponding drop amounting to 3.1% year-to-June 2014. Based on the more recent estimates of our VECM model for forecasting residential housing prices in Greece⁵, we forecast a cumulative decline of slightly less than 6% in the aforementioned index for the full-year, with a broadly flat trajectory expected next year along with a return to positive growth rates from 2016 onwards. All in all, real gross fixed capital formation growth should turn positive in H2 2014, supporting the ongoing stabilization in domestic economic activity.

Figure II.3 – Greece: Real investment expenditure components (seasonally adjusted data 2007=100)



Source: EL.STAT., Eurobank Global Markets Research

As regards external sector developments, total exports continued to record positive real growth (+ 5.3% YoY in Q2 vs. + 5.4% YoY in Q1), primarily thanks to the strong performance of services exports (mainly in the tourism sector). On the other hand, exports of goods continued to lag, despite the steep adjustment in wage costs *i.e.*, by almost 20ppts as per the ULC-based REER relative to 37 major trade partners (Figure II.4). Real imports of goods and services also recorded positive growth for the second quarter in a row (+4.2% in Q2 vs. +2.2% in Q1) raising concerns about a significant worsening of the contribution of net exports to overall GDP growth in the period ahead.⁶

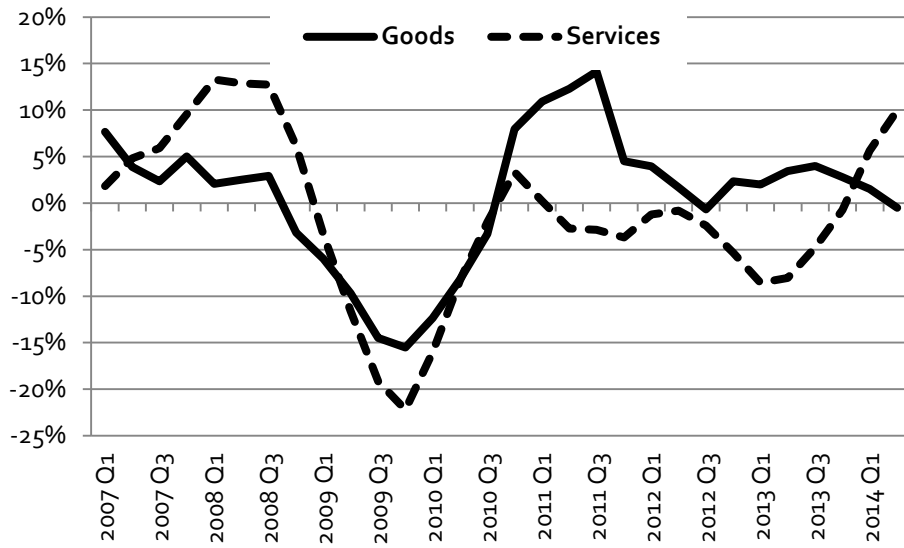
⁵ See, "Explaining and forecasting residential house prices in Greece- A technical note", Greece Macro Monitor, Eurobank Global Markets Research, March 10, 2014.

http://www.eurobank.gr/Uploads/Reports/Explaining_and_forecasting_residential_houseprices_in_Greece_Mar10_2014.pdf

⁶ In 2013, net exports provided a 2ppts positive contribution to the annual change in real GDP.

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Figure II.4 – Greece: Real export growth (% YoY, 4-quarter moving average)



Source: EL.STAT., Eurobank Global Markets Research

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