



NATIONAL BANK  
OF GREECE

# GREECE Macro Flash

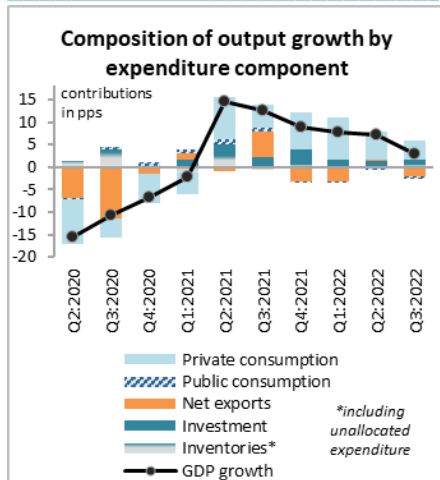
**GDP Q3:2022**

**December 2022**

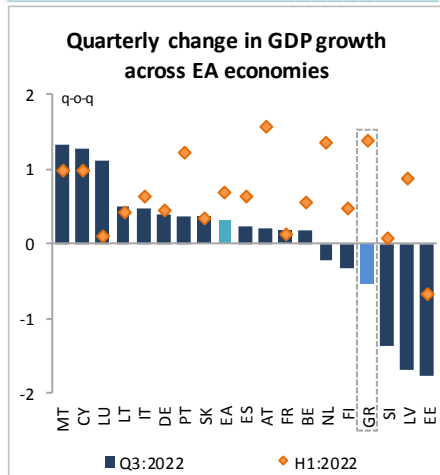
***Q3:2022 GDP likely stronger than headline figure, due to excessive adjustments for services export prices and energy-product subsidies***

- Greece's GDP growth slowed significantly to +2.8% y-o-y in Q3:2022 (-0.5% on a q-o-q s.a. basis) from +7.1% y-o-y in Q2:2022, due to a sizeable, and surprising, drag from net exports (-2.0 pps) and an expected decline in government consumption (-1.0 pp).
- Private domestic demand remained resilient to the inflation shock, with private consumption increasing by a solid 6.2% y-o-y and gross fixed capital formation by 7.7% y-o-y, nearly double the average demand growth in the euro area.
- The negative impact of net exports reflects broadly stable total exports (+0.9% y-o-y, in constant price terms) compared with a faster growth in total imports (+5.2% y-o-y), due to resilient domestic demand.
- This lackluster export performance in Q3:2022 reflects surprisingly weak services export growth (+3.0% y-o-y, in constant price terms) which seems inconsistent with conjunctural indicators and market data on activity in the tourism and shipping sectors. This outcome reflects the application of a very high deflator growth rate (+26% y-o-y) to a very strong nominal increase in services exports (+30% y-o-y). The services import deflator is also of a similar puzzling magnitude.
- NBG has reconstructed the services export and import deflators on the basis of the underlying inflation trends in their key components. The impact would point to a services export deflator of c. 15% y-o-y and a services import deflator of c. 7%, which would translate into a c. 1.0-pp boost to Q3 GDP y-o-y growth.
- A second noteworthy implication of the Q3 GDP data, when examined from the production side, is an unprecedented c. 4.0-pp drag from the subtraction of subsidies on energy products from GVA figures to derive GDP.
- Although the exclusion of subsidies (and the addition of taxes) is consistent with the statistical standards, a downward bias arises in the Q3 GDP estimates due to timing lags between the subsidies and the taxes with which they are financed.
- Specifically, the subsidies will, to a large extent, be financed by proceeds from retroactive taxation on windfall profits of energy producers which will occur in Q4 (and later). This timing difference entails a downward bias to GDP, estimated by the NBG, of around 1.3% of GDP, mostly reflecting private sector domestic demand.
- All in all, the combined effect of the above discussed adjustments to the services deflator and net production taxes would add 2.2 pps to Q3 GDP, raising the growth rate close to 5.0% y-o-y for this quarter and leave our FY:2022 GDP growth estimates at 5.8%.

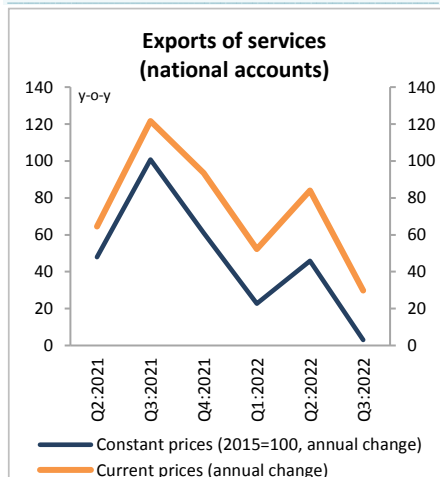
**Greece's GDP growth slowed to +2.8% y-o-y in Q3:2022 due to a sizeable 3.0-pp drag from net exports and declining government spending...**



**...but outpaced the euro area average for a 6<sup>th</sup> consecutive quarter**



**Services export growth, in real terms, was sharply weakened by the application of a very high deflator rate on nominal services exports...**



**Q3:2022 GDP likely stronger than headline figure, due to excessive adjustments for services export prices and energy-product subsidies**

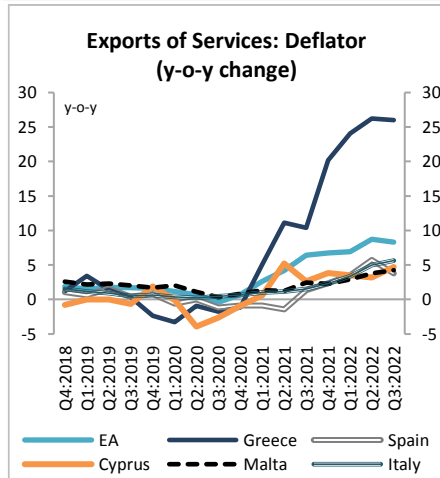
Greece's GDP growth slowed significantly to +2.8% y-o-y in Q3:2022 from +7.1% y-o-y in Q2:2022, due to a sizeable 3.0-pp drag from net exports and declining government consumption. Due to the performance in H1, activity outpaced the euro area average for a 6th consecutive quarter, on an annual basis (+2.3% y-o-y in Q3:2022) but underperformed on a quarterly basis (-0.5% q-o-q s.a. vs +0.3% in the euro area).

Private domestic demand remained resilient to the inflation shock, with private consumption increasing by a solid 6.2% y-o-y and gross fixed capital formation by 7.7% y-o-y, nearly double the average demand growth in the euro area. Indeed, government support measures and sizeable liquidity buffers of the private sector have helped cushion the inflation drag on real disposable income. Moreover, business inventories rose by 13.5% y-o-y in Q3:2022, despite rising import costs, as firms have been encouraged by the strength of demand. The combined contribution of these expenditure components to annual GDP growth in Q3:2022 amounted to 5.8 pps. However, the impact on growth has been halved due to a 2-pp drag from net exports and another 1-pp drag from lower government consumption, mainly due to the ending of Covid-19 related spending.

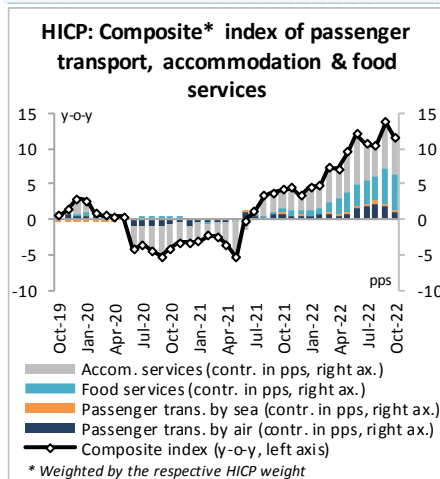
The negative impact of net exports reflects stable total exports (+0.9% y-o-y) at the same time as total imports experienced robust growth (+5.2% y-o-y, in constant price terms), due to resilient domestic demand. The lackluster export performance in Q3:2022 is underpinned by a marginal decline in goods exports (-0.3% y-o-y) for the first time since Q2:2020 due to a softening in external demand, and most notably, by surprisingly weak services export growth (+3.0% y-o-y, in constant price terms). This latter outcome seems inconsistent with information from conjunctural indicators and market data on activity in the tourism and shipping sectors, which comprise the main part of Greece's service exports, with roughly equal shares. Indeed, inbound tourism arrivals in Greece increased by nearly 60% y-o-y in Q3 whereas combined activity volumes (average deadweight tonne miles) in the major shipping market segments (tankers, dry-bulkers, containerships, and LNGs) recorded only a low single-digit contraction, on average, in this period.

It seems that the weakness of services export volumes reflects the application of a very high deflator rate (+26% y-o-y) to the

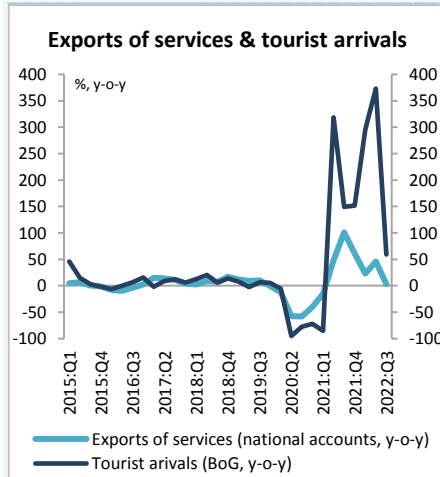
**...which exceeded by a wide margin services-exports deflator rates in other euro area economies with similar export structures**



**Tourism-related price growth (HICP based) has been significantly lower than the services deflator rate...**



**...and inbound tourism arrivals growth exceed 50% y-o-y in Q3:2022 a quarter when 2/3rds of annual tourism revenue is generated**



value of total services exports, whose value increased by 30% y-o-y in Q3:2022. Notably, there is a widening gap (see graph) between the annual growth in the services export deflator in Greece and other euro area countries with comparable characteristics (i.e., significant role of tourism and shipping in their export mix such as Spain, Malta, Cyprus). Similarly, a relatively high deflator rate is applied on Greece's services imports, which leads to relatively low growth rates in constant price terms in 2021 and 9M 2022 (negative in Q3:2022 at -4.6%). The net impact on GDP growth is clearly negative since Greece exhibits a sizeable surplus in exporting services, with exports being nearly two times higher than imports in value terms.

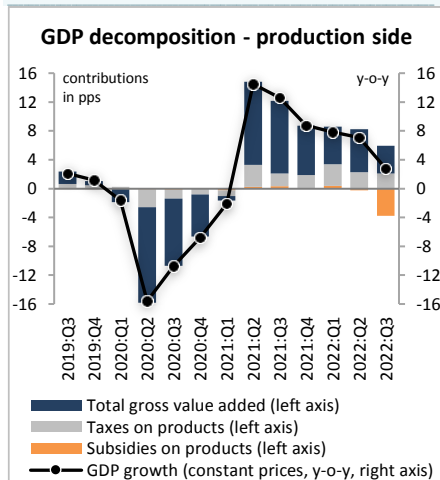
NBG research attempts to gauge the impact of this effect by reconstructing the services deflator. Specifically, according to the national accounts compilation standards, the deflator of services exports corresponds to a combination: i) of the producer price index in industry for the non-domestic market, excluding energy, which is used for deflating non-travel revenue and ii) the CPI for deflating travel services revenue. According to NBG estimates, based on a reconstruction of the deflator as an arithmetic average of the above inflation measures, the annual growth in services export prices should have been c. 15% instead of 26% and still triple the pace of countries with comparable characteristics, in Q3:2022. Accordingly, the increase in services export volumes would accelerate to 14.5% y-o-y. A similar adjustment, based on the import price index in industry excluding energy, is used to derive the respective adjusted estimates of services import volumes, with their annual growth reaching 6.0% y-o-y – compared with a decline of 4.6% y-o-y recorded in the original data for Q3 – and an outcome that is more in line with the solid demand growth.

The combined impact of these adjustments on growth is c. 1.0 pp, reducing the drag from net exports to -1.0 pps in Q3:2022 from c. -2.0 pps in the official announcement.

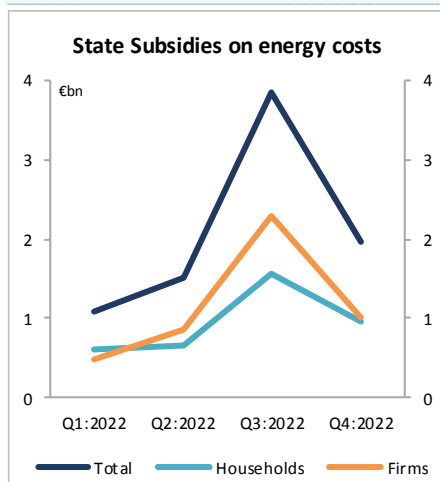
A second puzzling component of the Q3 GDP data concerns the production breakdown of GDP in constant price terms, which typically sets the basis for estimating economic activity: i.e., expenditure and income side estimates are derived from the production side.

Production-side GDP is derived by subtracting from gross value added (GVA at basic prices) the value of all subsidies on products that benefit households, and by adding taxes on products (such as value added and excise taxes, taxes and duties on imports,

**The subtraction of sizeable subsidies on energy products from the Q3 gross value added lowered Q3 GDP by 3.8 pps from the production side**



**Energy subsidies to households and firms peaked in Q3; in parallel with the spike in natural gas prices to an all-time high**



**GDP growth paths<sup>1</sup> following adjustments for the impact of net subsidies and services' deflators**

Greece: GDP Growth (real, % y-o-y, s.a.)			
Scenarios	2022e		
	Q3e	Q4f	FY22e
"No-change" scenario	2,8	1,6	4,8
Adjusted for excessive correction for net subsidies	3,9	2,7	5,3
Adjusted for excessive correction for net subsidies and deflator bias	5,0	3,6	5,8

Sources: ELSTAT & NBG Economic Analysis estimates

<sup>1</sup>Assuming revision of Q3:2022 data in future data releases

stamp taxes etc.), with both items recorded on an accruals basis. According to this principle, a total of €1.8 bn of electricity subsidies paid in Q3 – to offset the surge in wholesale electricity market prices caused by the spike of global natural gas prices to an all-time high in July-August – have been subtracted from Q3 GDP. This adjustment leads to an unprecedented reduction in GDP growth by 3.8 pps y-o-y.

Although this treatment of the new subsidies remains consistent with the statistical standards, a timing bias arises due to the fact that the sharp increase in subsidies will be, to a large extent, financed by retroactive taxation of windfall profits of energy producers. Provided that most part of this latter source of tax revenue will be realized in Q4:2022 and in future quarters, there is a downward bias, which is estimated by NBG at around 1.3% of GDP. This bias is expected to be reversed either through an upward revision in production tax data for Q3, or a deferred boost to Q4 GDP. Such a development will also entail an upward revision in nominal and real GDP from the expenditure side, with private consumption and inventories possibly being the most affected components.

All in all, the combined impact of the above adjustments to the services deflator and net production taxes (assuming revision of Q3 data instead of a boost in Q4 GDP) would imply an adjusted GDP growth of 5.0% y-o-y for Q3, leading to an estimate of nearly 5.8% in FY:2022.

In a scenario involving the reversal of the negative net tax effect without a revision in the services deflator, Q3 growth would increase to c. 4.0% and the projection for FY:2022 growth to 5.3%, compared to a “no change” scenario where FY:2022 GDP growth averages at 4.8%.

All scenarios take into consideration an underlying estimate of economic activity in Q4, derived from the NBG’s high frequency indicator of GDP – according to the latest available information for October-November – that implies a decrease in Q4 GDP of c. 0.6% in s.a. q-o-q terms.





## Greece – GDP decomposition (expenditure components)

Greece: GDP Growth Decomposition & Outlook												
	2019	2020	2021	2022e	2021				2022e			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4f**
GDP (real, % y-o-y, s.a.)	1,9	-8,7	8,1	5,3	-2,1	14,5	12,6	8,8	7,9	7,1	2,8	3,5
GDP (real, % q-o-q, s.a.)	...	...	...	...	3,1	1,3	3,6	0,6	2,2	0,6	-0,5	1,2
Domestic Demand (y-o-y)	1,1	-3,4	6,9	6,1	-3,6	14,4	6,0	11,6	10,8	6,2	4,5	3,2
Final Consumption (y-o-y)	1,6	-5,2	5,1	5,8	-4,5	11,1	5,7	9,0	10,5	6,3	3,6	3,2
Private Consumption (y-o-y)	1,6	-7,5	6,1	7,6	-6,9	13,6	7,1	12,1	13,7	8,9	6,2	2,1
Gross Fixed Cap. Formation (y-o-y)	-2,3	1,0	19,8	9,7	13,2	20,6	16,4	29,7	13,2	9,8	7,7	8,5
Residential construction	12,8	18,3	27,5	12,7	30,3	12,3	68,1	11,3	16,9	15,8	8,2	10,5
Total GFCF excluding residential	-3,4	-0,5	17,3	11,0	11,6	21,5	12,0	25,1	12,8	9,1	7,7	14,4
Inventories* (contribution to GDP)	0,0	1,1	0,3	-0,1	-1,1	2,6	-0,7	0,5	0,0	-0,3	0,6	-0,7
Net exports (contribution to GDP)	0,7	-5,3	0,8	-1,1	1,6	-1,0	5,9	-3,2	-3,1	0,4	-2,0	0,1
Exports (y-o-y)	4,9	-21,5	24,1	7,6	-0,7	28,7	52,8	26,0	10,0	18,8	0,9	2,5
Exports of goods (y-o-y)	2,1	4,2	13,8	0,8	11,6	21,7	14,0	8,8	3,7	1,5	-0,3	-1,6
Exports of services (y-o-y)	7,4	-42,6	37,7	17,9	-15,5	48,0	100,8	61,0	22,8	45,8	3,0	9,0
Imports (y-o-y)	2,9	-7,5	18,0	9,3	-4,7	25,6	22,0	32,3	17,4	14,5	5,2	2,0

\*also including other unallocated expenditure / Sources: ELSTAT & NBG estimates \*\* assuming deferred boost from net taxes in production-side GDP to Q4

## Greece – Indicators of Economic Activity in high frequency

	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22
PMI (index level)	54,4	56,2	42,5	29,5	41,1	49,4	48,6	49,4	50,0	48,7	42,3	46,9	50,0	49,4	51,8	54,4	58,0	58,6	57,4	59,3	58,4	58,9	58,8	59,0	57,9	57,8	54,6	54,8	53,8	51,1	49,1	48,8	49,7	48,1	48,4
Industrial confidence (index level)	3,1	5,2	2,3	-8,1	-20,7	-19,2	-13,4	-16,3	-16,7	-8,2	-11,7	-6,6	-5,1	-4,4	-4,6	-5,2	5,4	2,1	7,7	9,4	2,4	8,9	8,9	8,6	13,1	9,8	9,6	3,0	5,1	0,1	-0,1	-1,9	-5,2	-7,0	-5,2
Manufacturing production (y-o-y)	4,7	-1,0	1,4	-12,3	-9,3	-0,6	0,1	-0,9	-3,7	-2,4	7,1	0,8	1,3	2,3	3,3	23,0	14,5	7,1	5,8	6,3	12,9	15,1	10,4	7,1	2,2	8,9	5,4	-0,7	6,3	8,6	6,3	5,0	1,7	2,4	
Industrial production (y-o-y)	-0,6	-2,9	0,0	-10,8	-8,2	-4,6	-0,1	-3,9	-2,1	-3,2	8,9	3,8	3,4	4,0	5,6	22,6	14,1	9,0	8,2	10,2	10,7	16,7	9,0	9,2	-0,5	5,7	8,8	-4,6	4,3	9,2	6,8	4,6	-1,2	-2,5	
Services confidence (index level)	23,2	31,8	25,6	1,9	-47,4	-52,0	-35,8	-28,7	-29,0	-24,5	-27,3	-27,3	-24,8	-14,6	-7,9	-7,8	16,4	31,0	30,3	30,2	33,6	41,0	45,5	34,4	33,3	42,5	36,7	19,5	20,6	17,3	15,7	19,4	36,2	11,2	18,0
Consumer confidence (index level)	-12	-8	-24	-42	-40	-33	-36	-34	-41	-39	-45	-37	-39	-43	-40	-38	-22	-25	-31	-32	-38	-40	-39	-38	-41	-39	-51	-55	-51	-53	-55	-54	-51	-58	-52
Retail confidence (index level)	22,8	25,1	17,7	-1,1	-30,6	-12,3	-24,4	-21,2	-17,0	-10,9	-5,0	-11,9	-9,1	-7,0	-0,2	2,7	0,4	3,6	9,8	10,5	3,8	19,3	11,7	21,1	14,0	8,7	6,2	0,9	2,8	1,0	5,0	-2,2	0,6	11,8	17,7
Retail trade volume (y-o-y)	6,2	2,5	-2,4	-24,6	-3,0	-3,8	-2,8	-0,6	-4,0	4,7	-7,4	-11,5	-2,5	-2,8	-0,7	39,8	15,0	11,3	11,3	5,3	9,6	8,4	16,7	19,6	7,6	10,8	12,3	8,7	-4,6	1,2	2,1	5,2	1,4		
Construction Permits (y-o-y)	44	71	54	-18	5	11	18	-11	-14	-13	-15	14	4	22	33	116	100	51	20	57	39	61	76	14	24	32	-6	2	-15	-19	-7	-17			
House prices (y-o-y, quarterly series)	6,7	6,7	4,3	4,3	4,3	3,9	3,9	3,9	3,2	3,2	4,5	4,5	4,5	6,9	6,9	6,9	8,8	8,8	8,8	9,9	9,9	9,9	9,8	9,8	9,8	10,1	10,1	10,1	11,2	11,2					
Construction confidence (index level)	-25	-29	-29	-88	-82	-57	-30	-43	-52	-48	-31	-38	-14	-9	-5	-4	-9	-10	3	-5	10	1	-3	-7	-10	-3	1	-7	-25	-14	-35	-32	-29	-26	-26
Employment (y-o-y)	1,2	0,2	-3,9	-9,4	-13,8	-11,3	-4,3	-0,4	-0,4	-3,7	-6,1	-4,3	-4,1	-3,2	-1,0	5,3	17,1	14,9	7,2	4,4	4,4	7,0	11,4	9,4	7,9	12,0	13,2	10,3	5,1	4,3	3,4	1,6	2,7	2,5	
Interest rate on new private sector loans (CPI deflated)	3,5	4,1	4,1	5,6	5,4	5,6	5,9	6,0	5,9	6,2	6,1	5,8	5,1	5,7	4,1	3,8	2,9	2,7	2,3	1,6	0,5	-1,1	-1,4	-2,3	-3,5	-5,0	-6,0	-7,5	-8,1	-7,9	-7,4	-7,4			
Credit to private sector (y-o-y)	-0,6	-0,8	0,1	0,3	0,7	0,4	1,5	1,9	2,4	2,5	2,6	3,5	3,7	3,7	2,9	2,4	2,2	2,3	1,2	0,8	0,8	0,9	1,1	1,4	0,9	1,4	1,6	2,8	3,3	4,5	5,5	5,8	6,0	5,3	
Deposits of domestic private sector (y-o-y)	6,3	7,7	8,8	8,6	9,4	8,4	9,5	9,0	10,3	11,6	14,0	14,4	15,3	14,9	13,8	14,8	13,7	14,5	13,2	13,9	13,3	11,5	10,4	9,9	9,3	8,7	7,0	5,8	6,3	6,9	6,1	5,2	6,2	5,9	
Interest rate on new time deposits (households, CPI deflated)	-0,5	0,1	0,3	1,7	1,4	1,8	2,1	2,2	2,0	2,3	2,5	2,2	1,5	1,8	0,4	0,0	-0,9	-1,2	-1,7	-2,1	-3,3	-4,7	-5,0	-6,1	-7,1	-8,7	-10,0	-11,2	-12,0	-11,5	-11,3	-11,9			
Economic sentiment index (EU Commission, Greece)	110	113	107	97	84	86	90	90	90	93	92	95	94	96	100	99	109	109	112	113	109	114	114	111	114	114	112	105	107	104	102	101	105	98	101
Economic sentiment index (EU Commission, Euro area)	105	105	95	61	65	76	84	91	95	95	92	97	96	98	103	106	110	116	118	117	118	118	116	114	113	114	106	105	104	103	99	97	94	93	94
Exports (excl. oil & shipping, y-o-y, 6m mov.avg)	5,6	6,3	4,2	1,3	-1,9	-3,8	-6,0	-8,7	-8,0	-6,2	-2,8	-1,5	-1,1	1,8	7,5	14,5	19,2	23,6	28,7	32,7	33,1	30,4	32,9	32,3	31,4	30,7	28,2	26,6	26,9	27,6	26,9	28,2	27,7		
Imports (excl. oil & shipping, y-o-y, 6m mov.avg)	0,5	1,4	-1,7	-4,4	-9,2	-9,9	-12,0	-12,8	-10,9	-9,1	-4,5	-3,8	-3,6	-3,2	3,1	11,7	18,5	24,1	30,4	36,9	35,5	33,6	34,9	38,3	41,0	42,0	40,0	38,1	38,2	33,8	29,8	27,0	25,9		
BoG - Tourist arrivals (y-o-y)	19,7	24,6	-46,8	-96	-98	-93,8	-85,4	-73,3	-73,9	-65,6	-81,1	-86,0	-87,9	-87,8	-75,9	186	414	317	240	125	124	125	219	294	257	315	319	884	673	241	87	44	52		
AIA - International passenger traffic development (y-o-y)	10,2	6,4	-62,0	-99,2	-98,4	-93,4	-76,1	-66,2	-72,3	-72,2	-86,0	-87,7	-88,2	-89,8	-72,2	1292	1083	435	139	91	122	139	389	388	297	436	556	616	355	157	63	42	52	46	35
Estimation of total electricity demand in the network (y-o-y)	-3,2	-1,5	0,3	-6,9	-4,5	-13,1	-0,8	-7,9	1,2	-0,6	4,4	-4,9	-10,6	-6,8	2,7	6,2	3,6	11,7	14,9	15,2	-3,8	3,1	3,2	9,1	8,8	3,4	10,4	-6,3	1,6	0,0	-11,8	-13,2	-3,3	-8,6	
VAT on other goods & services (y-o-y)	-0,8	1,1	-23,7	9,1	-51,1	-17,1	-15,4	-10,0	-10,8	-15,1	-12,8	-7,5	-10,0	-8,6	28,6	-1,4	72,3	29,2	14,9	14,4	18,2	21,2	29,9	29,9	-4,2	58,9	27,7	20,9	25,6	15,0	22,4	23,8	20,7	27,9	
Business Turnover (y-o-y, double-entry bookkeeping)	9,8	-2,6	-10,5	-31,7	-26,7	-15,6	-16,6	-19,8	-11,1	-7,3	-7,2	-6,4	-16,0	-9,2	13,2	42,3	24,1	22,4	24,4	32,6	30,0	28,6	39,9	33,7	36,4	45,1	47,8	37,1	51,8	45,1	44,4	55,7	48,4		

Sources: NBG, BoG, ELSTAT, Ministry of Finance, EU Commission, IHS Markit, IOBE, AIA, ADMIE



**Nikos S. Magginas, PhD** | Chief Economist, Head of NBG Economic Analysis Division  
e-mail: [nimaqi@nbg.gr](mailto:nimaqi@nbg.gr)

### NBG GREECE MACRO ANALYSIS TEAM

**Effrosyni Alevizopoulou, PhD**  
(+30210) 334 1620  
e-mail: [alevizopoulou.e@nbg.gr](mailto:alevizopoulou.e@nbg.gr)

**Katerina Gouveli, MSc**  
(+30210) 334 2359  
e-mail: [gouveli.aikaterini@nbg.gr](mailto:gouveli.aikaterini@nbg.gr)

**Eleni Balikou, MSc**  
(+30210) 334 1198  
e-mail: [balikou.eleni@nbg.gr](mailto:balikou.eleni@nbg.gr)

**Eleftherios Athanasiou, MSc**  
(+30210) 334 1453  
e-mail: [athanasiou.eleftherios@nbg.gr](mailto:athanasiou.eleftherios@nbg.gr)

**Sofia Tsaroucha, MSc**  
(+30210) 334 1626  
e-mail: [tsaroucha.sofia@nbg.gr](mailto:tsaroucha.sofia@nbg.gr)

*This report has been produced by the Economic Research Division of National Bank of Greece S.A., which is regulated by the Bank of Greece and the Hellenic Capital Market Commission, and is provided solely as a sheer reference for the information of experienced and sophisticated investors who are expected and considered to be fully able to make their own investment decisions without reliance on its contents, i.e. only after effecting their own independent enquiry from sources of the investors' sole choice. This report does not constitute investment research or a research recommendation, and as such, it has not been prepared under legal requirements designed to promote investment research independence. The information contained in this report does not constitute the provision of investment advice and under no circumstances is it to be used or considered as an offer or an invitation to buy or sell or a solicitation of an offer or invitation to buy or sell or enter into any agreement with respect to any security, product, service or investment. No information or opinion contained in this report is sufficient to support an investment decision – and should constitute any representation or warranty as to future performance of any financial instrument, credit, currency rate or other market or economic measure. Past performance is not necessarily a reliable guide to future performance. It is duly stated that investments products include investment risks, among which the risk of losing part of or the entire capital invested. National Bank of Greece S.A. and/or its affiliates shall not be liable in any matter whatsoever for any consequences (including but not limited to any direct, indirect or consequential losses, loss of profits and damages) of any reliance on or usage of this report and accepts no legal responsibility to any investor who directly or indirectly receives this report. The final investment decision must be made by the investor and the responsibility for the investment must be taken by the investor. Any data provided in this report has been obtained from sources believed to be reliable but has not been independently verified. Because of the possibility of error on the part of such sources, National Bank of Greece S.A. does not guarantee the accuracy, timeliness or usefulness of any information. Information and opinions contained in this report are subject to change without notice and there is no obligation to update the information and opinions contained in this report. The National Bank of Greece S.A. and its affiliate companies, its representatives, its managers and/or its personnel or other persons related to it, accept no responsibility, or liability as to the accuracy, or completeness of the information contained in this report, or for any loss in general arising from any use of this report including investment decisions based on this report. This report does not purport to contain all the information that a prospective investor may require. Recipients of this report should independently evaluate particular information and opinions and seek the advice of their own professional and financial advisers in relation to any investment, financial, legal, business, tax, accounting or regulatory issues before making any investment or entering into any transaction in relation to information and opinions discussed herein. National Bank of Greece S.A. has prepared and published this report wholly independently of any of its affiliates and thus any commitments, views, outlook, ratings or target prices expressed in these reports may differ substantially from any similar reports issued by affiliates which may be based upon different sources and methodologies. This report is not directed to, or intended for distribution to use or use by, any person or entity that is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to any law, regulation or rule. This report is protected under intellectual property laws and may not be altered, reproduced or redistributed, or passed on directly or indirectly, to any other party, in whole or in part, without the prior written consent of National Bank of Greece. All the views expressed in this report accurately reflect author's personal views solely, about any and all of the subject issues. Further, it is certified that no part of any of the report author's compensation was, is, or will be directly or indirectly related to the specific or views expressed in this report.*