

PIRAEUS BANK



Greek Economy

Three Growth Drivers for 2023: The Statistical, the Passive and the Risky one !

May 2023

GREEK & SECTORAL ECONOMICS - GREC

ECONOMIC RESEARCH & INVESTMENT STRATEGY

Τρεις Παράγοντες Στήριξης της Ελληνικής Οικονομίας: ο Στατιστικός, ο Παθητικός και ο Ευμετάβλητος



Πριν από έξι μήνες, στην κορύφωση της Παγκόσμιας Γεωπολιτικής κρίσης, με τον πληθωρισμό να κυμαίνεται σε διψήφιο επίπεδο και την αβεβαιότητα για την επάρκεια του ενεργειακού εφοδιασμού, όλοι ήταν απασχολημένοι με την προς τα κάτω αναθεώρηση των προβλέψεών τους για την αναπτυξιακή δυναμική της ΕΕ και της Ελλάδας. Πηγαίνοντας κόντρα στο ρεύμα, προτιμήσαμε να μην ενστερνιστούμε την απαισιόδοξη αυτή στάση και να διατηρήσαμε την πρόβλεψή μας για αύξηση του ΑΕΠ της ελληνική οικονομία το 2023 κατά 3,6%, βάσει 3 διαφορετικών παραγόντων:

- α) Στον «στατιστικό» παράγοντα. Η πολύ θετική δυναμική της ελληνικής οικονομίας το 4ο τρίμηνο του 2022 όπου το ΑΕΠ (σε σταθερές τιμές 2015) έφτασε το υψηλό επίπεδο των €48,7 δισ., σημαίνει ότι εάν το ΑΕΠ σε κάθε ένα από τα 4 τρίμηνα του 2023 παραμένει σταθερό σε αυτά τα επίπεδα (δηλαδή των €48,7 δισ ανά τρίμηνο) τότε η κατ' έτος μεταβολή του ΑΕΠ 2022/2023 θα ανέλθει στα επίπεδα του 1,5%. Με άλλα λόγια, αυτή και μόνο η «στατιστική» ιδιότητα του υπολογισμού των ρυθμών μεταβολής της οικονομικής δραστηριότητας χαρίζει στην Ελλάδα 1,5% αύξηση στο ΑΕΠ.
- β) Η ανάπτυξη θα υποστηριχθεί επίσης με «παθητικό» τρόπο από την αντιστροφή του αρνητικού σοκ των όρων του εμπορίου που έπληξε την ελληνική και την ευρωπαϊκή οικονομία το 2022. Στην Ελλάδα, η άνοδος στις διεθνείς τιμές ενέργειας και τροφίμων διεύρυνε το έλλειμμα του ισοζυγίου τρεχουσών συναλλαγών και αφείρεσε σχεδόν 2,5% μονάδες της αύξησης του ΑΕΠ. Η μερική αντιστροφή αυτού του αρνητικού αντίκτυπου το 2023, καθώς οι τιμές επιστρέφουν παθητικά στα μακροπρόθεσμα επίπεδά τους αναμένουμε να συμβάλει θετικά στην αύξηση του ΑΕΠ.
- γ) Τέλος, ο «ευμετάβλητος» παράγοντας καθώς αναμένουμε ότι η ανάπτυξη θα προέλθει από την ανάκαμψη των επενδύσεων. Η αυξημένη αξιοποίηση του παραγωγικού δυναμικού και ο ακόμη αρνητικός σχηματισμός «καθαρού παγίου κεφαλαίου» υποδηλώνουν επείγουσα ανάγκη για αυξημένες επενδύσεις στην ελληνική οικονομία. Αυτά τα επενδυτικά σχέδια θα μπορούσαν να χρηματοδοτηθούν με προνομιακούς όρους από το Ταμείο Ανάκαμψης. Ωστόσο, θα πρέπει να έχουμε υπόψη μας τη μεγάλη μεταβλητότητα αυτού του παράγοντα καθώς επηρεάζεται από σημαντικό πλήθος μεταβλητών όπως το οικονομικό κλίμα, το στάδιο του επιχειρηματικού κύκλου, το επίπεδο των επιτοκίων, η έκταση της πολιτικής αβεβαιότητας κ.τ.λ.



Three Growth Drivers for 2023: The Statistical, The Passive and the Risky one!



Six months ago, at the peak of the Global Geopolitical crisis, with inflation hovering at double digit level and uncertainty regarding the adequacy of energy supply, everybody was busy downgrading their forecasts regarding the growth dynamics of the EU and Greece. Going against the current, we preferred to keep our nerves and avoid joining the doom and gloom consensus. So, we kept our 2023 GDP forecast for the Greek economy at 3.6% on the back of 3 distinct economic drivers:

- a) We call the first factor “statistical” given that it relates to growth linked to the so-called “carry-over” effect. In brief, the essence of the carry-over effect is linked to the idea that given the strong momentum of the Greek economy at the end of 2022, even if Real GDP in all 4 quarters of 2023 remained stable at €48.7bn (that is at its Q4-2022 levels) full year 2023 GDP would register a 1.5% growth rate. So, the statistical properties of GDP growth arithmetic adds a 1.5% to Greek GDP growth rate in 2023.
- b) Growth will also be supported in a “passive” manner from the reversal of the negative terms-of-trade shock that hit the Greek and the European economy in 2022. In Greece alone, the spike in international energy and food prices widened the current account deficit and subtracted almost 2.5% of GDP growth. A partial reversal of this negative impact in 2023 as prices passively return to their long-term levels could easily provide a positive boost to GDP growth.
- c) Finally, we have economic growth that we expect to come from the recovery of investments. Increased capacity utilization and still negative “net fixed capital” formation point towards an urgent need for increased investment in the Greek economy. These investment projects could still be financed with preferential terms from the RRF. Still investments can be a rather unreliable and “risky” growth driver given at it is highly volatile and depends upon a number of parameters such as the economic sentiment, the stage of the business cycle, the level of interest rates, the extend of political uncertainty etc.





Piraeus Bank forecasts (as of May 23)	Economic Outlook				
	2022a	2023	2024	2025	2026
Real GDP (% change)	5.9	3.6	3.4	3.4	3.3
Nominal GDP (% change)	14.5	5.7	4.9	5.0	5.0
Inflation (CPI, % change)	9.6	2.5	1.8	1.9	2.1
Unemployment rate (% of labour force)	12.4	11.4	11.2	10.9	10.6
Non-residential real estate prices (% change) ^(1,2)	1.8	3.1	3.6	4.0	4.3
Residential real estate prices (% change)	11.1	7.4	6.5	6.0	5.6
General Government Primary Balance (% of GDP)	0.1	1.0	2.0	2.0	2.0
General Government Gross Debt % of GDP)	171.3	163.7	151.8	143.5	134.9

Note: (1) based on Office price index (2) 2022data: estimate





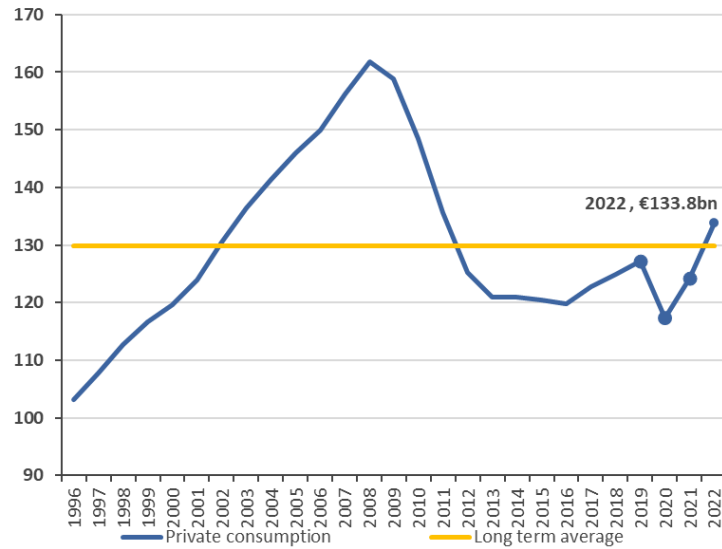
- 1** Conjunctural Analysis & Leading Indicators
- 2 Economic Outlook
- 3** Competitiveness of the Greek Economy
- 4 Real Estate Developments
- 5 Public Finance, Sovereign Rating & Bonds markets
- 6** Banking Sector Developments



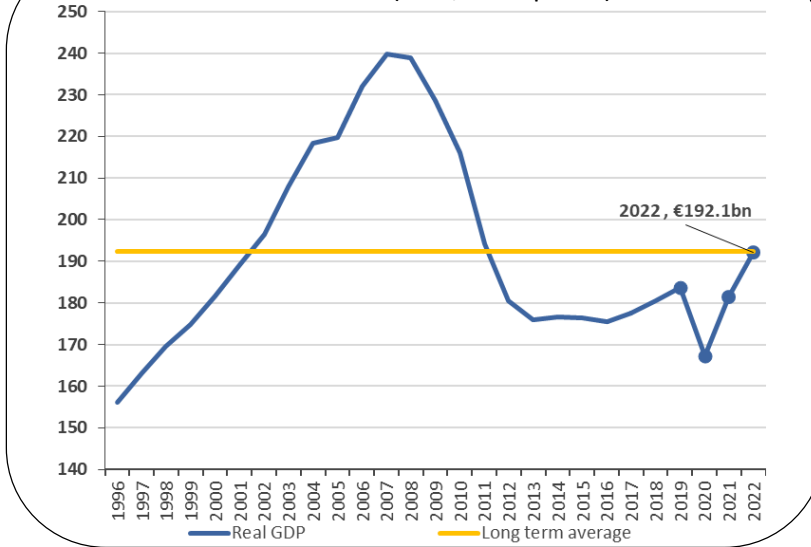
A Bird's Eye View of Greek GDP: Real GDP returns close to long term average levels



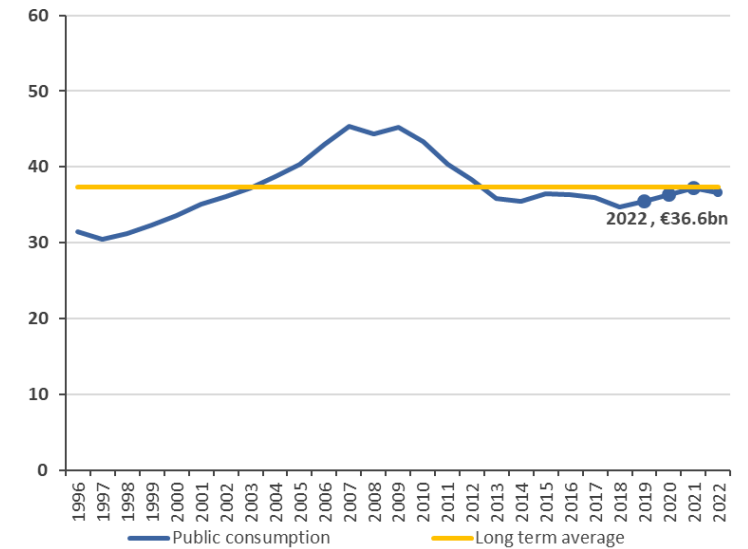
Private Consumption back at above average levels



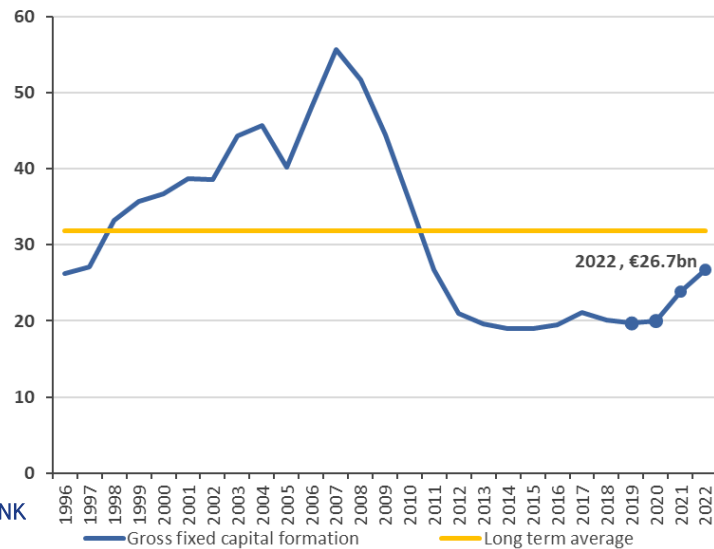
Real GDP (€ bn, 2015 prices)



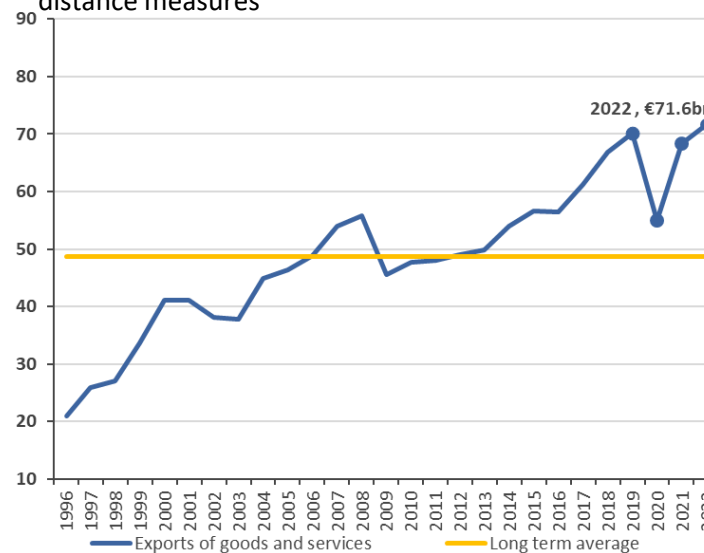
Public Consumption impact from the one-off measures



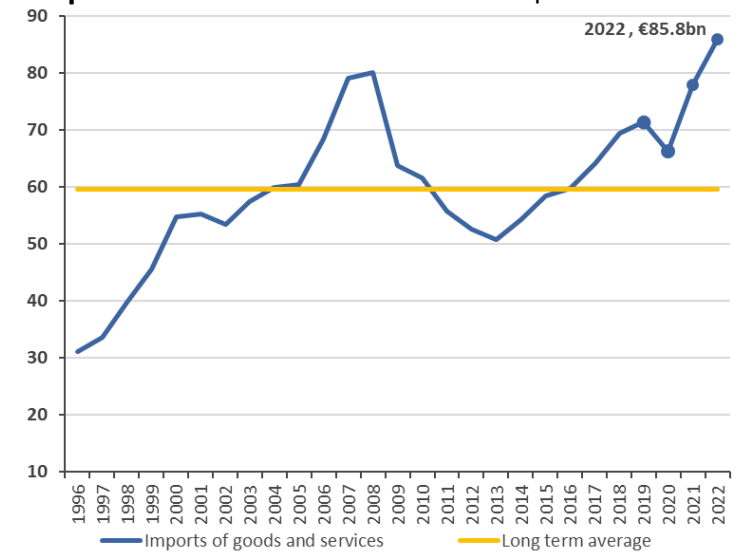
Gross Fixed Capital Formation on an upward trend



Exports of Goods & Services affected by the social distance measures



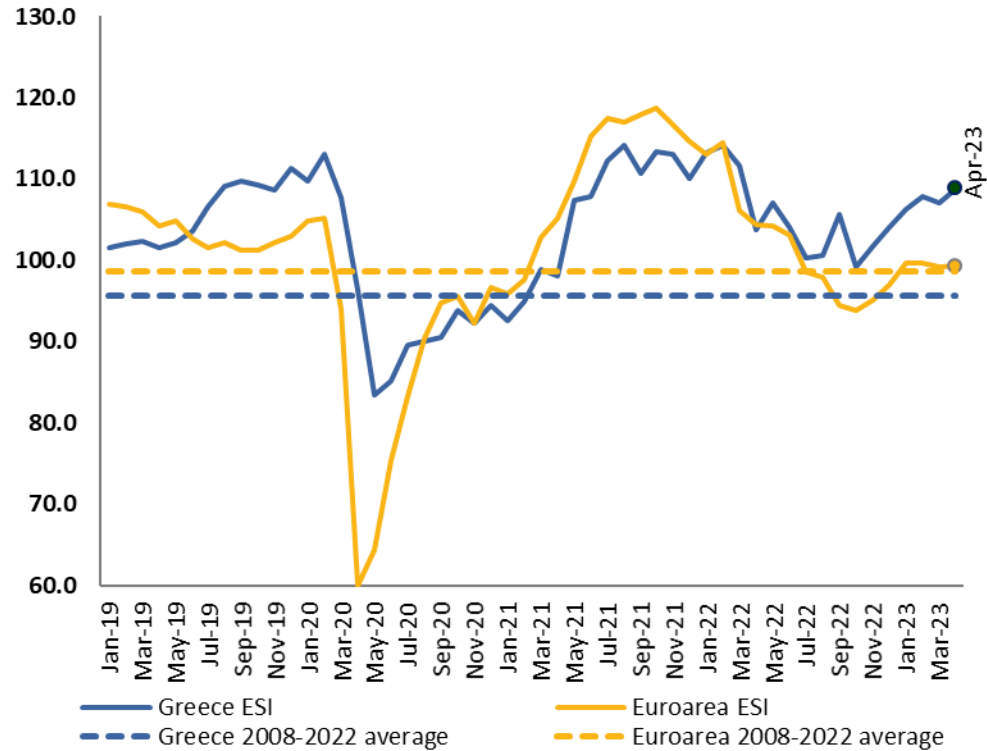
Imports of Goods & Services on an upward trend



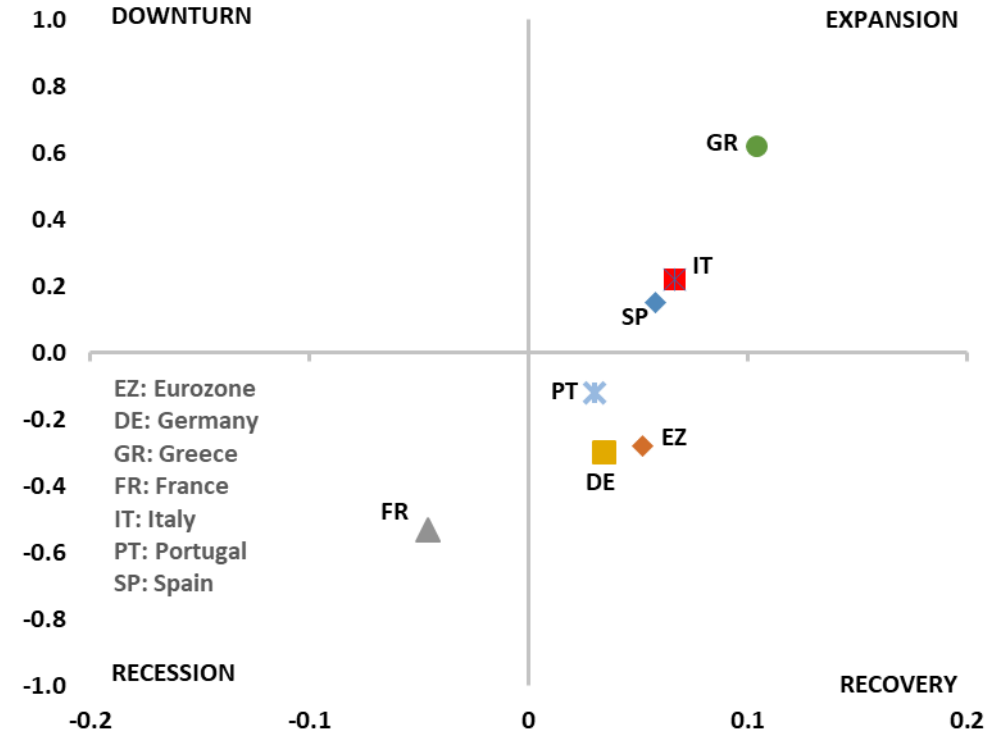
A mild winter and lower energy prices have contributed to an improvement of the Economic Climate



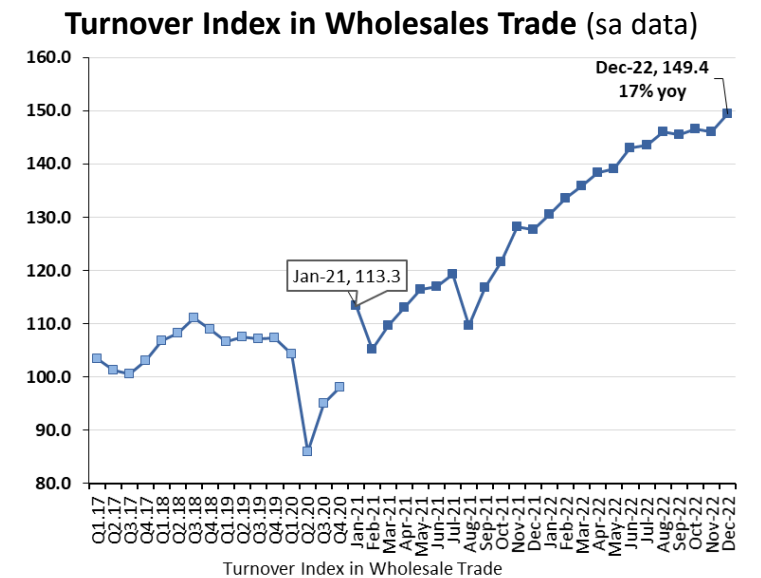
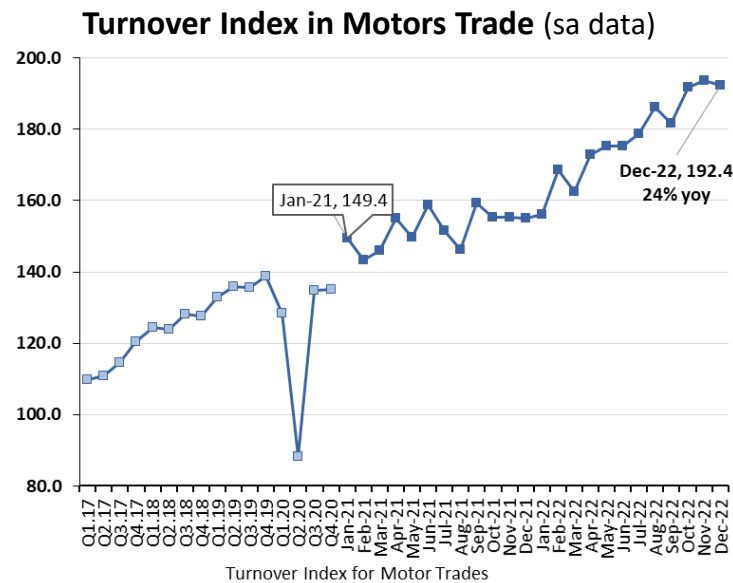
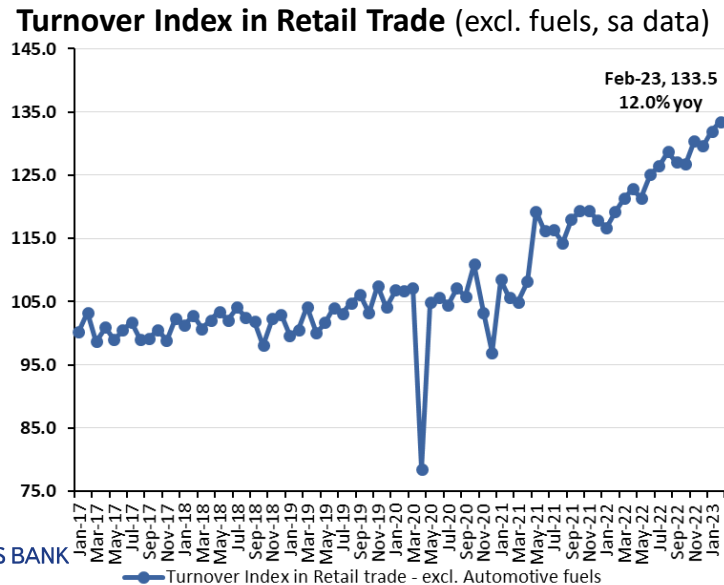
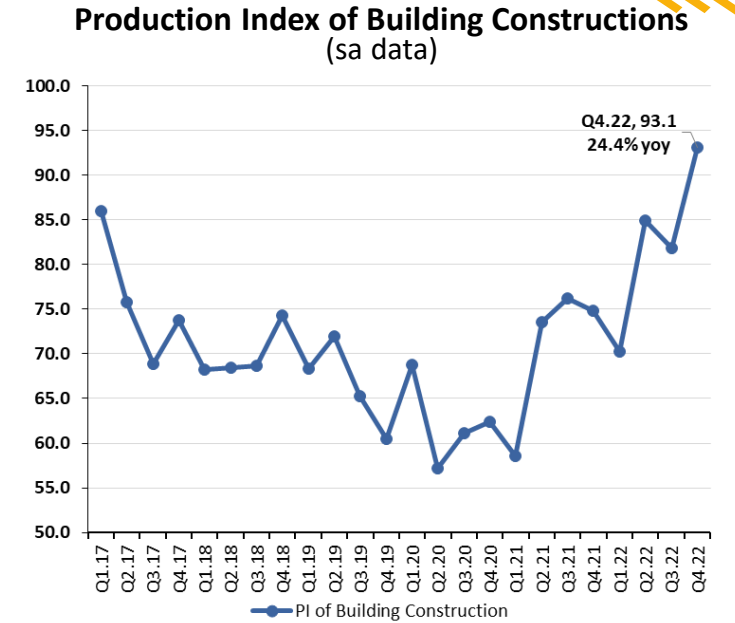
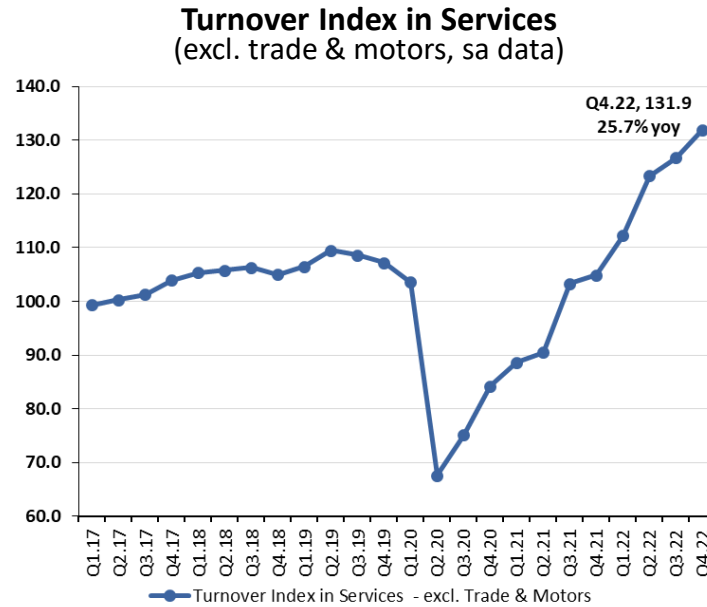
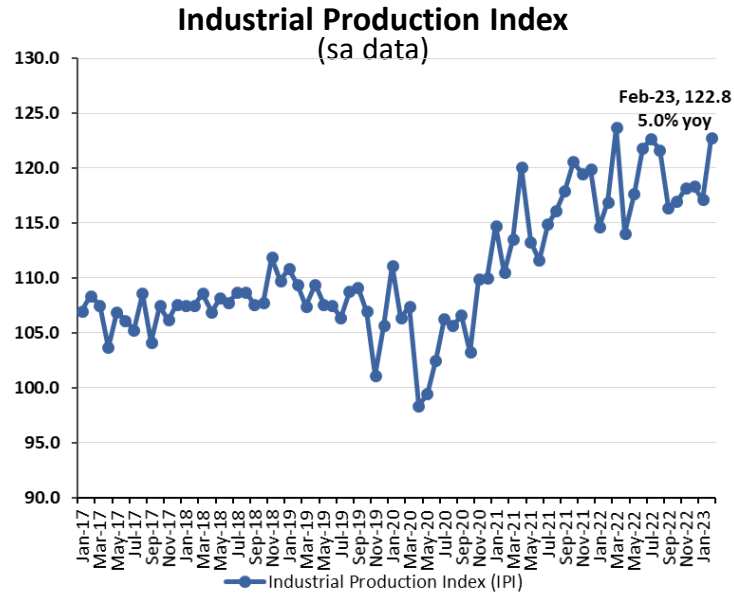
Economic Sentiment Indicator
Greece vs Euroarea (ESI, sa data)



Business Cycle



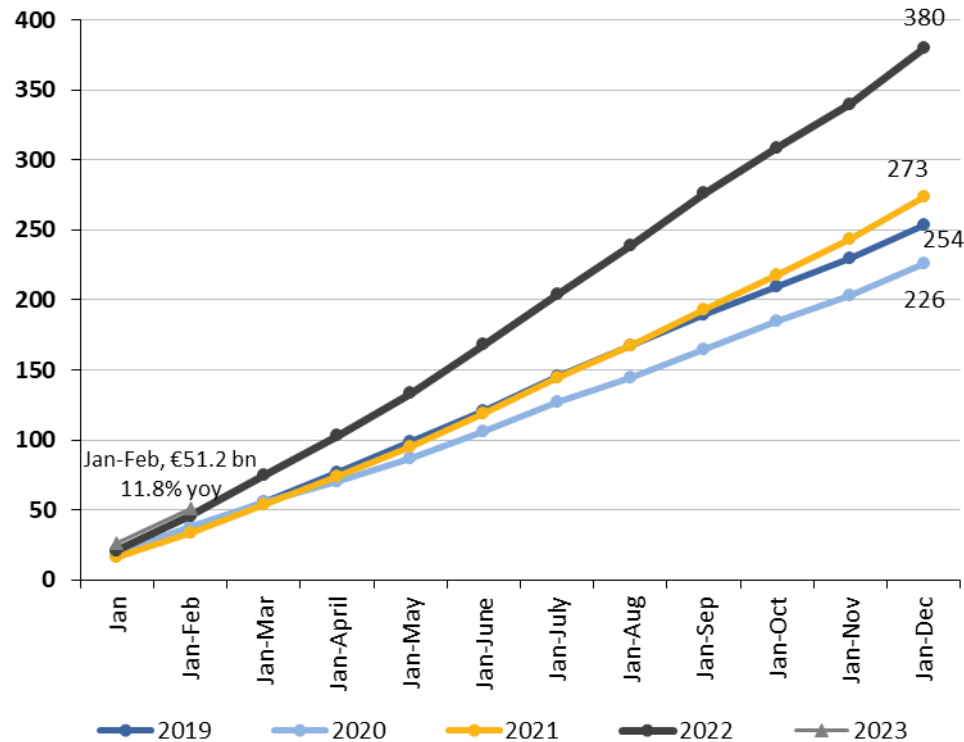
Short-term Economic Indicators: Available data suggests positive dynamics in the Greek economy



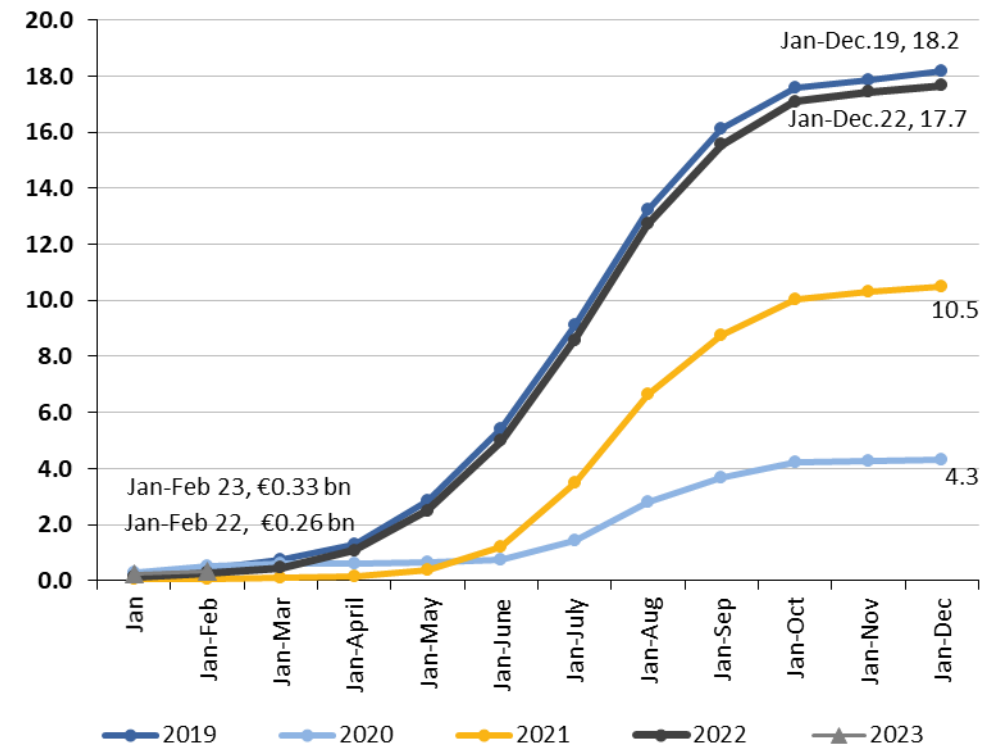
Turnover of Enterprises: Sales growth exceeds even the most optimistic expectations



Turnover of Enterprises^{1,2} (€ bn)



Travel Receipts (€ bn)

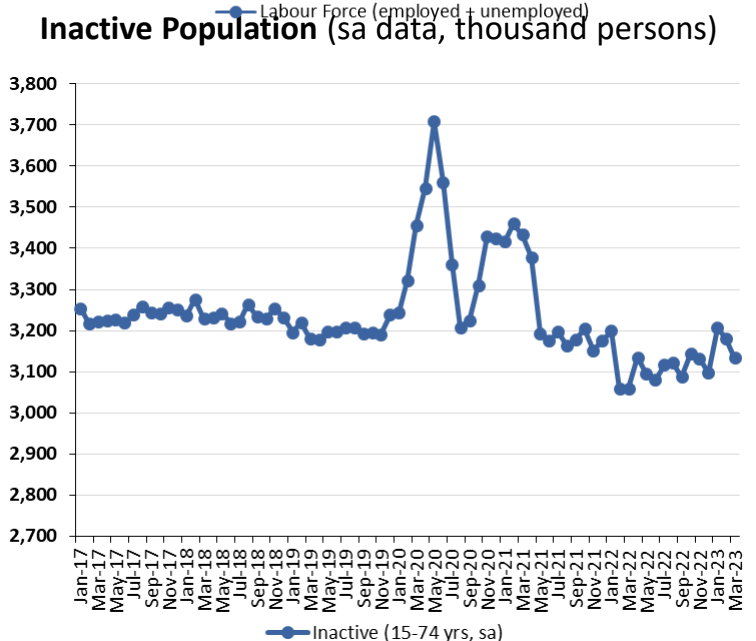
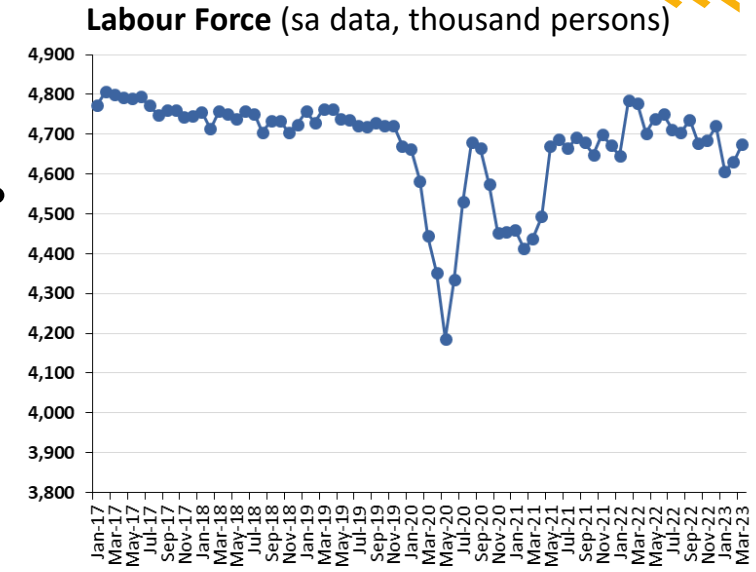
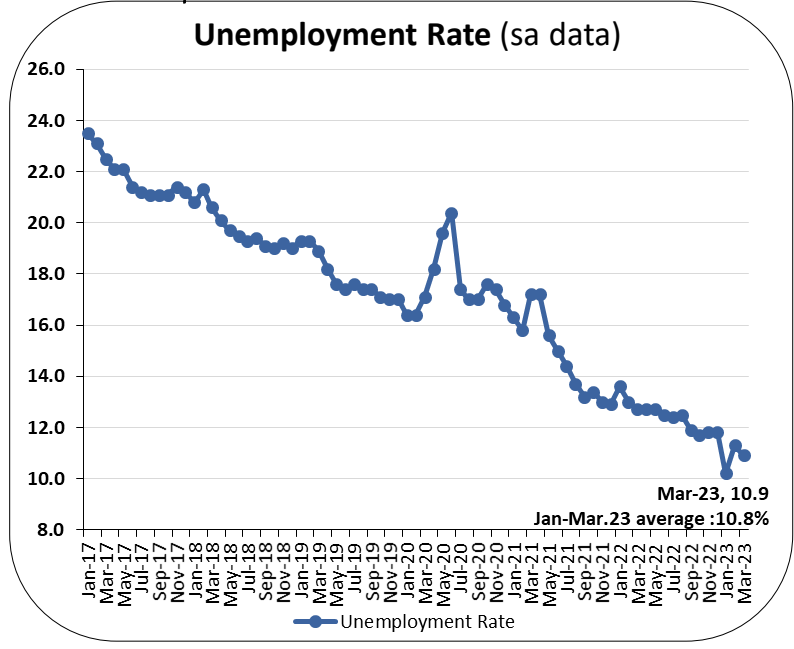
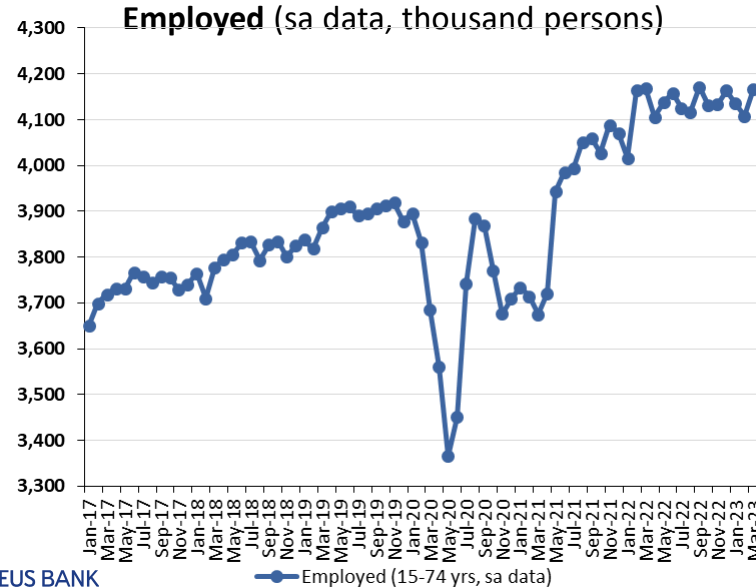
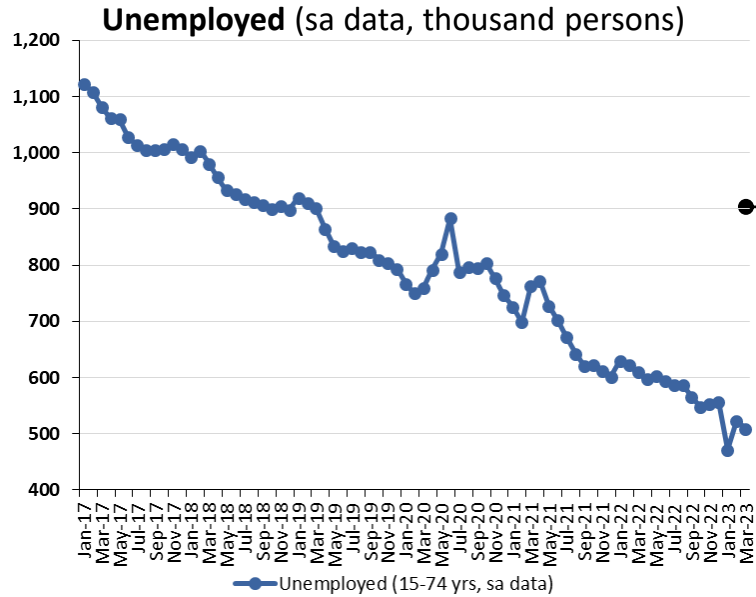


Note: 1) Only double-entry accounting bookkeeping. Enterprises with single-entry accounting bookkeeping are obliged to submit data to tax authorities on a quarterly basis, while enterprises with double-entry accounting bookkeeping are obliged to submit data respectively on a monthly basis. Therefore, for the total of enterprises, data are available only on a quarterly basis.

2) The enterprises that were under suspension of operation, on the basis of state order, due to covid-19 were classified in the following economic activity classes: **47** Retail trade (exc. motor vehicles & motorcycles), **55** Accommodation, **56** Food & beverage service activities, **59** Motion picture, video, television programme production etc., **71** Architectural & engineering activities etc, **77** Rental & leasing activities, **82** Office administrative & support etc, **85** Education, **88** Social work activities without accommodation, **90** Creative, arts & entertainment, **91** Libraries, archives, museums etc, **92** Gambling & betting activities, **93** Sports activities, amusement etc, **94** Activities of membership organisations, **96** Other personal service activities



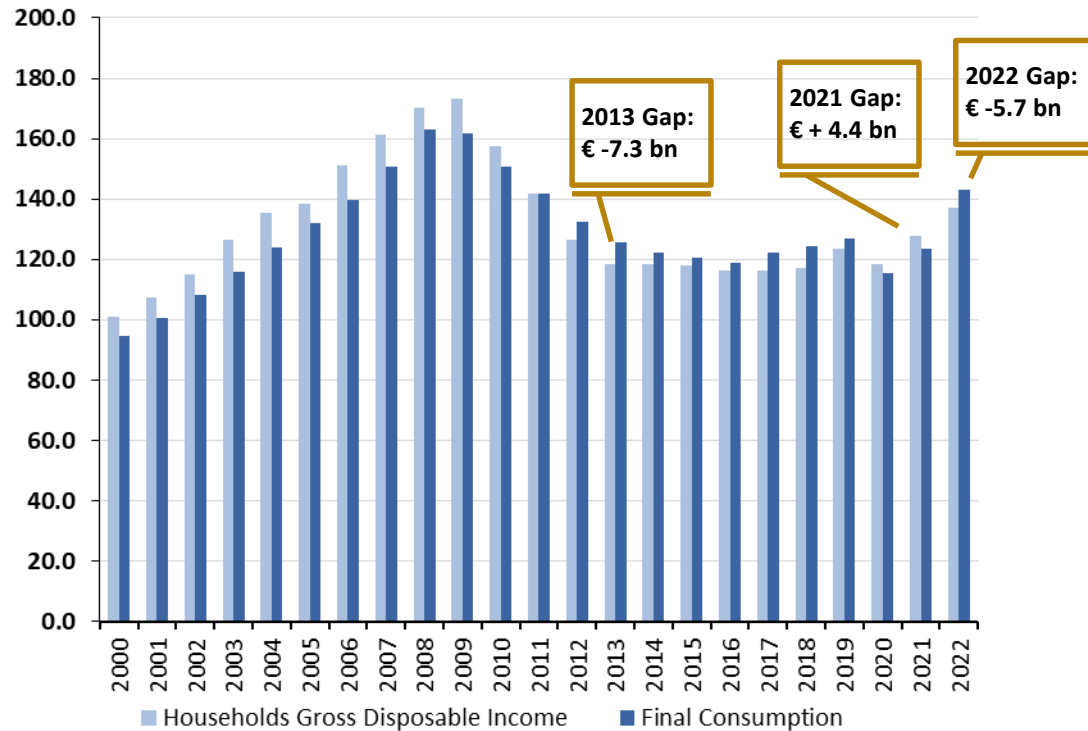
Unemployment Rate: Continued economic growth has kept unemployment on a declining track



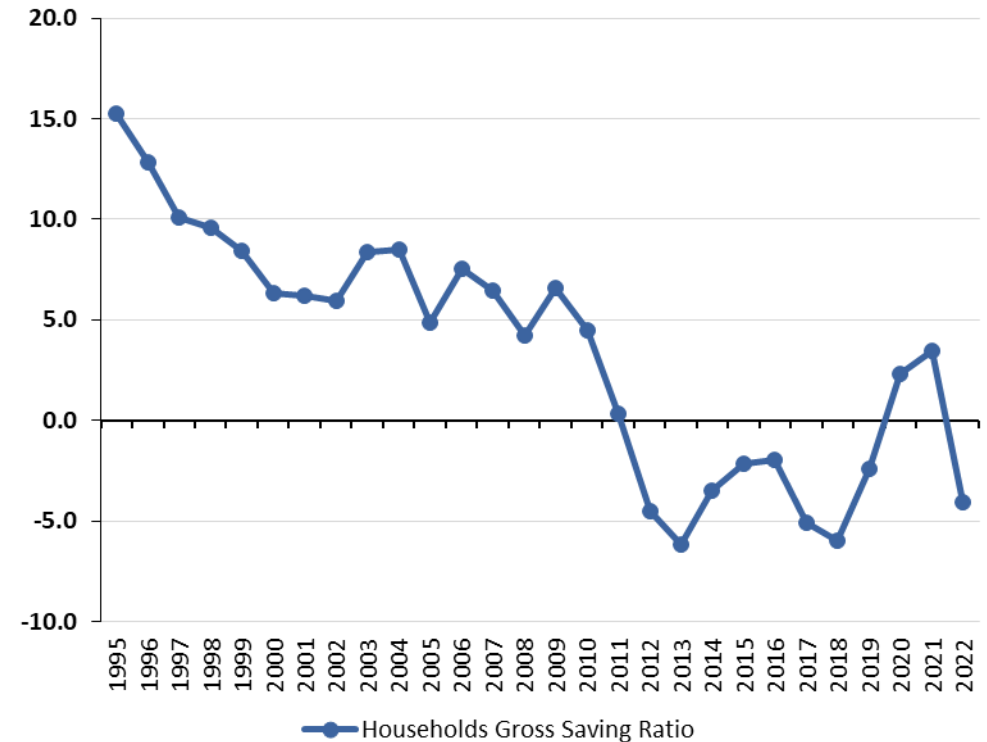
Household Finances: The positive Saving Gap of 2020 – 2021 seems to have supported the increase of households' consumption of 2022



Household Disposable Income vs Private Consumption
(Current prices, € bn)



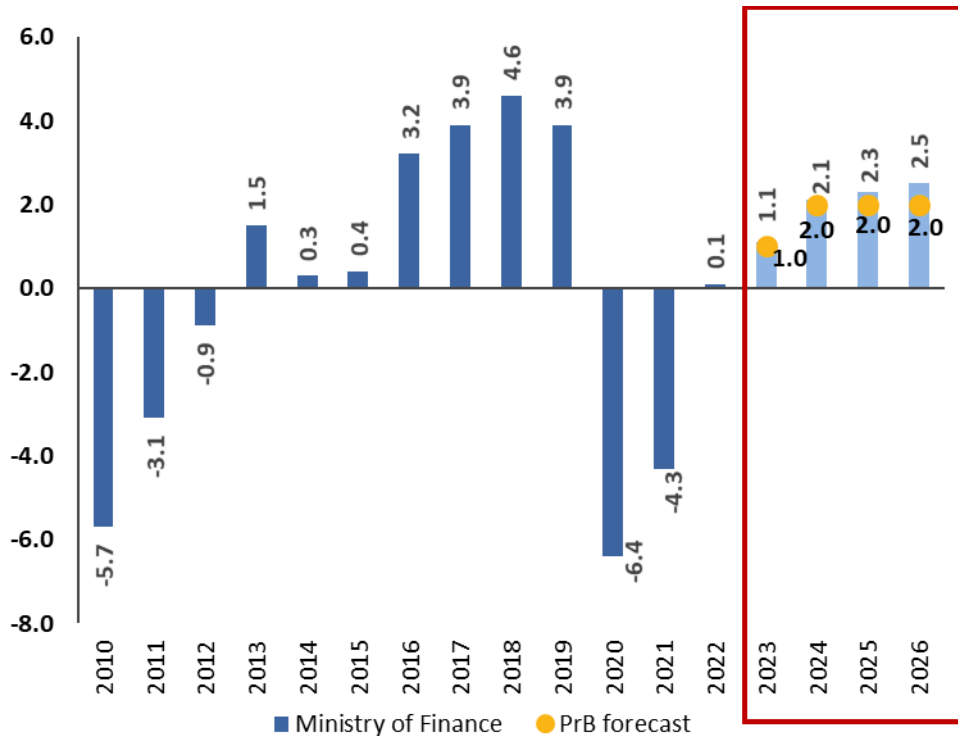
Households Gross Saving Ratio
(% of households disposable income)



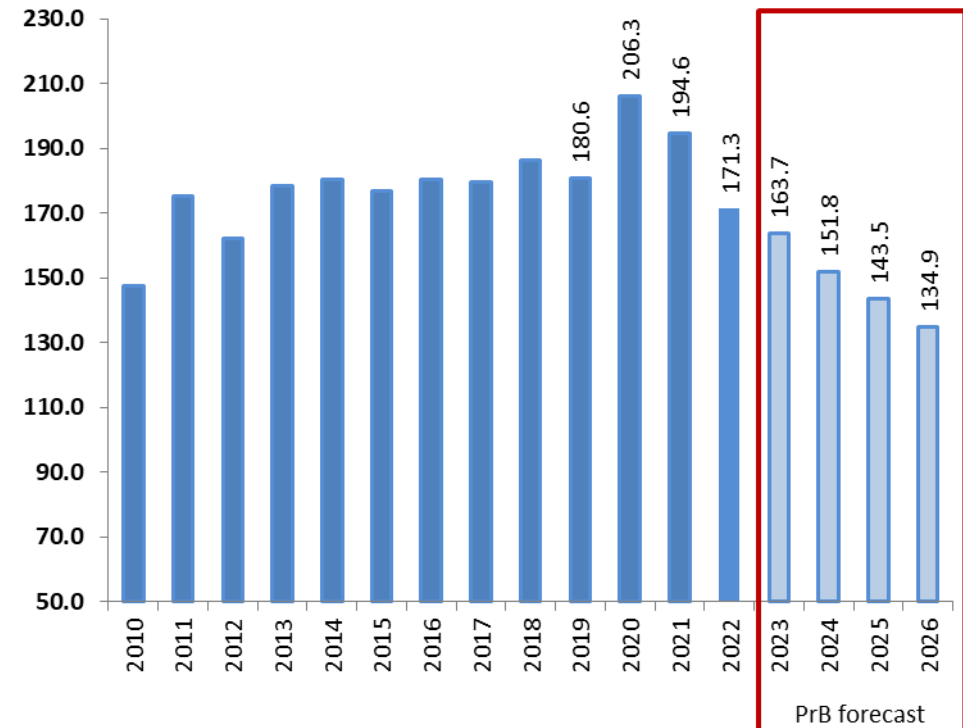
Fiscal Balance & Debt Dynamics: it's all about fiscal rationalization (fiscal balance) & snowball effect (debt)



General Government Primary Balance (% of GDP)
(2010 – 2021: ESA definition, excl. support to financial institutions)



General Government Public Debt (% of GDP)



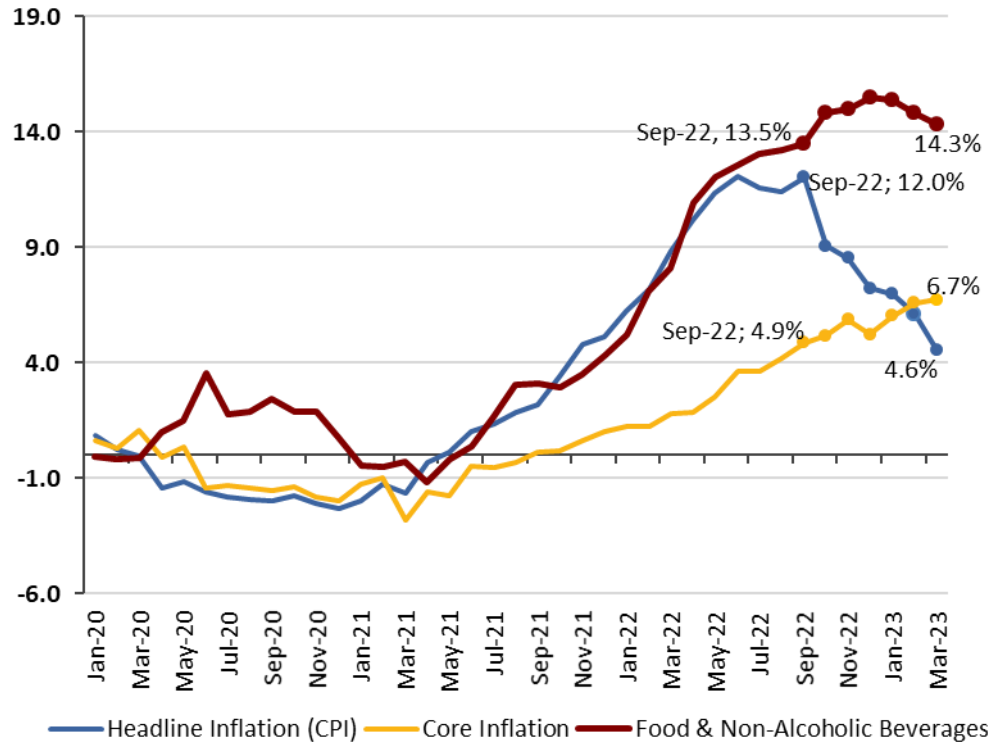
Based on Ministry of Finance, Greece: Stability Programme 2023, April



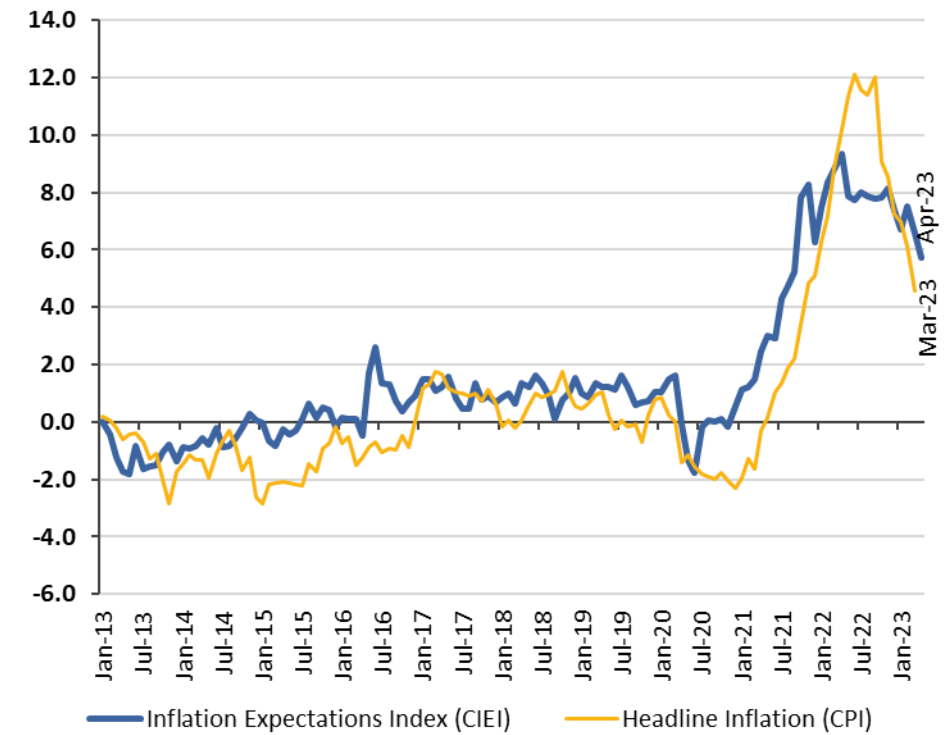
Inflation: Headline inflation moderates on the back of a massive Energy inflation decline, while expectations point to further deceleration



CPI Inflation vs Core CPI¹ & Food / Non alcoholic beverages Prices (annual % change)



CPI Inflation vs Inflation Expectations Index (CIEI)²



1. Core Inflation: CPI, excluding food, beverages, tobacco and energy

2. The CIEI is a composite indicator, based on ECO methodology. It is based on principal component analysis on five economic indicators provided by the European Commission Business and Consumer Survey. (i.e. the balance diffusion indices regarding consumer inflation expectations over the next 12 months and selling price expectations over the next three months for the industrial, services, retail trade and construction sectors.)





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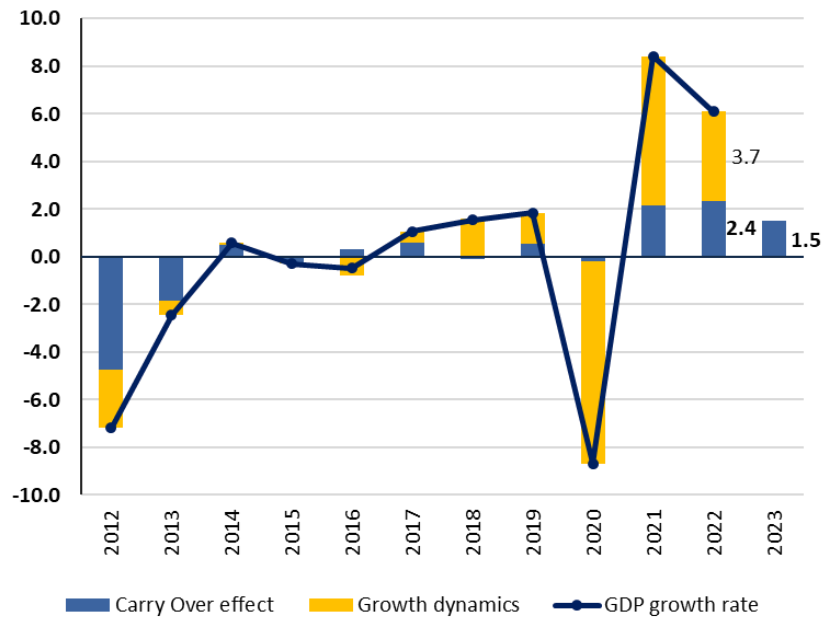
6 Banking Sector Developments



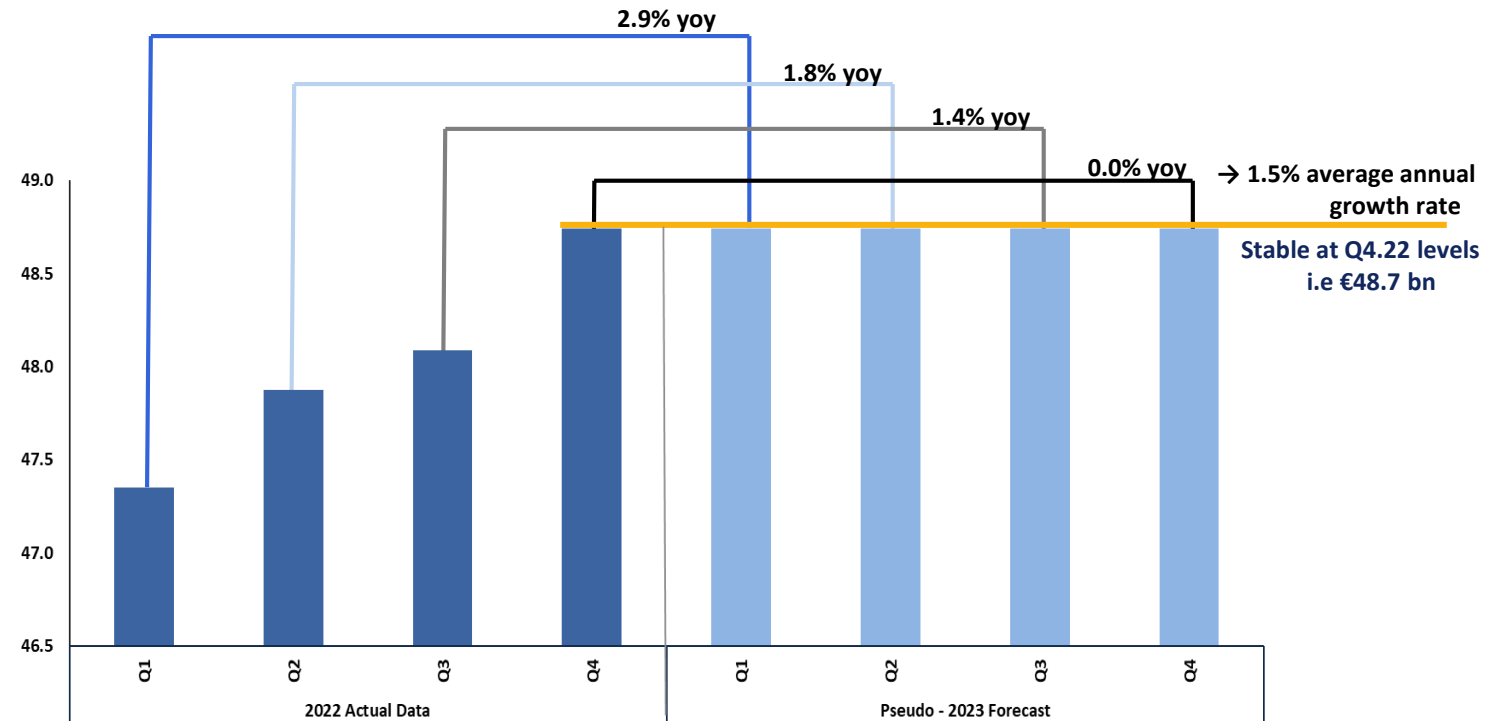
The STATISTICAL Carry Over Effect Analysis: We start from 1.5% GDP growth



Carry Over Effect and Real GDP Growth Dynamics
(2015 prices, %)



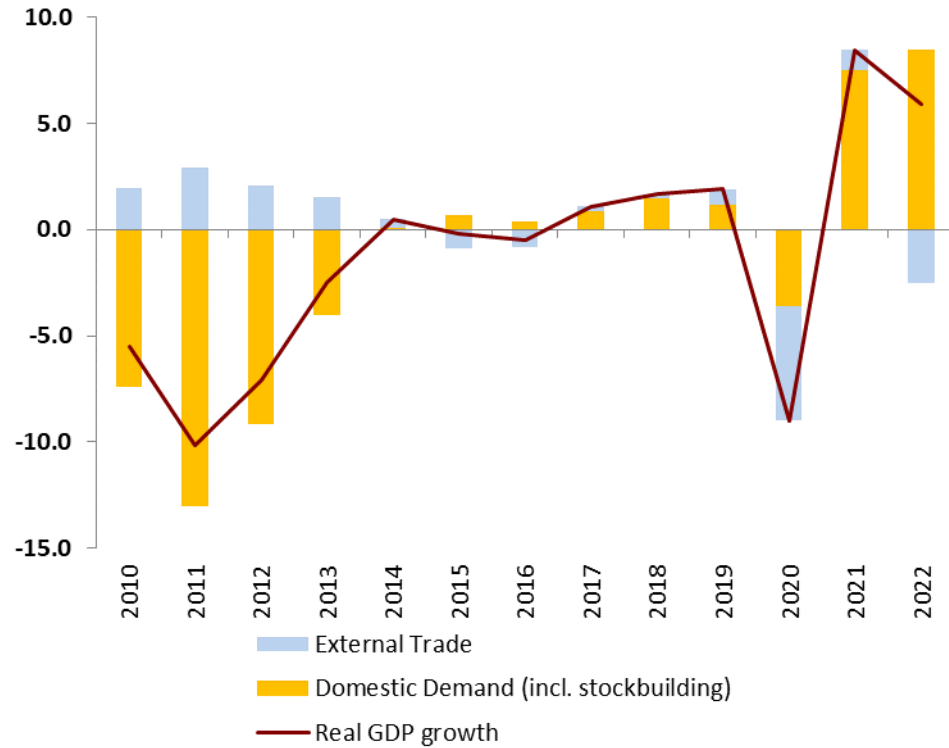
Carry over effect (Real GDP, € bn)



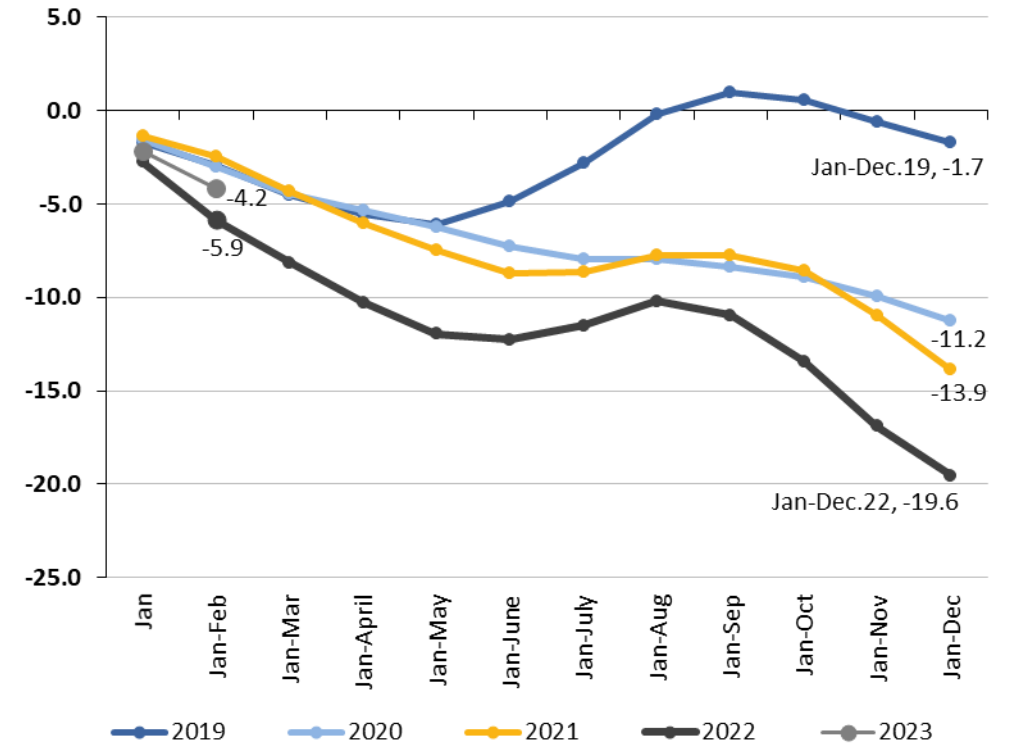
The Passive Growth Driver: External Sector Reversal already at € 1.7 bn



Contribution to Real GDP growth rate (%)



External Balance of Goods & Services ¹ (bn €)



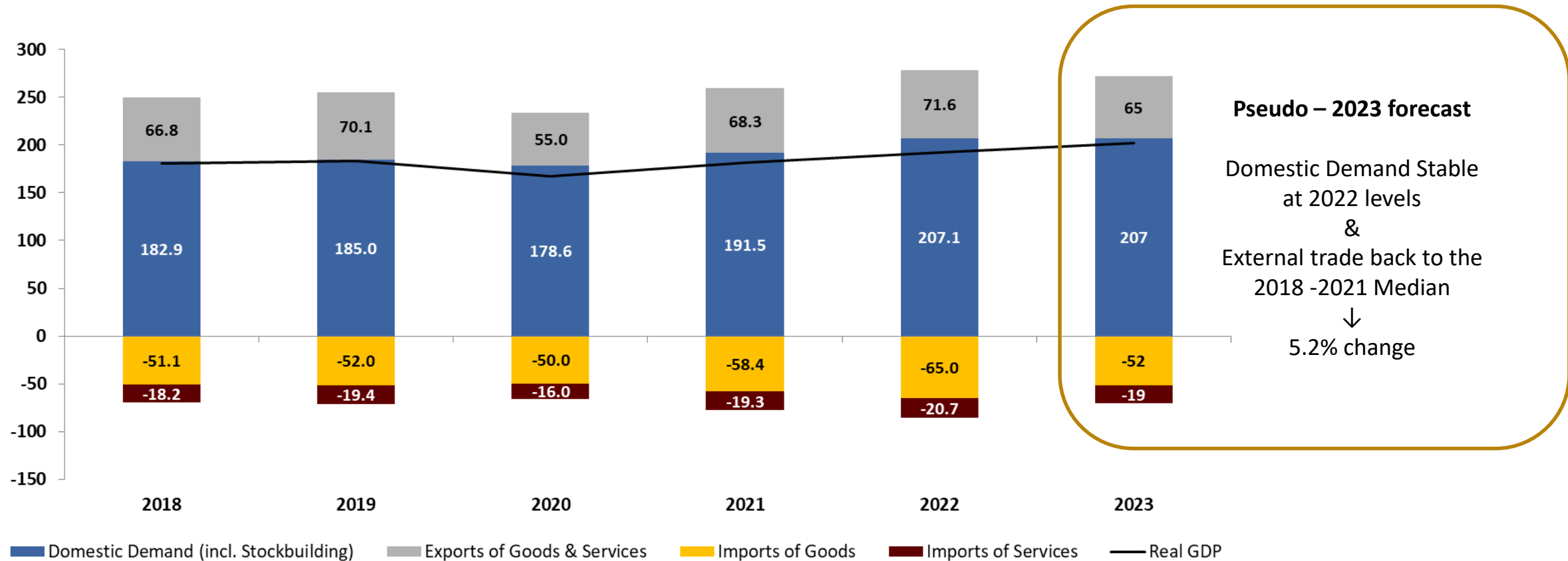
1. Balance of Payments, Bank of Greece



The PASSIVE reversal of the negative “Terms of Trade” shock alone could add 5% to Real GDP



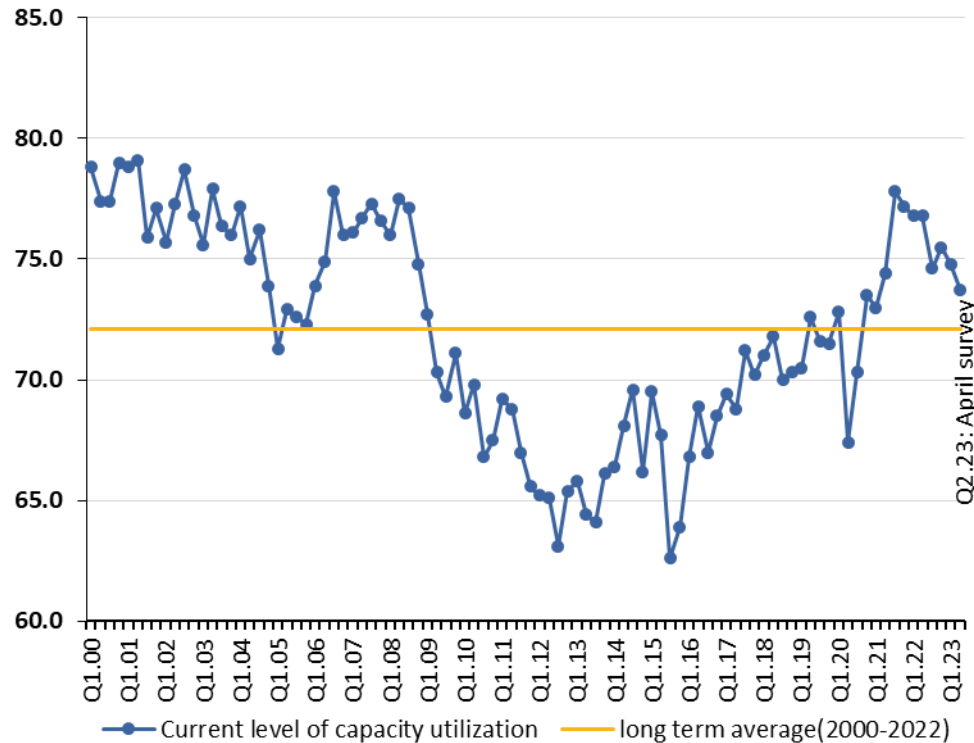
Components of Real GDP (€ bn)



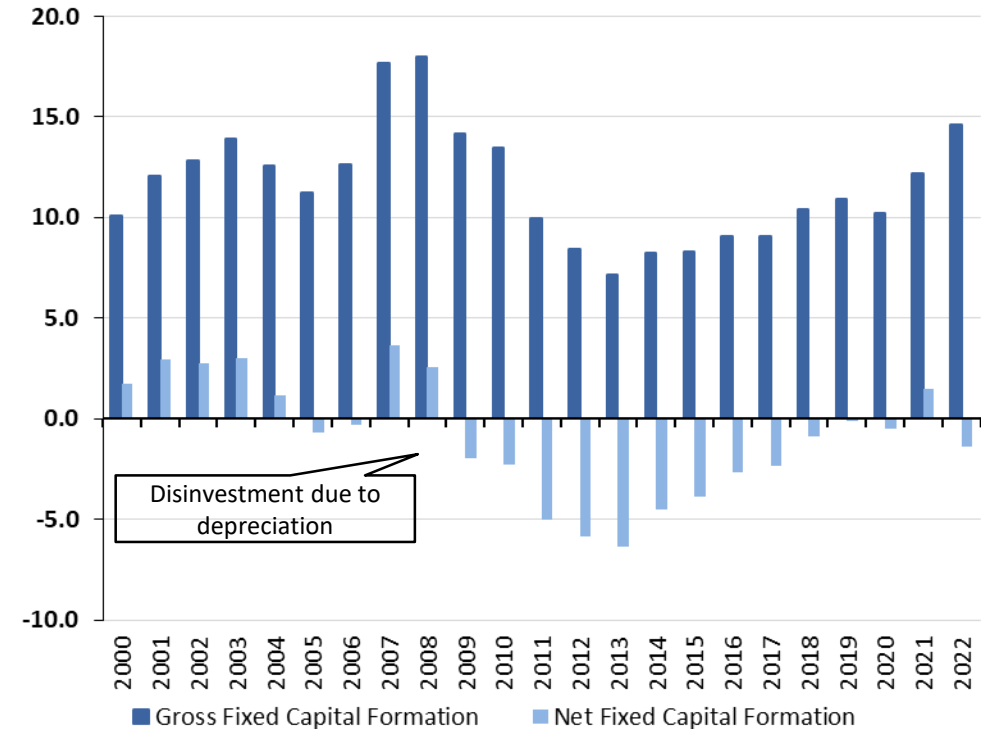
Investments: Increased Capacity Utilization and still negative levels of Net Investment create pressure for More Investments



Level of Capacity Utilization in Manufacturing Industry
(%, sa data)¹



Non Financial Corporations' Investment Gap
Gross & Net Fixed Capital Formation (bn €, current prices)



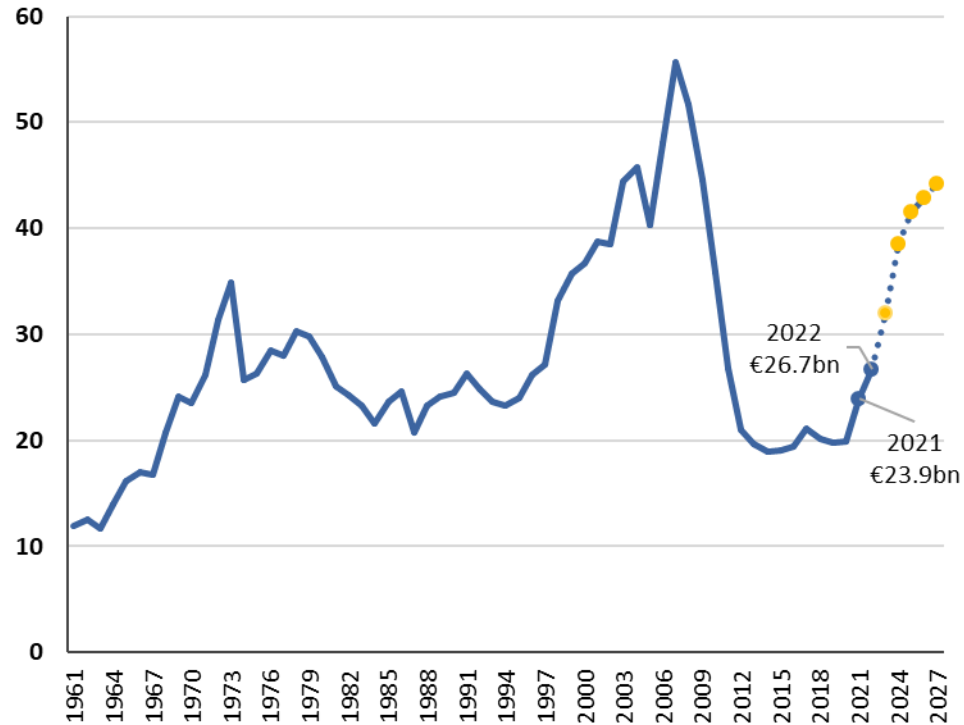
Q13 At what capacity is your company currently operating (as a percentage of full capacity) ?
The company is currently operating at % of full capacity



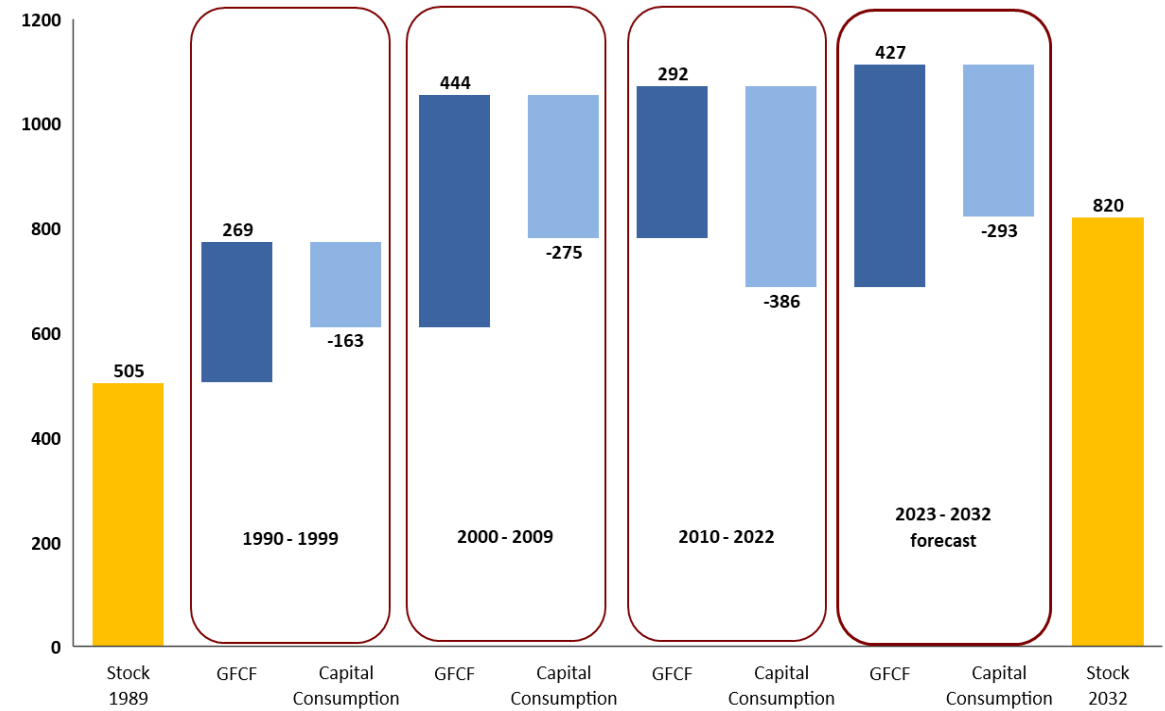
Investment Outlook: Above €30 bn in 2023 (in 2015 prices) and €427 bn until 2032



Investment Outlook
(Gross Fixed Capital Formation, 2015 prices, € bn)



Investments & Net capital stock
(€bn ,constant prices 2015, nsa data)



The Risky Factor: A total amount of €87bn is available for investment funding



NATIONAL RECOVERY AND RESILIENCE PLAN "GREECE 2.0", 2021 - 2026 (bn €)

Main Pillar	Grants	% of total	Loans	Total Grants & Loans
1. Green Transition	6.2	34%		
2. Digital Transformation	2.2	12%		
3. Employment skills and social cohesion	5.2	28%		
4. Private investment & transformation of the economy	4.8	26%		
TOTAL	18.4	100%	12.7	31.2

Note: (1) The National Recovery and Resilience Plan "Greece 2.0" was approved by ECOFIN on 13 July 2021. The "Greece 2.0" plan includes 106 investments and 68 reforms, utilising investment resources of 31.2 billion euros, of which 30.5 billion European funds (18.4 billion euros in grants and 12.7 billion euros in loans) will mobilise a total of 60 billion euros in investments in the country over the next five years.

NATIONAL STRATEGIC REFERENCE FRAMEWORK, 2021-2027 (bn €)

Human Resources and Social Cohesion	4.2
Competitiveness	3.9
Environment and Climate Change	3.6
Transportation	2.2
Fair Development Transition	1.6
Digital Transformation	0.9
Civil Protection	0.7
Technical Assistance and Beneficiary Support	0.5
Fisheries, Aquaculture and the Sea	0.5
13 Regional Programs	8.1
TOTAL FUNDS	26.2
out of which " National contribution"	5.3

COMMON AGRICULTURAL POLICY 2021 - 2027 (€ bn)

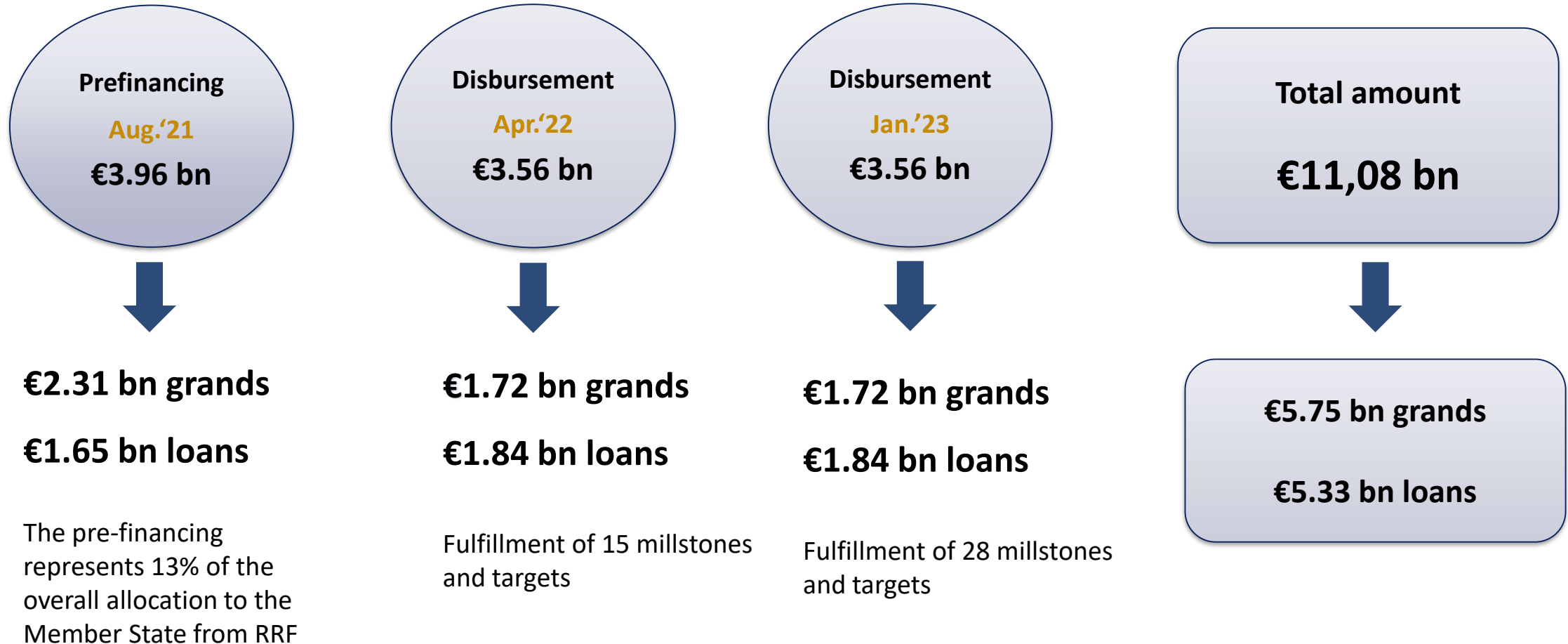
Direct payments	14.5
Rural development	4.4
Market measures	0.4
TOTAL	19.3

NATIONAL DEVELOPMENT PROGRAMME [NDP, 2021-2025] (€ bn)

Sectoral Programmes (68.35%), of which:	6.8
Ministry of Infrastructure and Transport	2.6
Ministry of Maritime Affairs and Insular Policy	0.9
Ministry of Development	0.9
Ministry of Education	0.6
Ministry of Interior	0.5
Ministry of Digital Governance	0.4
Ministry of Environment and Energy	0.3
Ministry of Health	0.2
Ministry of Culture & Sports	0.2
Ministry of Labour and Social Affairs	0.1
Ministry of Justice	0.0
Ministry of Tourism	0.1
Other Sectoral Programmes	0.2
Regional Programmes (22.5%)	2.3
Continuance of specific programmes (North & South Aegean, Athens Municipality)	0.2
Technical assistance programme	0.01
Reserve	0.8
TOTAL	10.0



Disbursements from RRF



The pre-financings are granted upon request of the Member State. All further disbursements are made upon request of the Member State and conditional on a positive assessment by the Commission as to the satisfactory fulfilment of a set of relevant milestones and targets



"Greece 2.0": Resource absorption and loan capital



RRF Loans

- A total of 392 investment plans, with a combined budget of €12.33 billion, have been submitted to the National Recovery and Resilience Plan, Greece 2.0, up to end of April 2023.
- These investment plans cover several sectors of the economy (primary sector, industry, retail commerce, electricity production, renewable energy sources, telecommunications, tourism and services).
- The loan part of 'Greece 2.0', amounting to €12.7 bn, aims, primarily, at strengthening the competitiveness of the country's businesses, contributing, financially, to the implementation of their investment plans.
- Greek Ministry of Finance at the end of March 2023, submitted a request to the European Commission for additional loan financing resources from the Recovery and Resilience Facility (RRF), amounting to € 5.0 bn, in the context of REPowerEU.

392 Investment Plans

Total Budget €12.33 bn

RRF Loans €5.1 bn

Own Funds €3.12 bn

Banks' loans €4.11 bn

236 investment plans have been submitted by very small, small and medium-sized enterprises, with a total budget of €2.75 bn.

136 loan contracts have been signed

Total Budget €5.74 bn

RRF Loans €2.34 bn

Own Funds €1.41 bn

Banks' loans €1.99 bn

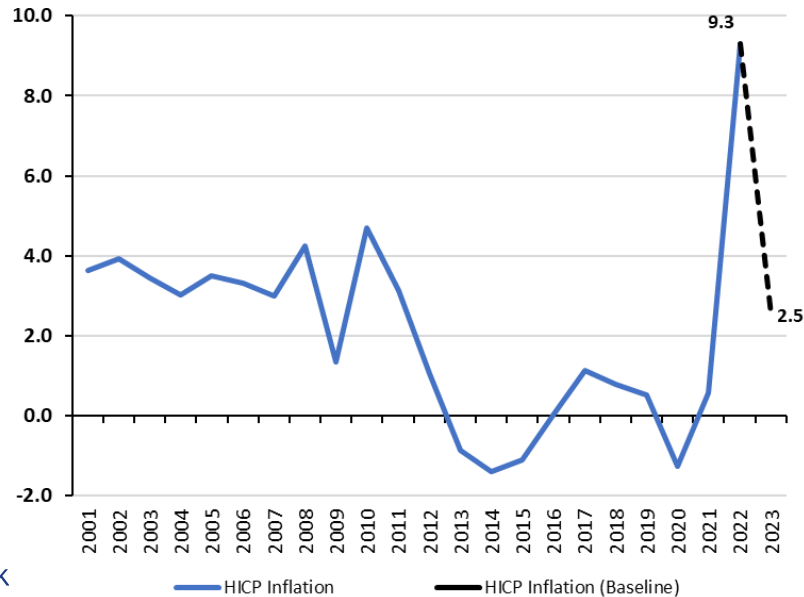
The average weighted interest rate of the loans is 1.9%, with an average repayment duration of 12 years.



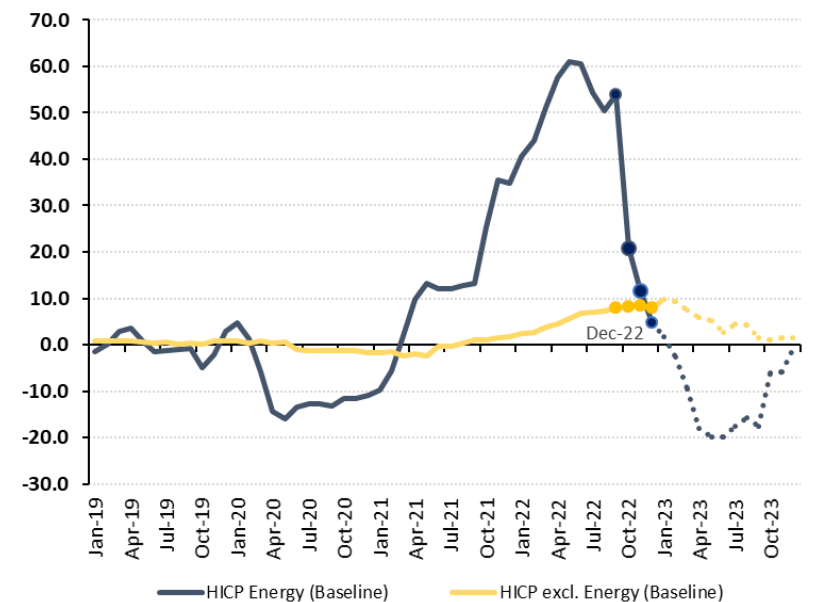
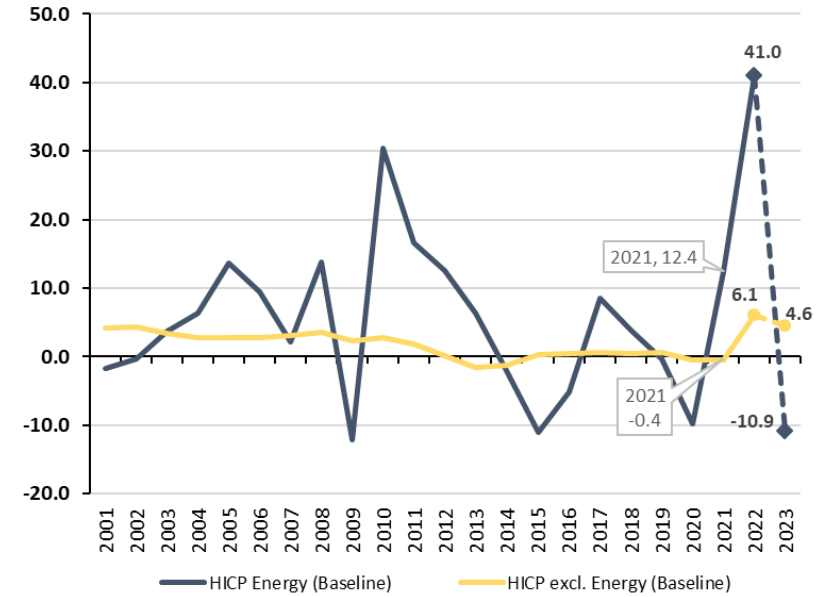
Baseline Scenario 2023 HICP Inflation Rate: Inflation could decline to 2.5% in 2023

	HICP Inflation	HICP Energy	HICP excl. Energy
2022	9.3 %	41.0 %	6.1 %
Peak point (2001 -2022)	Q3.22: 11.5% (Sep.'22: 12.1 %)	Q2.22: 59.7% (May '22: 61.0%)	Q4.22: 8.2% (Nov.'22: 8.5%)
Q1.23 F	7.3%	-3.4%	8.8%
Q2.23 F	1.3%	-19.3%	4.6%
Q3.23 F	0.7%	-16.9%	3.4%
Q4.23 F	0.8%	-4.0%	1.4%
2023 (F)	2.5%	-10.9%	4.6%

Overall HICP (Inflation Rate, %)



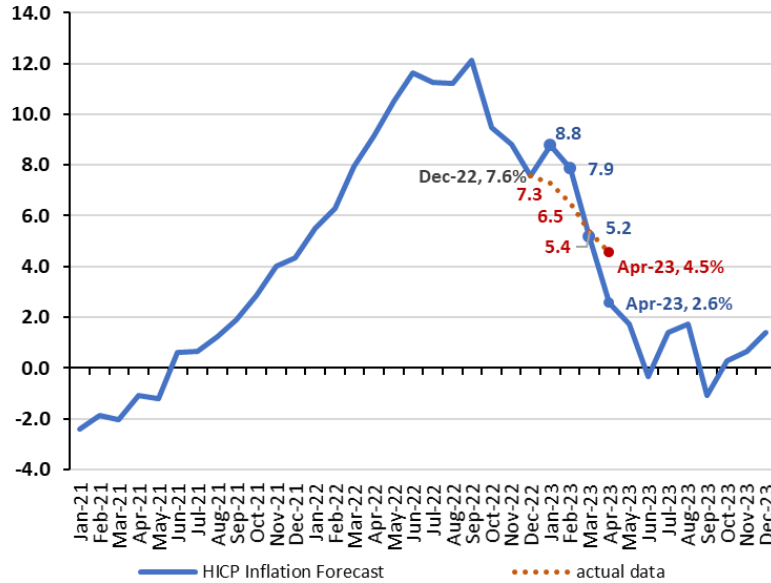
the annual view
 HICP Energy
 VS
 HICP excl. Energy
 the monthly view



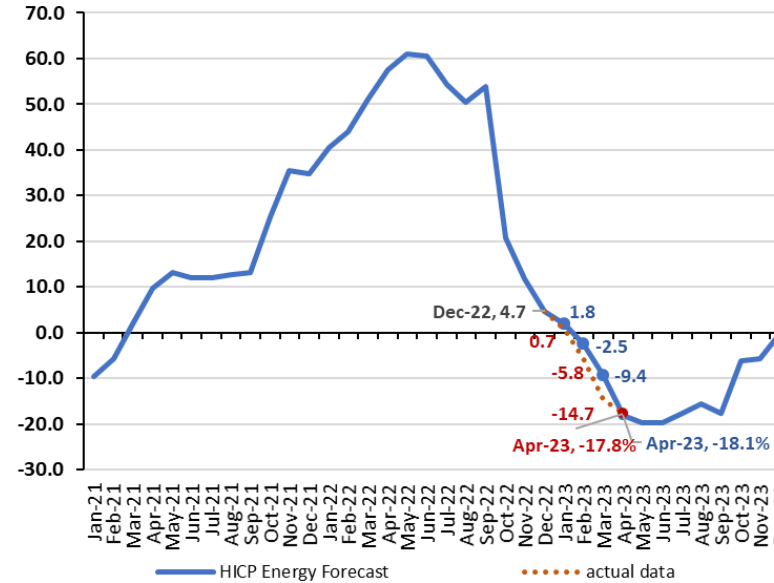
Baseline Scenario 2023 HICP Inflation Rate vs Actual



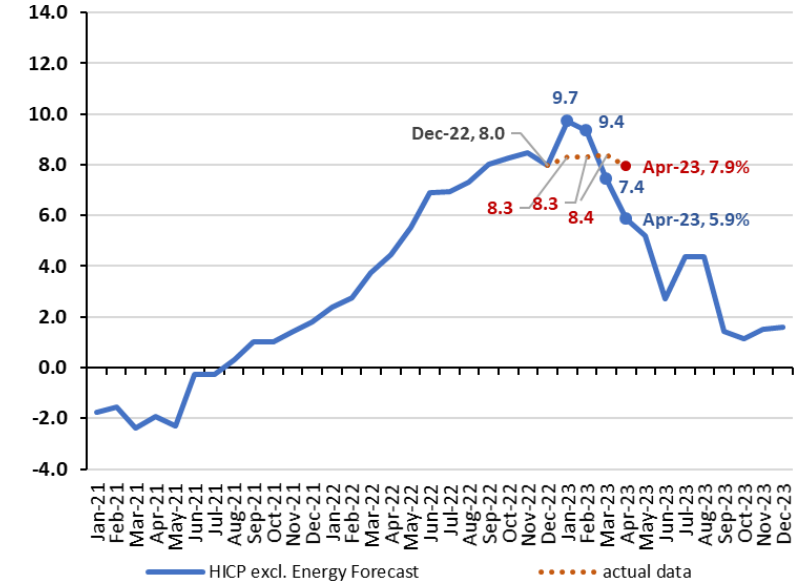
Overall HICP
(annual % change)



HICP Energy
(annual % change)



HICP excl. Energy
(annual % change)



(% change)	HICP (% change)	HICP Energy (% change)	HICP excl. Energy (% change)
Jan – April 2022	7.2	48.3	3.3
Jan – April 2023 (actual)	5.9	-9.4	8.2
Jan – April 2023 (forecast)	6.1	-7.1	8.1

April 2023: provisional data (Eurostat)





1 Conjunctural Analysis & Leading Indicators

2 Economic Outlook

3 **Competitiveness of the Greek Economy**

4 Real Estate Developments

5 Public Finance, Sovereign Rating & Bonds markets

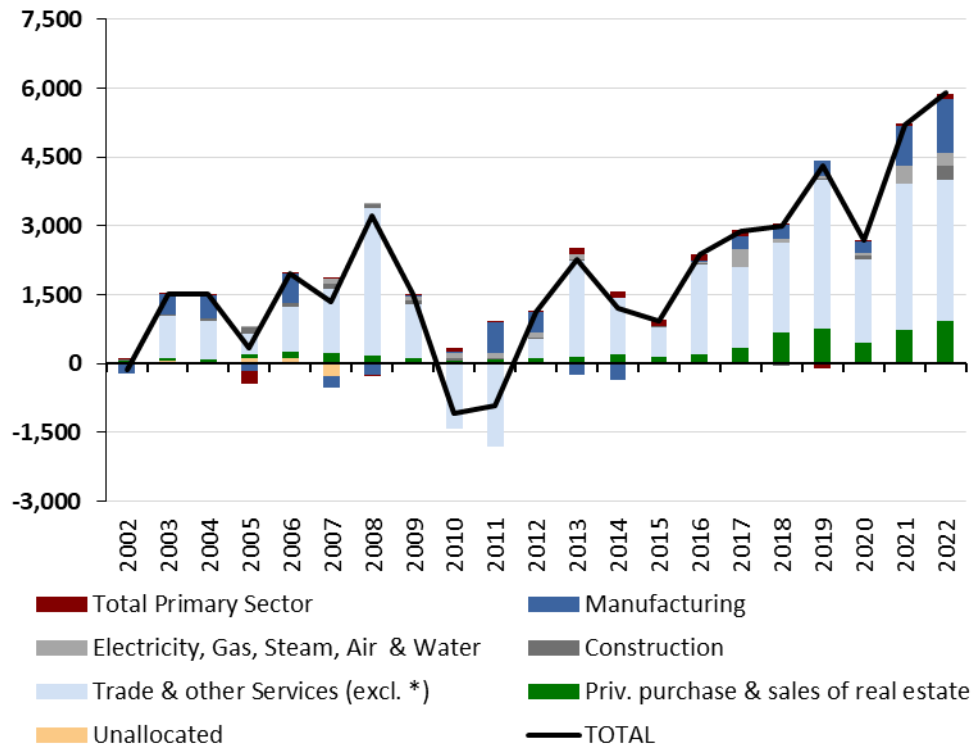
6 Banking Sector Developments



Net Foreign Direct Investment: Greek Economy open to foreign capital, while demand for real estate maintains its momentum

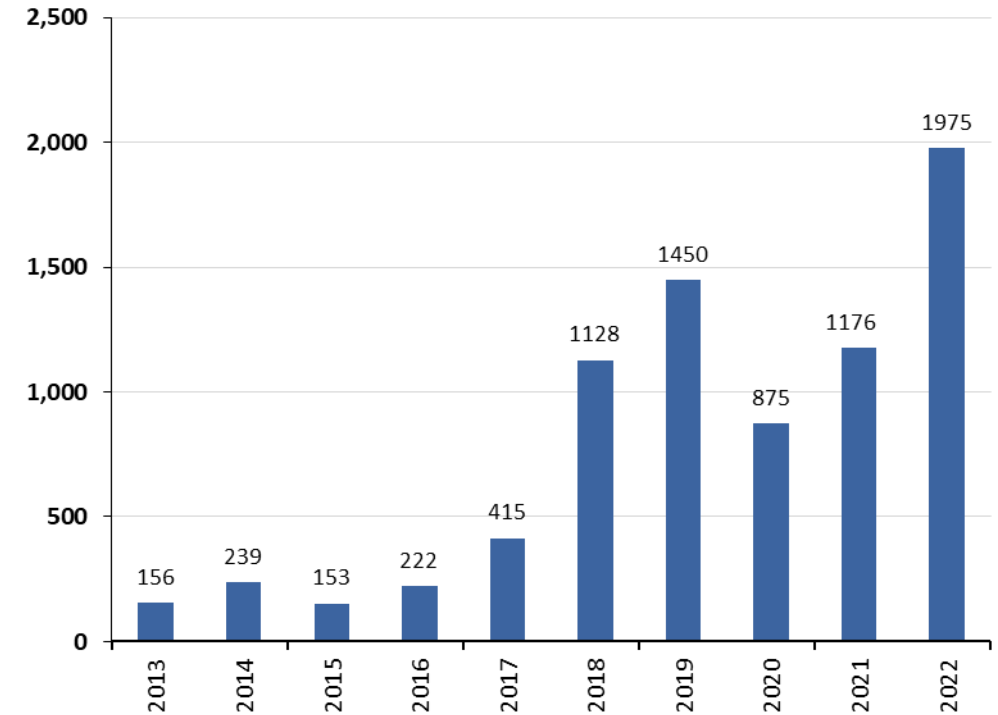


Net Foreign Direct Investment (FDI) in Greece by industry classification* (mn €)



*: (excl. financial services activities, except insurance and pension funding)

Real Estate FDI in Greece¹
(annual cumulative flows, € mn)



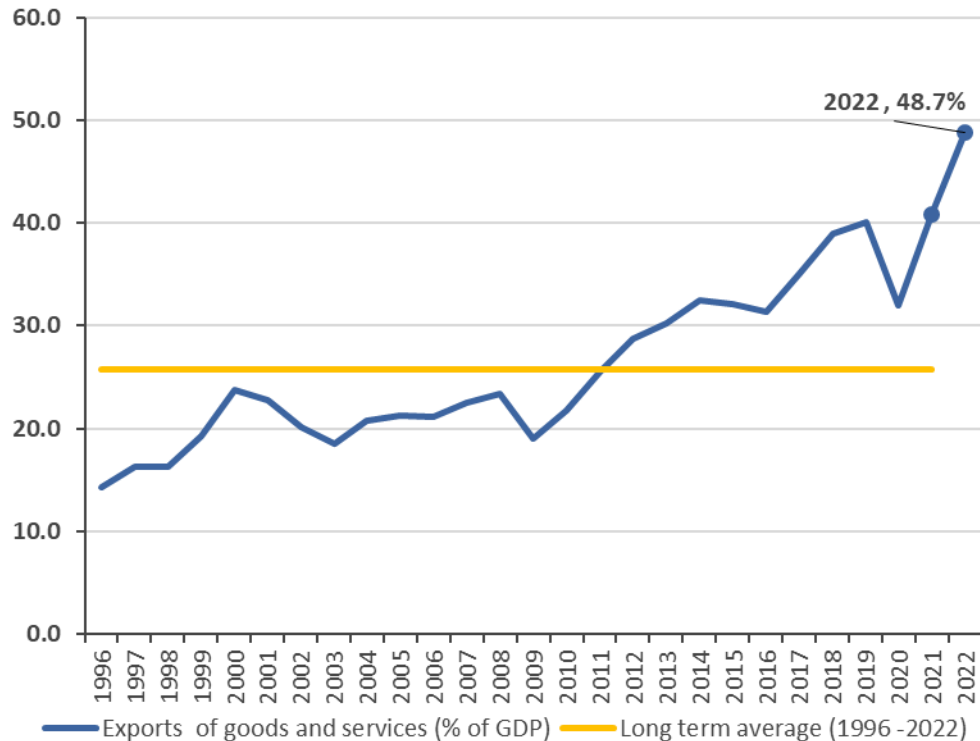
1. Net Foreign Direct Investment in Greece: Real Estate



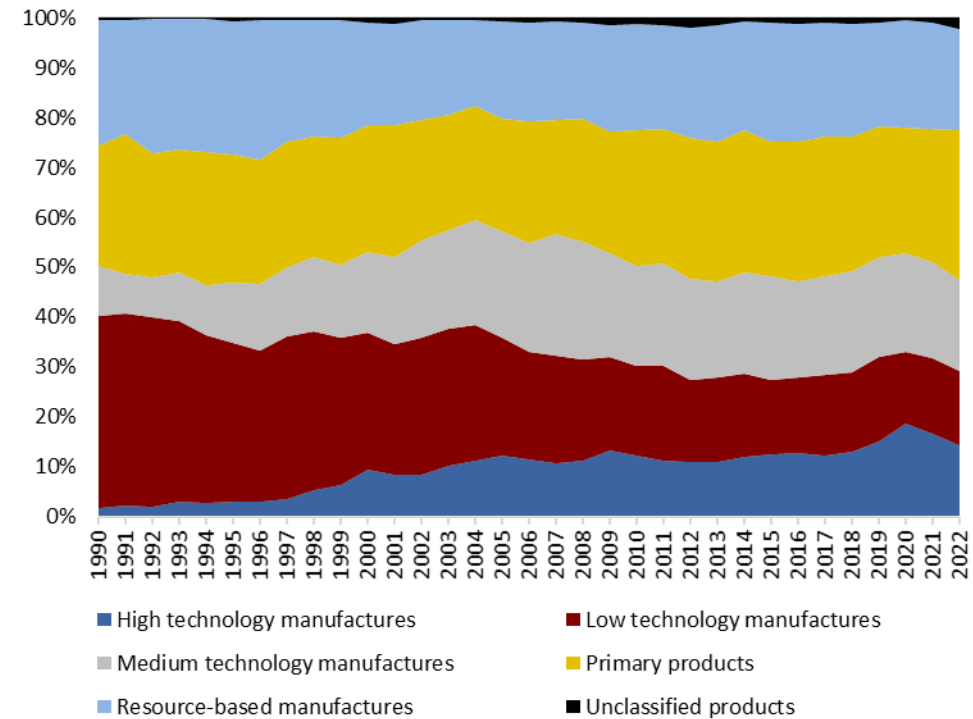
Exports: A more extrovert and open Greek Economy, with an increasingly more sophisticated export offering



Exports of Goods & Services
(current prices, as % of GDP)



Greek exports by technology categories
(as % of total)



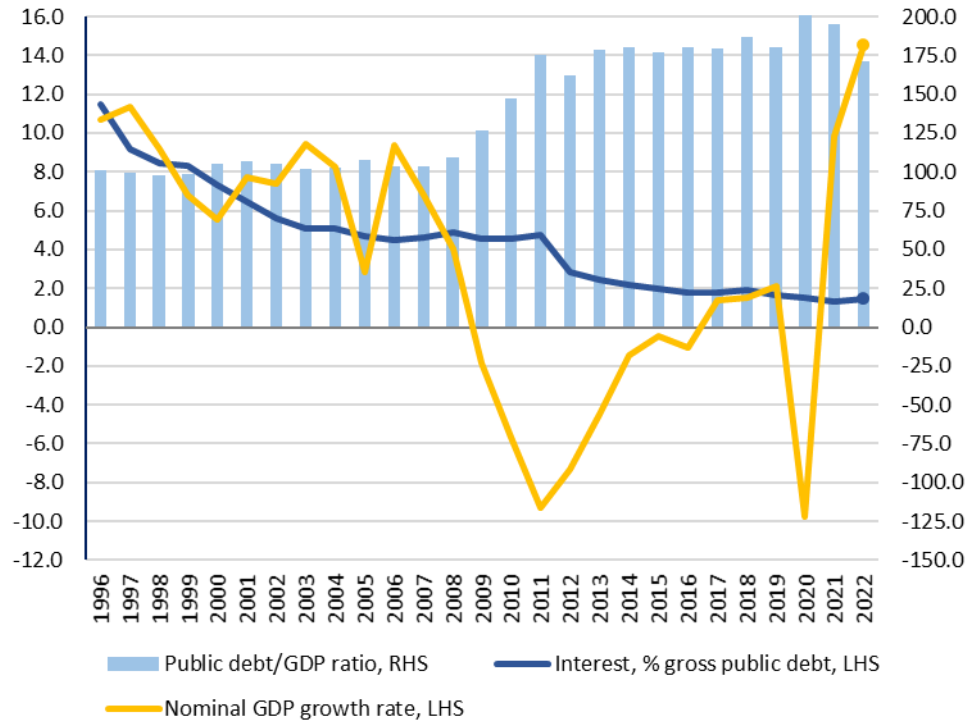
- Products by technological level were categorised by Lall's (2000) technological categorization | UNCTAD's rev.3 product's technological hierarchy Lall (2000), generation date: 27 January 2023.
- Product categorisation is according to the Standard International Trade Classification (SITC) revision 3.
- Excluding petroleum-related products (33) and product category "commodities and transactions, n.e.s." (9).



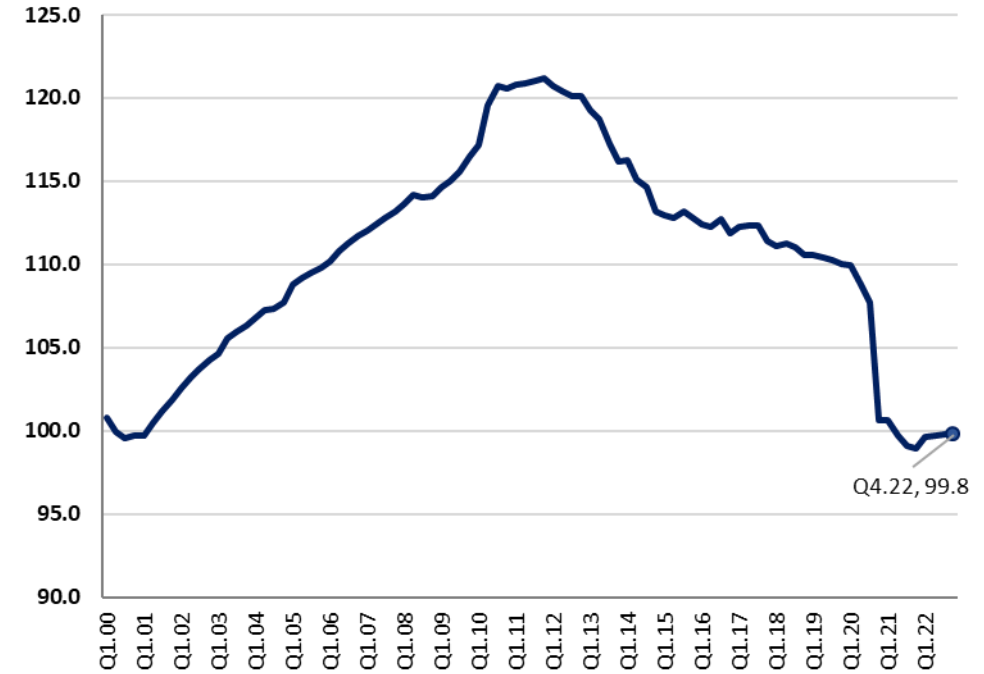
Conditions for Successful EA membership: “Painless deleveraging” and “ Price Competitiveness”



Interest rate (% gross public debt)
Nominal GDP growth (annual % change) &
General Government Public Debt ratio (as % of GDP)



Real Effective exchange rate index
with respect to EA countries
 (index, 2000=100)





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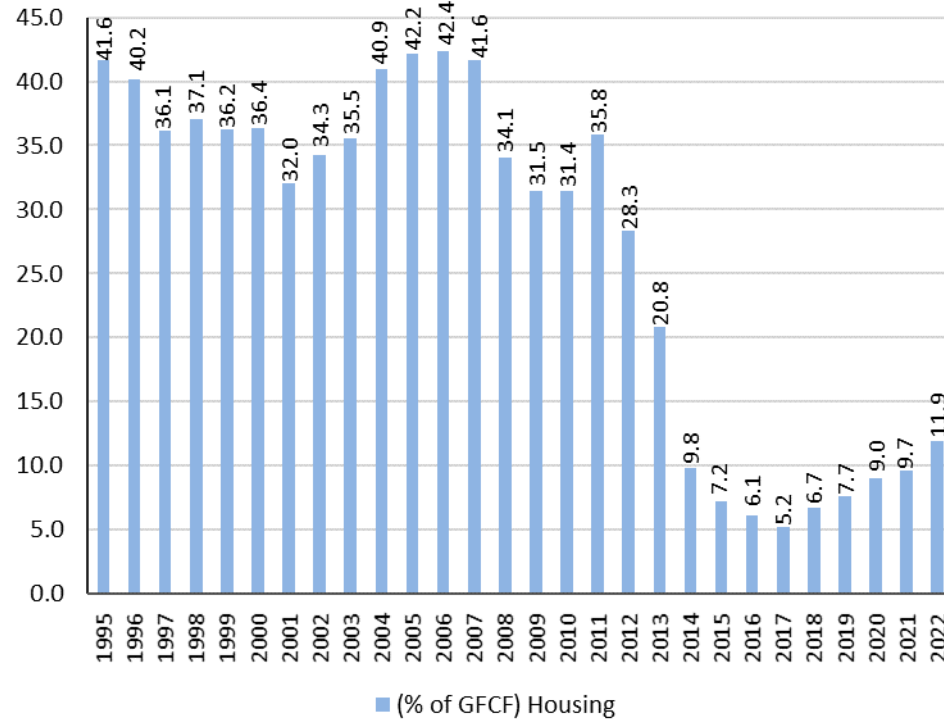
6 Banking Sector Developments



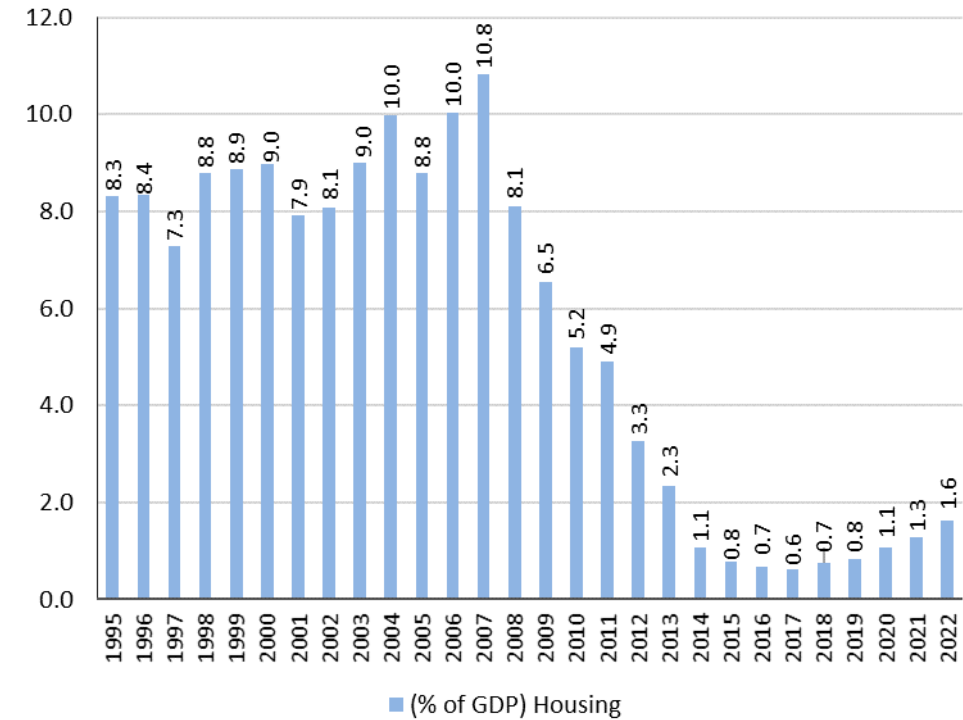
Real Estate Sector: Tightly linked to Construction activity



Gross Fixed Capital Formation: Housing
(% of GFCF, current prices)



Gross Fixed Capital Formation: Housing
(% of GDP, current prices)

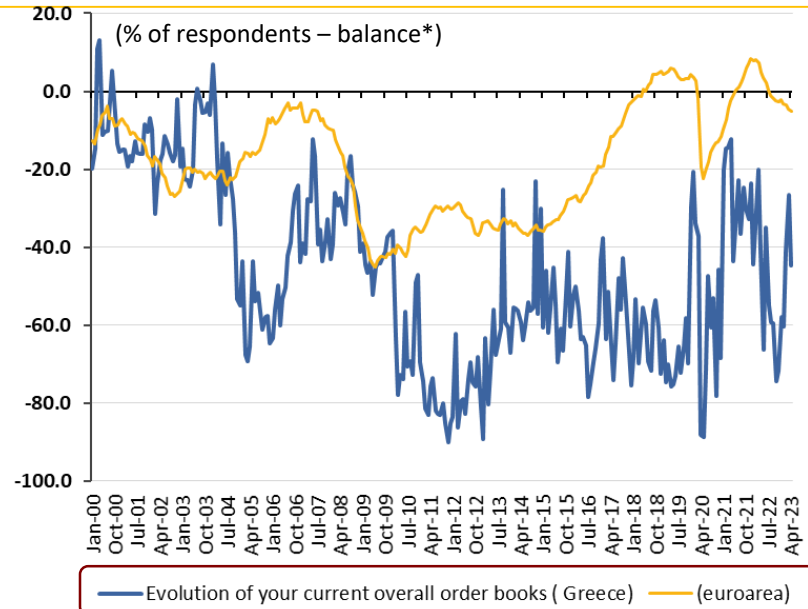


Construction Sector: Despite fluctuations, expectations seem to recover



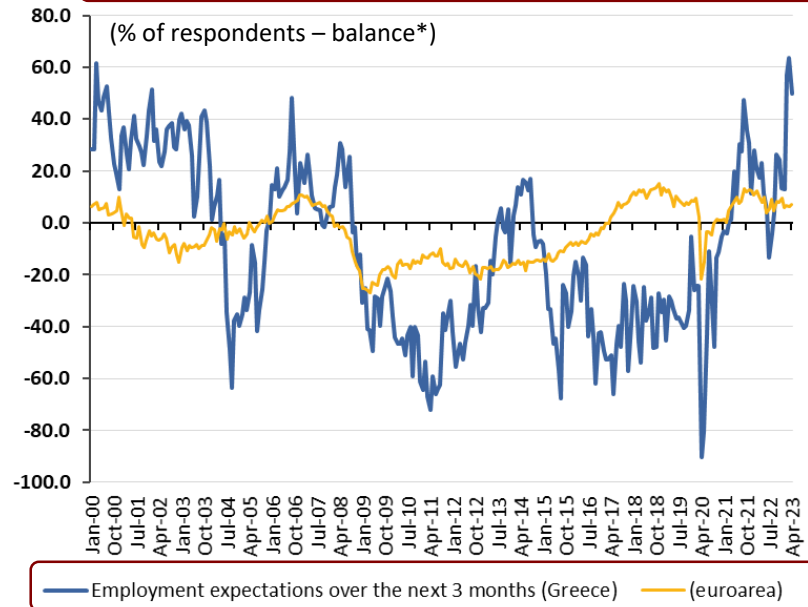
Q3 Do you consider your current overall order books to be...?

- + more than sufficient (above normal)
- = sufficient (normal for the season)
- not sufficient (below normal)

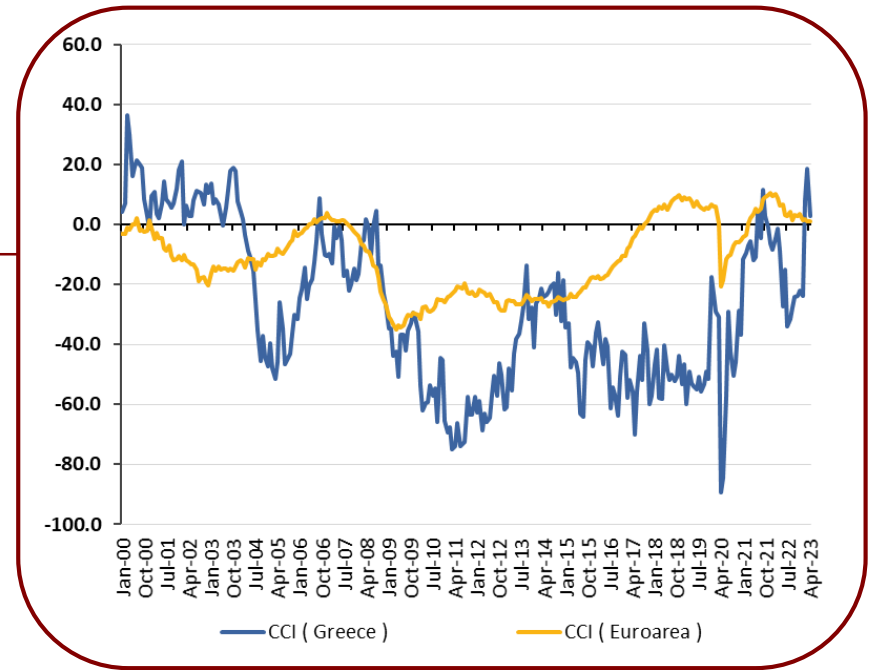


Q4 How do you expect your firm's total employment to change over the next 3 months? It will...

- + increase
- = remain unchanged
- decrease



Construction Confidence Indicator¹



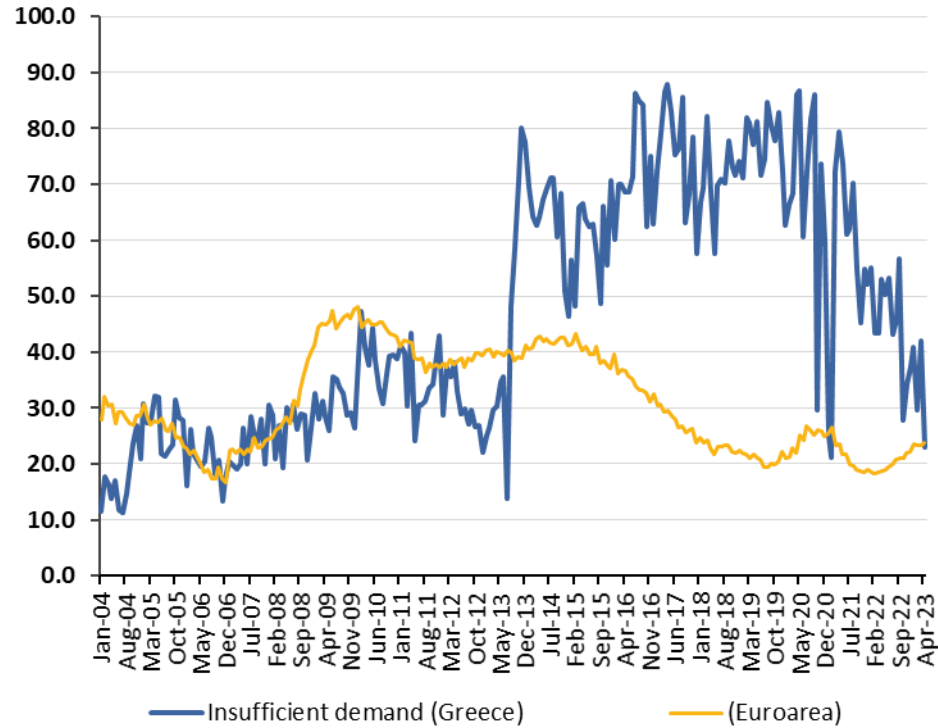
1. The construction confidence indicator is the arithmetic average of the balances (in percentage points) of the answers to the questions on order book and employment expectations. Balances are seasonally adjusted.

* Balances are constructed as the difference between the percentages of respondents giving positive and negative replies.

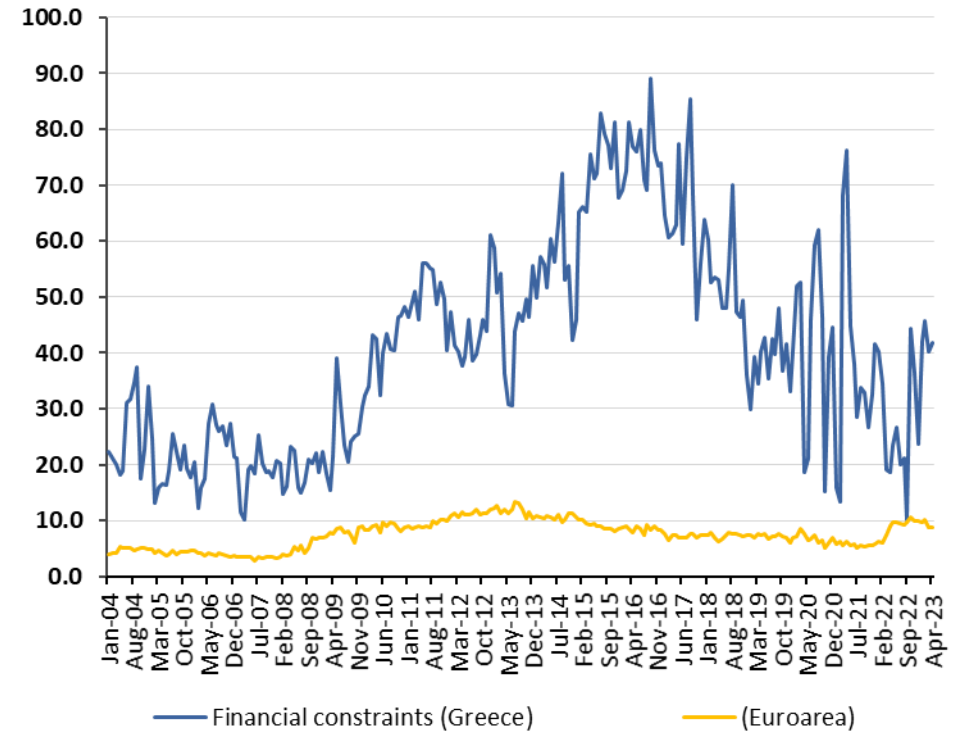
Construction's Companies estimates: Some of the main factors currently limiting the building activity...



Insufficient Demand
(% of respondents)



Financial Constraints
(% of respondents)



Q2 What main factors are currently limiting your building activity?

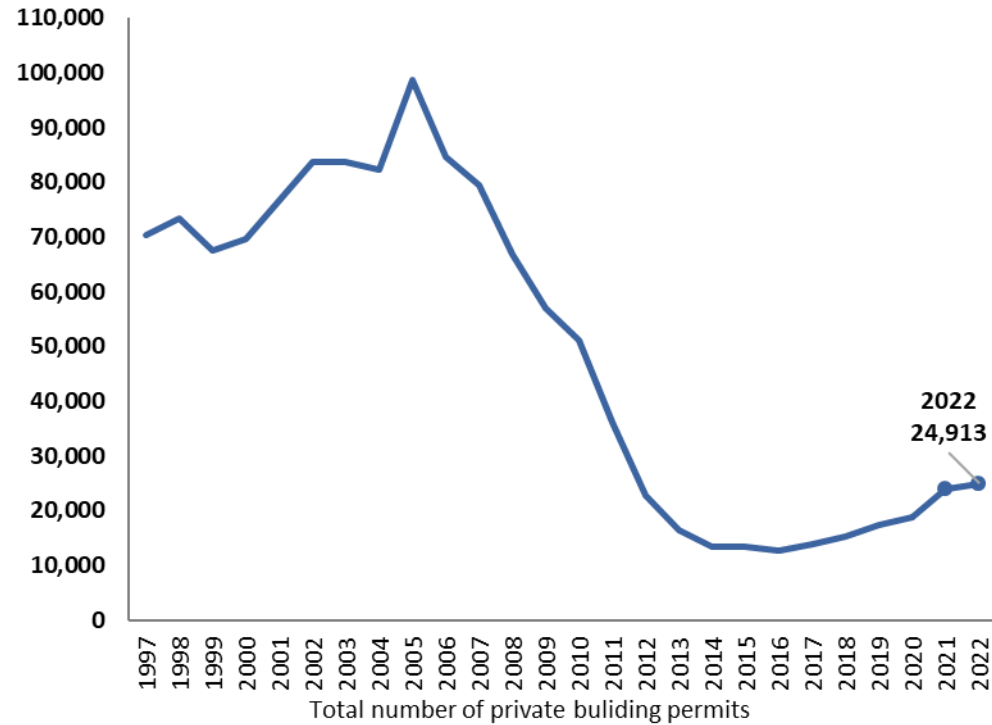
- none
- insufficient demand
- weather conditions
- shortage of labour force
- shortage of material and/or equipment
- financial constraints
- other factors



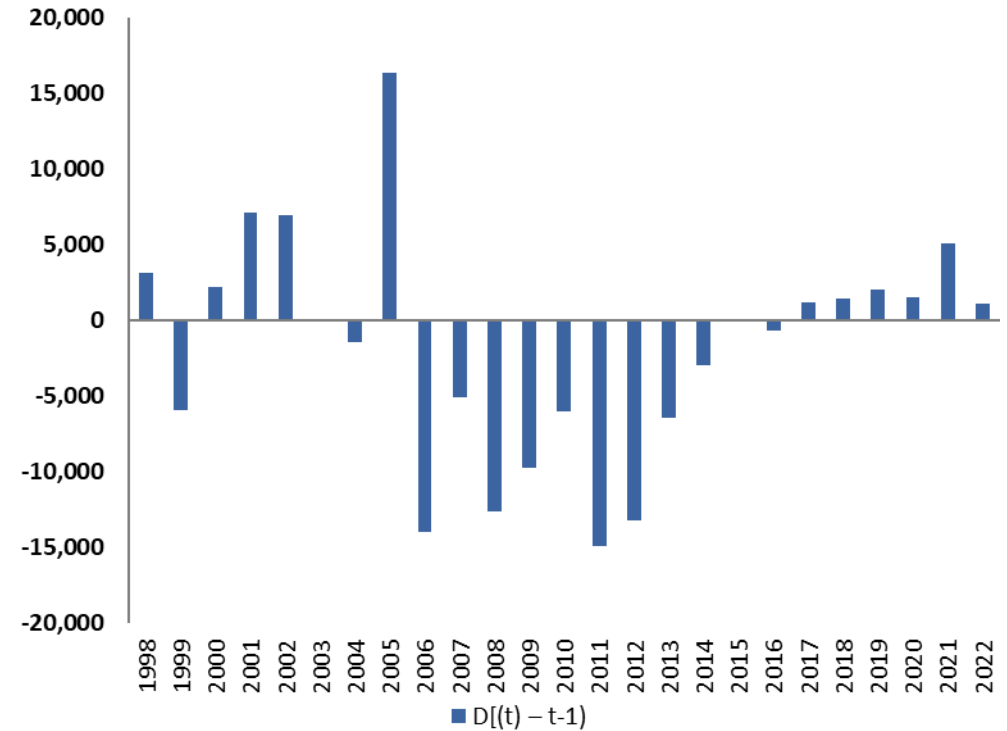
Real Estate Supply (I): At extremely low levels for more than a decade



Private Building Permits (number)



Private Building Permits (number, annual difference $D[(t) - (t-1)]$)

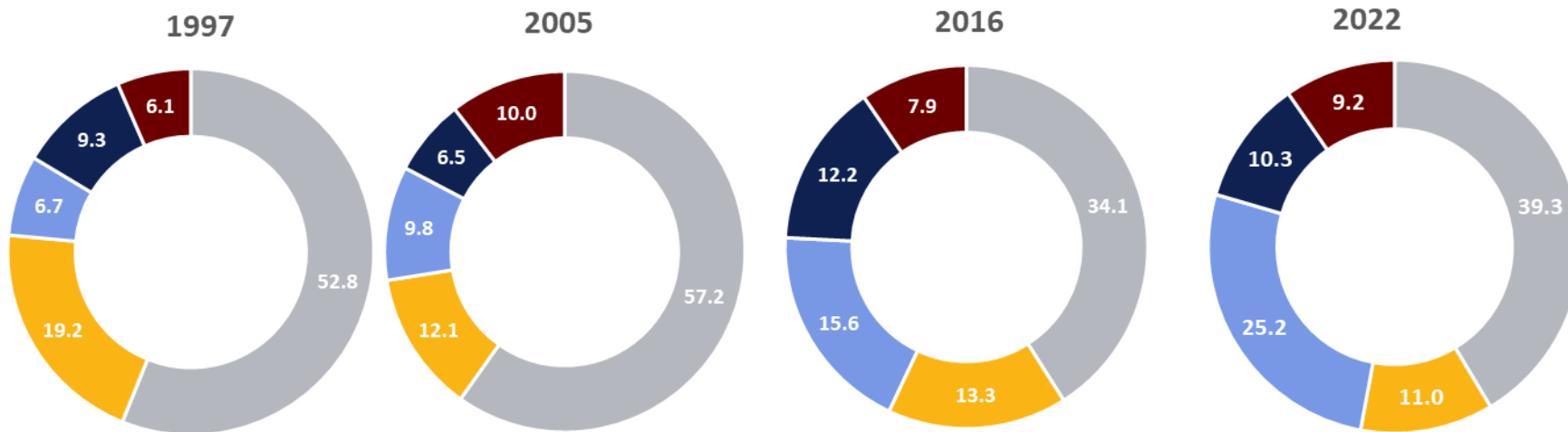


Real Estate Supply (II): New- built properties below 10K !

Categories of private building permits (number of permits)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
New built-properties	37,047	38,619	34,494	35,196	40,446	45,195	45,249	43,446	56,342	45,406	41,790	34,021	27,447	23,380	15,114	9,066	5,675	4,620	4,618	4,305	4,930	5,685	6,044	6,915	9,888	9,793
Extensions of built-properties	13,453	13,372	12,268	11,625	11,684	11,755	11,434	11,640	11,907	11,708	10,950	8,943	7,833	7,092	4,836	2,983	1,830	1,635	1,757	1,683	1,835	1,905	2,034	2,185	2,857	2,728
Revisions	4,694	5,602	4,694	5,945	7,291	7,766	8,354	8,624	9,637	9,273	10,192	9,147	7,864	7,435	6,244	3,822	2,640	2,286	2,097	1,974	2,213	2,434	4,226	4,964	5,499	6,286
Repairs, Restorations & Surrounding walls	6,531	7,266	7,903	8,153	7,849	8,440	8,279	7,884	6,452	6,712	6,089	5,740	5,789	5,750	4,550	2,500	2,438	1,596	1,649	1,536	1,727	1,964	1,925	1,646	1,862	2,557
Demolitions	4,305	4,259	4,168	4,770	5,312	6,291	6,067	6,254	9,852	7,085	6,066	4,954	4,088	3,330	2,172	1,238	1,105	937	978	1,003	1,154	1,254	1,439	1,540	2,190	2,286
Legitimizations & Modifications	4,178	4,233	3,883	3,895	4,111	4,215	4,294	4,388	4,379	4,352	4,320	3,935	3,980	3,995	3,159	3,228	2,728	2,360	2,251	2,140	1,926	1,938	1,561	1,518	1,511	1,263
TOTAL	70,208	73,351	67,410	69,584	76,693	83,662	83,677	82,236	98,569	84,536	79,407	66,740	57,001	50,982	36,075	22,837	16,416	13,434	13,350	12,641	13,785	15,180	17,229	18,768	23,807	24,913

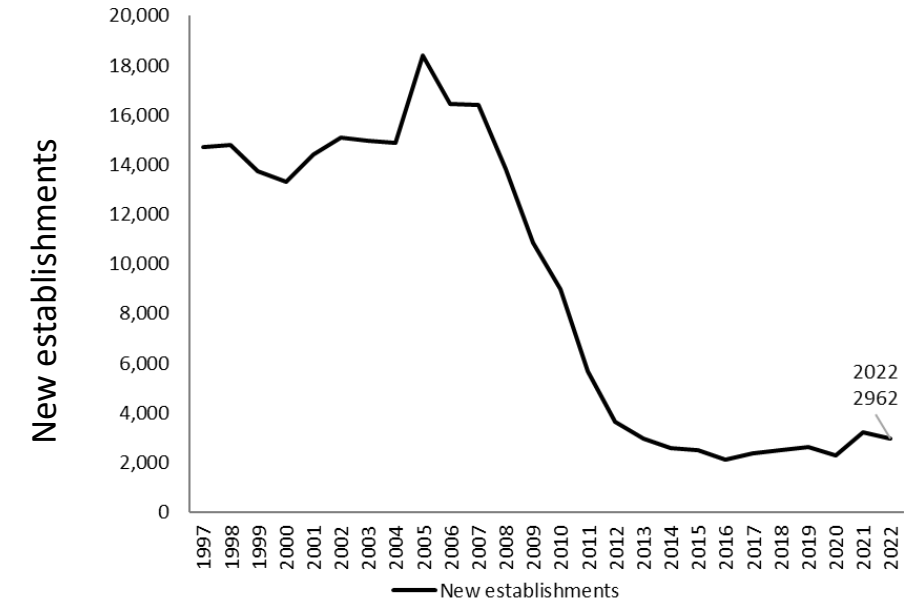
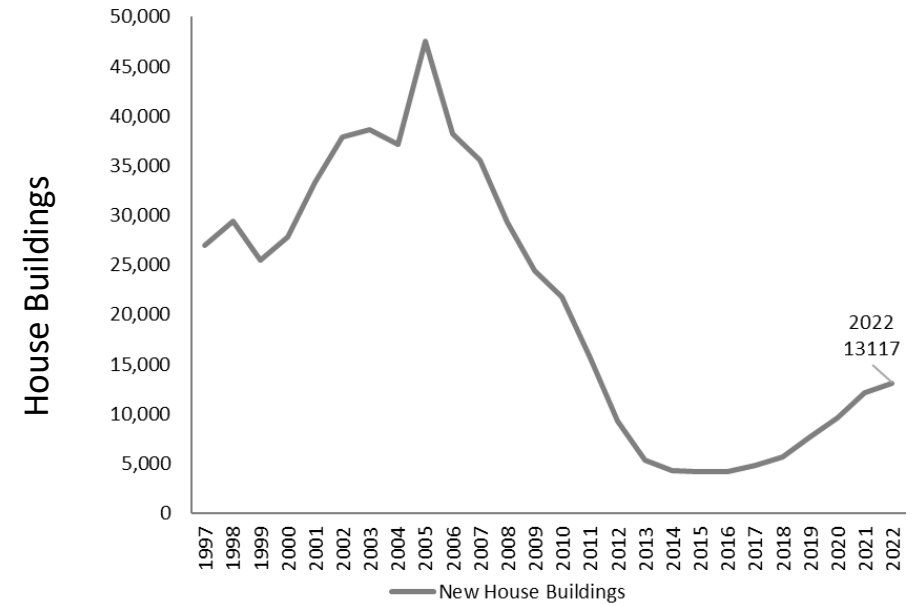
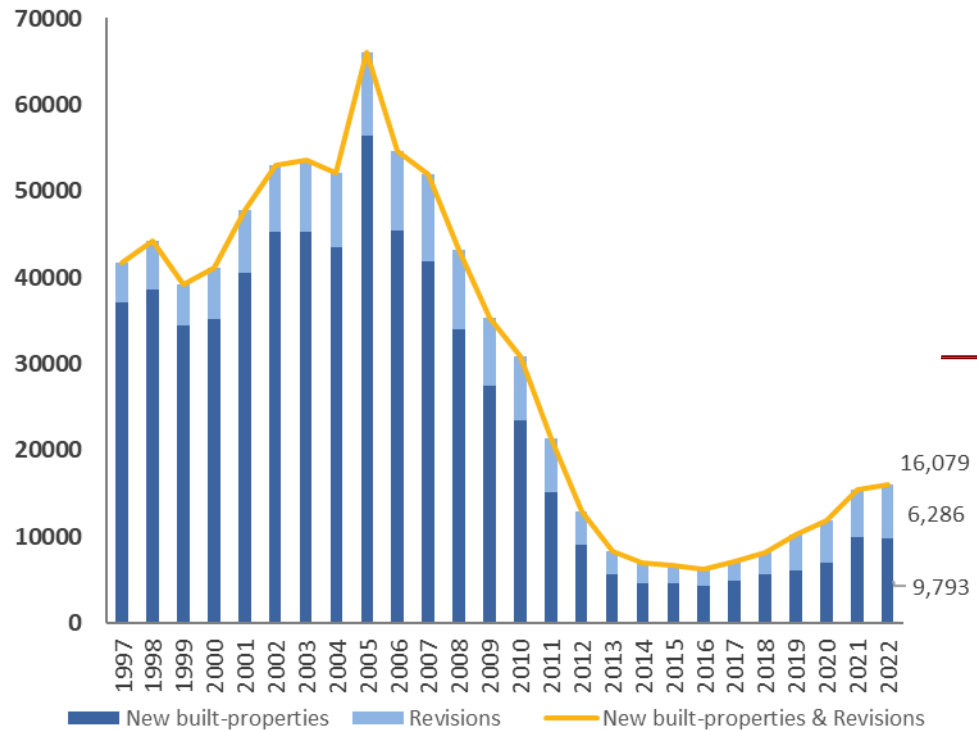
(categories as % of total)



Real Estate Supply (III): Low levels of supply in both Residential and Commercial segments



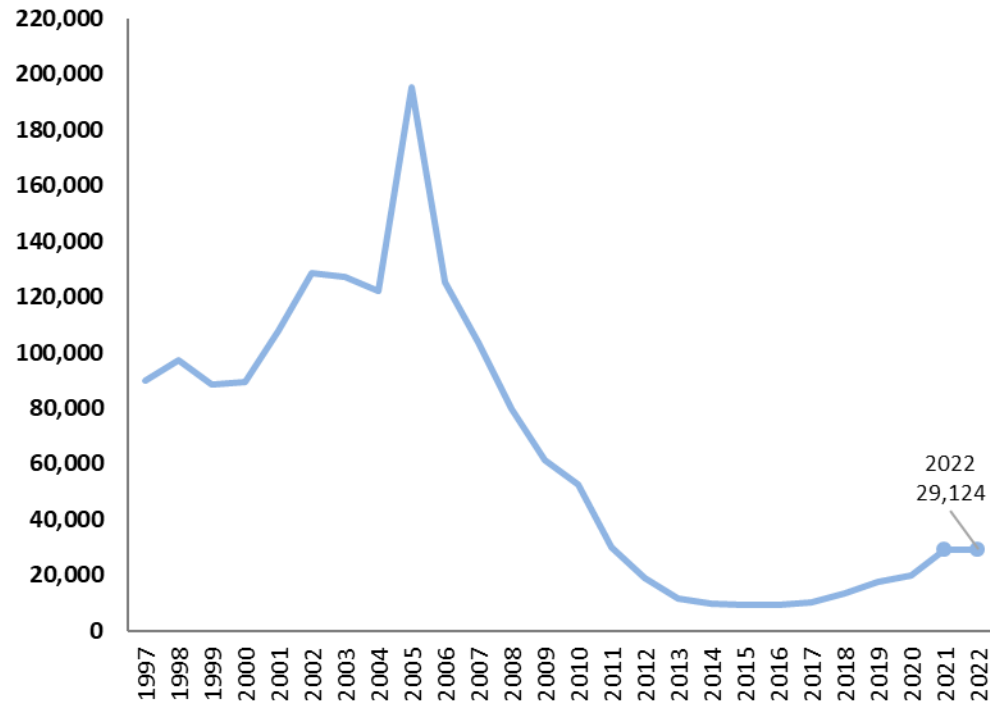
New Built- properties & Revisions
(number of Private Building Permits)



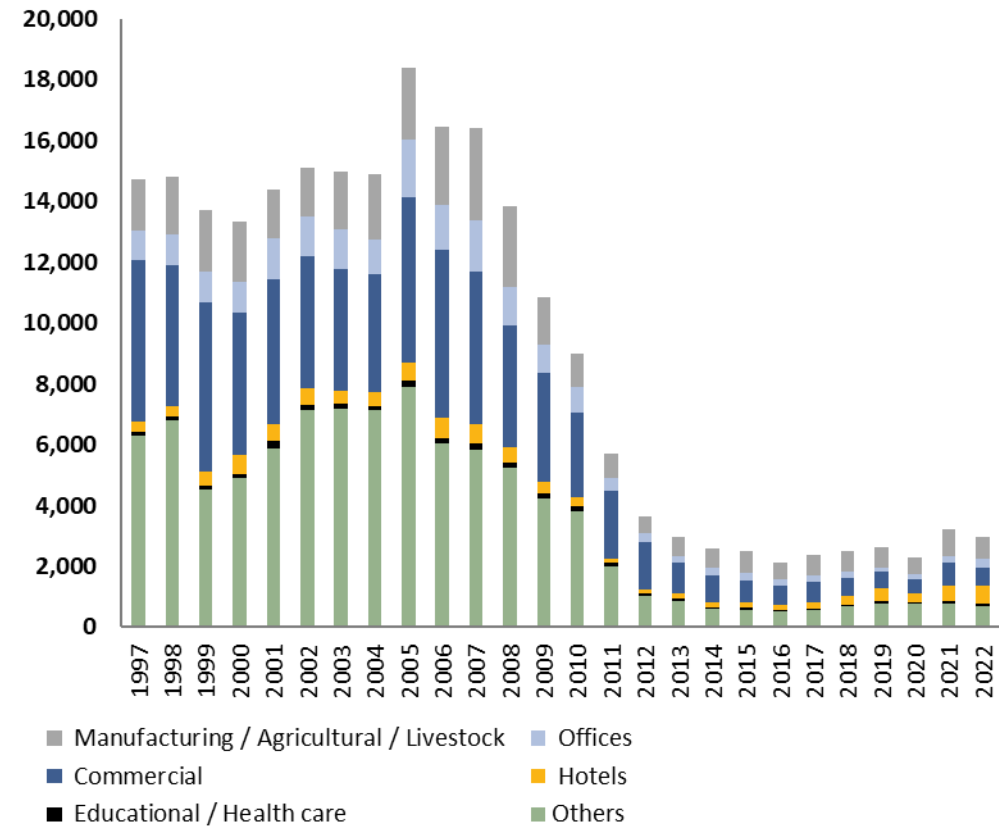
Real Estate Supply (IV): Strong Decline in both Dwellings & Establishments



New Dwellings
(number)



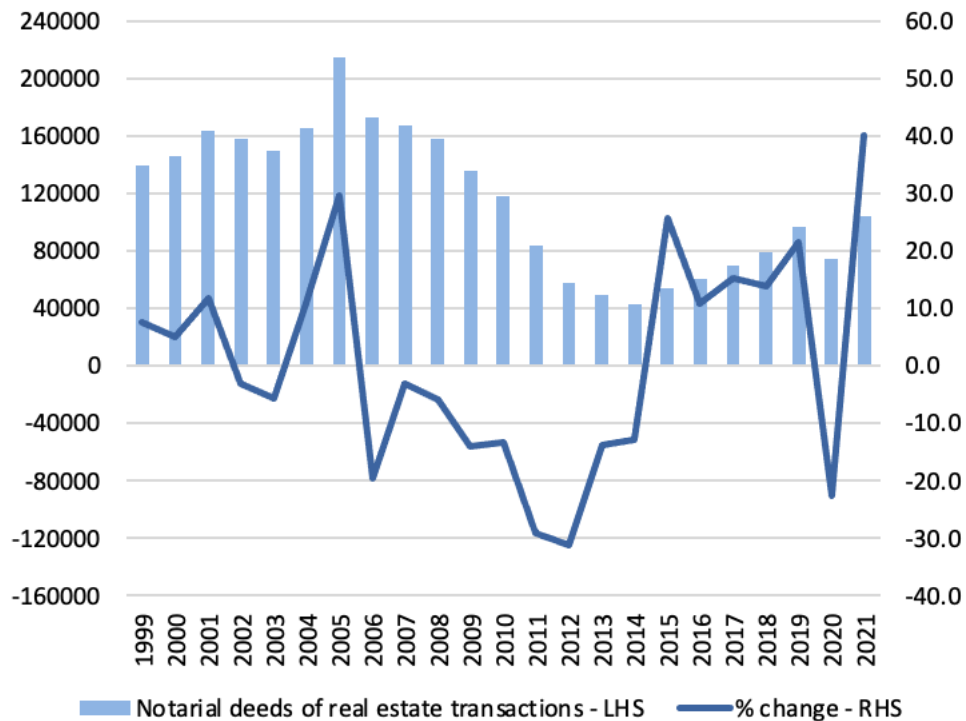
New Establishments by category of use
(number)



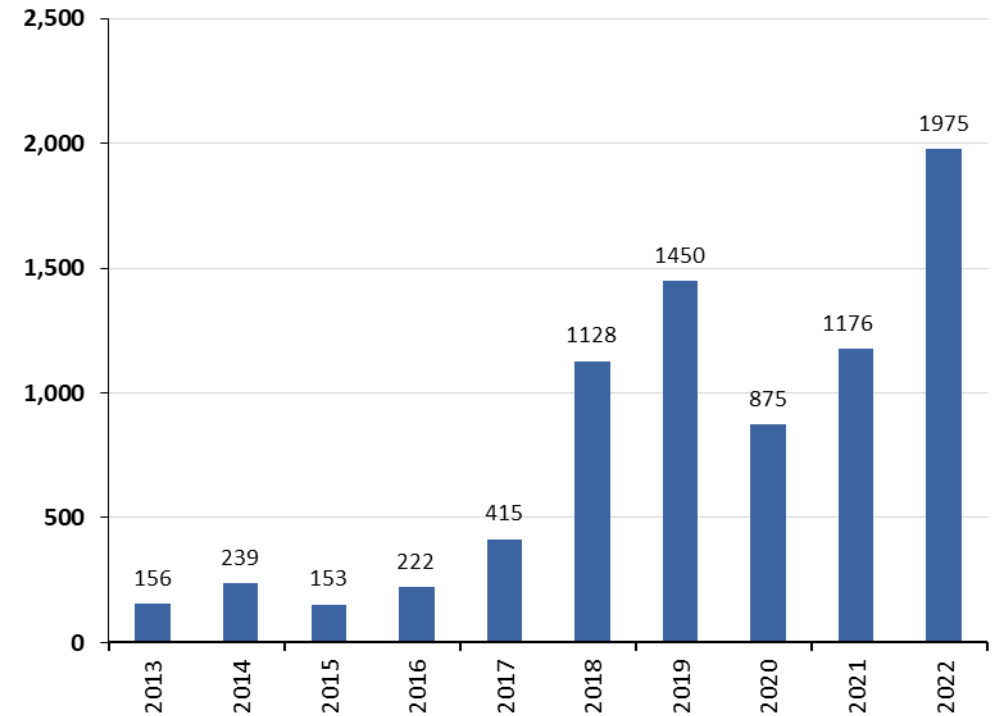
Real Estate Demand: While transactions and foreign demand have peaked -up



Notarial deeds of real estate transactions
(number & % growth rate)



Real Estate FDI in Greece¹
(annual cumulative flows, € mn)



Note: 1. Net Foreign Direct Investment in Greece: Real Estate



Mortgage Demand vs Residential Property Prices & Residential Investments



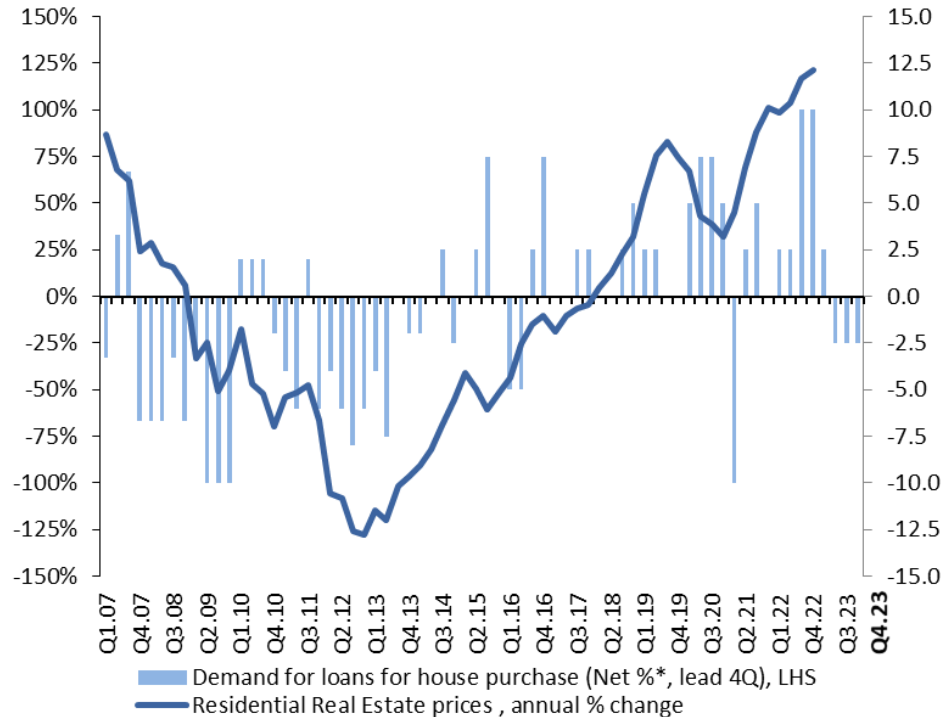
Question: 22. Please indicate how you expect **demand for loans to households to change over the next three months** at your bank (apart from normal seasonal fluctuations). Please refer to the financing need of households independent of whether this need will result in a loan or not.

- Decrease considerably
- Decrease somewhat
- Remain basically unchanged
- Increase somewhat
- Increase considerably

Bank Lending Survey Methodology: With respect to the questions on the demand for loans the Net Percentage records the difference between the percentage of credit institutions (CIs) that report an increase and the percentage of CIs that report a decrease. The Net Percentage for the sample as a whole equals the algebraic sum of the percentages that correspond to the answers given by all four CIs and can take a value in the range of 100% to -100%. It should be noted that in deriving the results for the Greek sample, the answers of each institution are not weighted with its market share: all institutions have the same weight.

PIRAEUS BANK

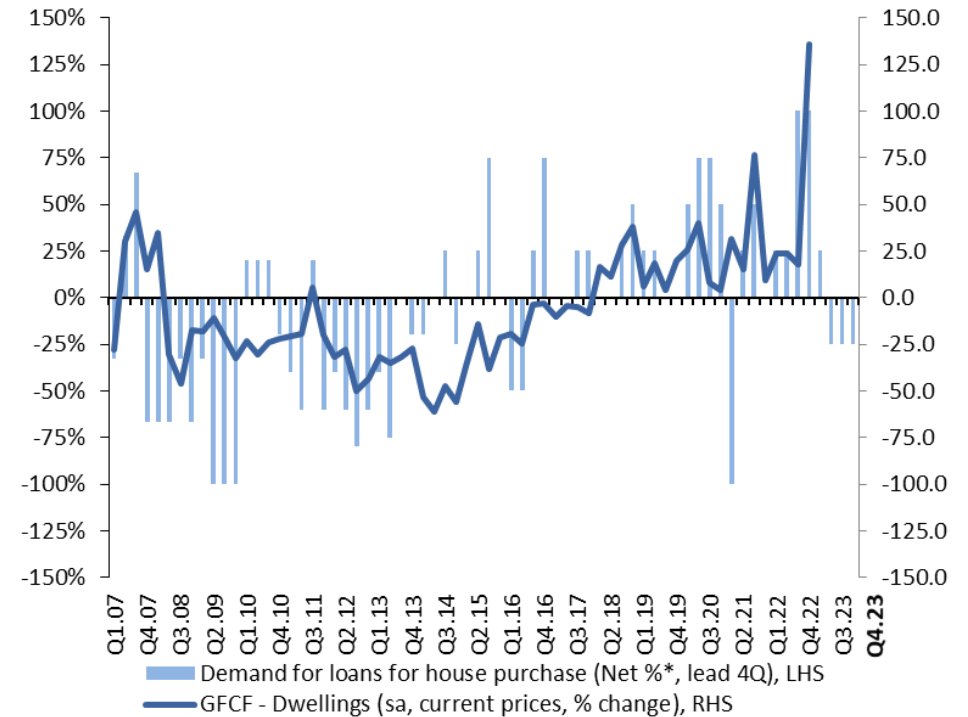
Mortgage Demand vs Residential Property Prices



Sample: 2007Q1 2022Q4
 Included observations: 64
 Correlations are asymptotically consistent approximations

DMND_LONS_ANWR,RRE_GROWTH(-i)	DMND_LONS_ANWR,RRE_GROWTH(+i)	i	lag	lead
		0	0.17	0.17
		1	0.11	0.28
		2	0.09	0.38
		3	0.03	0.47
		4	0.01	0.48
		5	-0.02	0.42

Mortgage Demand vs Residential Investments



Sample: 2007Q1 2022Q4
 Included observations: 64
 Correlations are asymptotically consistent approximations

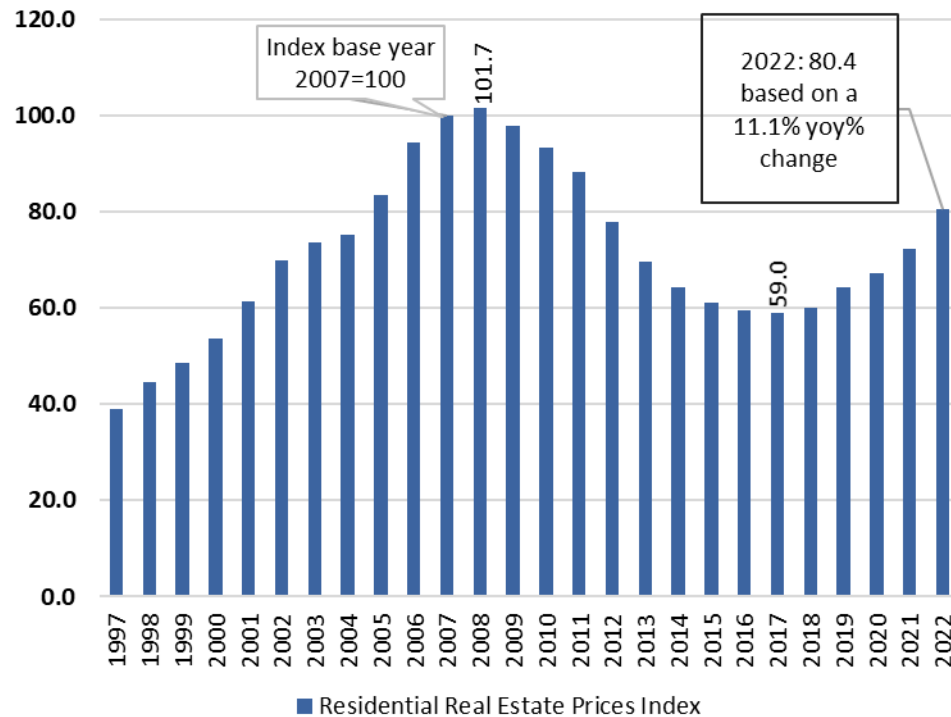
DMND_LONS_ANWR,GFCF_GROWTH(-i)	DMND_LONS_ANWR,GFCF_GROWTH(+i)	i	lag	lead
		0	0.16	0.16
		1	0.17	0.11
		2	0.12	0.23
		3	0.01	0.33
		4	0.03	0.46
		5	0.03	0.45



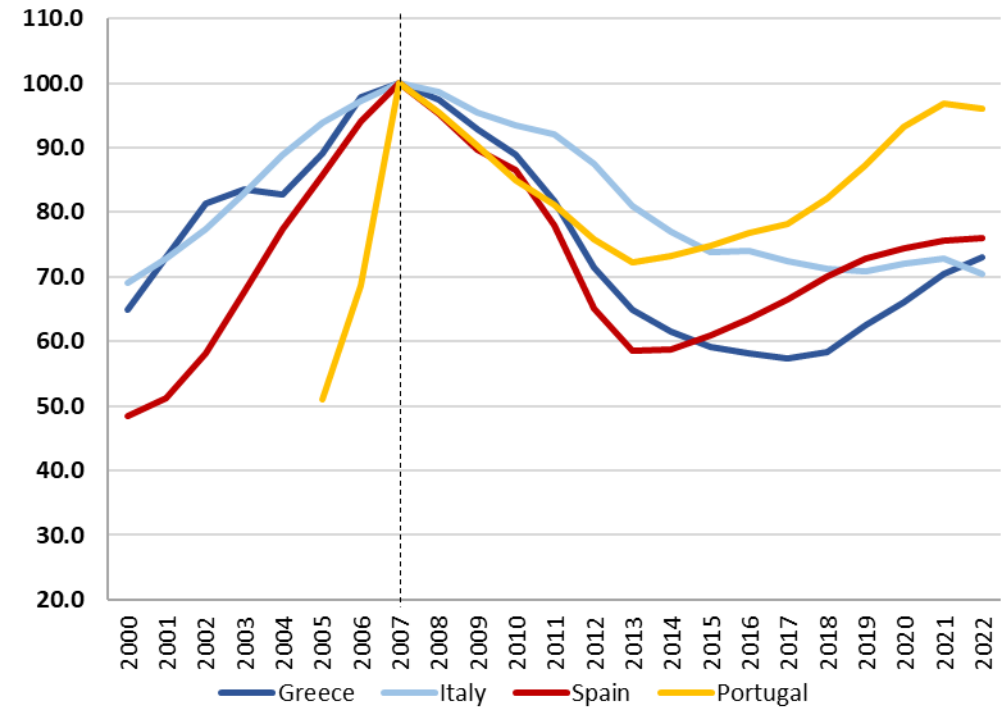
Housing Market: So limited new supply for years in combination with improved demand equal higher prices !



Residential Real Estate Prices Index
(2007=100)



Real House Price Indices¹
(in real terms, 2007=100)



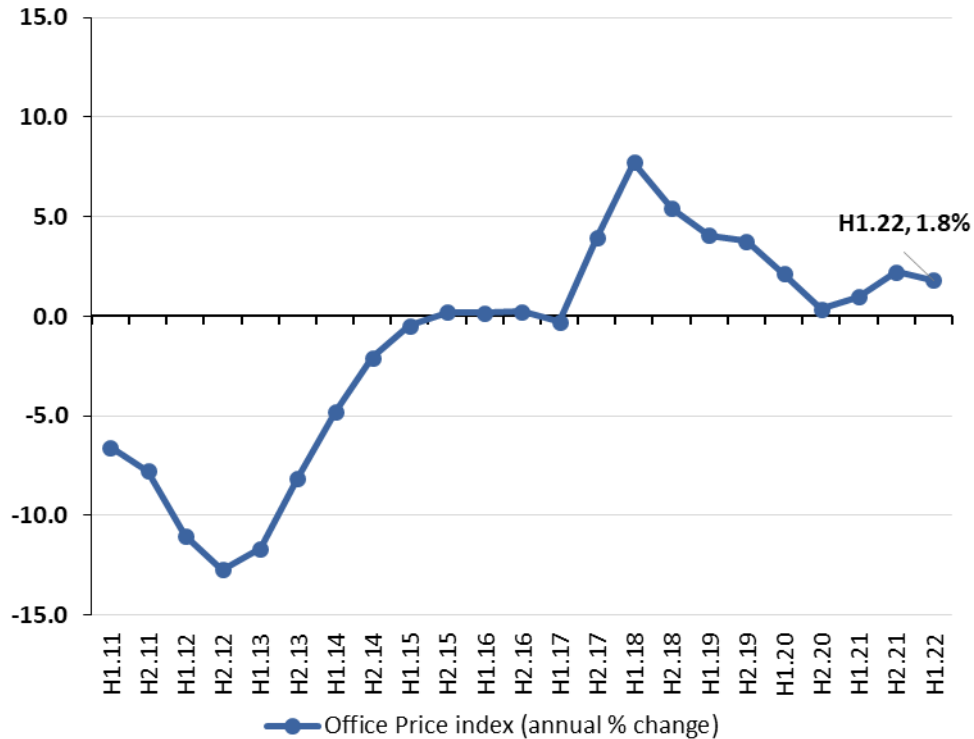
1. The real house price index is given by the ratio of the nominal house price index to the consumers' expenditure deflator in each country from the OECD national accounts database.



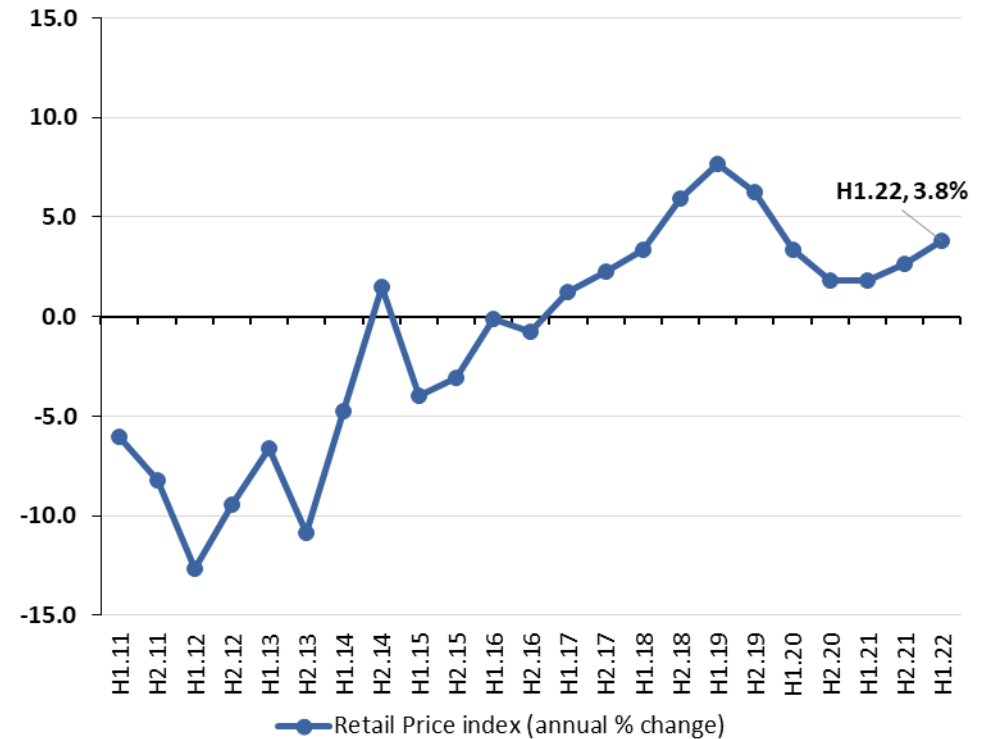
Commercial Real Estate Market: A positive but more subdued picture



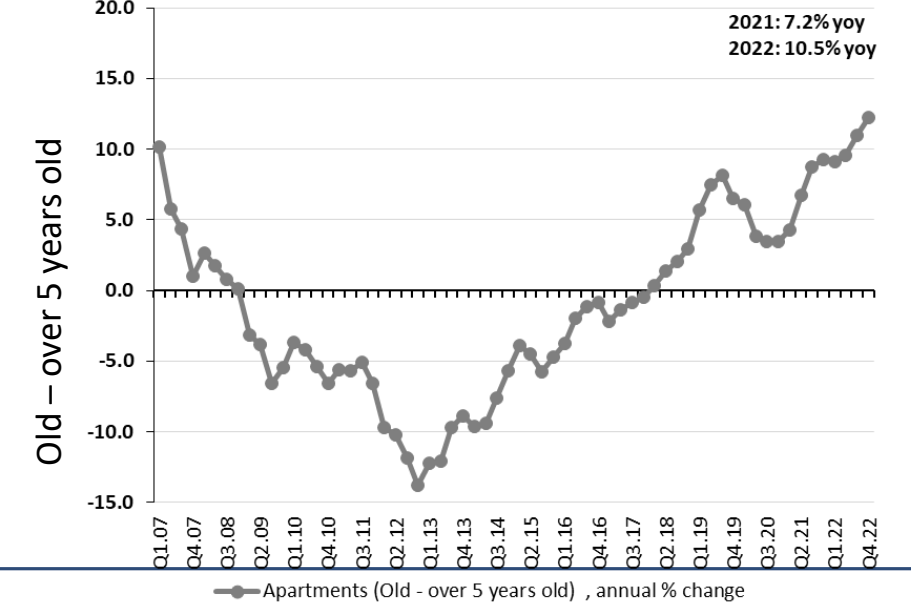
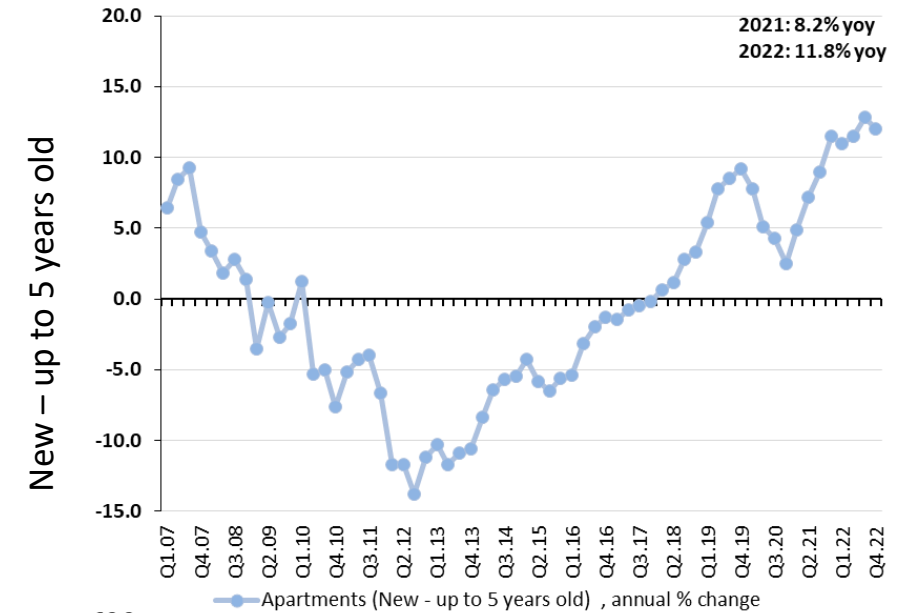
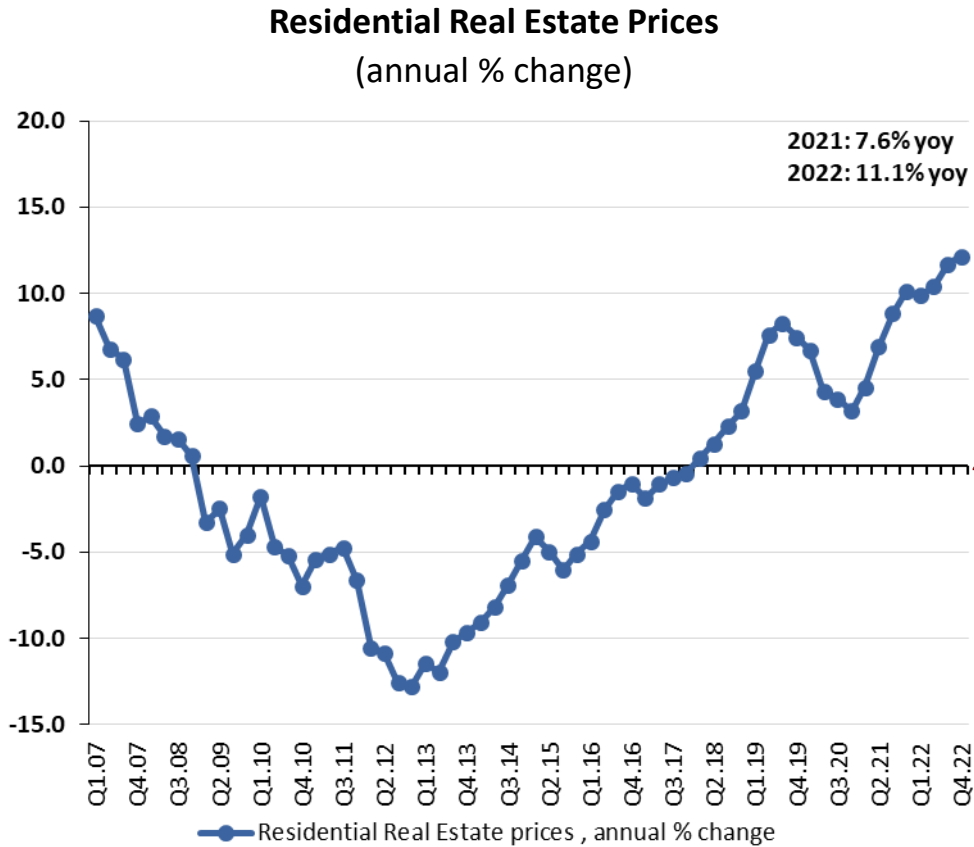
Office Prices Index
(annual % change)



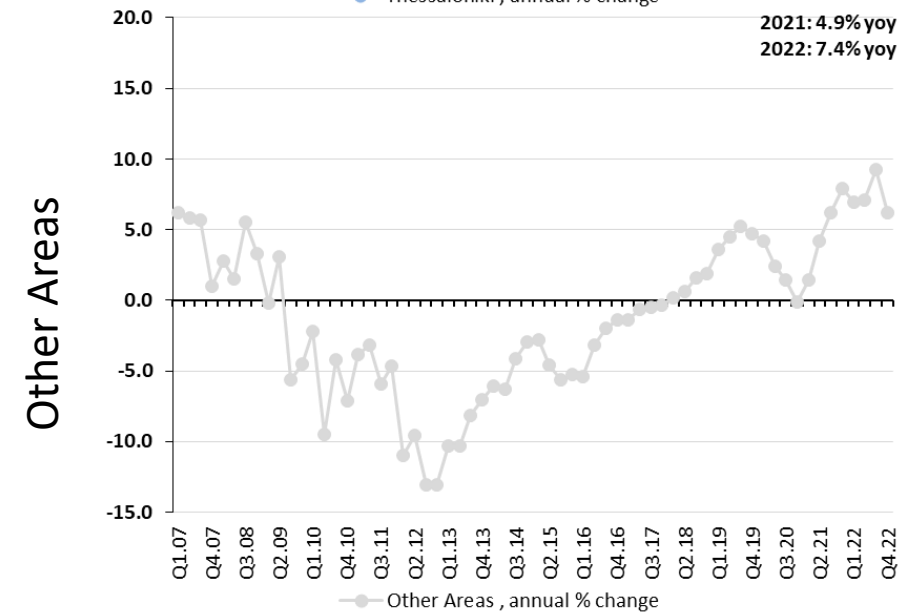
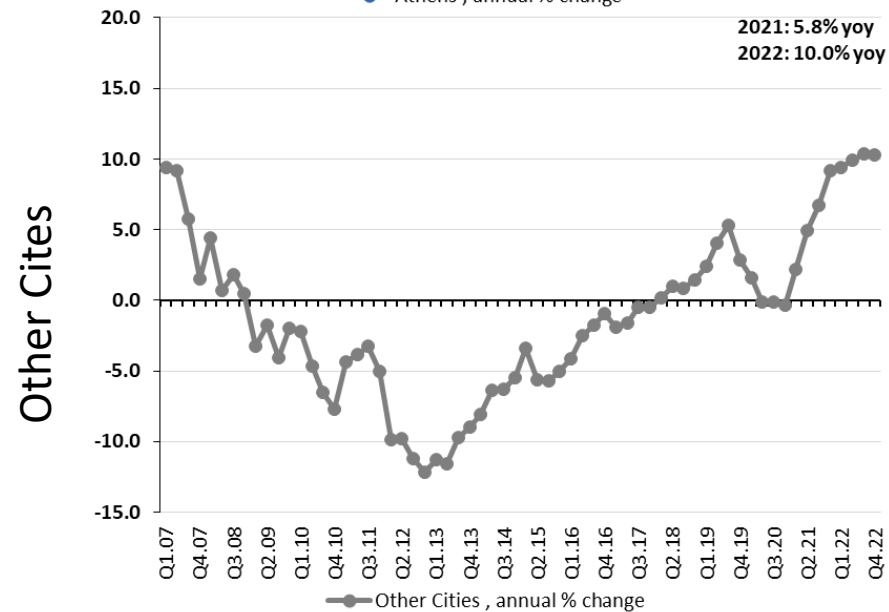
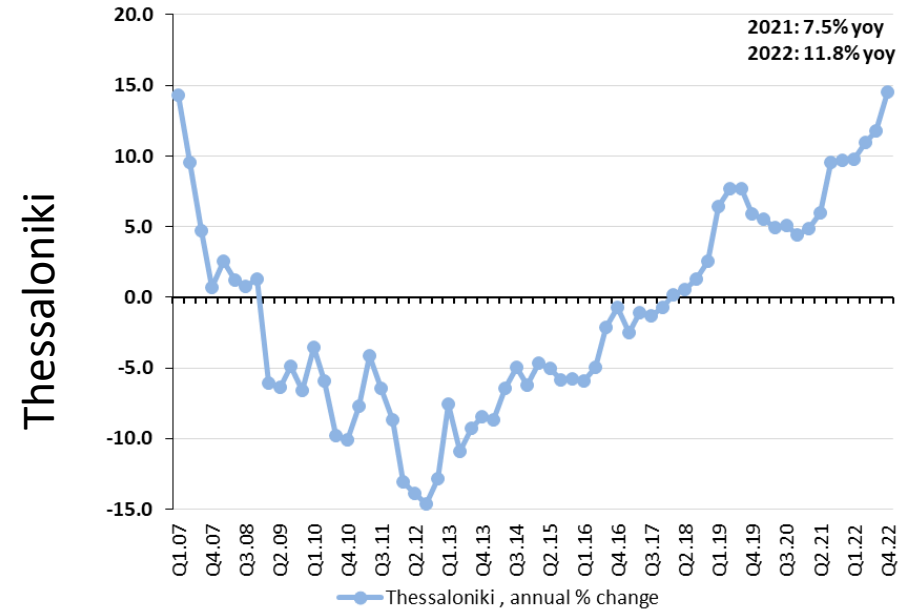
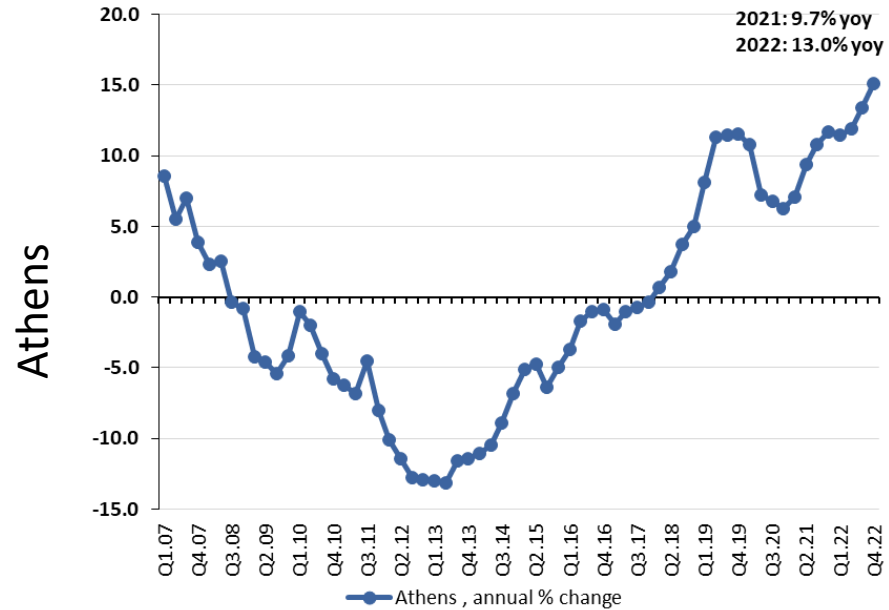
Retail Price Index
(annual % change)



House Prices: on an upward trend despite the age of the property ...



... and the geographical area



Construction's Companies estimates: Prices expectations over the next 3 months

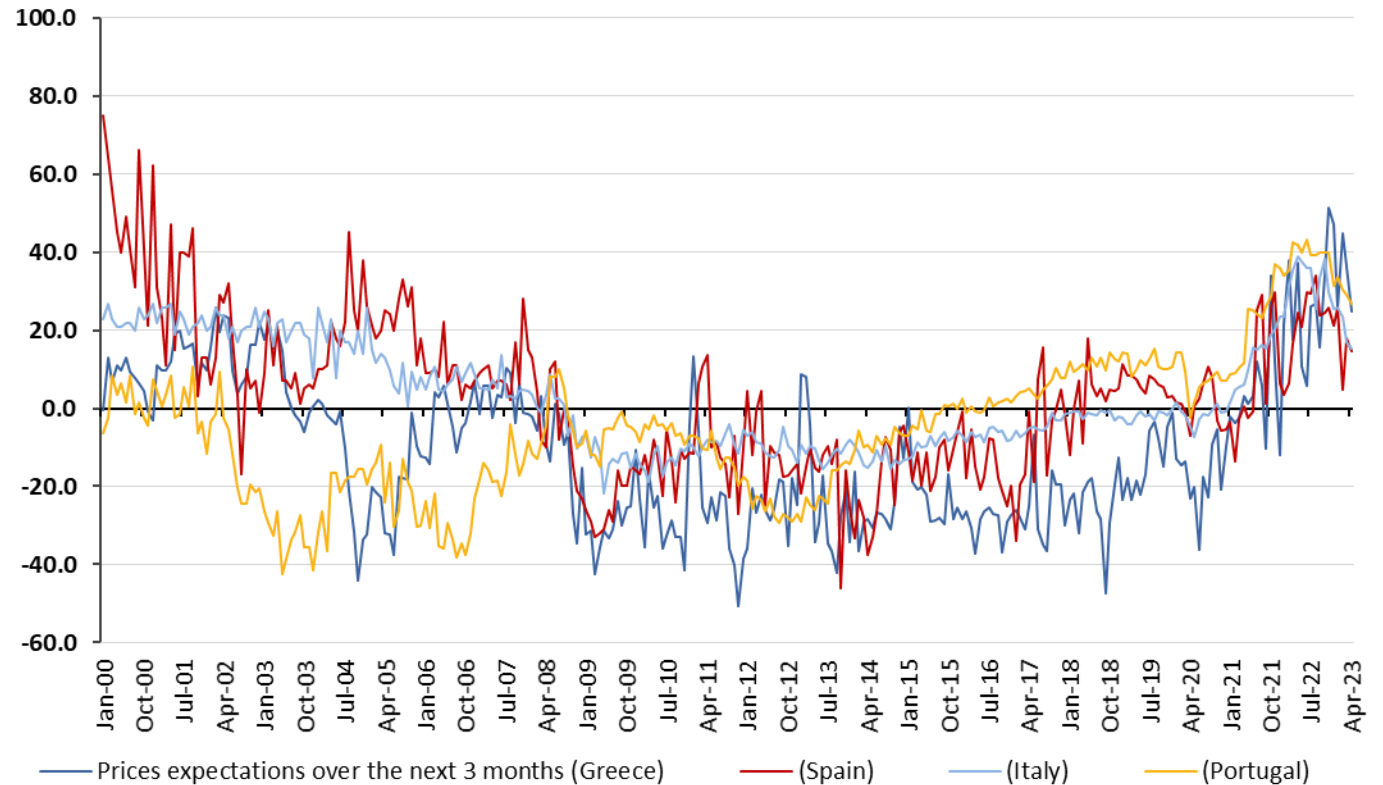


Prices expectations over the next 3 months
(% of respondents – balance¹)

Q5 How do you expect the prices you charge to change over the next 3 months? They will...

- + increase
- = remain unchanged
- decrease

1. Balances are constructed as the difference between the percentages of respondents giving positive and negative replies.

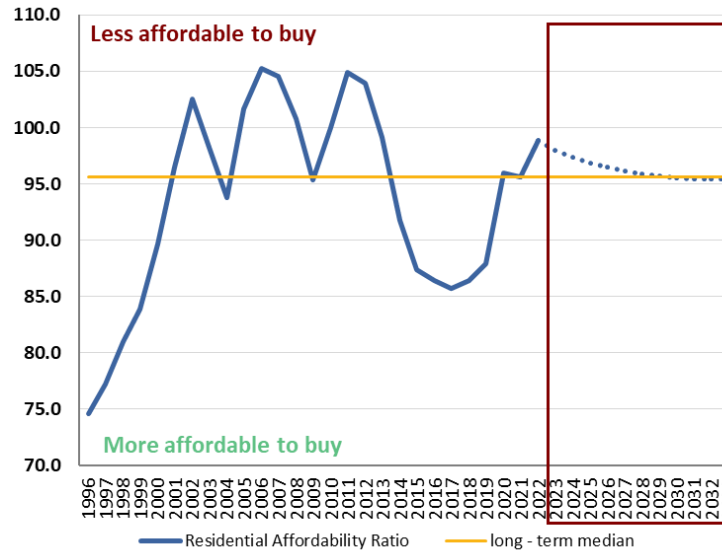
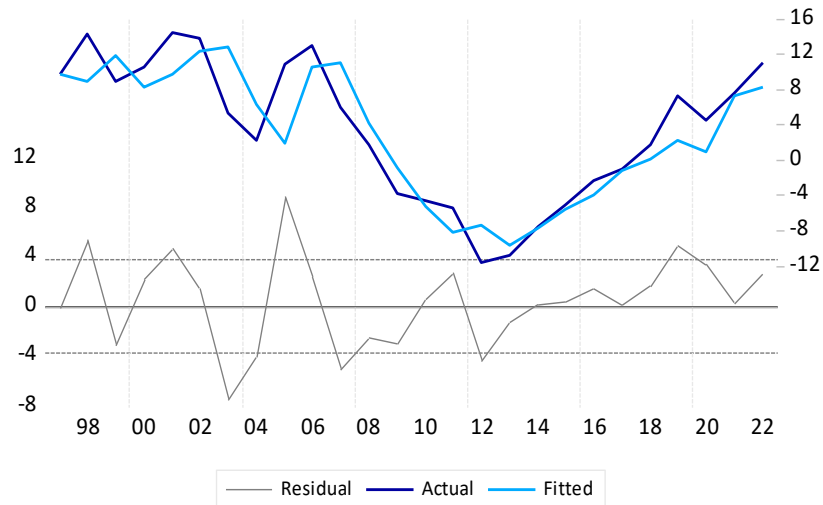


Residential Real Estate Outlook based of TWO factors:

A Statistical approach..... and A simple Affordability Assessment approach

Dependent Variable: HRE_GRWTH
 Method: Least Squares
 Sample (adjusted): 1997 2022
 Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP_GRWTH_BL	0.472949	0.190242	2.486032	0.0203
HRE_GRWTH(-1)	0.728349	0.106763	6.822096	0.0000
R-squared	0.784016	Mean dependent var		3.495216
Adjusted R-squared	0.775017	S.D. dependent var		7.986207
S.E. of regression	3.788048	Akaike info criterion		5.575382
Sum squared resid	344.3835	Schwarz criterion		5.672159
Log likelihood	-70.47997	Hannan-Quinn criter.		5.603251
Durbin-Watson stat	1.811225			



$$RAR_t^{2010} = 100 \times \frac{\frac{RP_t}{HDI_t}}{\frac{RP_{t=2010}}{HDI_{t=2010}}}$$

Where:

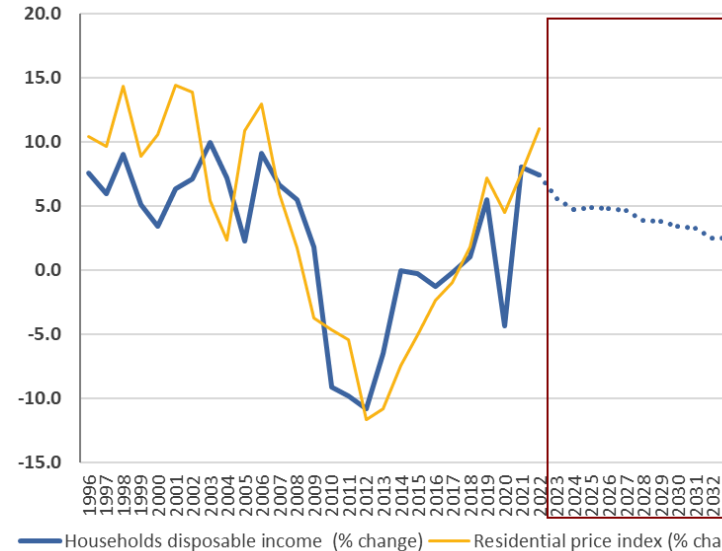
RAR: Residential Affordability Ratio

HDI: Household Disposable Income, current prices at time t

RP: Residential price at time t

HDI_{t=2010}: Household Disposable Income, current prices at base year 2010

RP_{t=2010}: Residential price at base year 2010



	Real GDP (% change)	HDI (% change)
2022	5.9	7.4
2023	3.6	5.6
2024	3.4	4.8
2025	3.4	4.9
2026	3.3	4.8



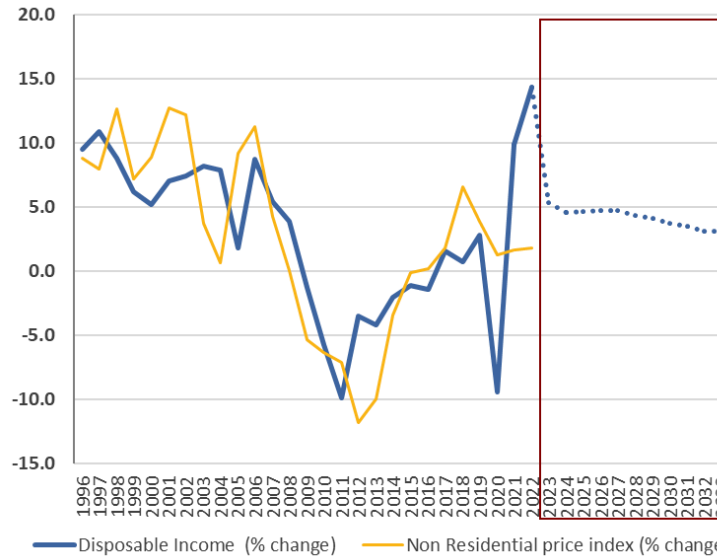
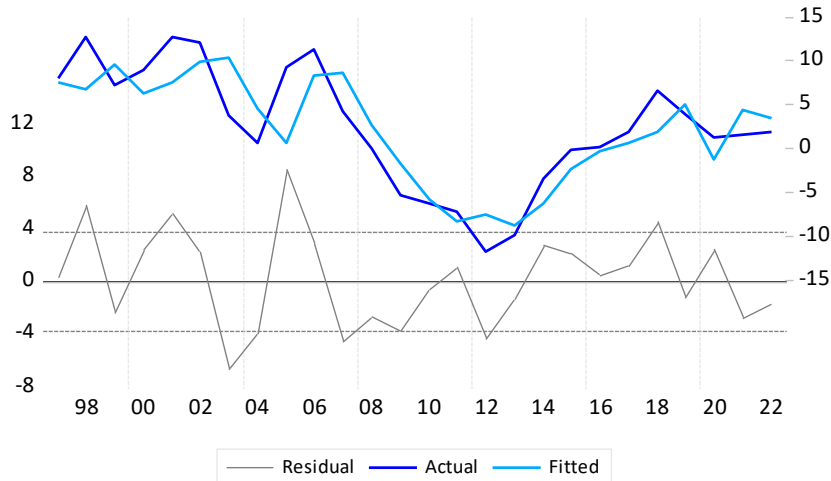
Non - Residential Real Estate Outlook based of TWO factors:



A Statistical approach..... and A simple Affordability Assessment approach

Dependent Variable: CRE_GRWTH
 Method: Least Squares
 Sample (adjusted): 1997 2022
 Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP_GRWTH_BL	0.416994	0.194627	2.142528	0.0425
CRE_GRWTH(-1)	0.649997	0.126127	5.153503	0.0000
R-squared	0.720061	Mean dependent var		2.446180
Adjusted R-squared	0.708396	S.D. dependent var		6.914123
S.E. of regression	3.733650	Akaike info criterion		5.546453
Sum squared resid	334.5634	Schwarz criterion		5.643230
Log likelihood	-70.10389	Hannan-Quinn criter.		5.574321
Durbin-Watson stat	1.871059			



$$NRAR_t^{2010} = 100 \times \frac{\frac{NRP_t}{DI_t}}{\frac{NRP_{t=2010}}{DI_{t=2010}}}$$

Where:

- NRAR: Non Residential Affordability Ratio
- DI: Disposable Income, current prices at time t
- NRP: Non - Residential price at time t
- DI_{t=2010}: Disposable Income, current prices at base year 2010
- RP_{t=2010}: Non - Residential price at base year 2010

	Real GDP (% change)	DI (% change)
2022	5.9	14.3
2023	3.6	5.3
2024	3.4	4.6
2025	3.4	4.6
2026	3.3	4.7

Based on the Bank of Greece "Office Price Index"



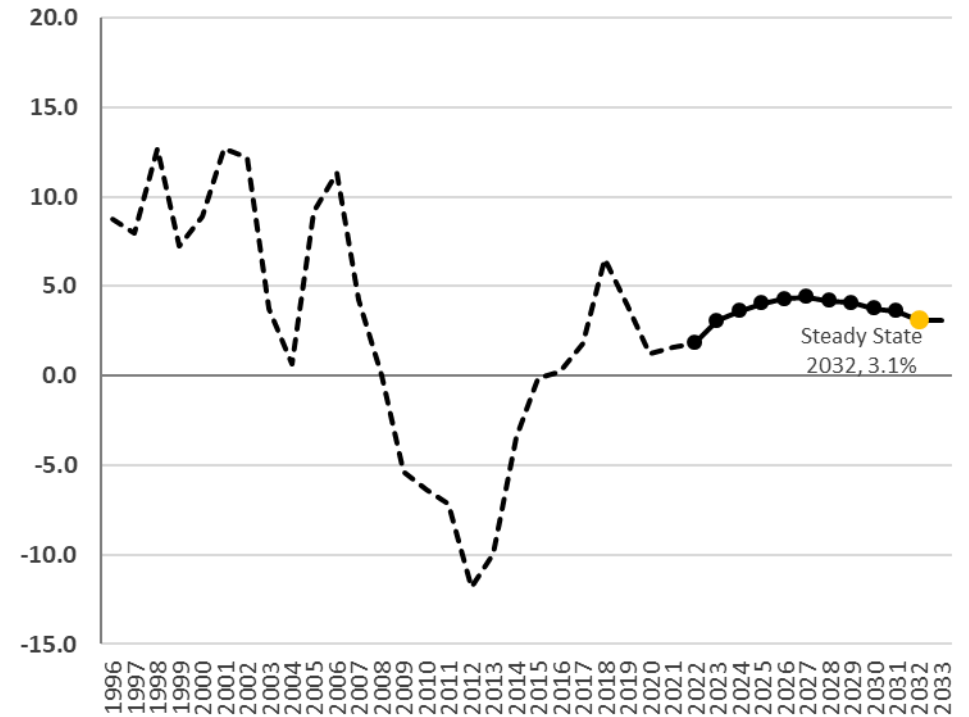
...  (equals) A weighted average Outlook



Residential Real Estate Prices : RRE Outlook
(annual % change)



Non Residential Real Estate Prices : CRE Outlook
(annual % change)



	2022	2023	2024	2025	2026
RRE prices Index (% change)	11.1	7.4	6.5	6.0	5.6

	2022e	2023	2024	2025	2026
CRE prices Index (% change)	1.8	3.1	3.6	4.0	4.3

2022e: estimate

Based on the Bank of Greece "Office Price Index"





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4 Real Estate Developments

5 Public Finance, Sovereign Rating & Bonds markets

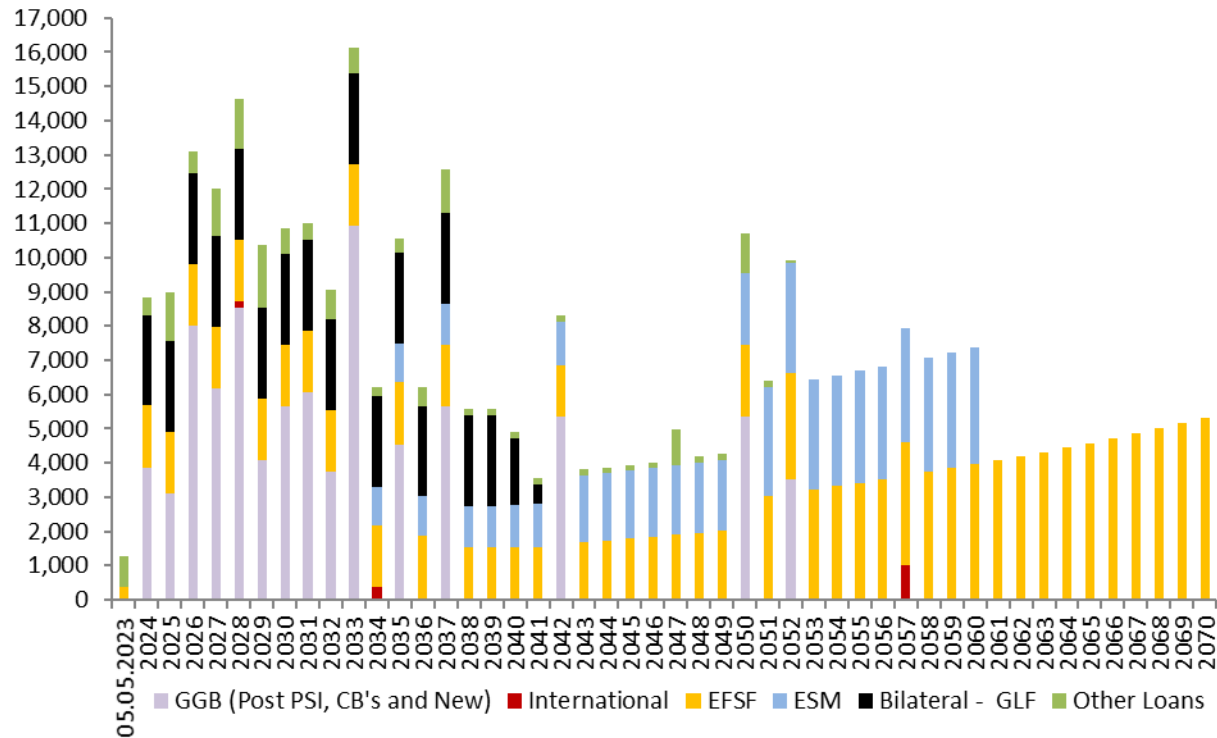
6 Banking Sector Developments



Public Debt: An extended maturities profile and an institution –based ownership structure support public finances

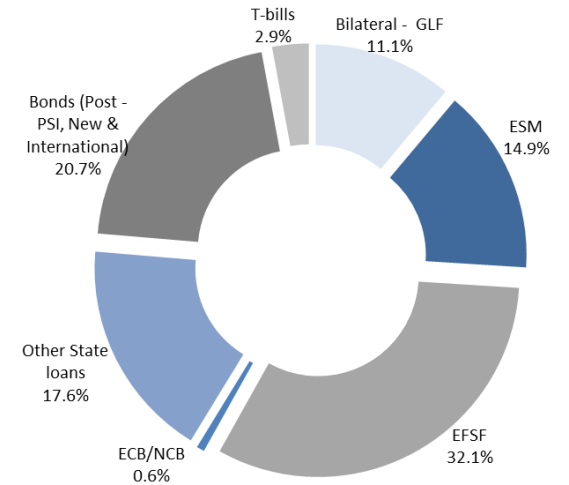


Bonds & Loans Maturities^{1,2}
(as of 5 May 2023, € mn)

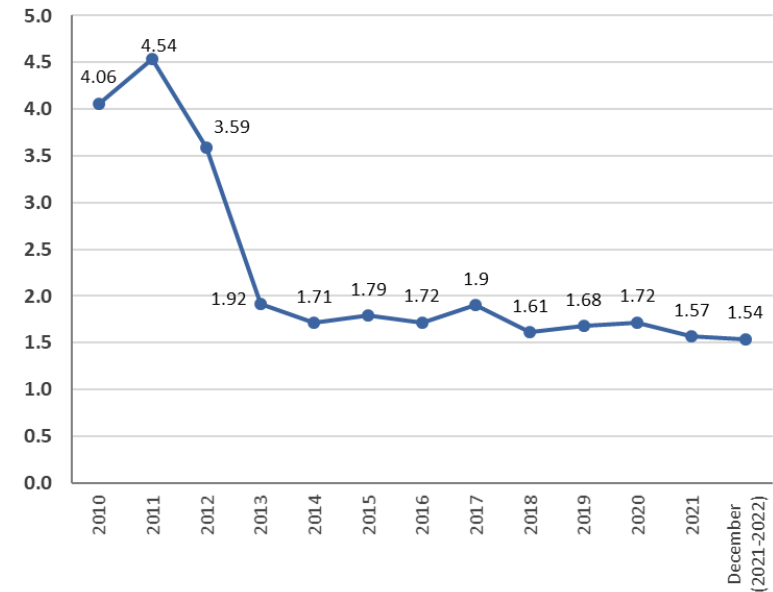


1. figures do not include T bills and repos.
2. takes into account the early repayment of €2.6bn of GLF loans that were maturing in 2023 and took place in mid-December of 2022

Debt distribution by holder² (%)
Official Sector holds 76% of total Government debt



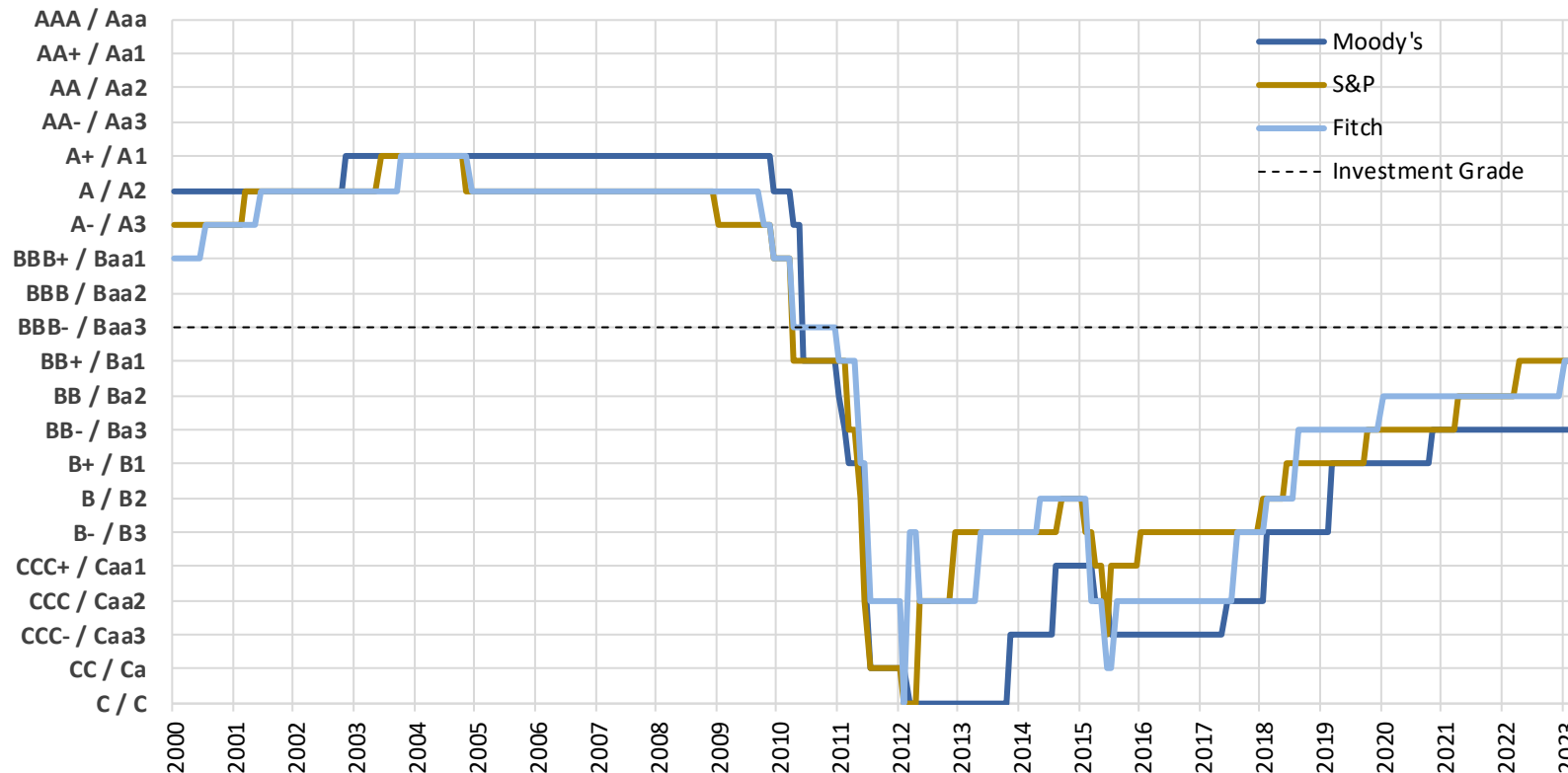
Central Government Debt
annual effective Weighted average Interest Rate (cash basis)



Greek Sovereign Rating History: S&P revised outlook to positive but kept rating score at BB+



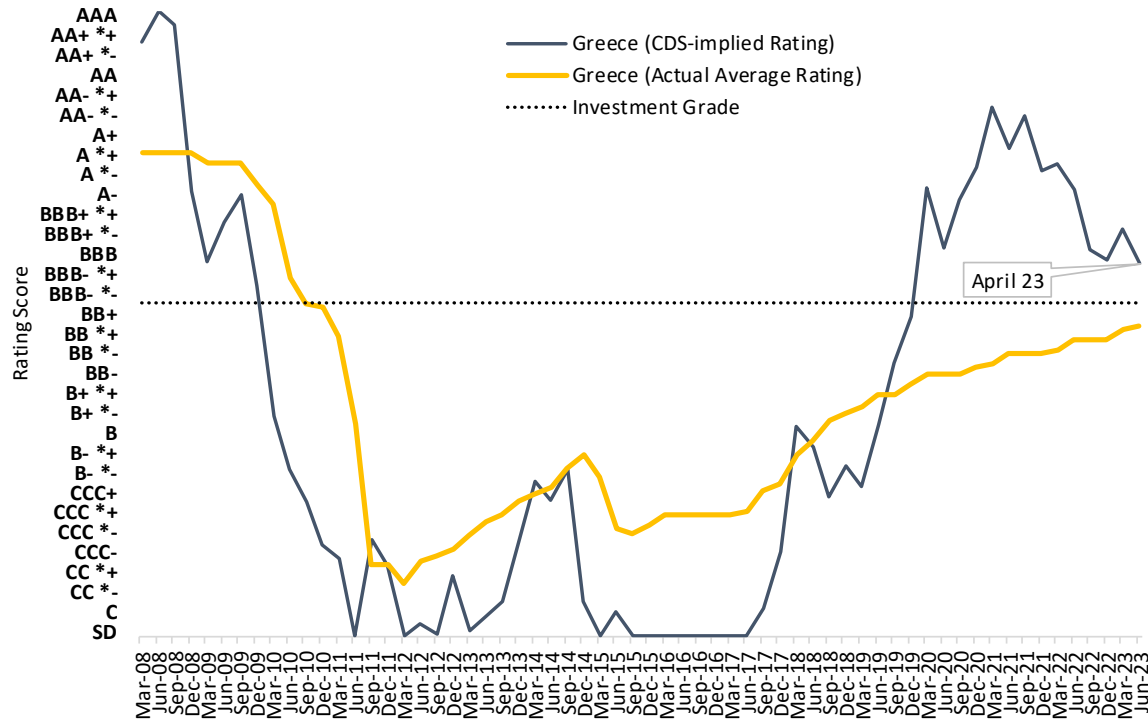
	Current LT Rating	Outlook	Last Rating Up/ Down grade	Latest Review	Next Scheduled Review
Fitch	BB+	Stable	Jan 2023	Jan 2023	9 Jun 2023
Moody's	Ba3	Positive	Jun 2020	Mar 2023	15 Sep 2023
Standard & Poor's	BB+	Positive	Apr 2022	Apr 2023	20 Oct 2023
DBRS	BB (high)	Stable	Mar 2022	Mar 2023	8 Sep 2023



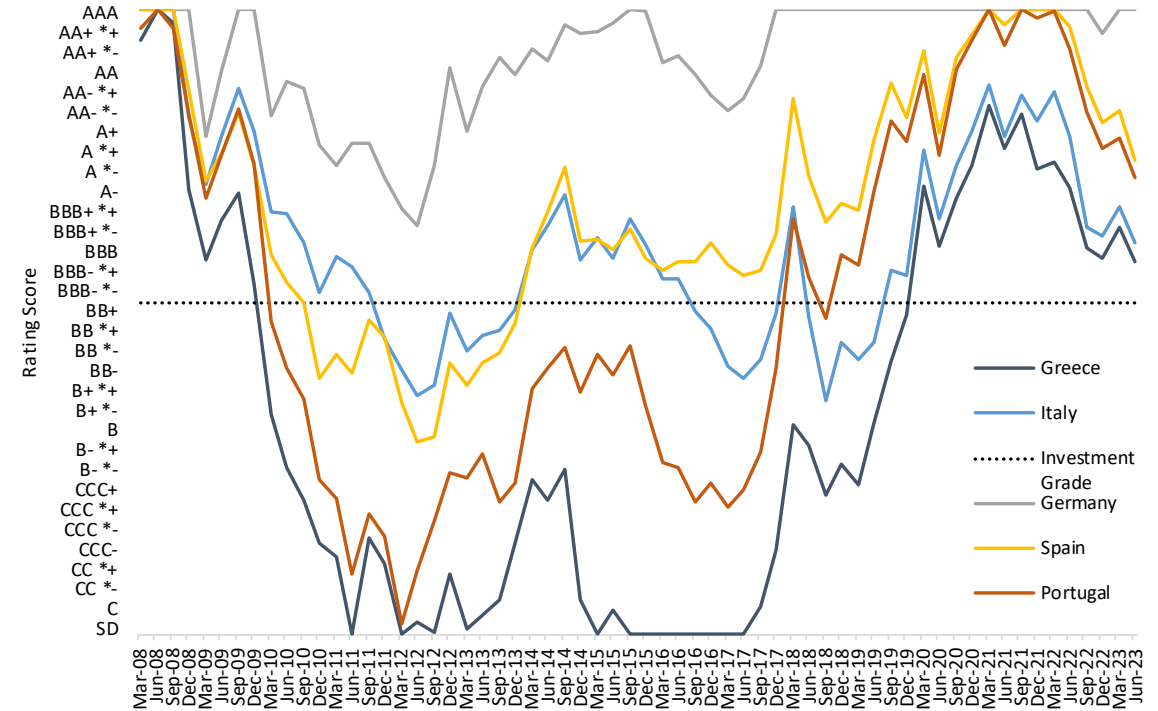
CDS Implied Ratings: CDS markets price-in further rating upgrades in 2023



CDS Implied Rating [Q1 2008– Apr. 2023]¹
(Rating Score)



Implied Ratings Comparisons¹
(Rating Score)



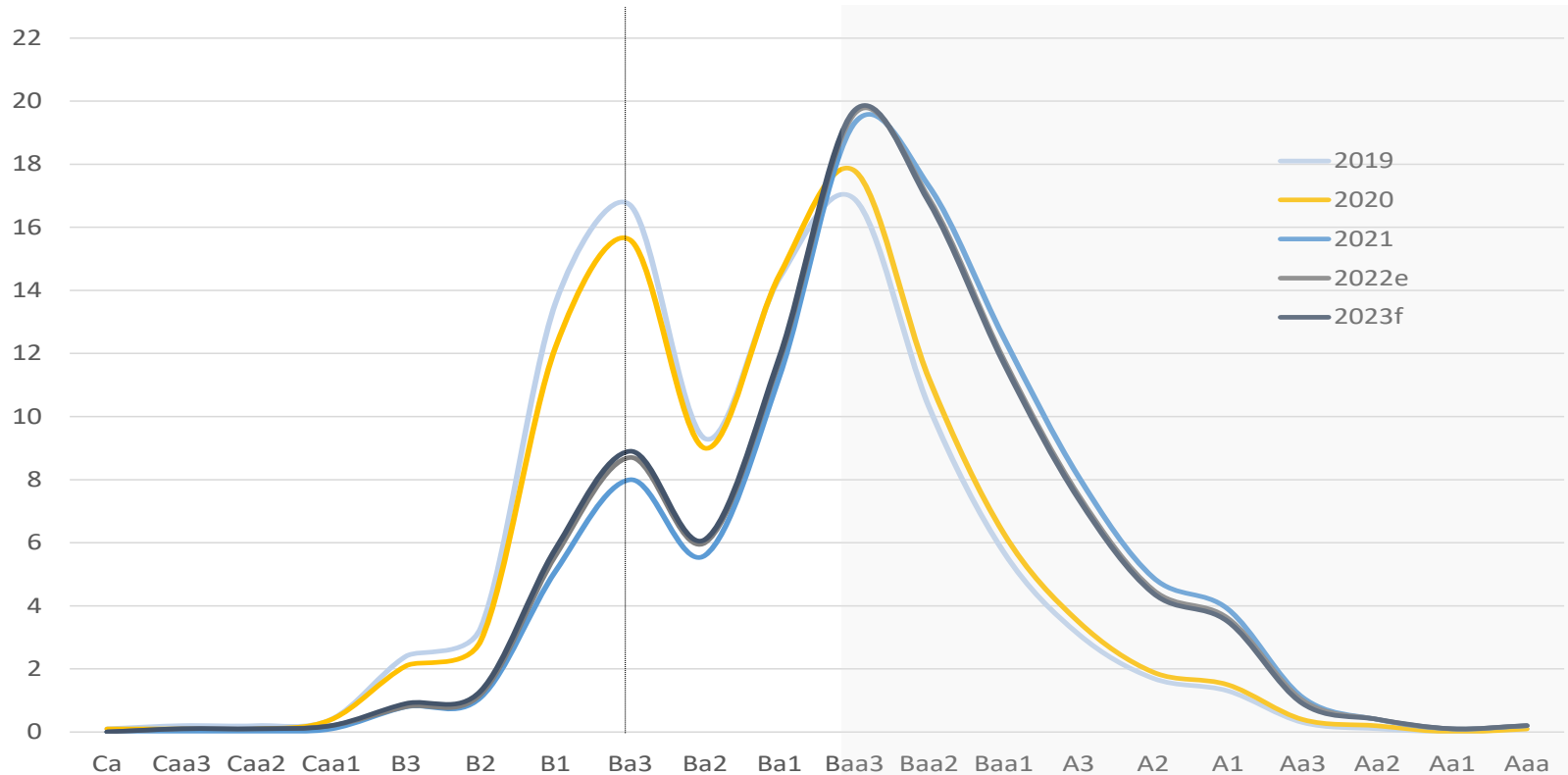
Note 1. We employ a one-way fixed effects model on a panel dataset of 60 countries during the period starting from Q1:2004. We use the 3-month average of 5Y sovereign CDS in US dollars for each country and the long-term credit rating scores provided by the S&P, Moodys and Fitch rating agencies. Moreover, we control for common time effects by employing three global variables, namely, crude oil price, the VIX index and US Treasury 10-year bond rates.



Greek Sovereign Rating Implied Probabilities: Current Rating Assessments Underrate Greece's fundamental factors by a maximum of 3 notches.



Greek Sovereign Rating Implied Probability Distribution*



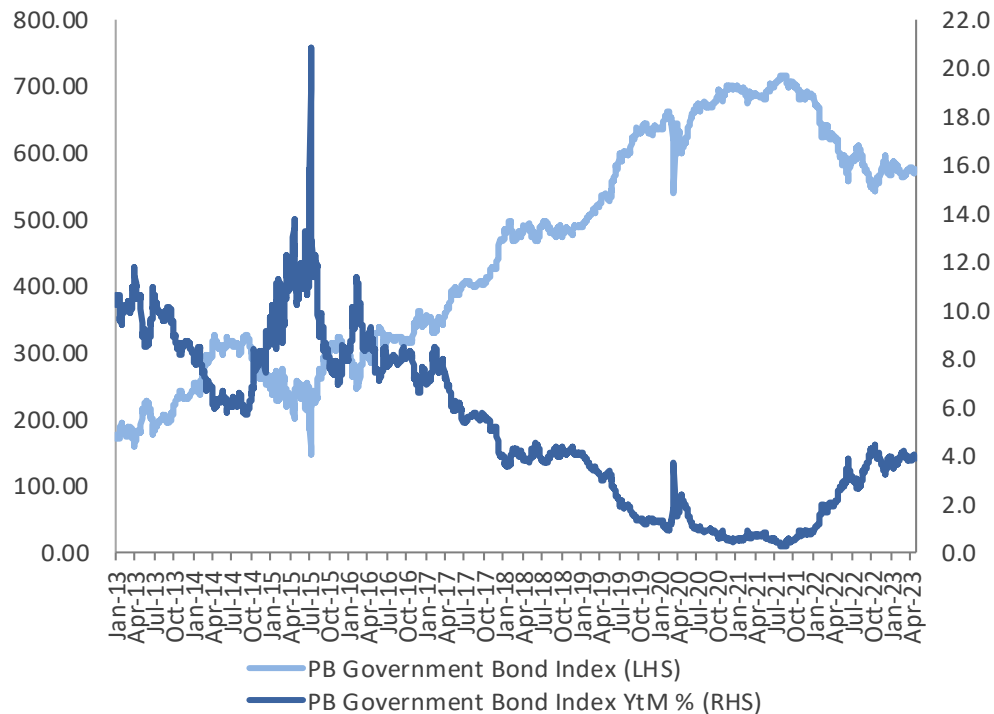
*The underlying model and methodology for assessing Greek Sovereign Rating Scores can be found at: <https://www.piraeusholdings.gr/el/oikonomiki-analisi-ependitiki-stratigiki/ependytiki-stratigiki/analysis-category/2022/global-downgrades-but-a-greek-upgrade>



Piraeus Bank Greek Government Bond Index: Refinancing costs stabilized at 113 bps despite mid-April rise



PBGGGSBI evolution [Jan 2013 – Apr 2023]
(Index, base date 9 Mar. 12 & Yield to Maturity, %)



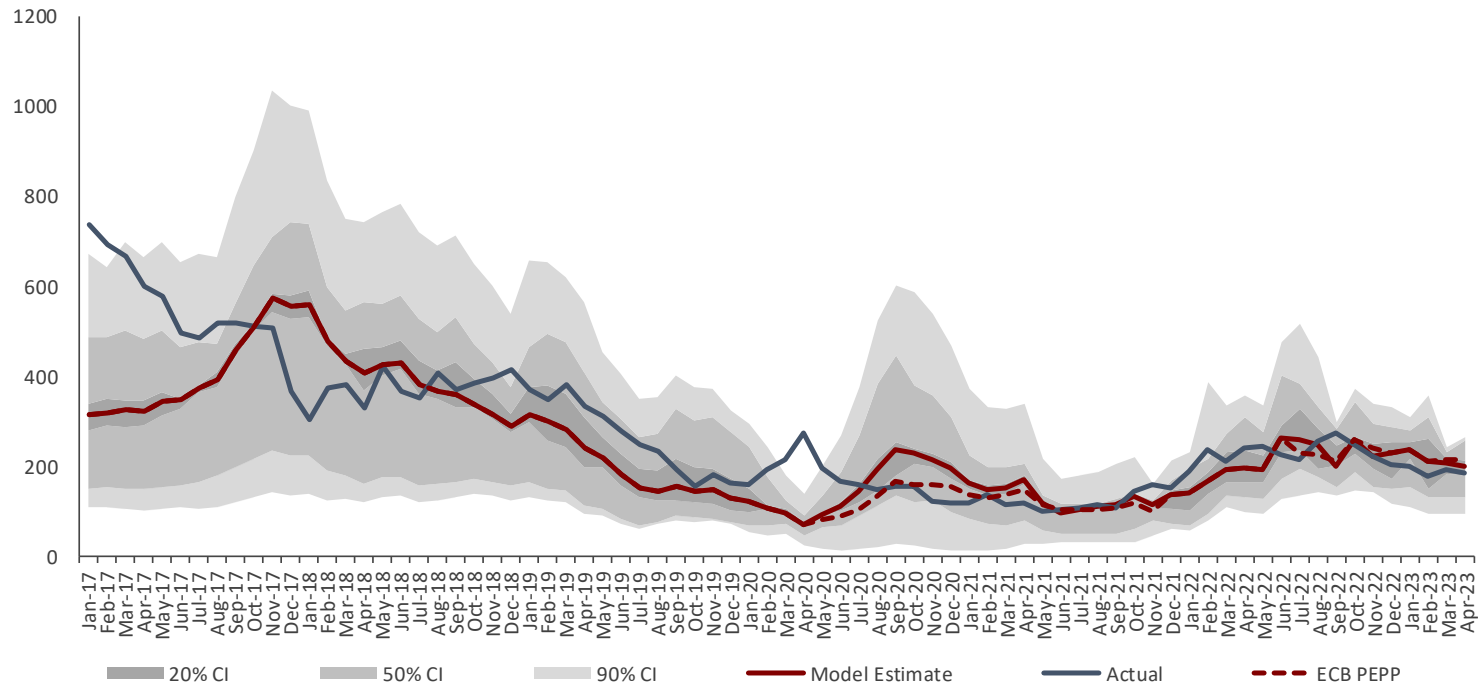
Greek Government Bond Index Yield Spread over Coupon
(basis points)



Greek Government Bond Spreads (I): Macro-implied 10Y spread “fair” value marginally below 200 bps



Greek Government 10-Year Spread vs 10-Year Bund ¹
(basis points)



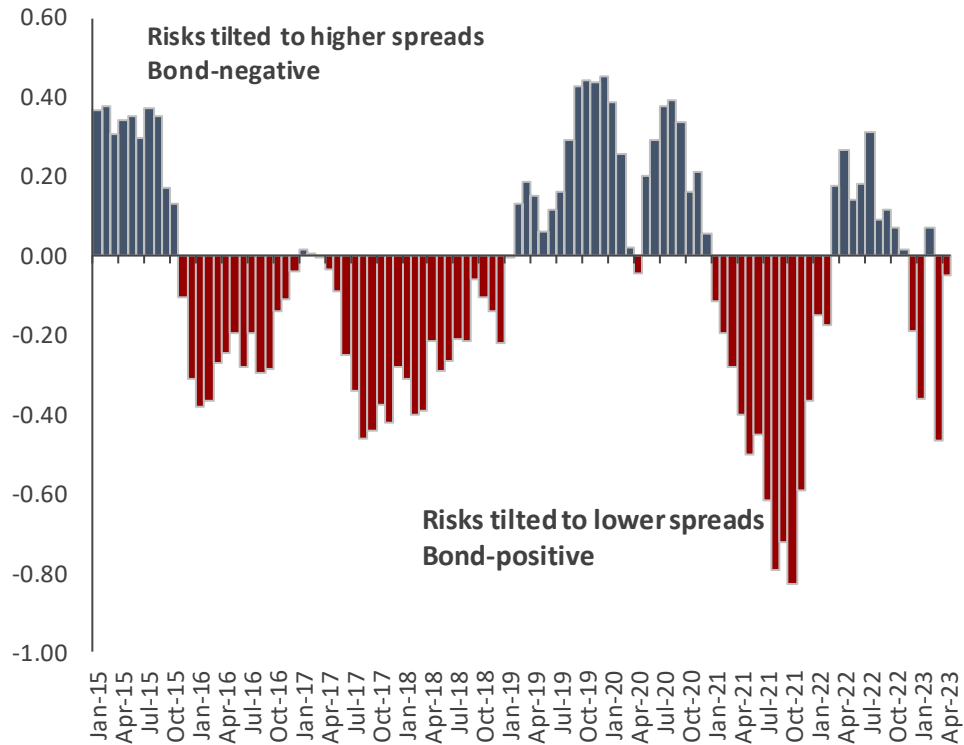
1. The underlying model for assessing Greek 10Y spreads as well as the methodology regarding the Risk Balance and Bond Market Stress indices can be found at: <https://www.piraeusholdings.gr/en/oikonomiki-analisi-ependitiki-stratigiki/oikonomiki-analisi-ellinikis-oikonomias-kladikes-meletes/analysis-category/2017/understanding-greek-government-bond-spreads>



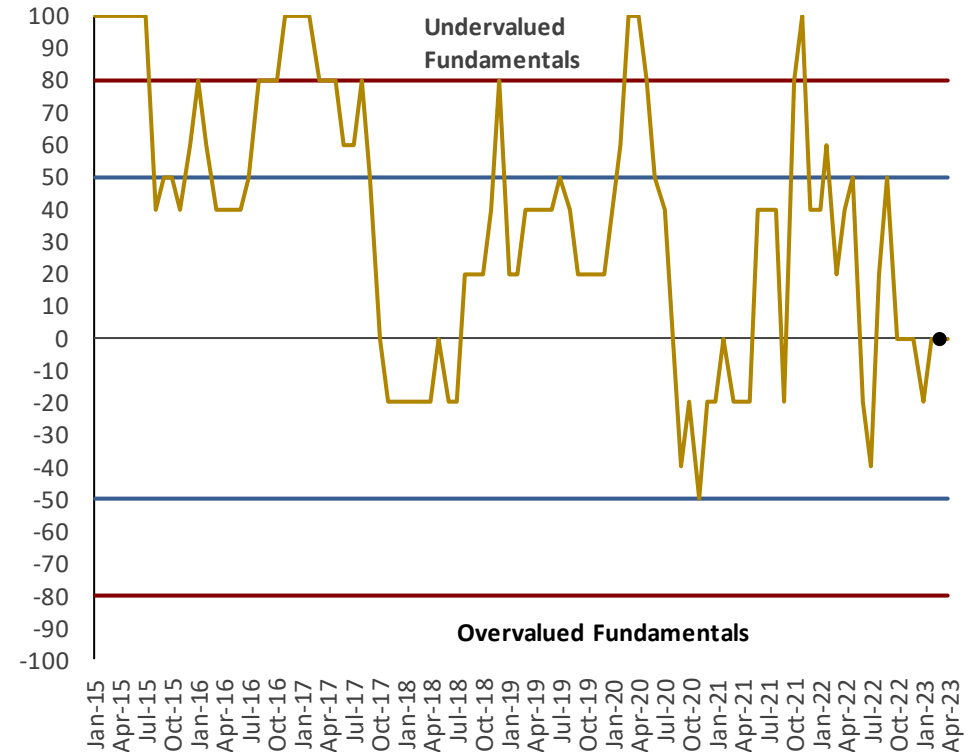
Greek Government Bond Spreads (II): Spread aligned to macro-implied fair value but risks tilt to neutral



Greek Gov. Bond Market Balance of Risks Indicator
(historical data: January 2000 – April 2023)

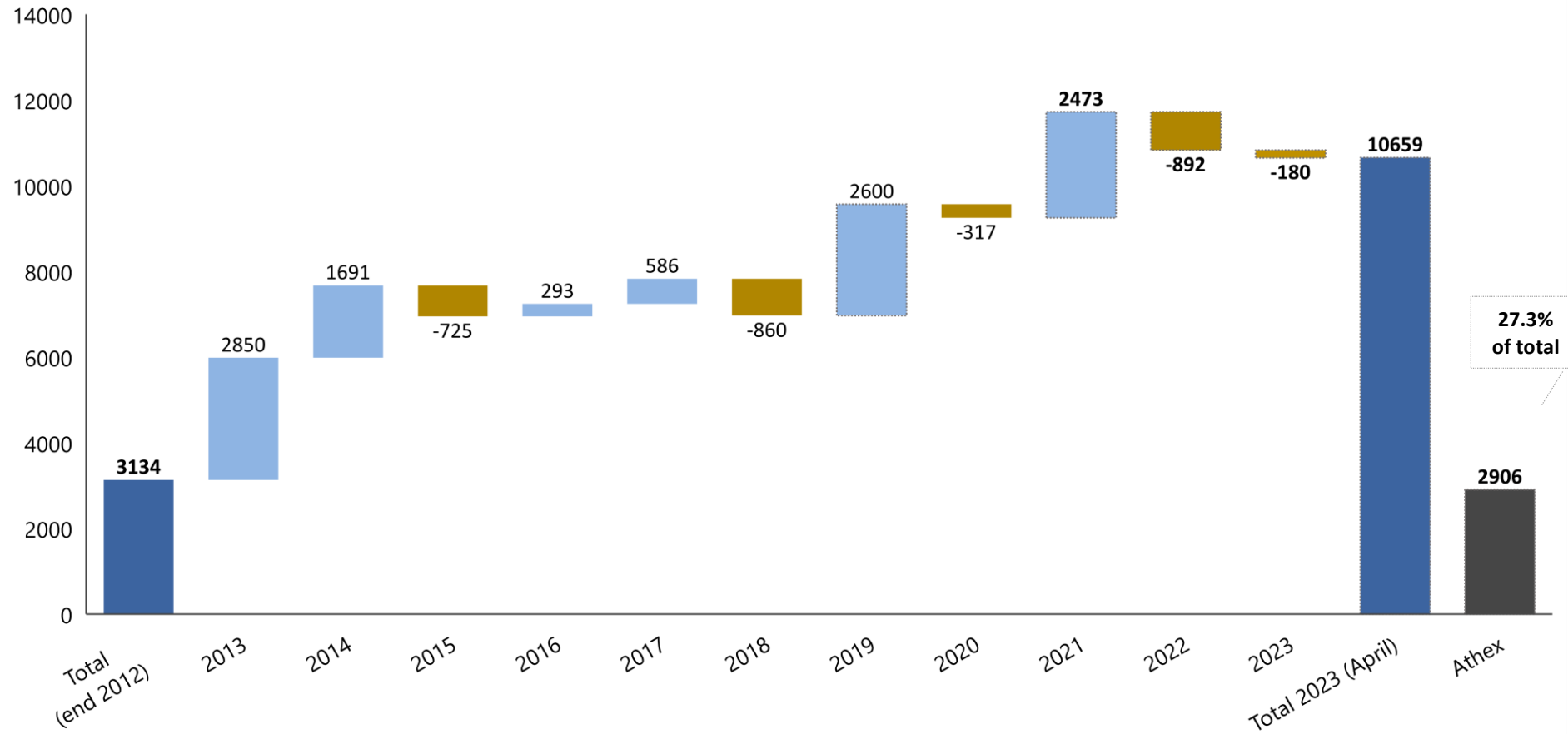


Greek Gov. Bond Market Stress Indicator
(historical data: January 2000 – April 2023)





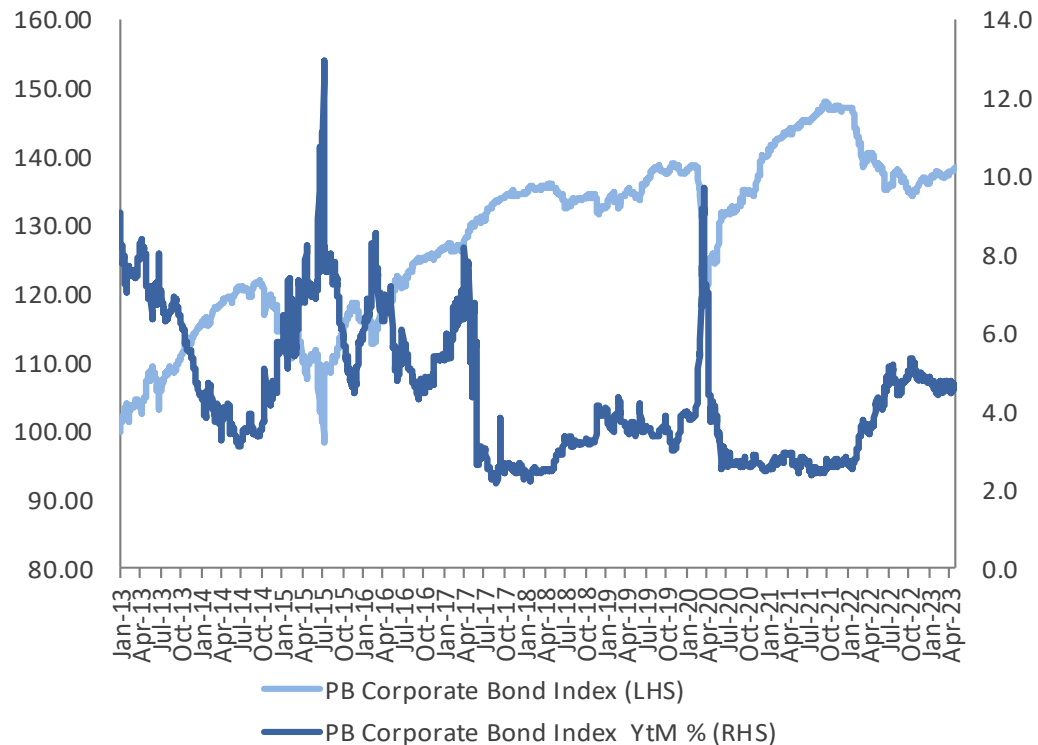
Greek Corporate Bond Net Issuance (mn €)



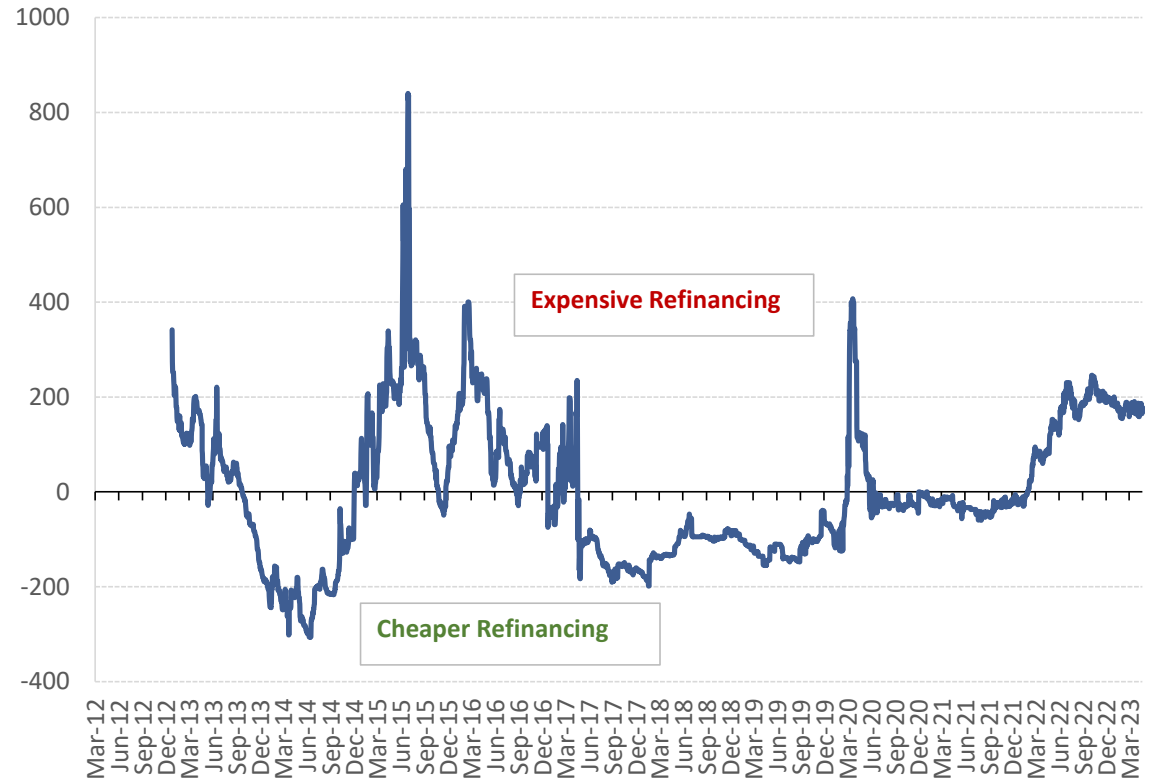
Piraeus Bank Greek Corporate Bond Index: Refinancing costs increased by 12 bps at 177 bps in April



PBGGGCBI evolution [Jan 2013 – Apr. 2023]
(Index, base date 2 Jan. 13 & Yield to Maturity, %)



Greek Corporate Bond Index Yield Spread over Coupon
(basis points)





1 Conjunctural Analysis & Leading Indicators

2 Economic Outlook

3 Competitiveness of the Greek Economy

4 Real Estate Developments

5 Public Finance, Sovereign Rating & Bonds markets

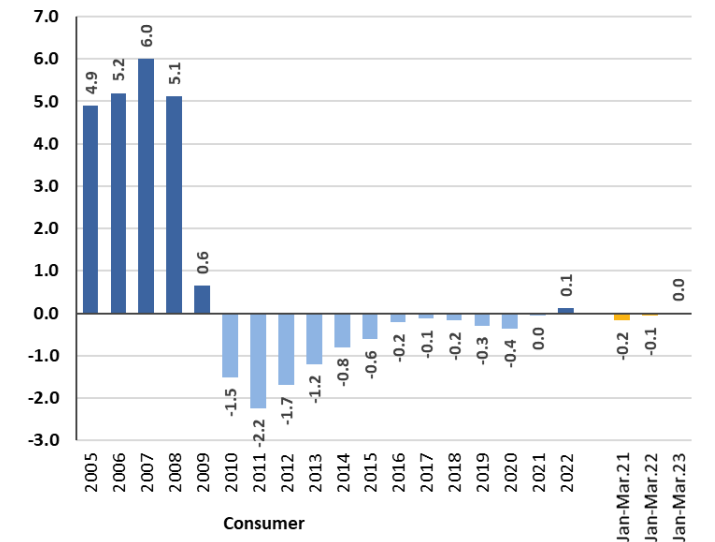
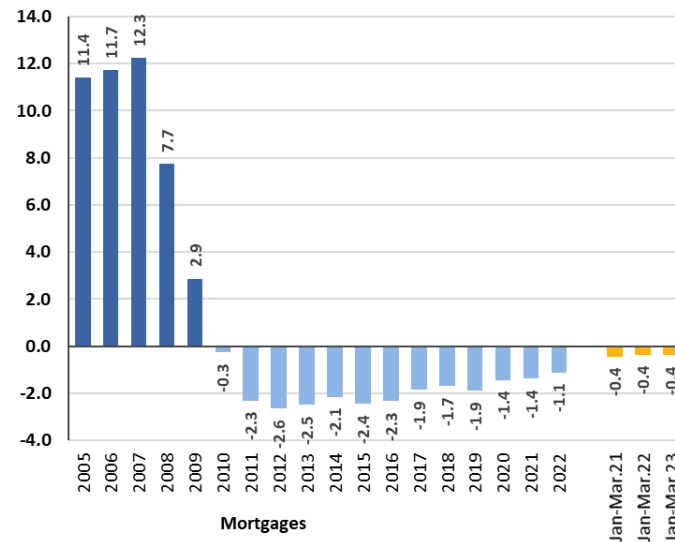
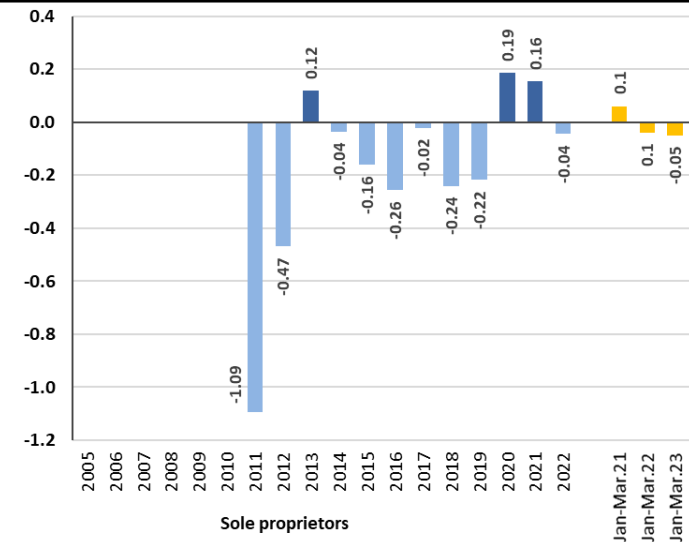
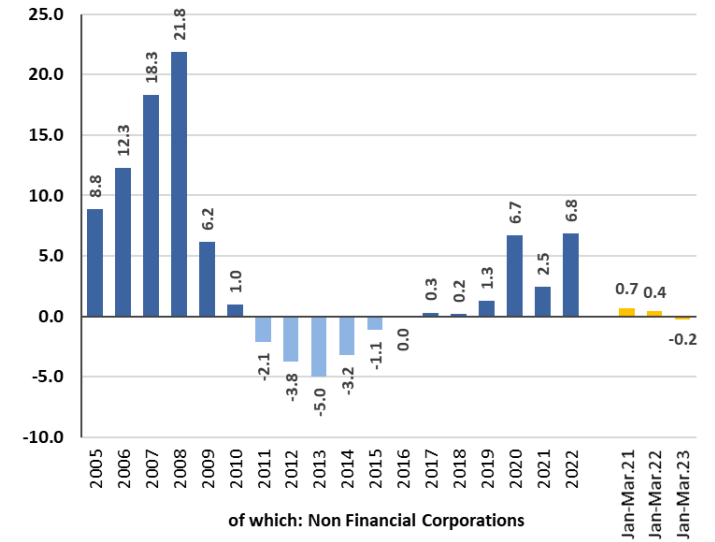
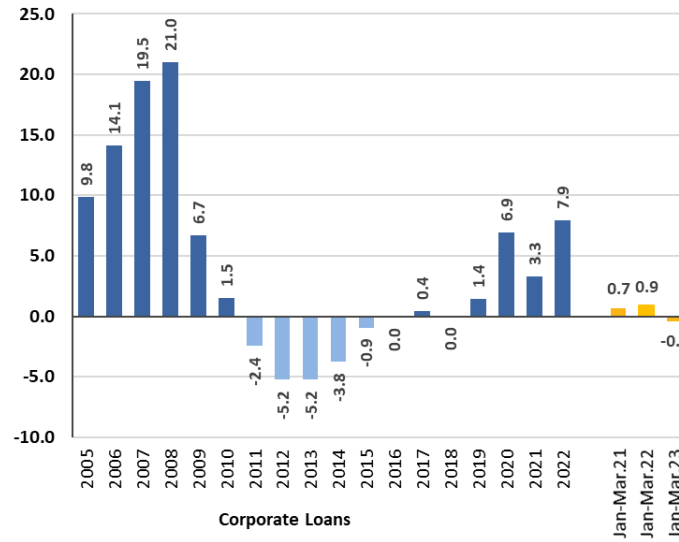
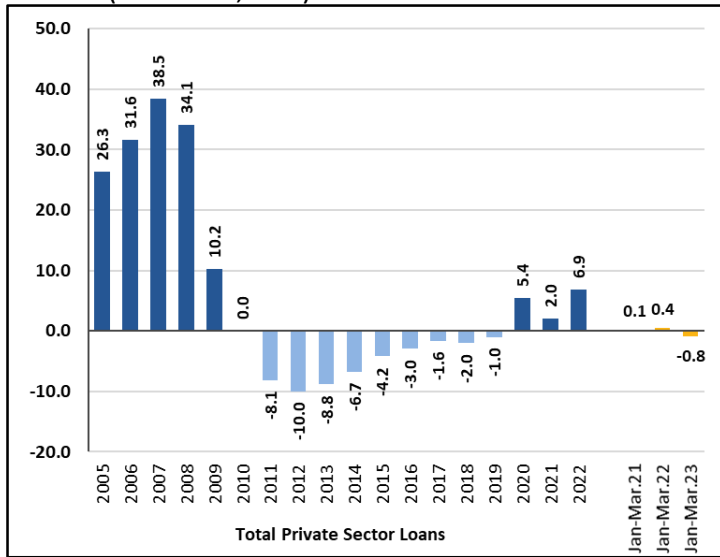
6 **Banking Sector Developments**



Private sector credit: The start of the year was negative for credit expansion



(net flows, €bn)



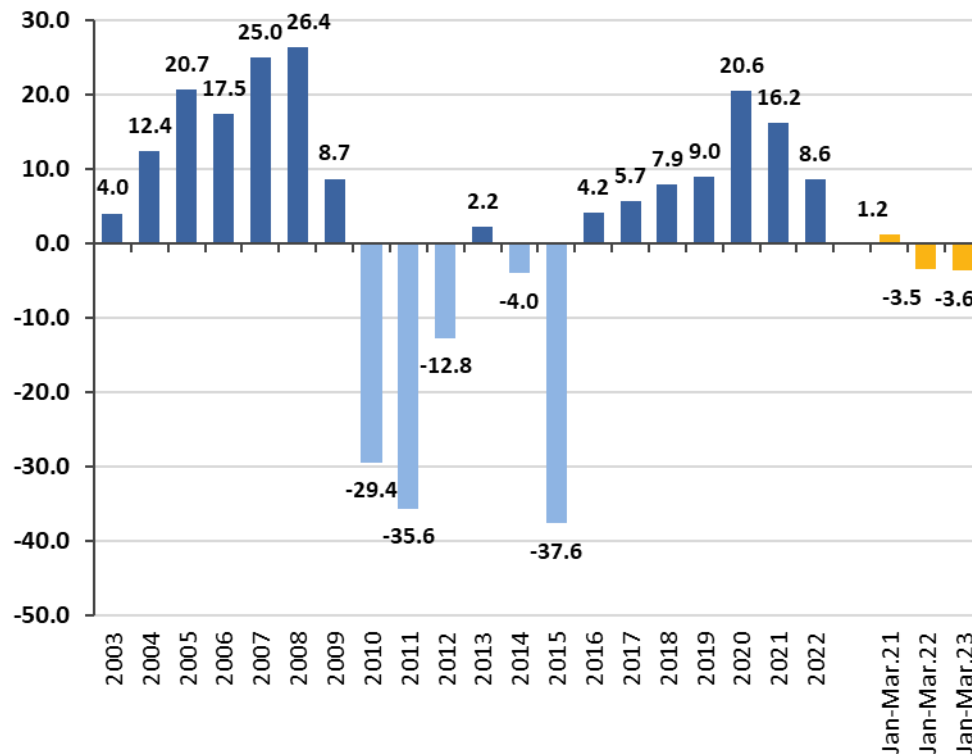
Notes: 1) Including securitised loans and corporate bonds that have been derecognised from the balance sheet and serviced by credit institutions. As of June 2010 non traded corporate bonds are included in 'loans' rather than 'debt securities'. As of December 2016, loans of the Consignment Deposits and Loan Fund are excluded from the domestic credit as the institution has been reclassified from the financial sector to the general government sector. As of March 2019, loans to shipping companies which have their registered office abroad, are no longer included in credit to the domestic economy, as they were reclassified to Other Countries. 2) Flows are derived from changes in outstanding amounts corrected for foreign exchange valuations write-offs/write-downs and reclassifications adjustments. Source: Bank of Greece, Piraeus Bank Research



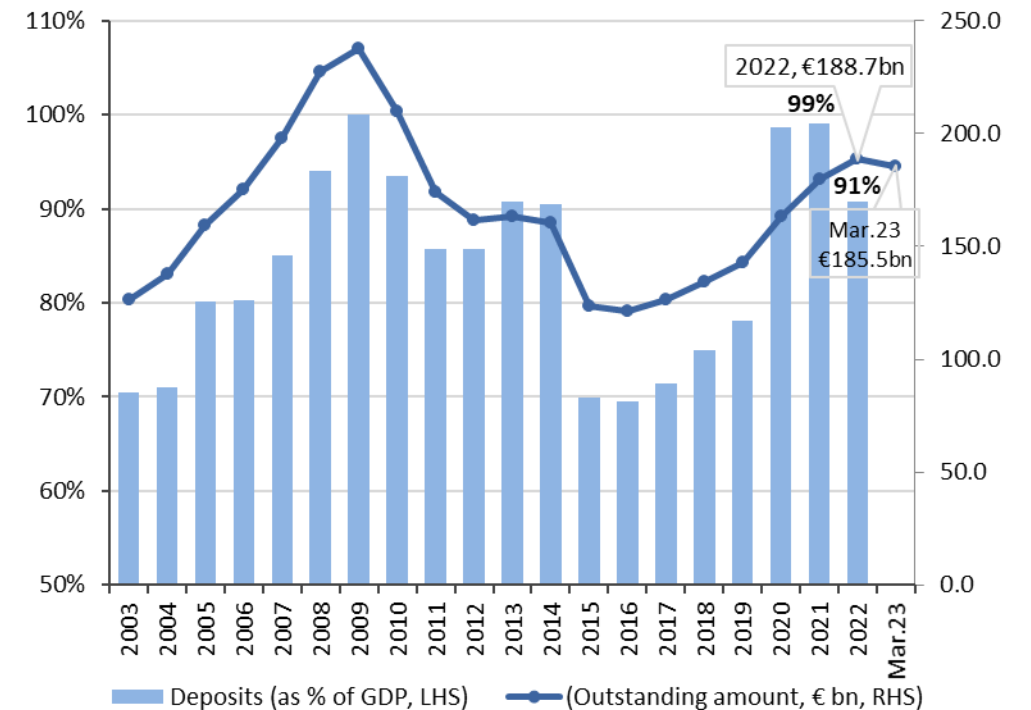
Private sector deposits: ...with equivalent outflows for deposits



Private Sector Deposits^{1,2} (net flows, €bn)



Private Sector Deposits¹ (% of GDP & € bn)

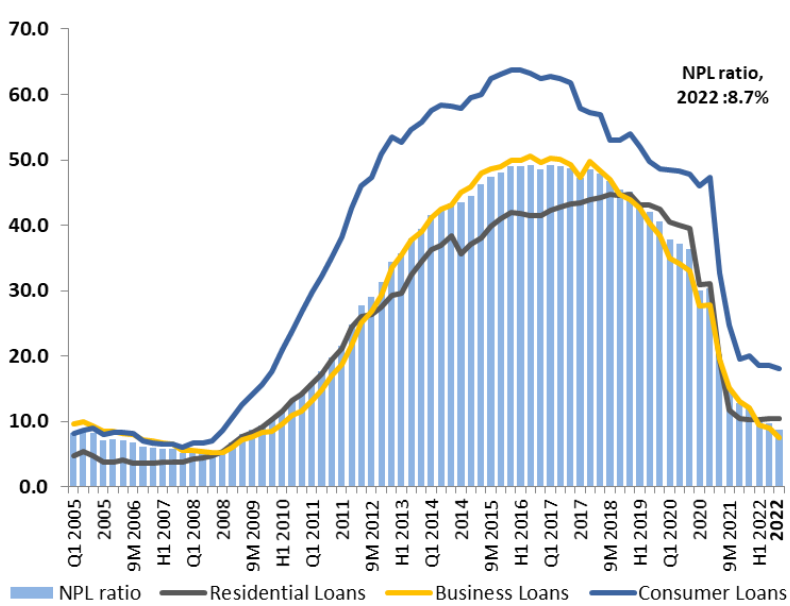


1. Excluding the Bank of Greece. As of December 2016, deposits of the Consignment Deposits and Loan Fund are excluded from the domestic deposits as the institution has been reclassified from the financial sector to the general government sector. As of March 2019, deposits and repos of shipping companies which have their registered office abroad, are no longer included in the deposits of the domestic economy, as they were reclassified to Other Countries.
2. Flows are derived from changes in outstanding amounts corrected for foreign exchange valuations and reclassifications adjustments. The flow of deposits does not include the accounting increase in deposits that is related to securitisation operations and represent liabilities of credit institutions to Special Purpose Vehicles.

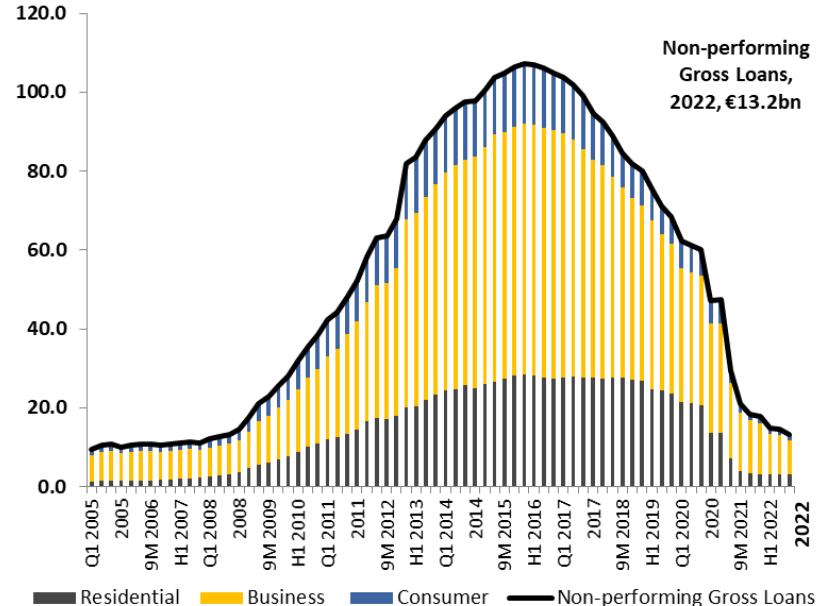
Evolution of Non-Performing Loans: After a “massive clean-up” the situation has stabilised



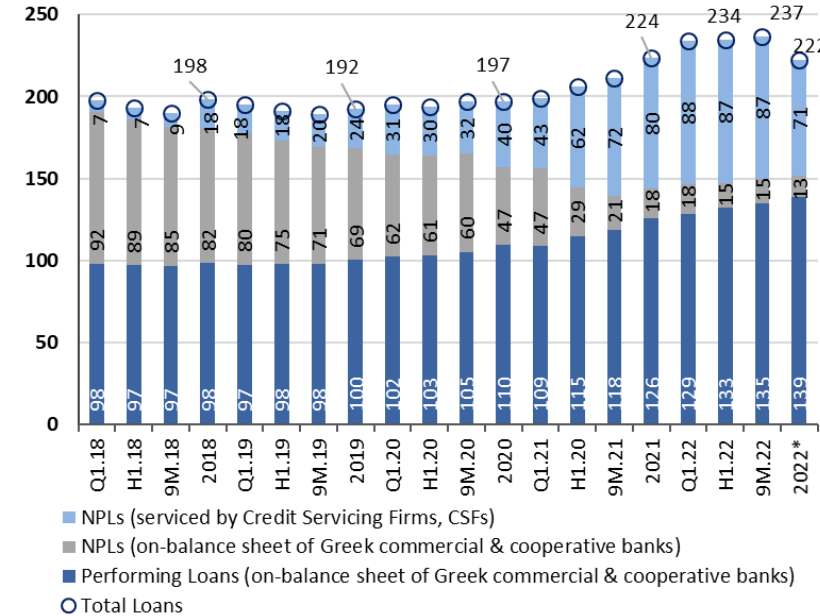
Non-Performing Loans ratio on balance sheet gross loans^{1,2,3,4,5} (%)



Non-Performing Loans, on balance sheet gross loans^{1,2,3,4,5} (€ bn)



Total Loans, on balance sheet gross loans^{1,2,3,4,5} & transferred to foreign specialised financial institutions & that are serviced by the domestic CSFs^{6,7,8}. (€ bn)



- All items are on solo basis and refer to on-balance sheet gross loans and advances of Greek commercial and cooperative banks.
- For 2014 onwards, the source is data from bank's submissions according to Act 42/2014 (as applicable) and European Banking Authority (EBA) rules and definitions
- For 2002 - 9M 2014, the source is data from banks' submissions according to Act 2442/1999 with the following assumption: Non-performing loans include also loans that have been restructured over the past 12 months.
- Balance changes between some quarters may be affected by the restructuring of the Greek banking system (resolution of banks, sale of foreign branches e.t.c.)
- All items refer to on-balance sheet loans and advances, in consistency with the operational targets for the reduction of non-performing loans. For that reason, balances and indicators may differ from previously published figures, where off-balance sheet items were also included in the perimeter.

- Concern loans that have been transferred to foreign specialised financial institutions and that are serviced by the domestic CSFs. Included in these loans are loans that have been written off by credit institutions and were thus not reported on their balance sheet
- Includes all financial institutions other than credit institutions.
- * It should be noted that as of Q4-2022 the nominal value of loans does not include off-balance sheet interest and the amounts of write-offs and write downs of loans made by the credit institution that transferred the loan portfolio.



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