

# Greece's Economic Growth:

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## Challenges and Opportunities

December 2024

Economic Research & Investment Strategy

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## Οικονομική ανάπτυξη στην Ελλάδα: Προκλήσεις και Ευκαιρίες

Το 2024, η ελληνική οικονομία συνέχισε την αναπτυξιακή της πορεία, παρά τις αβεβαιότητες στο διεθνές περιβάλλον. Το πρώτο εννεάμηνο του 2024, το πραγματικό ΑΕΠ αυξήθηκε κατά 2,3% σε ετήσια βάση, ρυθμός σημαντικά υψηλότερος του μέσου όρου της Ευρωζώνης (0,6%). Σύμφωνα με τα διαθέσιμα στοιχεία, οι βραχυχρόνιοι δείκτες οικονομικής δραστηριότητας και προσδοκιών υποδεικνύουν ότι η ελληνική οικονομία θα διατηρήσει την αναπτυξιακή της δυναμική της μεσοπρόθεσμα, με έναν σταθερό ρυθμό κοντά στο 2%. Χαρακτηριστικά, ο Δείκτης Οικονομικού Κλίματος παραμένει υψηλότερος από τον μέσο όρο της Ευρωζώνης και στηρίζεται στην ενίσχυση των επιχειρηματικών προσδοκιών.

Το ποσοστό ανεργίας διατηρεί μια καθοδική πορεία, με κύριο μοχλό την αύξηση της απασχόλησης. Αυτή η τάση, σύμφωνα με τον δείκτη προσδοκιών απασχόλησης, αναμένεται να συνεχιστεί μεσοπρόθεσμα, ενισχύοντας ταυτόχρονα το συνολικό διαθέσιμο εισόδημα των νοικοκυριών και την κατανάλωση. Παρ' όλα αυτά, θεμελιώδης όρος για τη διαμόρφωση μιας βιώσιμης αγοράς εργασίας είναι η σταδιακή αύξηση του ποσοστού συμμετοχής του πληθυσμού στο εργατικό δυναμικό, δηλαδή να επιτευχθεί μεγαλύτερη εισροή και παραμονή ατόμων στο εργατικό δυναμικό. Σημειώνεται ότι, το ποσοστό αυτό στην Ελλάδα κυμαίνεται το 2023 στο 52% έναντι 58% στην Ευρωζώνη.

Οι πληθωριστικές πιέσεις των προηγούμενων ετών υποχωρούν σταδιακά και ο γενικός δείκτης διαμορφώνεται στο 2,8% (Ιαν-Νοέμ.2024). Εντούτοις, από τα μέσα του έτους, η απόκλιση μεταξύ του εθνικού και του δομικού πληθωρισμού είναι σημαντική, υπογραμμίζοντας την επίδραση του τομέα των υπηρεσιών στην συνολική εικόνα αύξησης του κόστους ζωής που αντιμετωπίζουν οι καταναλωτές.

Η ιδιωτική κατανάλωση παραμένει η κύρια συνιστώσα του ΑΕΠ και της αναπτυξιακής πορείας και πιστεύουμε ότι θα συνεχίσει να διαδραματίζει το βασικότερο ρόλο. Ωστόσο, δεν πρέπει να παραβλέπουμε ότι η αναπτυξιακή προοπτική της Ελληνικής οικονομίας εξαρτάται από την αξιοποίηση των ευρωπαϊκών και εθνικών κεφαλαίων για την υλοποίηση των επενδυτικών σχεδίων και την τόνωση της επιχειρηματικότητας. Αυτή η εξέλιξη θα έχει διττό αποτέλεσμα: αφενός η αξία της επένδυσης θα "μετρήσει" στο ΑΕΠ και μαθηματικά θα βελτιώσει τον ρυθμό ανάπτυξης, και αφετέρου, μακροπρόθεσμα, θα έχει πολλαπλασιαστικό αποτέλεσμα, υποστηρίζοντας νέες θέσεις εργασίας και την παραγωγικότητα του παγίου κεφαλαίου. Μέχρι το 2027, η χώρα θα έχει εξασφαλίσει περίπου €78,6 δισεκ. από φορείς της Ευρωπαϊκής Ένωσης και περίπου άλλα €17 δισεκ. από εθνικούς πόρους. Οι επενδύσεις αναμένεται να επιταχυνθούν τα επόμενα χρόνια, λαμβάνοντας υπόψη την ωρίμανση των επενδυτικών σχεδίων και των έργων που υλοποιούνται στο πλαίσιο του RRF. Στόχος όμως θα πρέπει να είναι η ταχύτερη αύξηση του λόγου επενδύσεις παγίου κεφαλαίου προς ΑΕΠ (15% του ΑΕΠ) και η σύγκλιση προς τον μέσο όρο της Ευρωζώνης (22% του ΑΕΠ) αλλά και η μείωση του επενδυτικού κενού και της απαξίωσης του εργοστασιακού εξοπλισμού που δημιουργήθηκε κατά τη διάρκεια της οικονομικής κρίσης.

# Greece's Economic Growth: Challenges and Opportunities

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In 2024, the Greek economy continued its growth trajectory despite uncertainties in the international environment. In the first nine months of 2024, real GDP increased by 2.3% year-on-year, a rate significantly higher than the Eurozone average (0.6%). According to available data, short-term economic activity and expectation indicators suggest that the Greek economy will maintain its growth momentum in the medium term, with a steady rate close to 2%. Notably, the Economic Sentiment Index remains above the Eurozone average, supported by strengthened business expectations.

The unemployment rate maintains a downward trend, primarily driven by the increase in employment. This trend, according to the employment expectations index, is expected to continue in the medium term, simultaneously boosting the overall disposable income of households and consumption. Nevertheless, a fundamental condition for the development of a sustainable labour market is the gradual increase in the population's labor force participation rate, that is, achieving greater inflow and retention of individuals in the labour force. It is noting that, this rate in Greece stands at 52% in 2023, compared to 58% in the Eurozone.

Inflationary pressures from previous years are gradually easing, with the general index standing at 2.8% (Jan-Nov 2024). Nonetheless, since mid-year, the divergence between national and core inflation is significant, highlighting the impact of the services sector on the overall increasing cost of living.

Private consumption remains the main component of GDP and economic growth, and we believe it will continue to play the most vital role. However, we must not overlook that the growth outlook of the Greek economy depends on the utilization of European and national funds to implement investment plans and boost entrepreneurship. This development will have a dual effect: on the one hand, the value of investments will contribute to GDP and mathematically improve the growth rate, and on the other hand, in the long term, it will have a multiplier effect, supporting new jobs and fixed capital productivity. By 2027, the country will have secured approximately €78.6 billion from European Union sources and around €17 billion from national resources. Investments are expected to accelerate in the coming years, considering the maturity of investment plans and projects implemented under the Recovery and Resilience Facility (RRF). However, the goal should be the rapid increase in the ratio of fixed capital investments to GDP (15% of GDP) and convergence toward the Eurozone average (22% of GDP), as well as the reduction of the investment gap and the depreciation of industrial equipment that occurred during the economic crisis.

# 1. Macroeconomic Outlook

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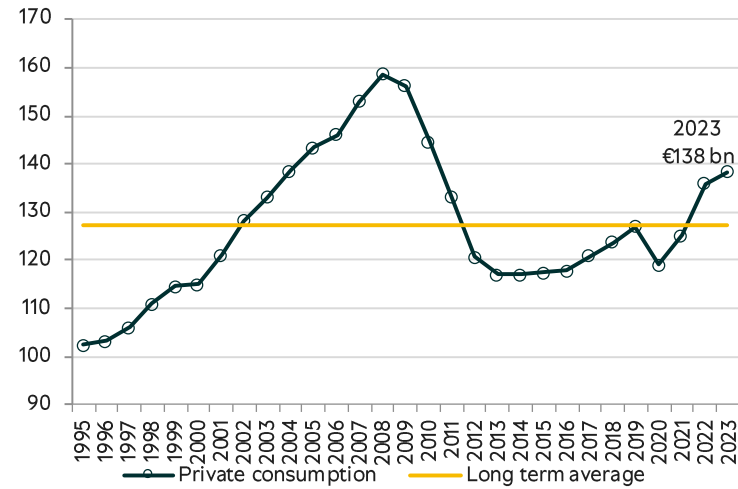
# Economic Outlook

Piraeus Bank forecasts		Economic Outlook				
	2023a	2024	2025	2026	2027	2028
Real GDP (% change)	2.3	2.2	2.1	2.1	2.0	1.9
Inflation (CPI, % change)	3.5	2.5	2.5	2.1	2.1	2.1
Unemployment rate (% of labour force)	11.1	10.8	10.6	10.5	10.4	10.3
Non-residential real estate prices (% change) <sup>(1)</sup>	6.0	5.5	4.9	4.5	4.3	4.2
Residential real estate prices (% change)	13.8	9.7	7.5	6.0	5.1	4.5

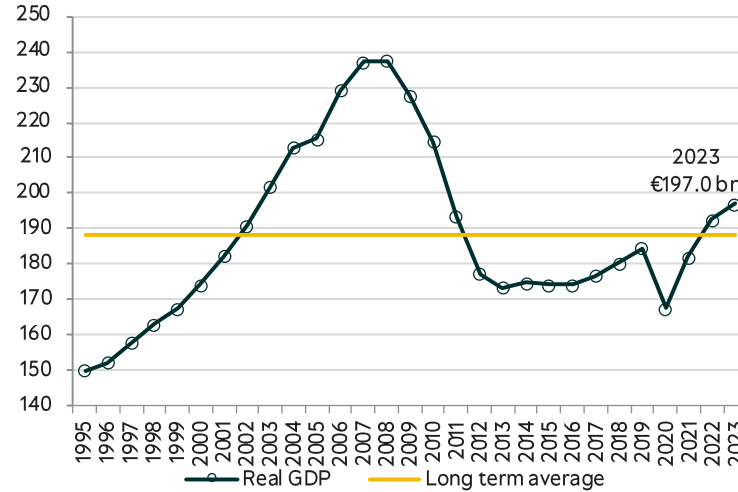
Note: 1. Commercial (Non – Residential) Real Estate price index based on Bank of Greece "Office price index.

# A Bird's Eye View of the Greek Economy: GDP is recovering but the distance to pre-crisis peak remains daunting

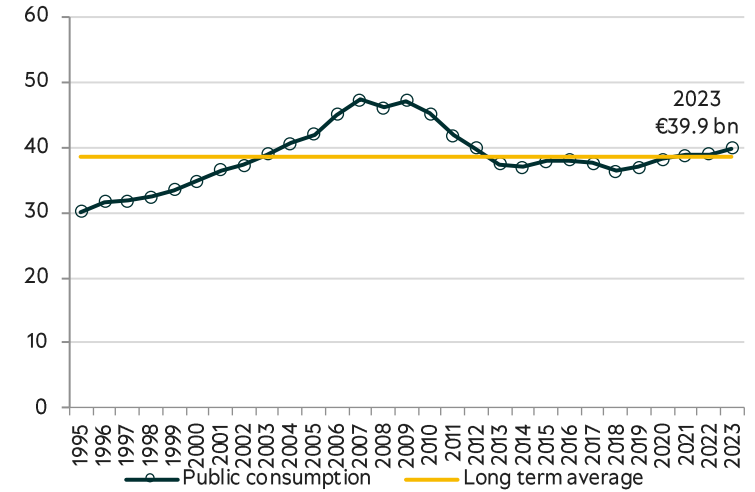
Private Consumption back at above average levels



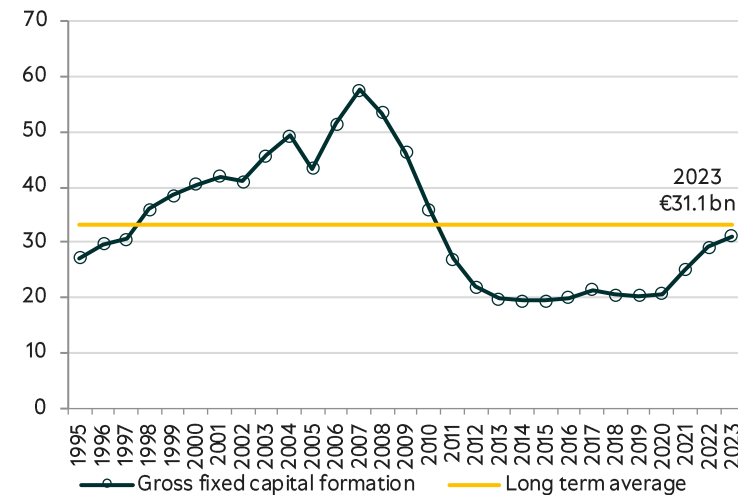
Real GDP (€ bn, 2020 prices)



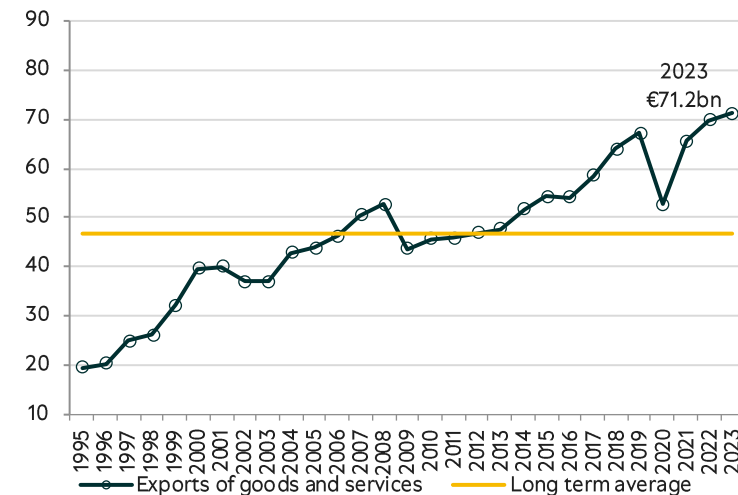
Public Consumption on an upward trend



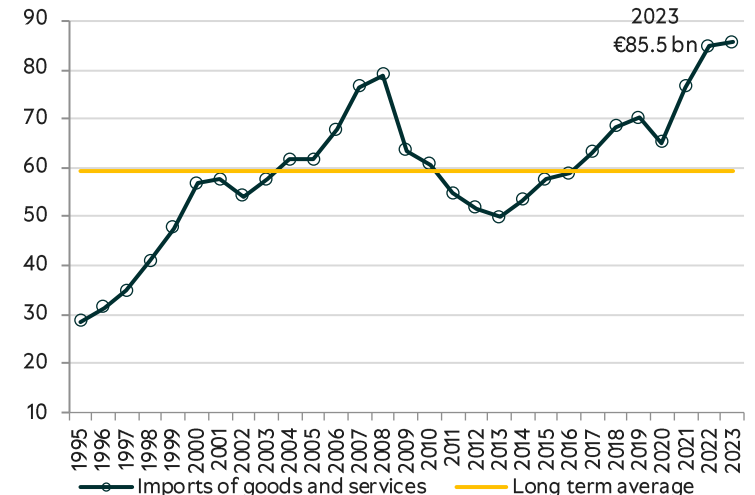
Gross Fixed Capital Formation still below long term



Exports of Goods & Services reaching a peak level

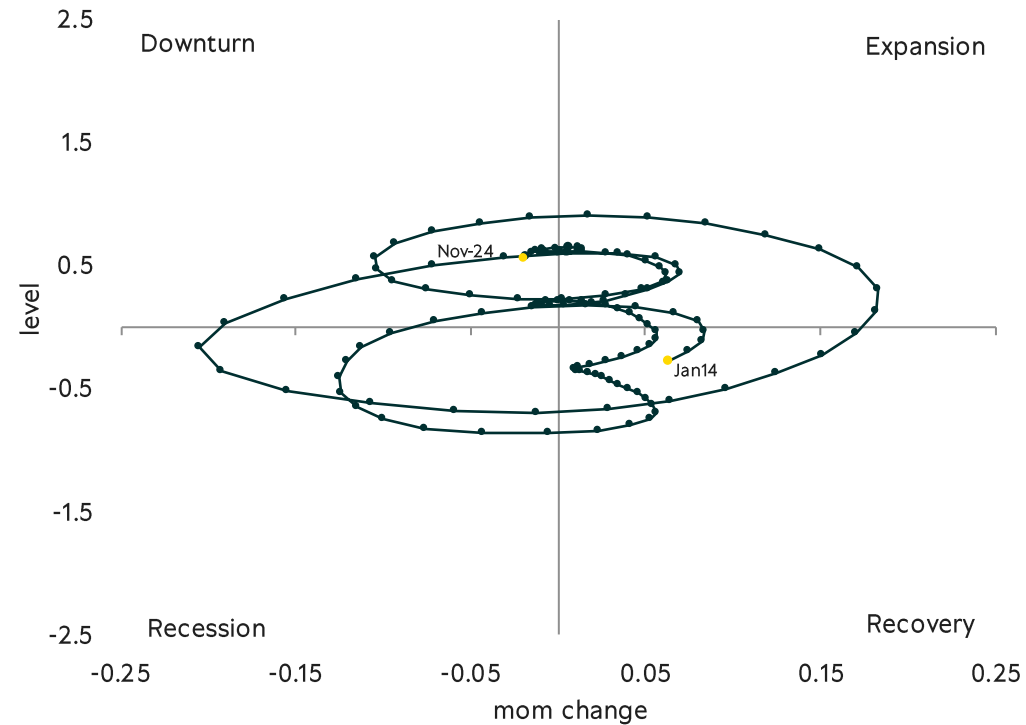


Imports burdens the improvement of the trade deficit

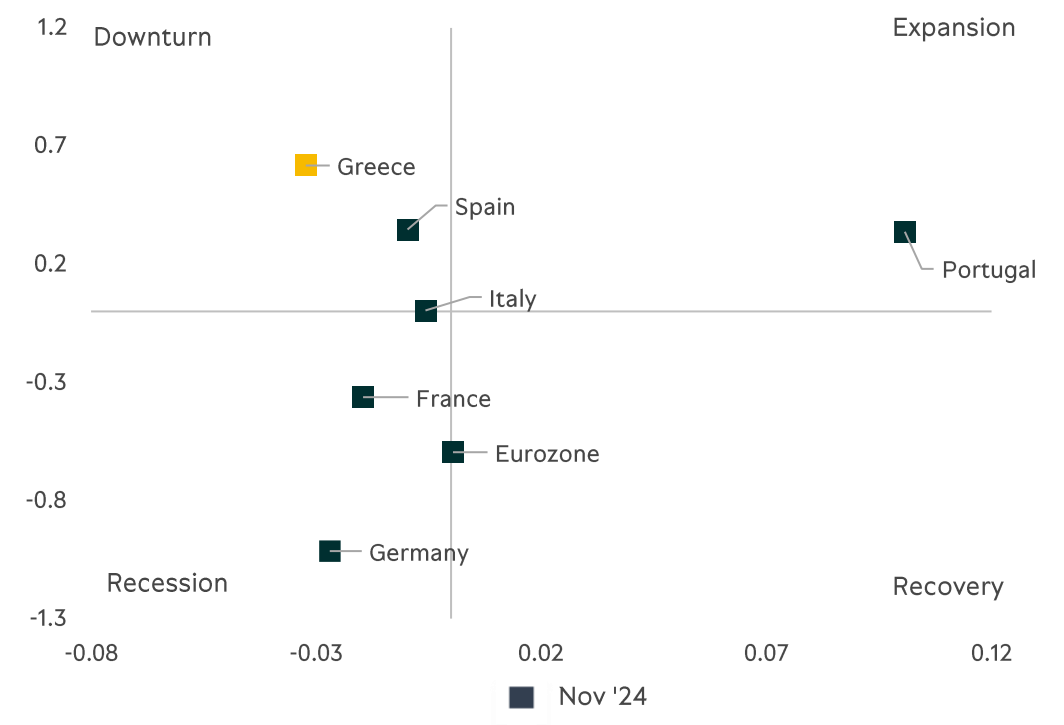


# The European “South” is leading the EU recovery

## Economic Sentiment Tracer of Greece (November 2024)



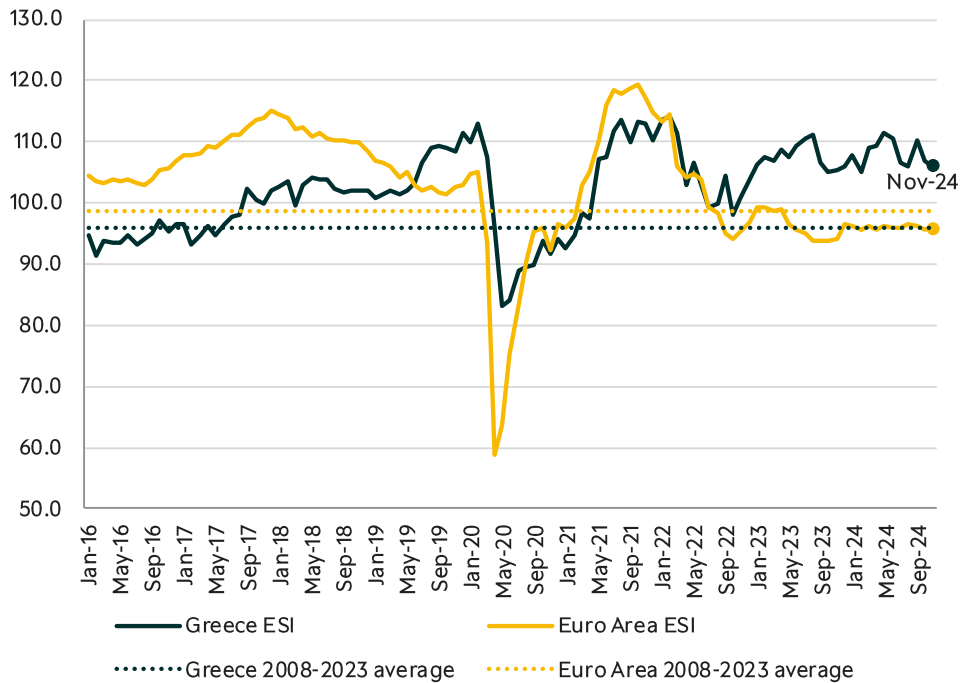
## Economic Sentiment of EA Members (November 2024)



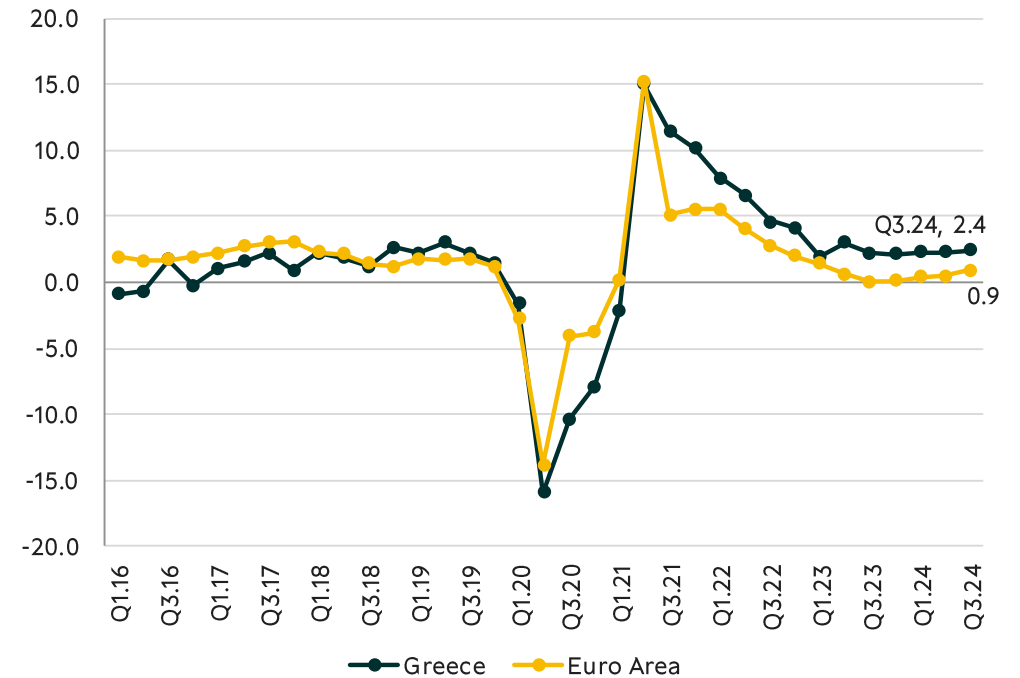


# Economic Climate & Real GDP growth rate are above the Euro area average

## Economic Sentiment Indicator Greece vs Euro Area (ESI, sa data)

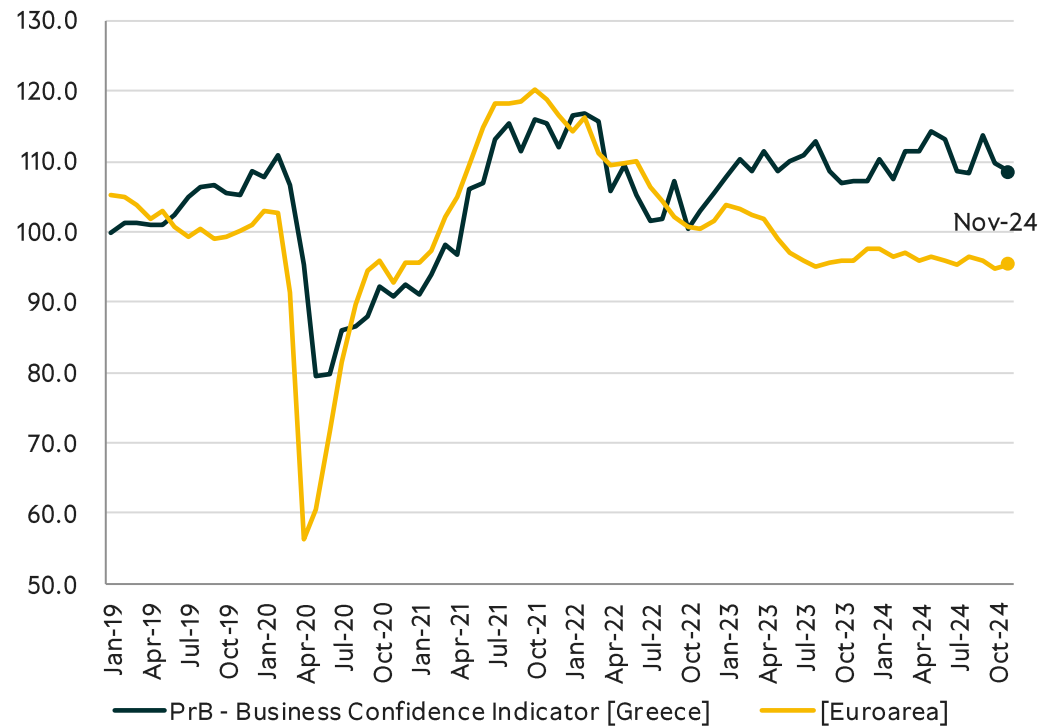


## Real GDP Greece vs Euro Area (annual % change, sa data)

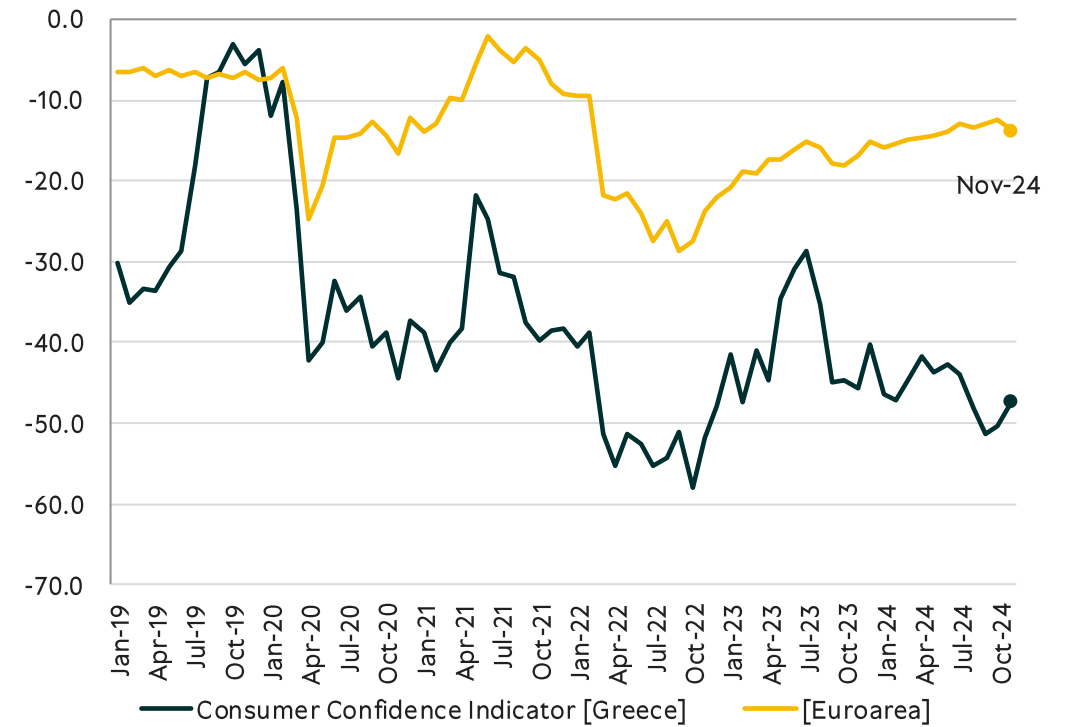


# In contrast to the EA, the ESI in Greece is primarily supported by the business sector

**Business Confidence Indicator<sup>1</sup>**  
Greece vs Euro Area (sa data)



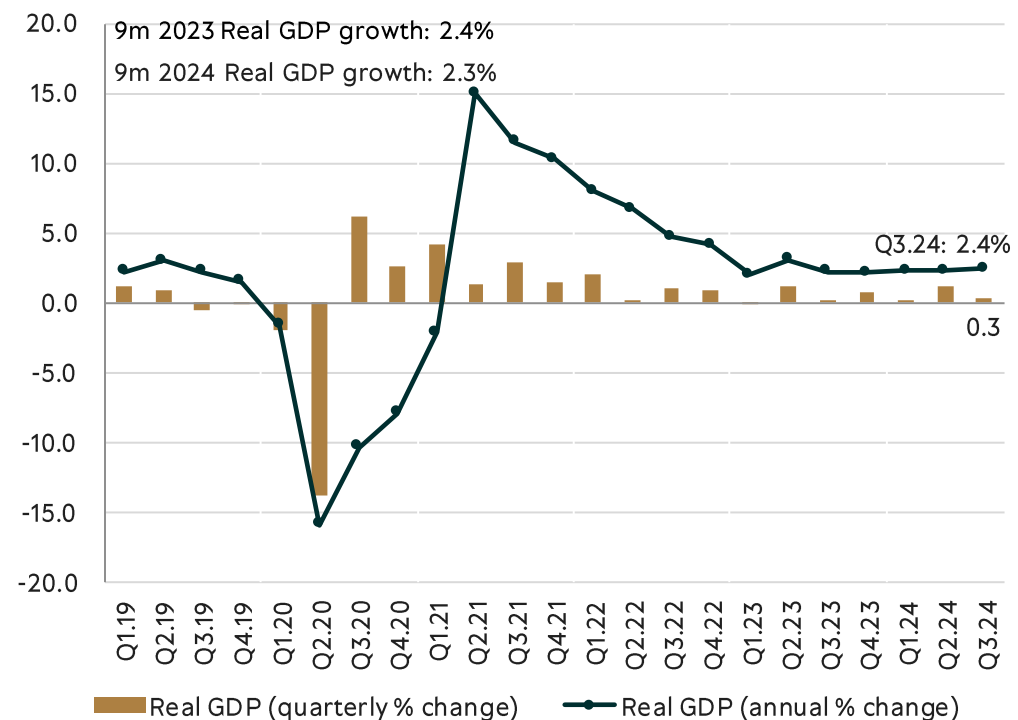
**Consumer Confidence Indicator**  
Greece vs Euro Area (sa data)



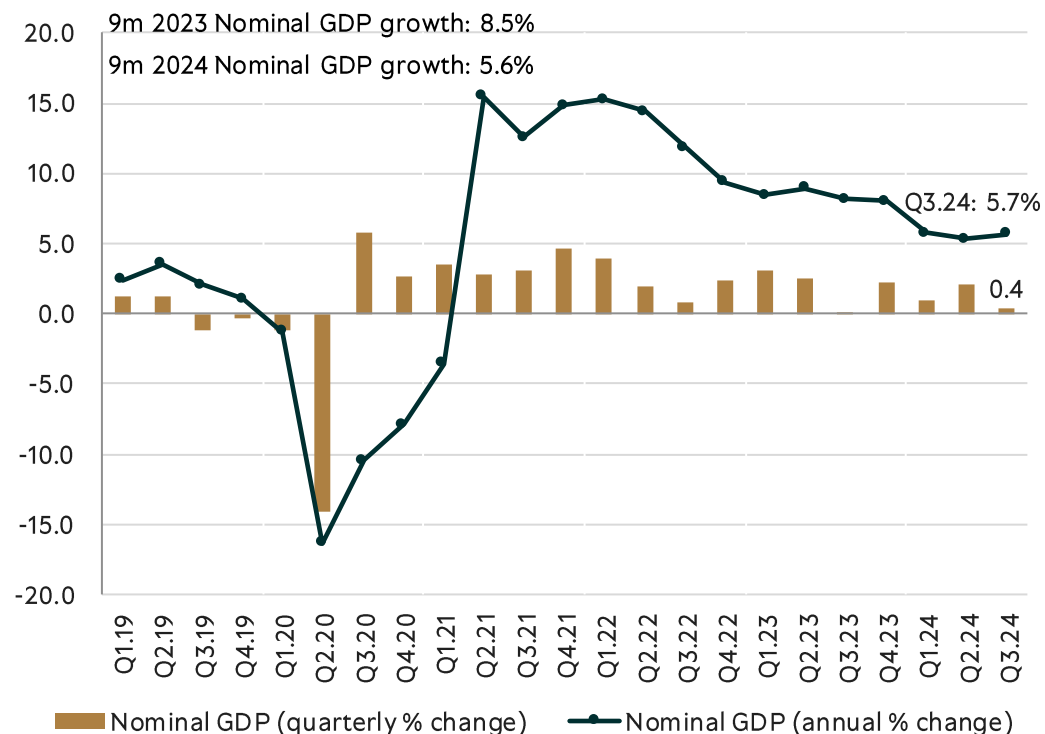
Note: 1. Economic Sentiment Indicator (ESI) excluding Consumer Confidence Indicator. Calculated by the Piraeus Bank economic research division by using DG ECFIN methodology.

# In 2024, the Greek economy remains on a growth trajectory

## Real GDP growth rate (% change)

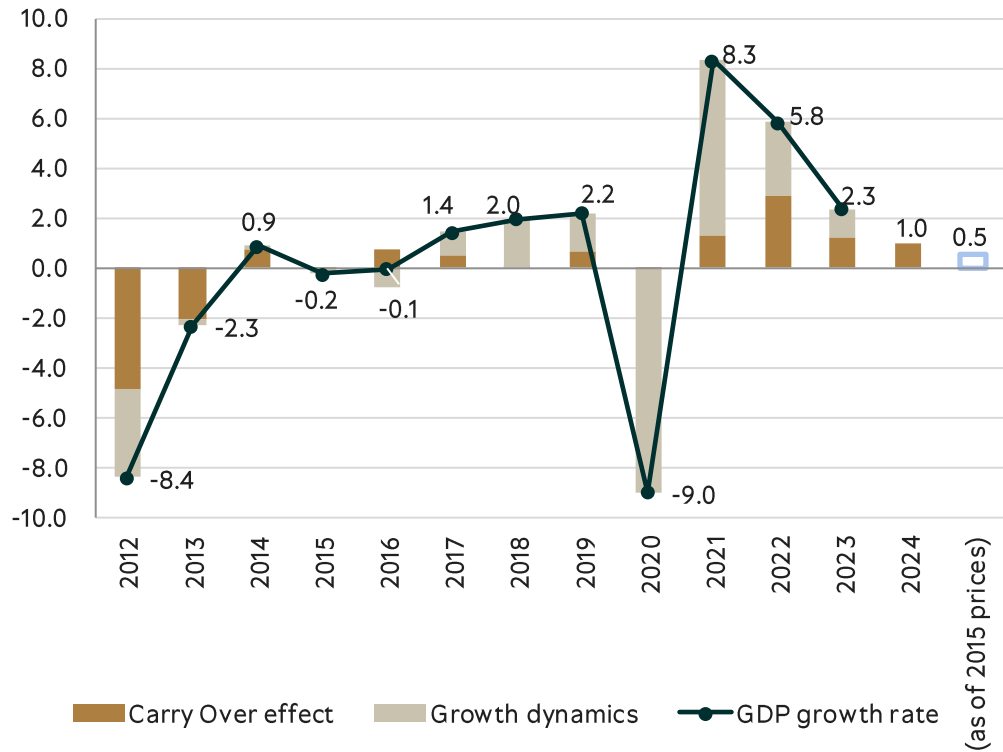


## Nominal GDP growth rate (% change)

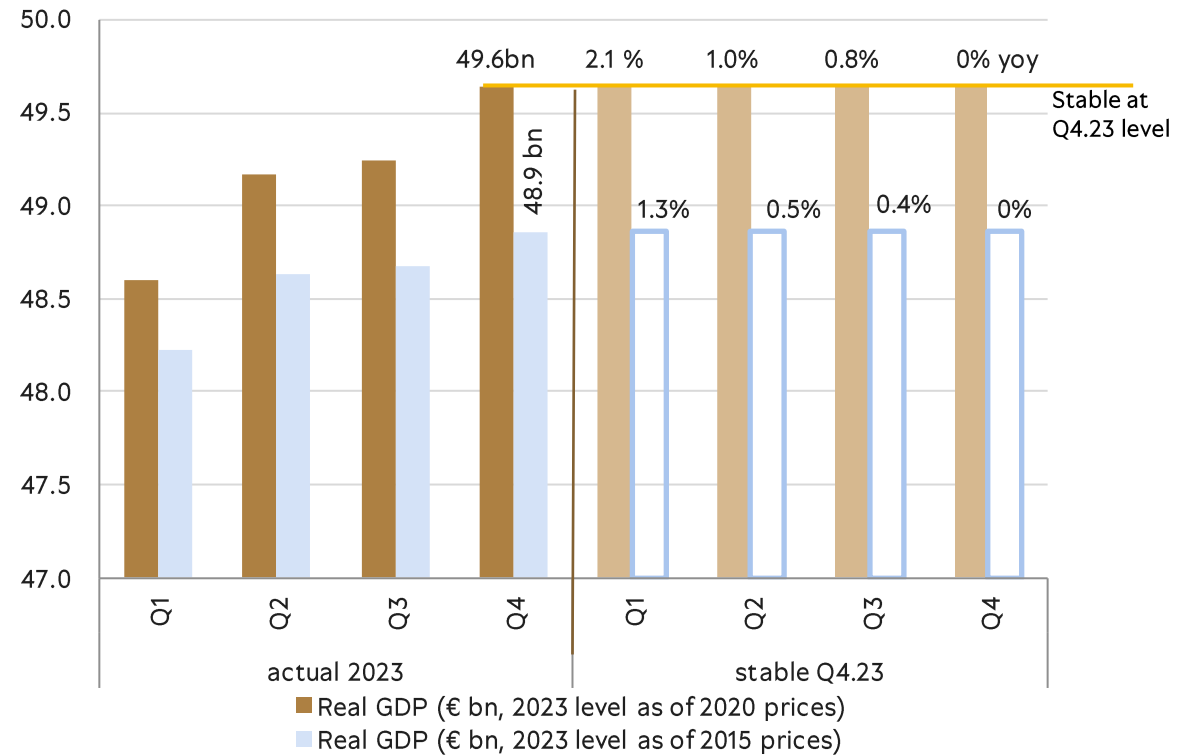


# The Statistical analysis: Carry over effect was revised upward to 1.0%

## Carry Over Effect and Real GDP Growth Dynamics (2020 prices, %)

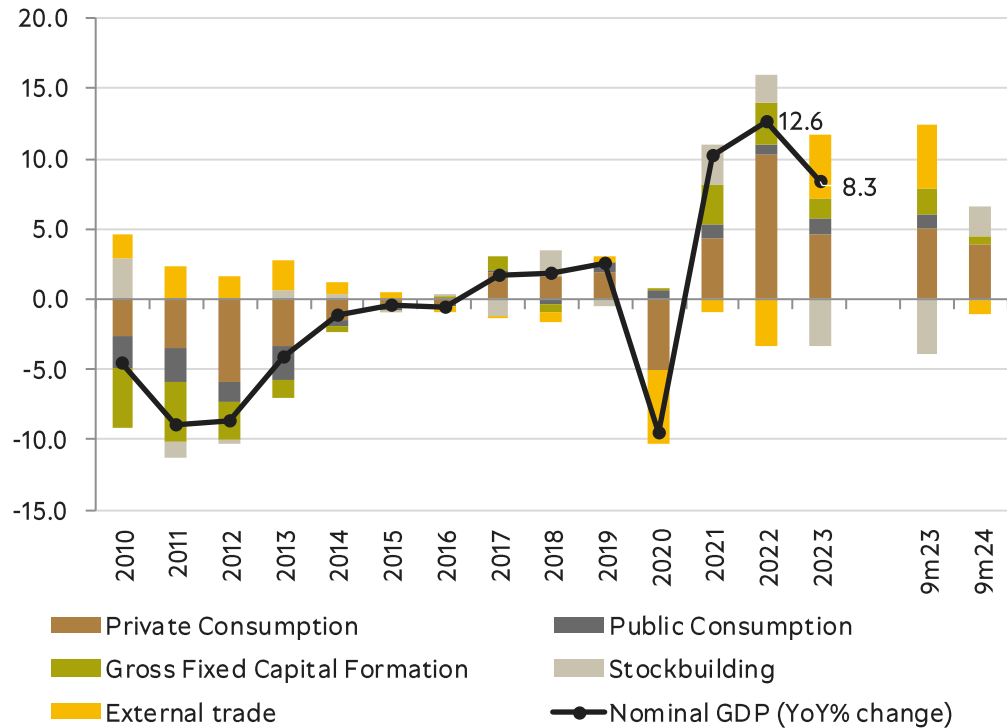


## Carry over effect (Real GDP, € bn)

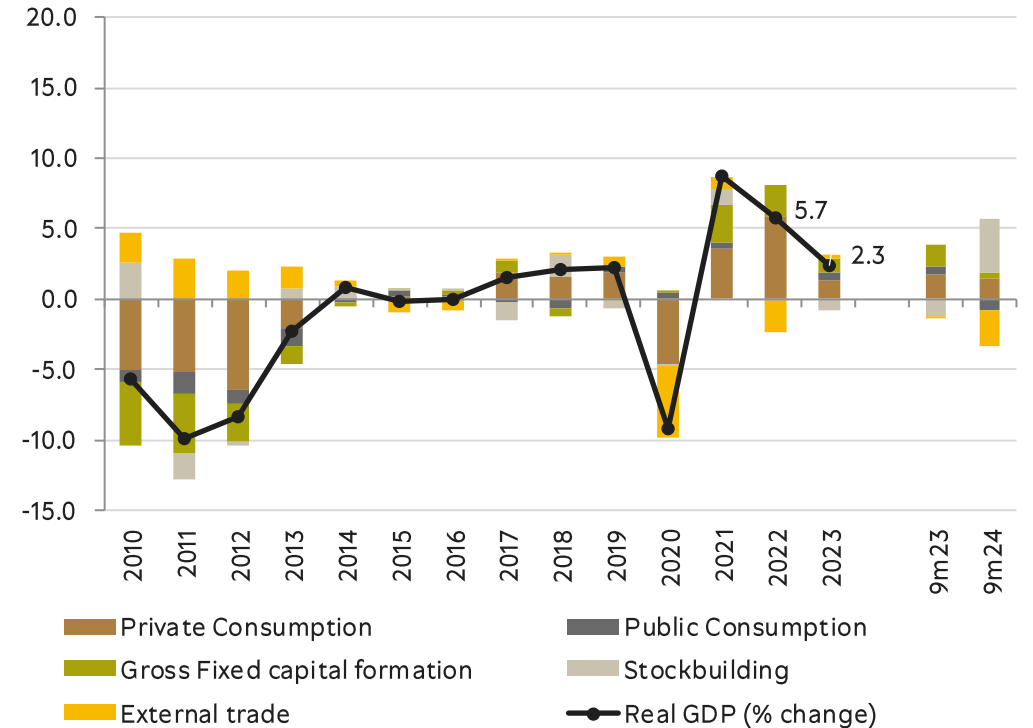


# Private Consumption retain its position as the primary positive contributor to growth

## Contribution to Nominal GDP annual growth rate (%)

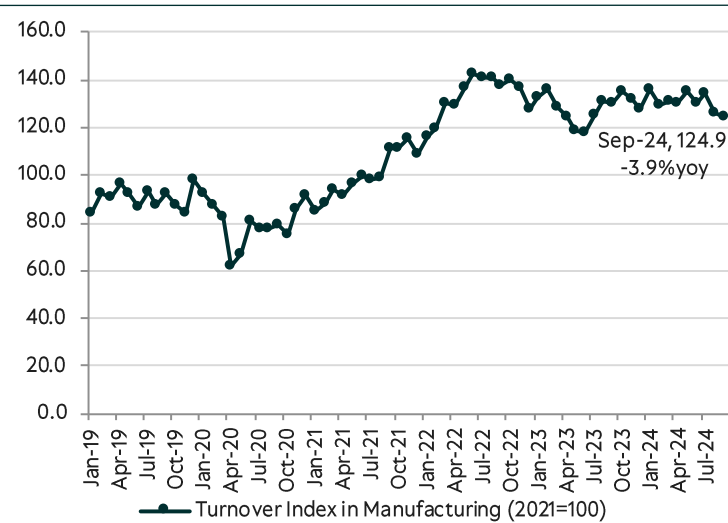


## Contribution to Real GDP annual growth rate (%)

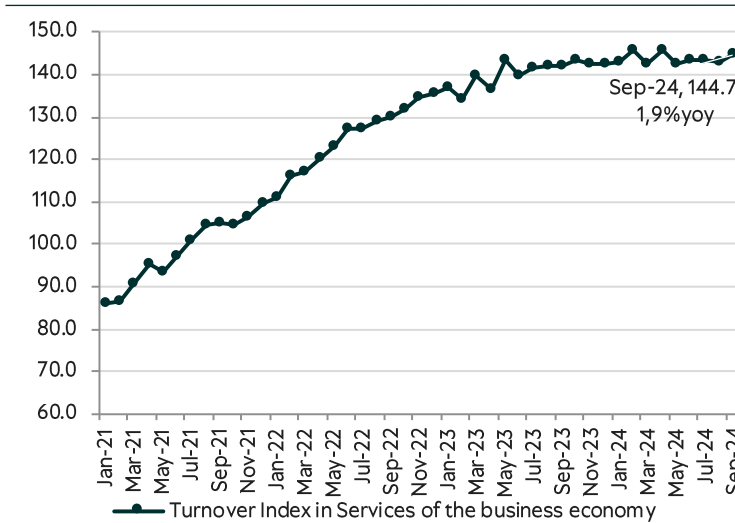


# “Nominal” Conjunctural Indicators: Inflation moderation results to a “cooling-off” of turnover

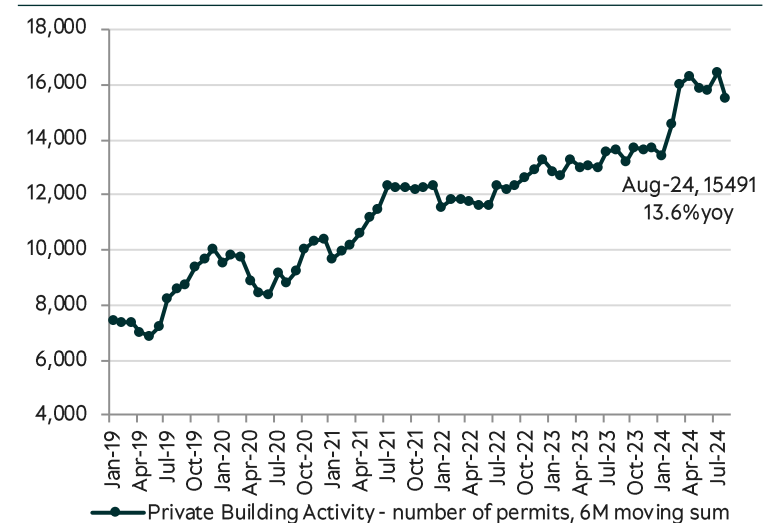
Turnover Index in Manufacturing (sa data)



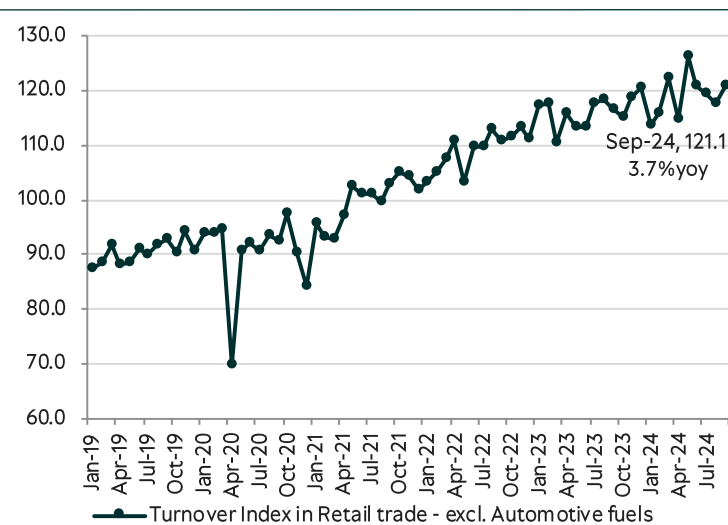
Turnover Index in Services of the business economy\*



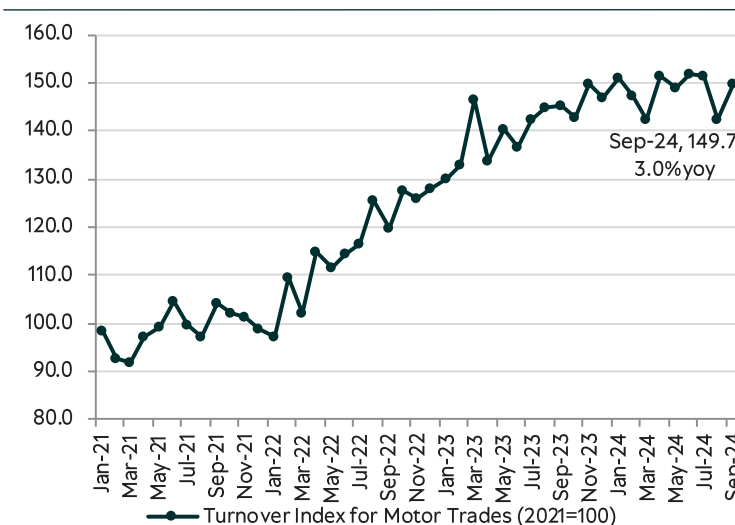
Private Building Permits (nsa data)



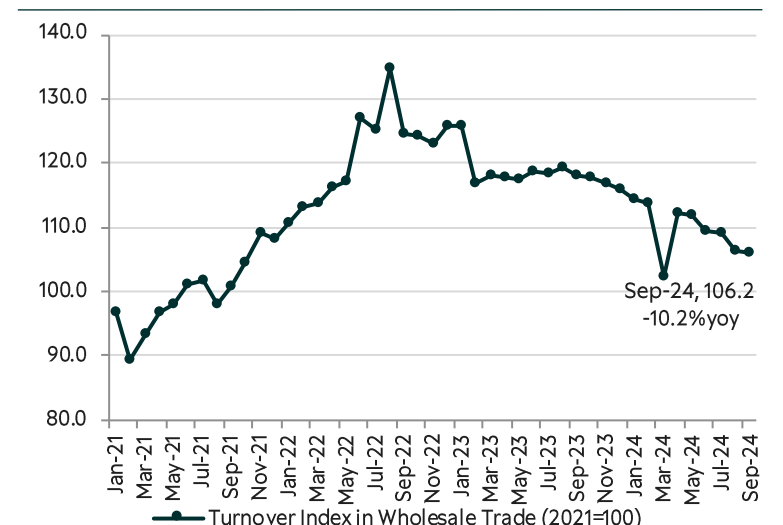
Turnover Index in Retail Trade (excl. fuels, sa data)



Turnover Index in Motors Trade (sa data)

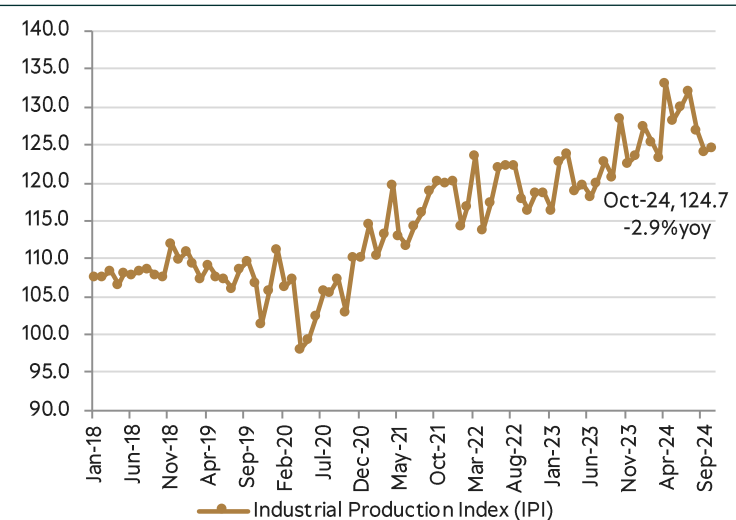


Turnover Index in Wholesales Trade (sa data)

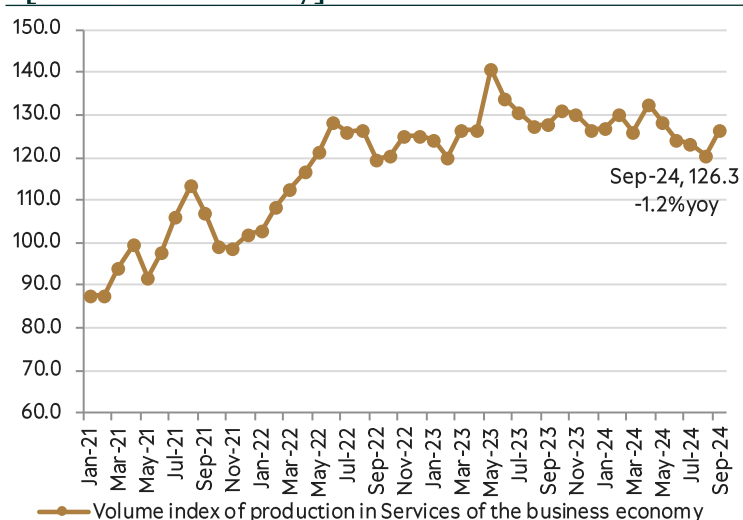


# “Real” Conjunctural Indicators: Mixed signals of overall stability

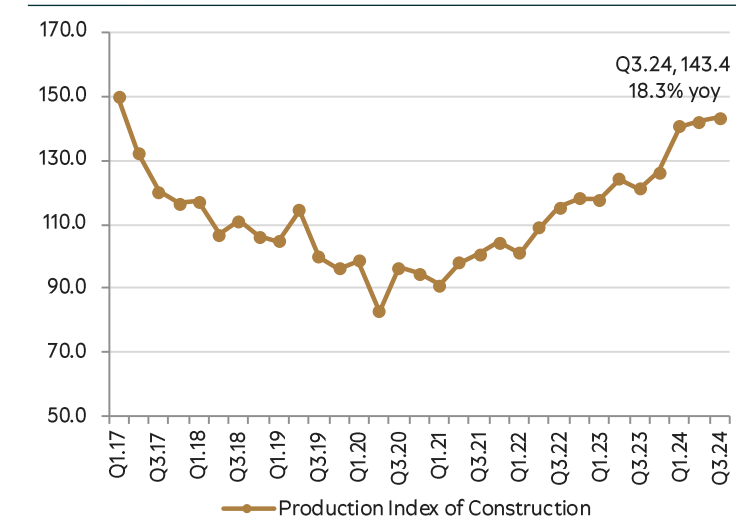
## Industrial Production Index (sa data)



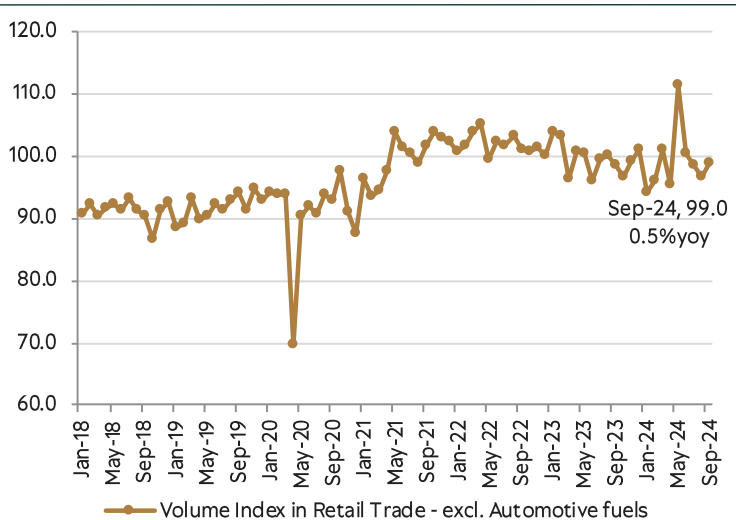
## Volume Index of Production in Services [business economy]



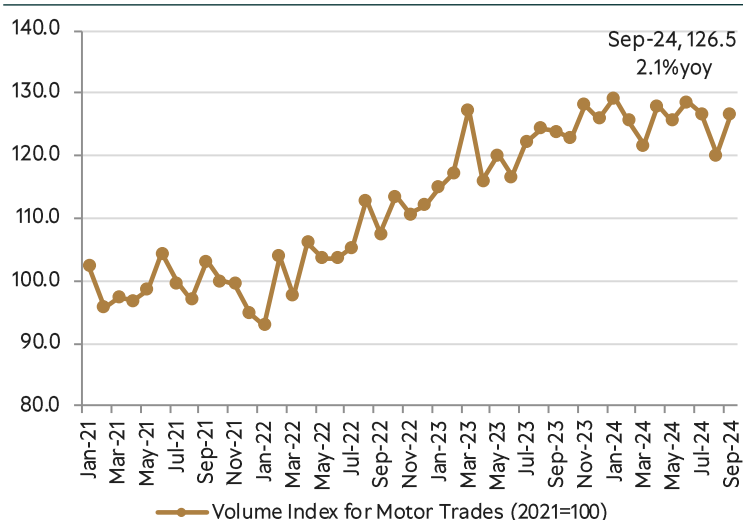
## Production Index of Constructions (sa data)



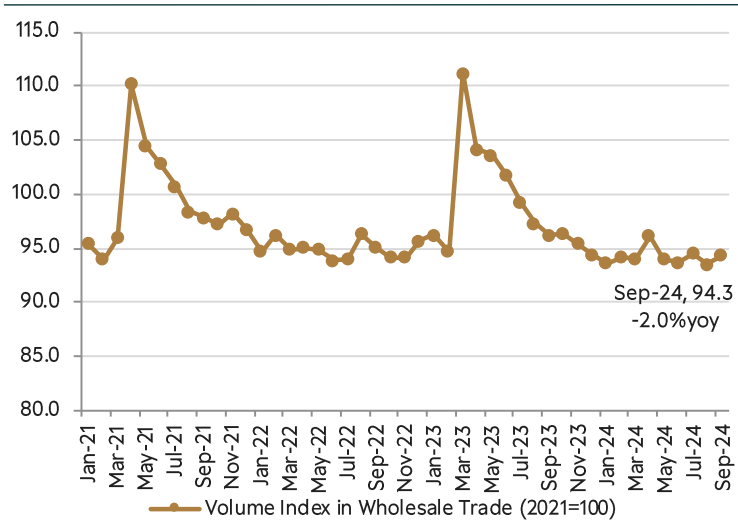
## Volume Index in Retail Trade (excl. fuels, sa data)



## Volume Index in Motors Trade (sa data)

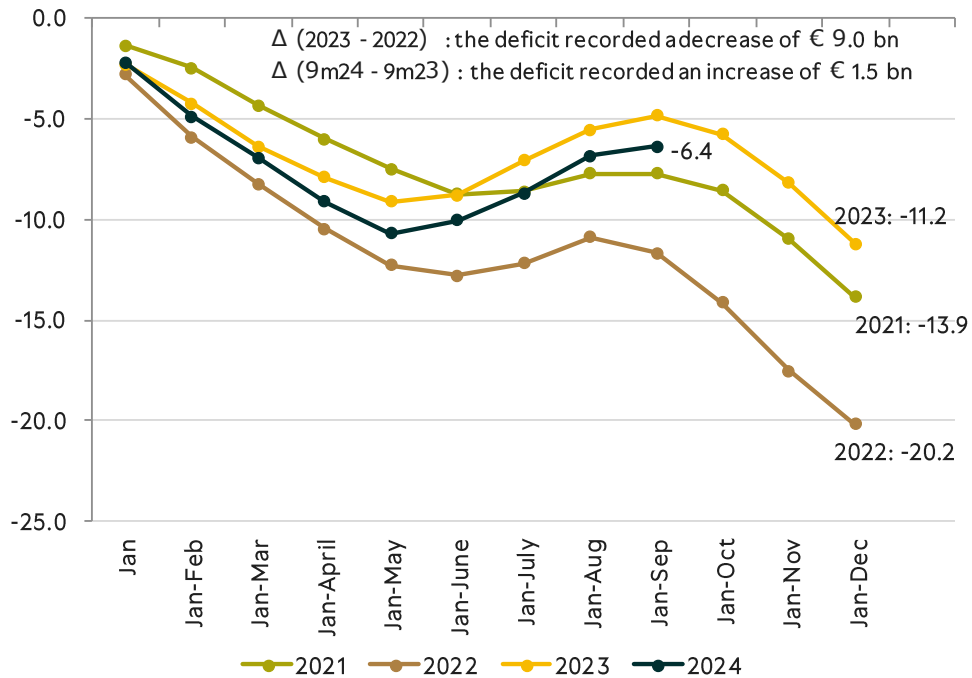


## Volume Index in Wholesales Trade (sa data)

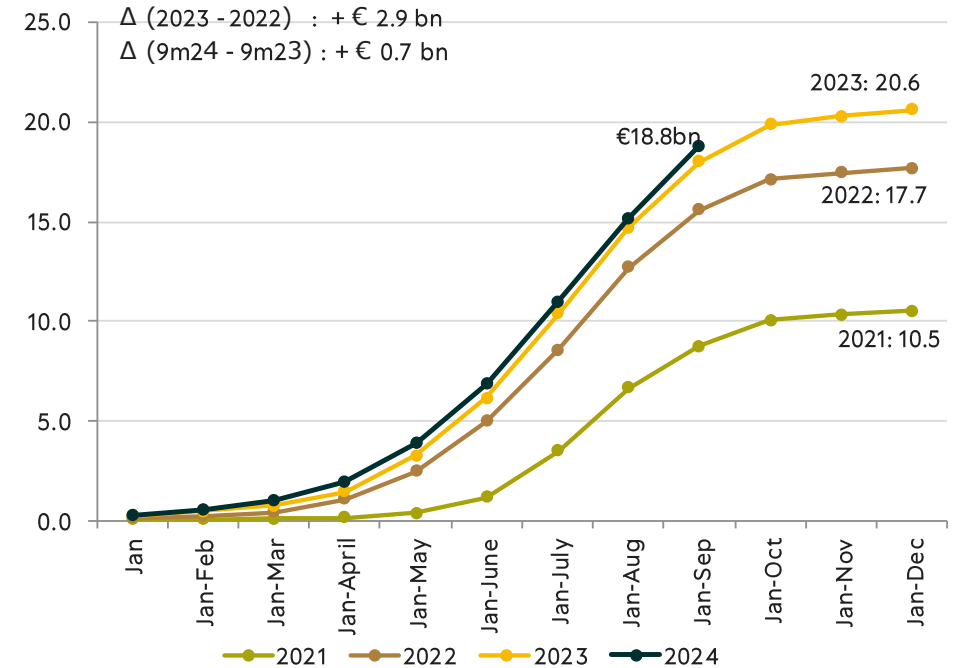


# External Sector: External trade deficit increases despite the improvement in travel receipts

## External Balance of Goods & Services<sup>1</sup> (€ bn)



## Travel Receipts<sup>1</sup> (€ bn)

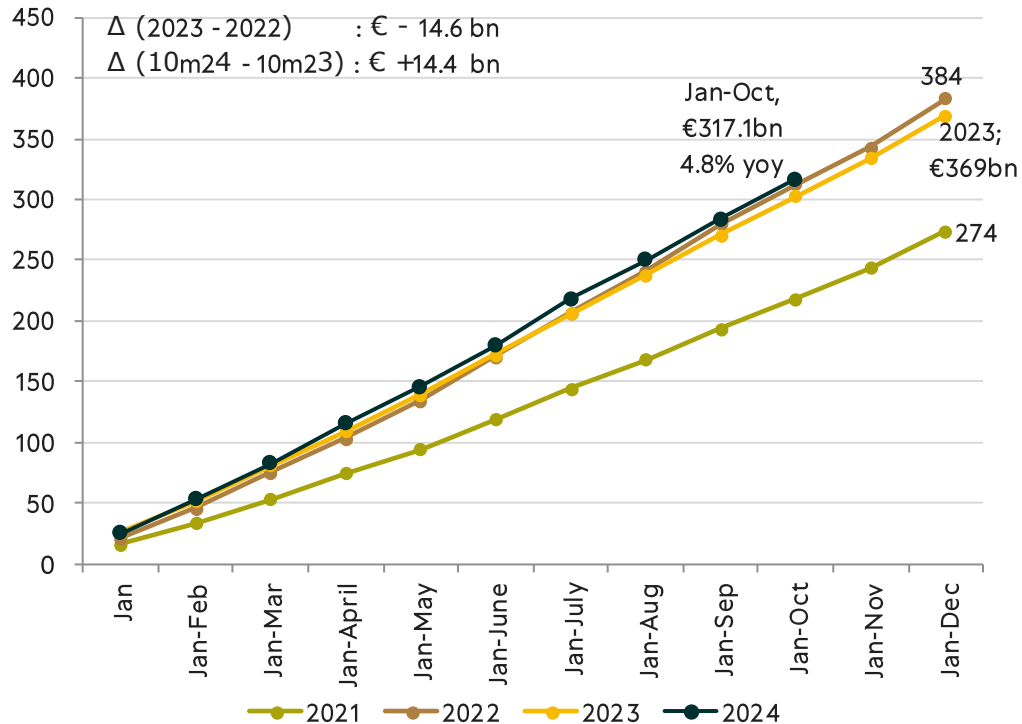


Notes: 1. Balance of Payments, Bank of Greece

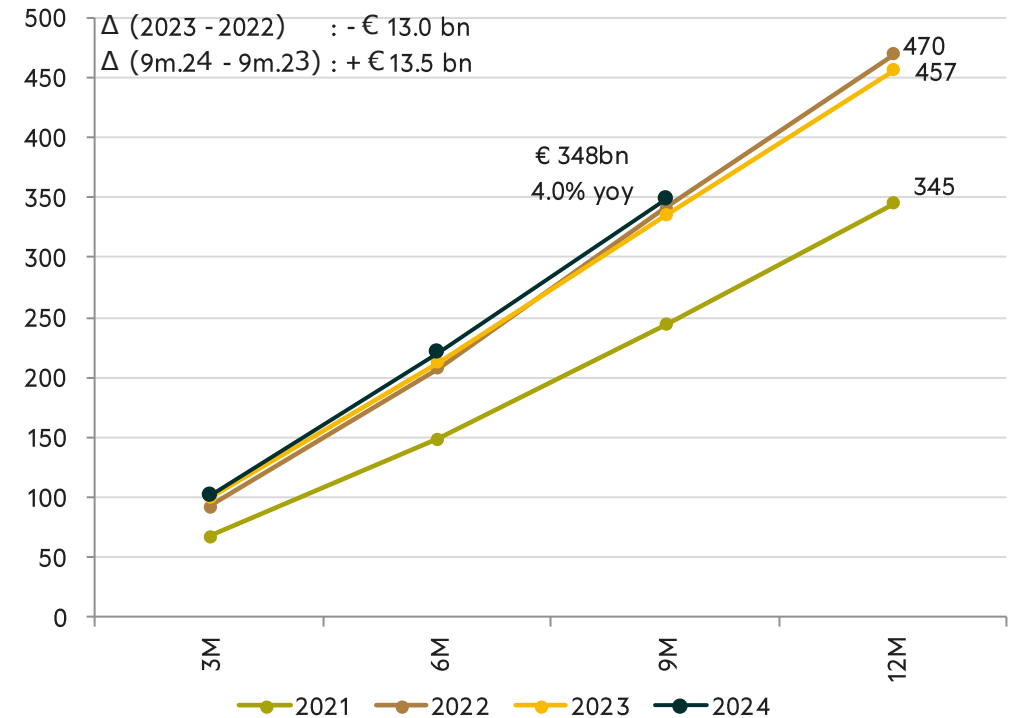


# Turnover of Enterprises: Sales follow an upward trend but adjusted for inflation are close to flat

Turnover of Enterprises<sup>1</sup> (€ bn)  
[double-entry accounting bookkeeping]

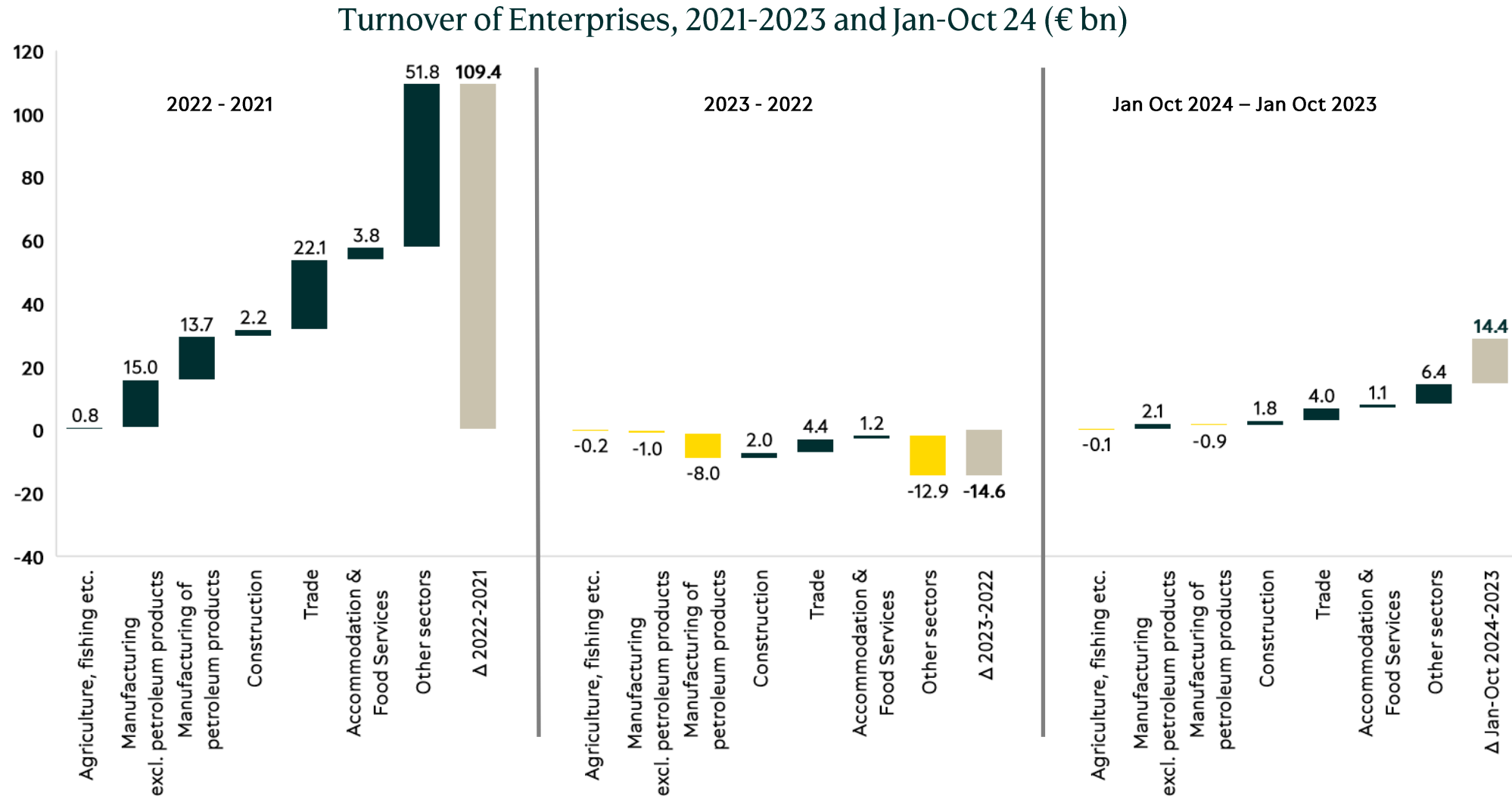


Turnover of the Total of Enterprises (€ bn)



Notes: 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.

# Turnover of Enterprises: on a rebound track from January to October 2024, following the decline in 2023



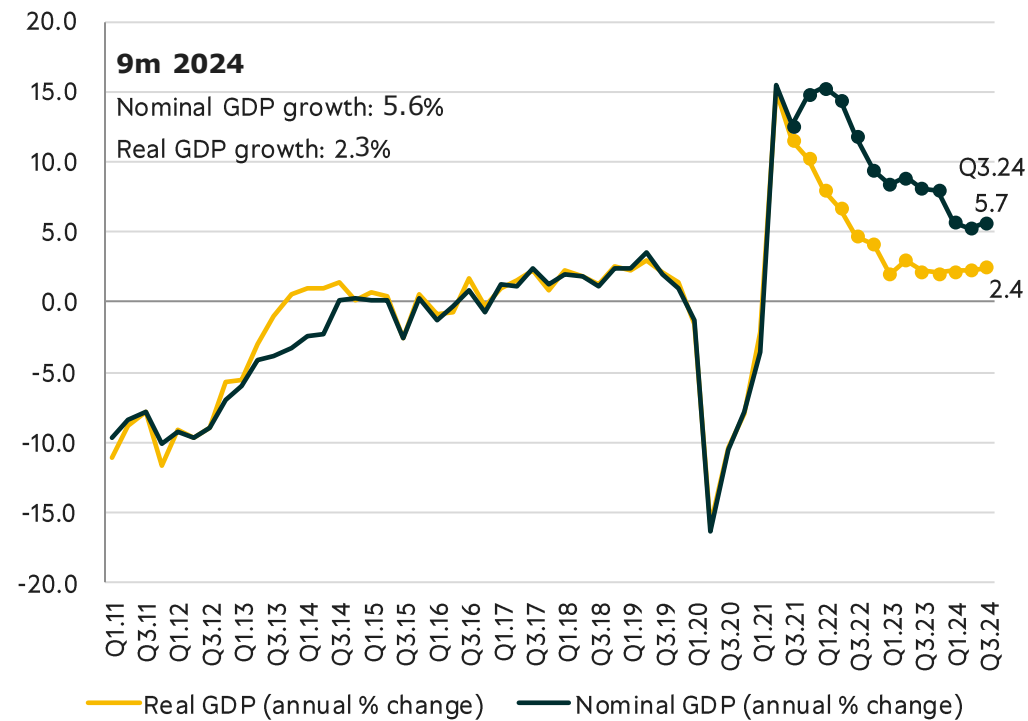
**Note:** Only double-entry accounting bookkeeping. Enterprises with single-entry accounting bookkeeping are obliged to submit data to tax authorities on a quarterly basis, while enterprises with double-entry accounting bookkeeping are obliged to submit data respectively on a monthly basis. Therefore, for the total of enterprises, data is available only on a quarterly basis. Energy, transportation and storage, financial activities, real estate, public sector, education, health, arts, administrative, and other services, are excluded, due to lack of available data for every month of the examined years. Unknown activity is excluded.

## 2. Inflation & Labour Market

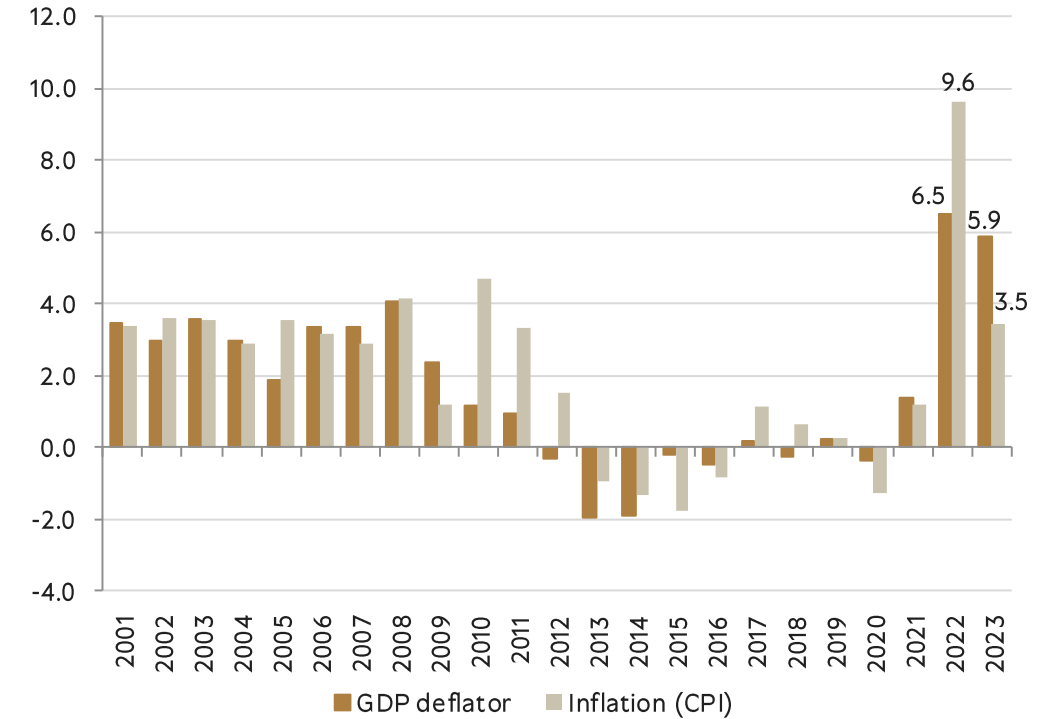
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# Despite the Inflation deceleration, GDP deflator still weighs on Real Growth

Real GDP vs Nominal GDP growth rate  
(annual % change)

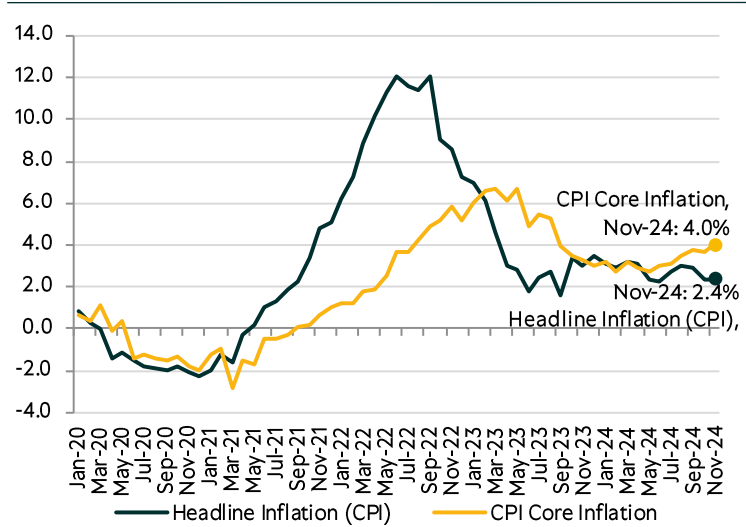


Inflation vs GDP deflator (%)

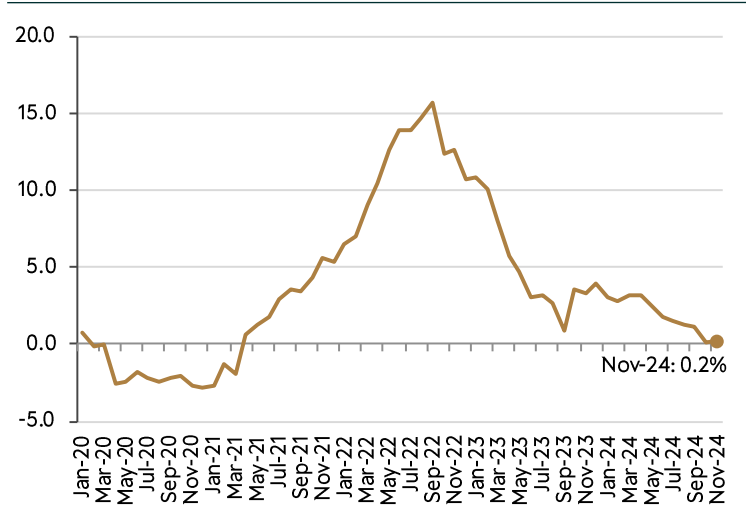


# Inflation: The pricing policy in Services creates inflationary pressures

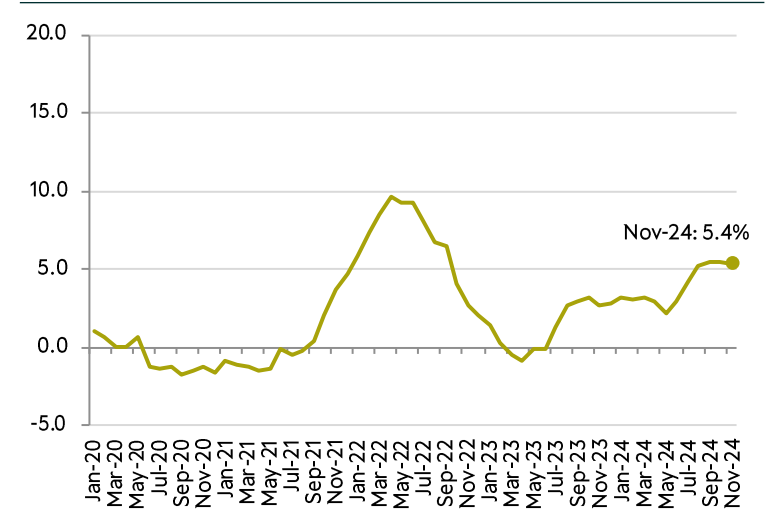
CPI vs CPI Core<sup>1</sup> Inflation (annual % change)



CPI - Goods Prices (annual % change)



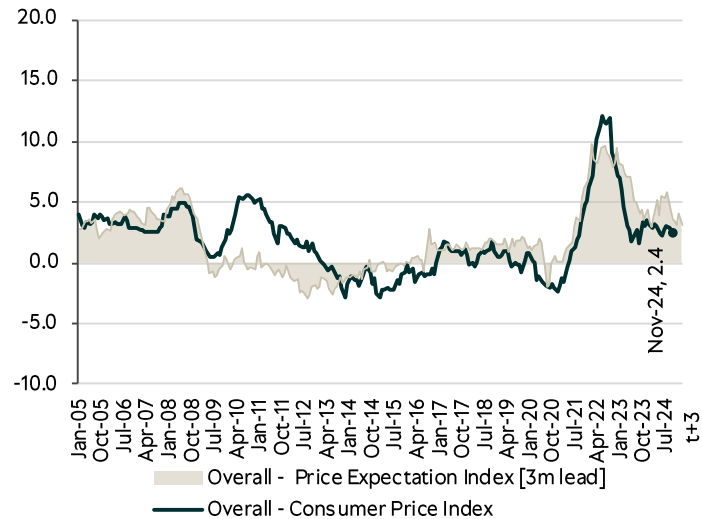
CPI - Services Prices (annual % change)



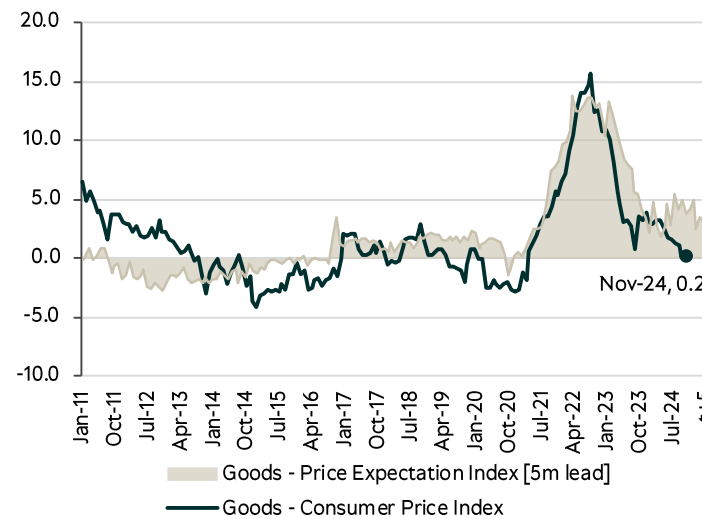
Notes: 1. Core CPI Inflation: CPI, excluding food, beverages, tobacco and energy

# Inflation Vs Expectations: Households experience in goods inflation is in disconnect with actual price changes

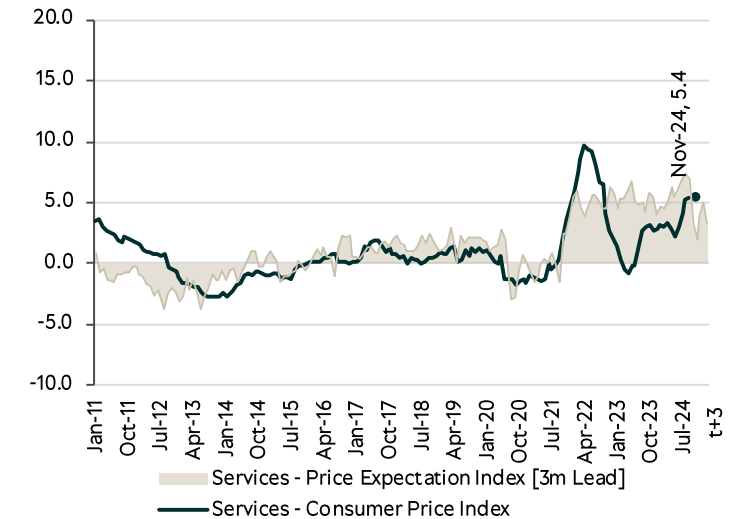
Overall CPI (annual % change) Vs Price Expectation Index



Goods CPI (annual % change) Vs Goods Price Expectation Index

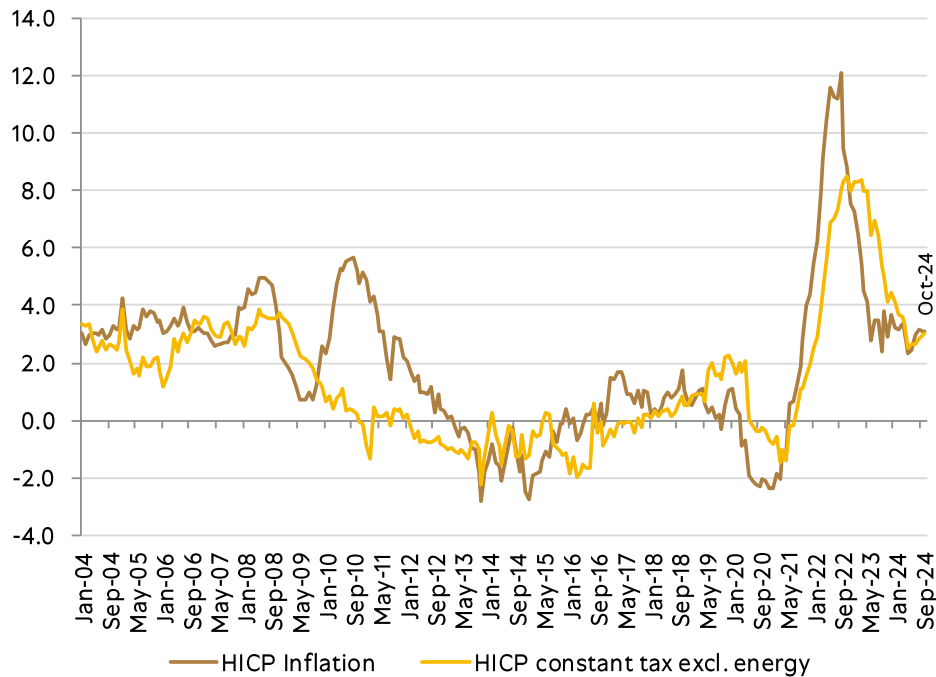


Services CPI (annual % change) Vs Services Price Expectation Index

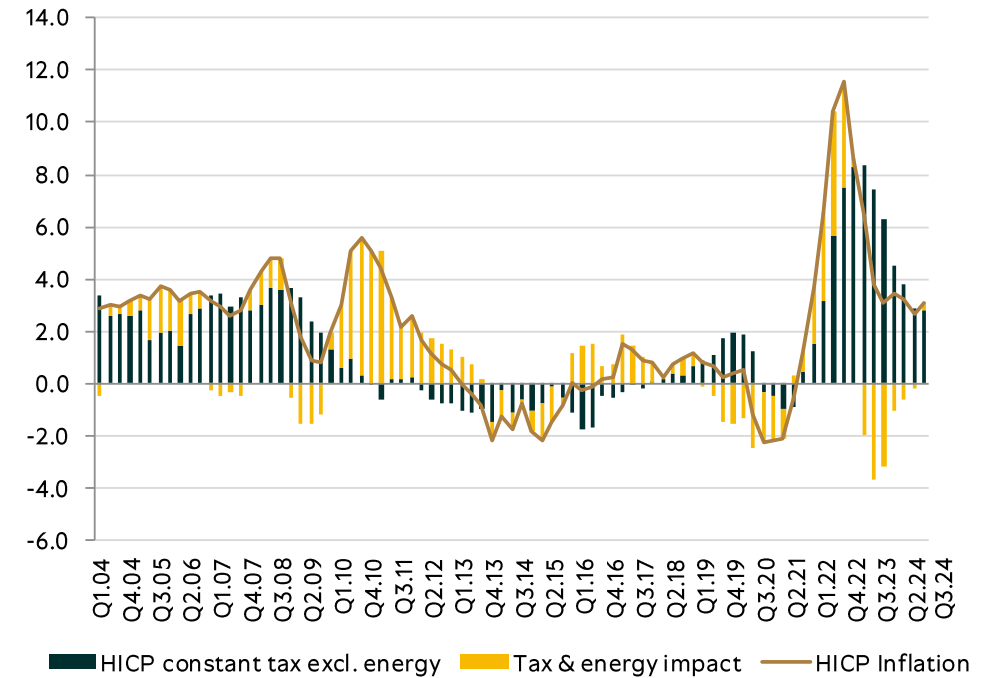


# Energy's impact (both positive & negative) on inflation has been substantial

## HICP vs HICP at constant tax excl. energy

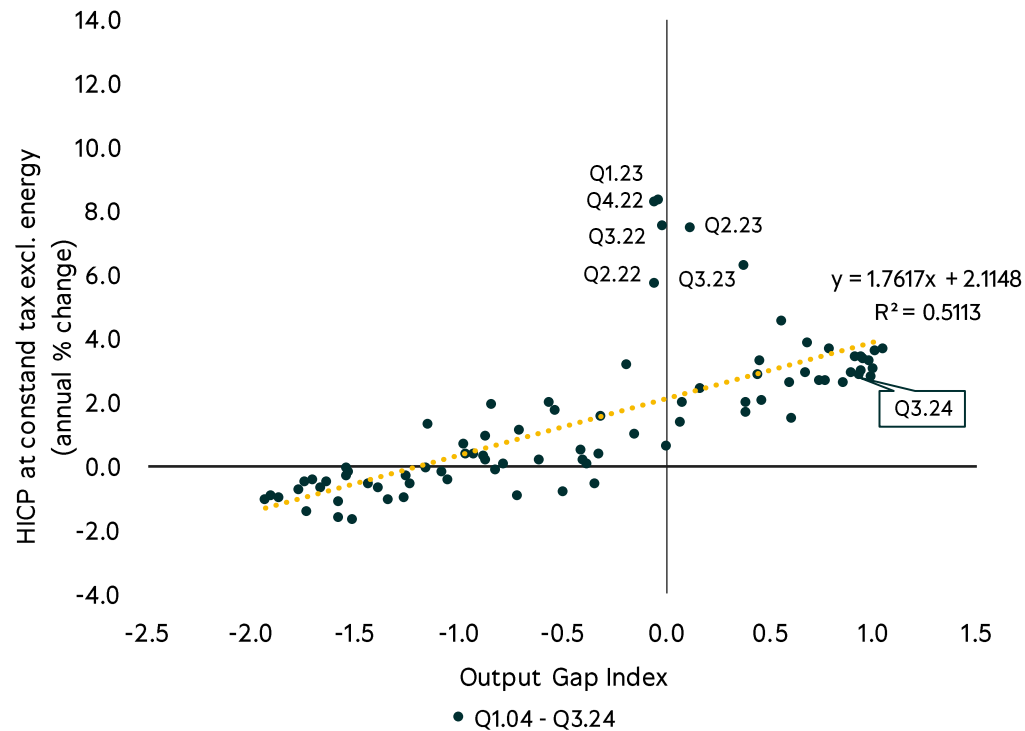


## Tax & energy impact to Inflation

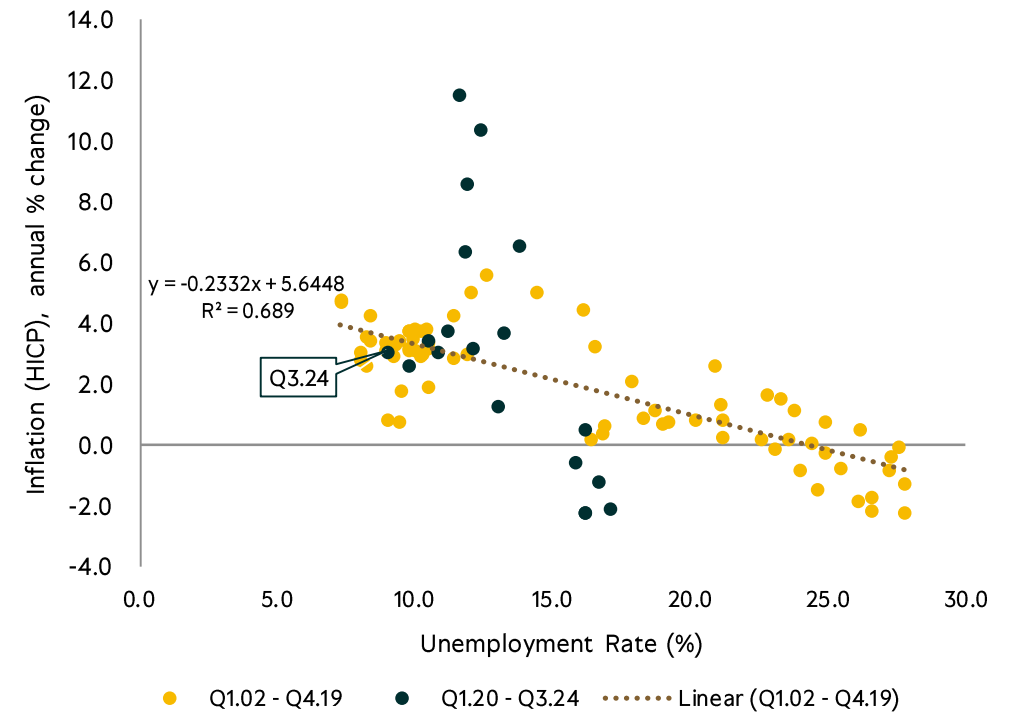


# A positive output gap and a tighter labour market point to upward inflation pressures

## Output Gap Index vs HICP at constant tax excl. energy



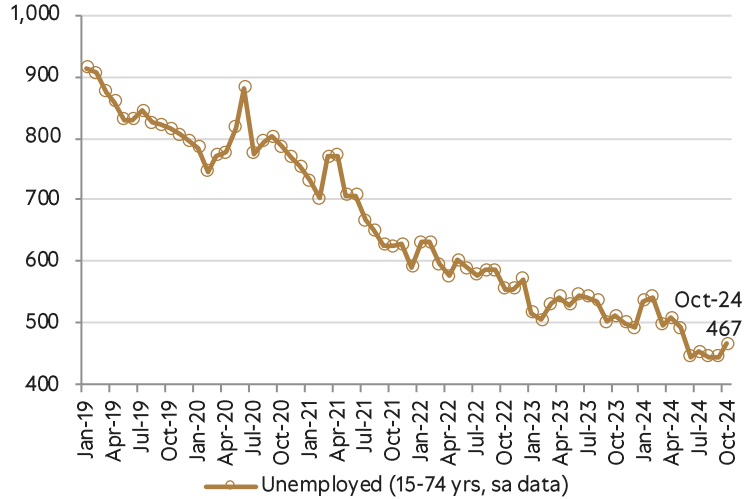
## Unemployment Rate vs HICP inflation



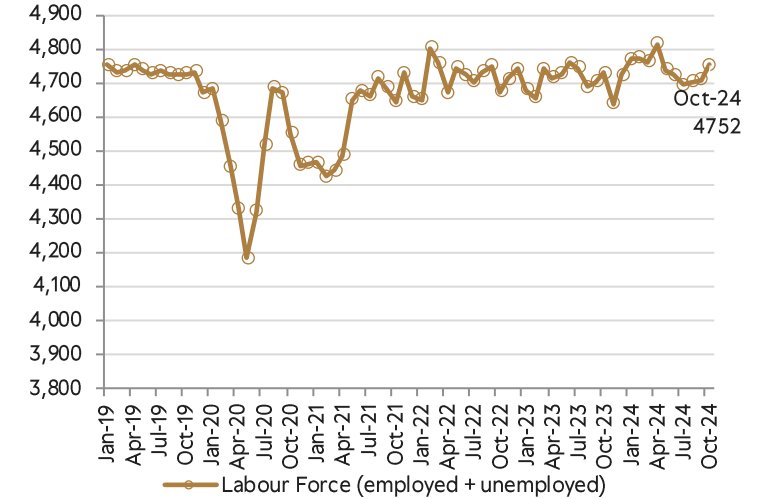


# Unemployment Rate: Continued economic growth has kept unemployment on a declining track

Unemployed (sa data, thousand persons)



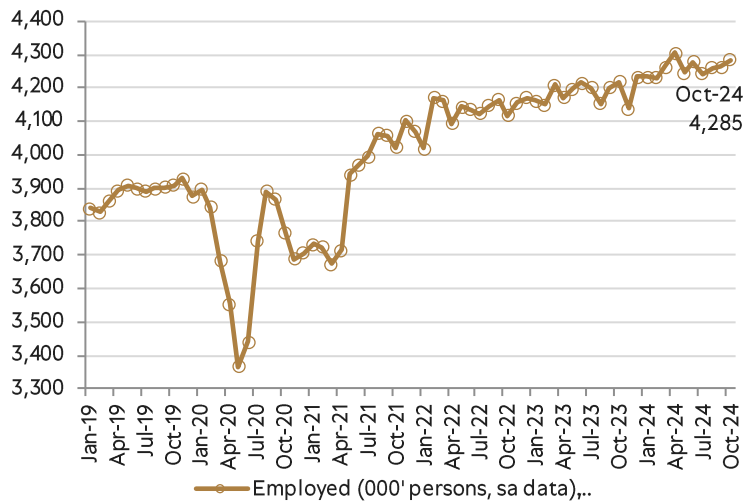
Labour Force (sa data, thousand persons)



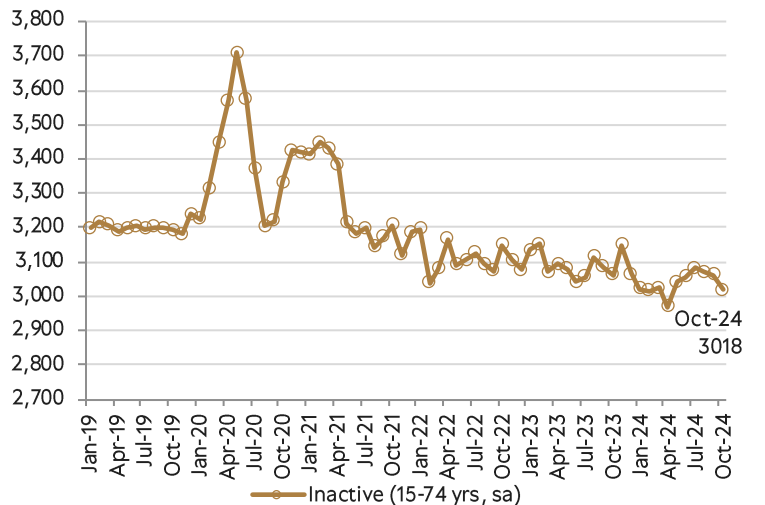
Unemployment Rate (sa data)



Employed (sa data, thousand persons)

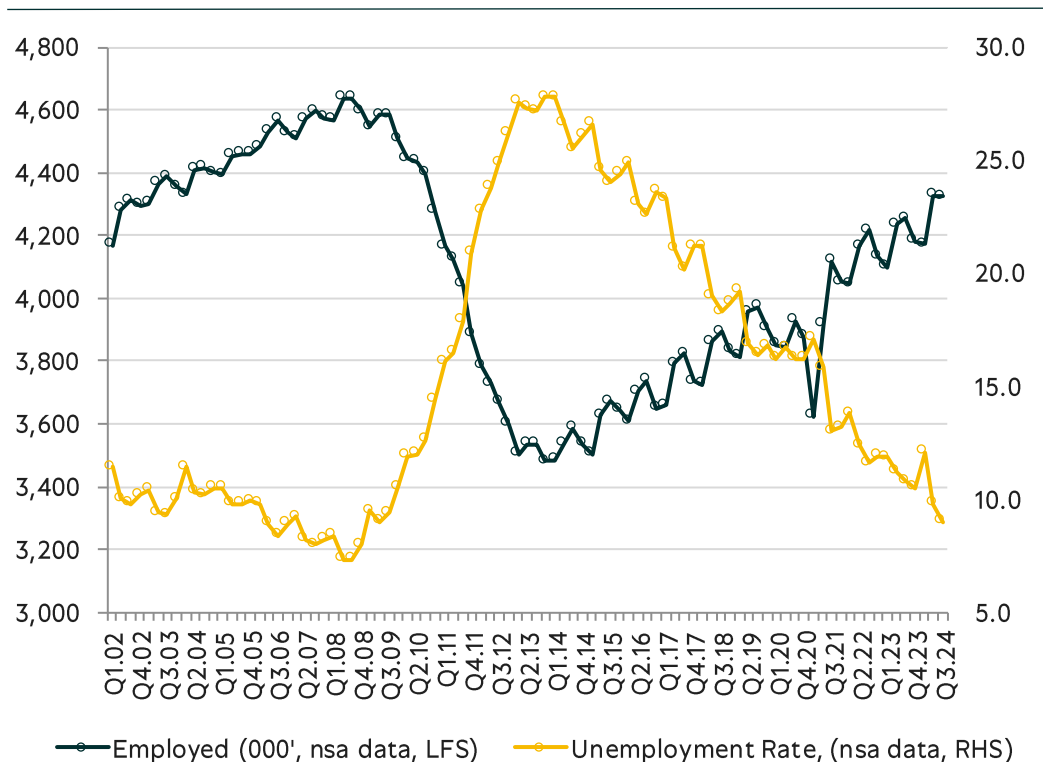


Inactive Population (sa data, thousand persons)

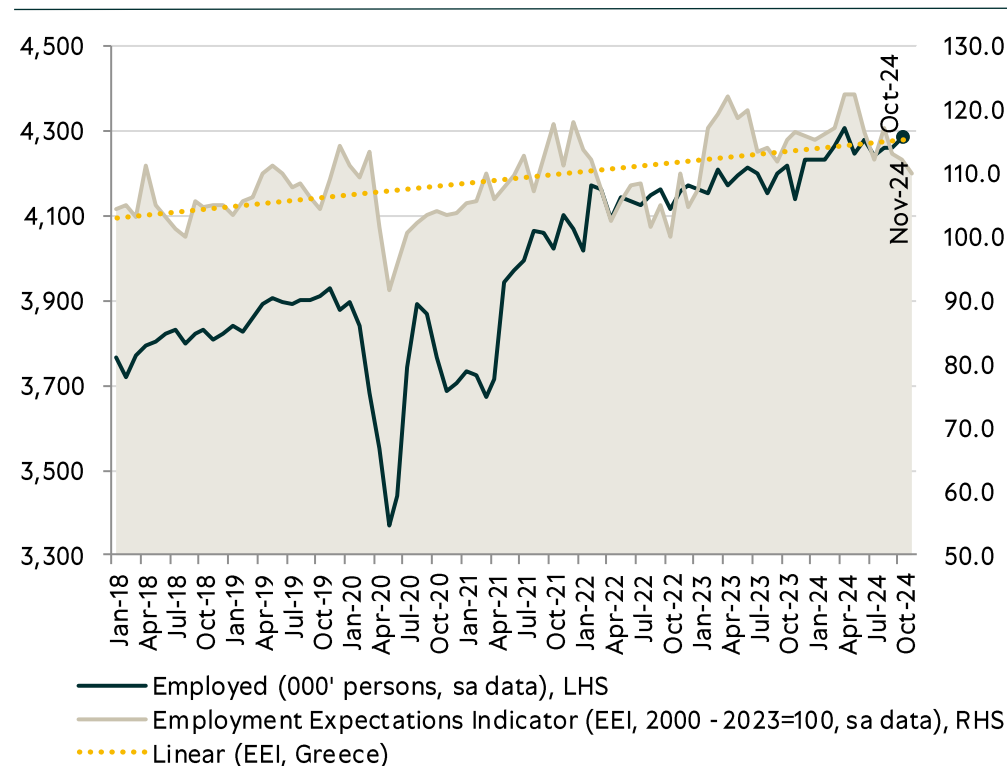


# Labour Market: Employment expectations point to continuous strength in the labour market

## Unemployment Rate Vs Employed persons (000')

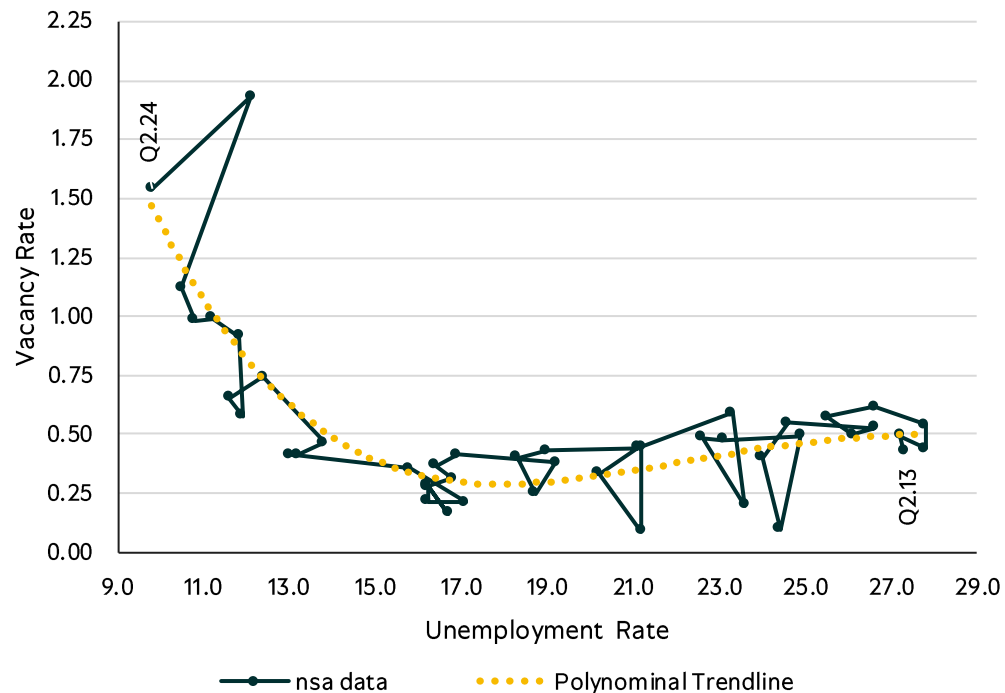


## Employment Expectation Index Vs Employed persons (000')

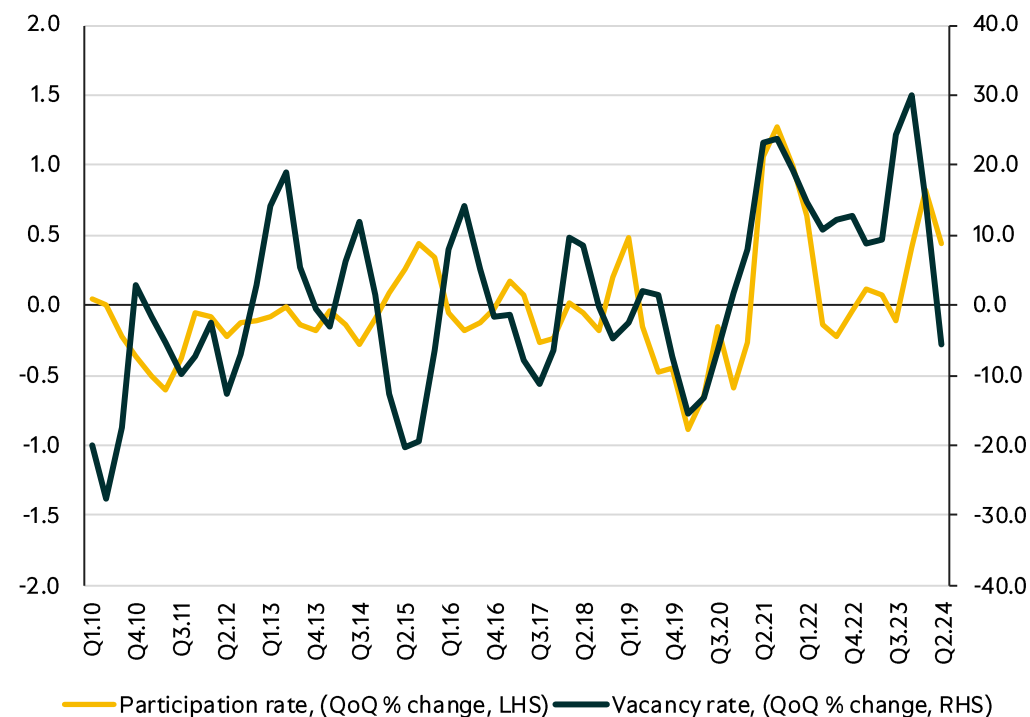


# Labour Market: The greater the likelihood of someone finding a job, the higher the participation rate in the labour force

## Beveridge Curve for Q2.2013-Q2.2024 period



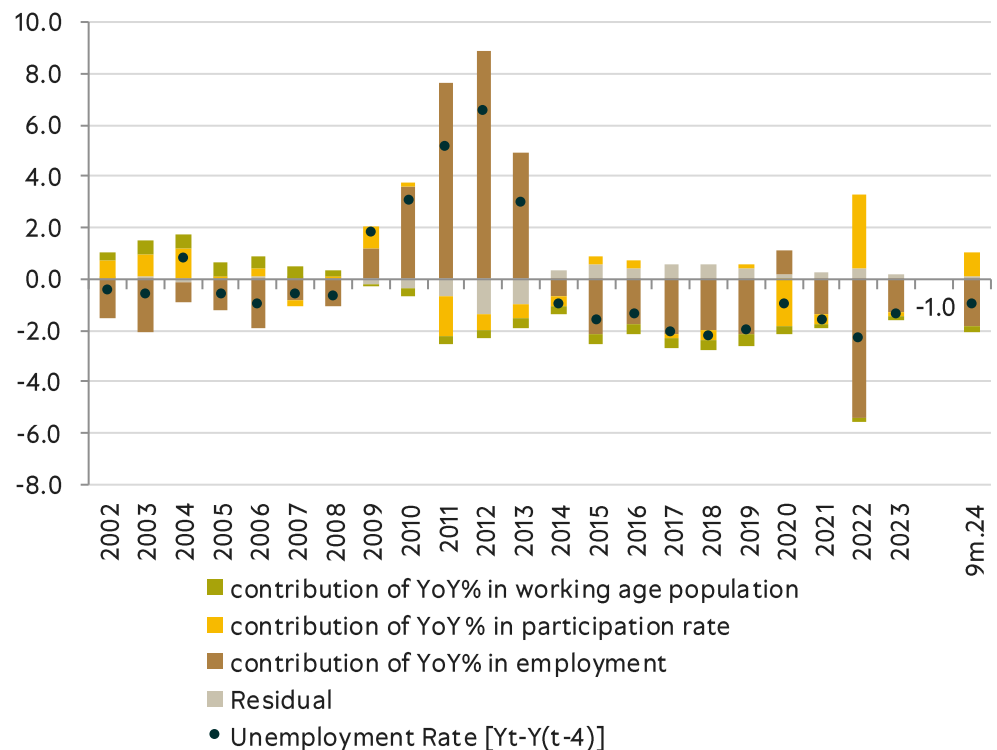
## Vacancy Rate & Participation Rate Relationship



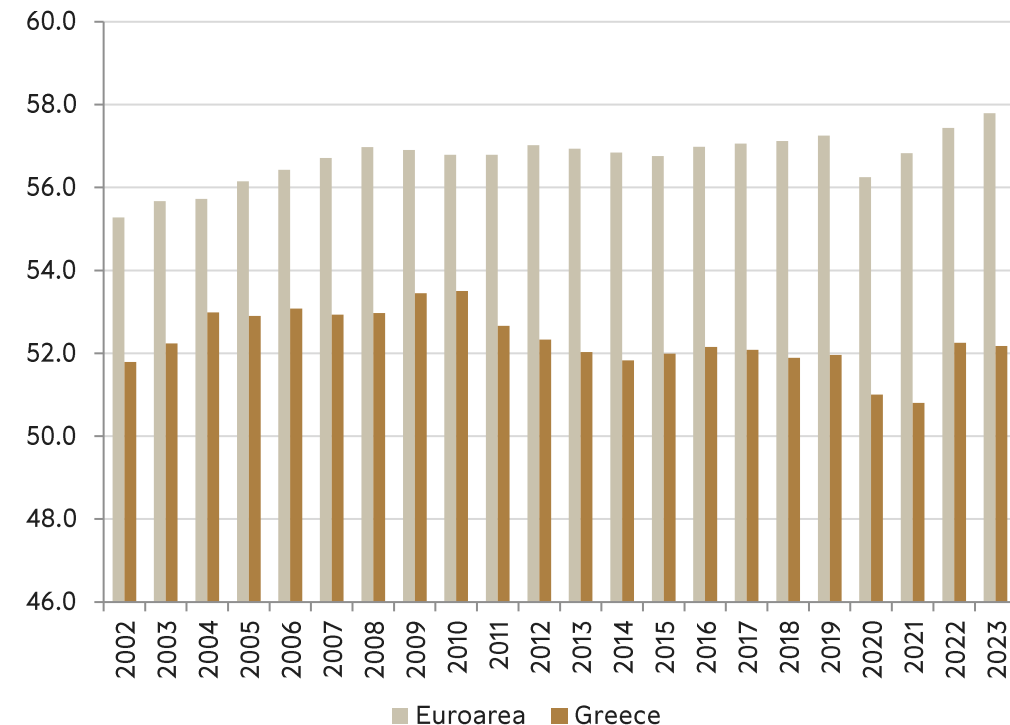
•The “Vacancy Rate” is calculated as the ratio of job vacancies (positions that employers are actively seeking to fill) to the total number of employees.

# Labour Market: The increase in the participation rate is a restraining factor in the dynamic reduction of the unemployment rate

## Unemployment Rate Change Decomposition



## Participation Rate (labour force % of population)



$$U = (Popwa \times Pr) - E$$

- U: unemployed persons
- Popwa: working age population
- Pr: participation rate
- UR: unemployment rate
- E: employment

$$\frac{U}{Popwa \times Pr} = 1 - \frac{E}{Popwa \times Pr}$$

and

$$(1 - UR) = \frac{E}{Popwa \times Pr}$$

logarithm  
 differentiation

$$dUR = \frac{d Popwa}{Popwa} + \frac{d Pr}{Pr} - \frac{d E}{E}$$

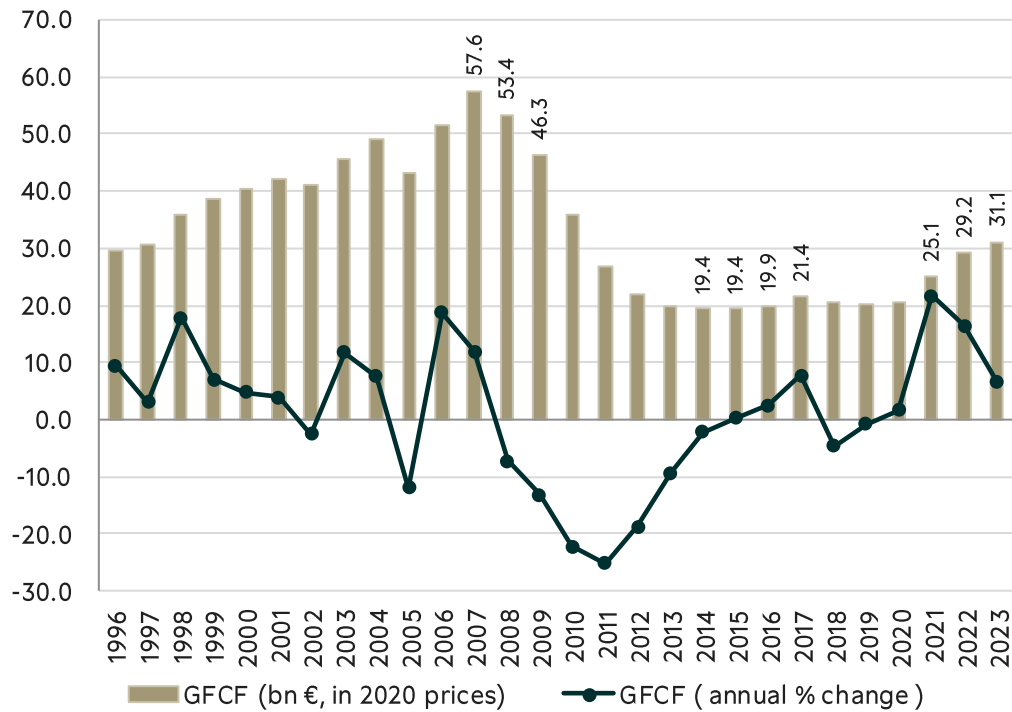
The changes in the unemployment rate (in percentage point) as the sum of the % change in the working age population and the participation rate minus the % change in employment.

### 3. Investments & Funding Resources

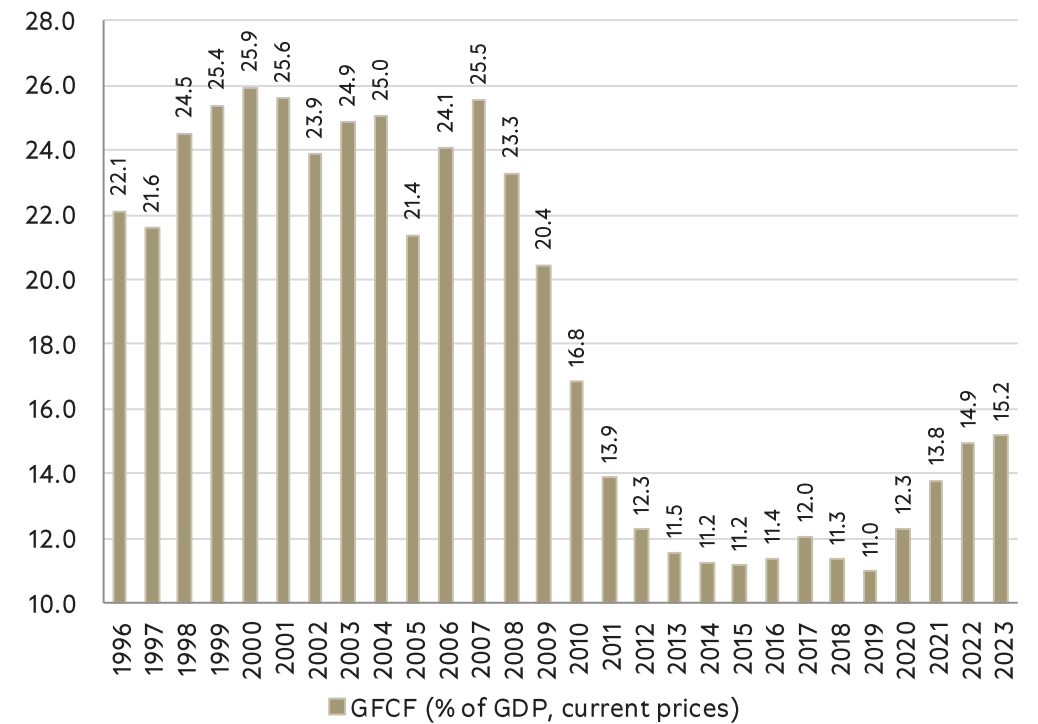
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# Gross Fixed Capital Formation: Loss of momentum over the past couple of years

Gross Fixed Capital Formation  
(€ bn, in 2020 prices)

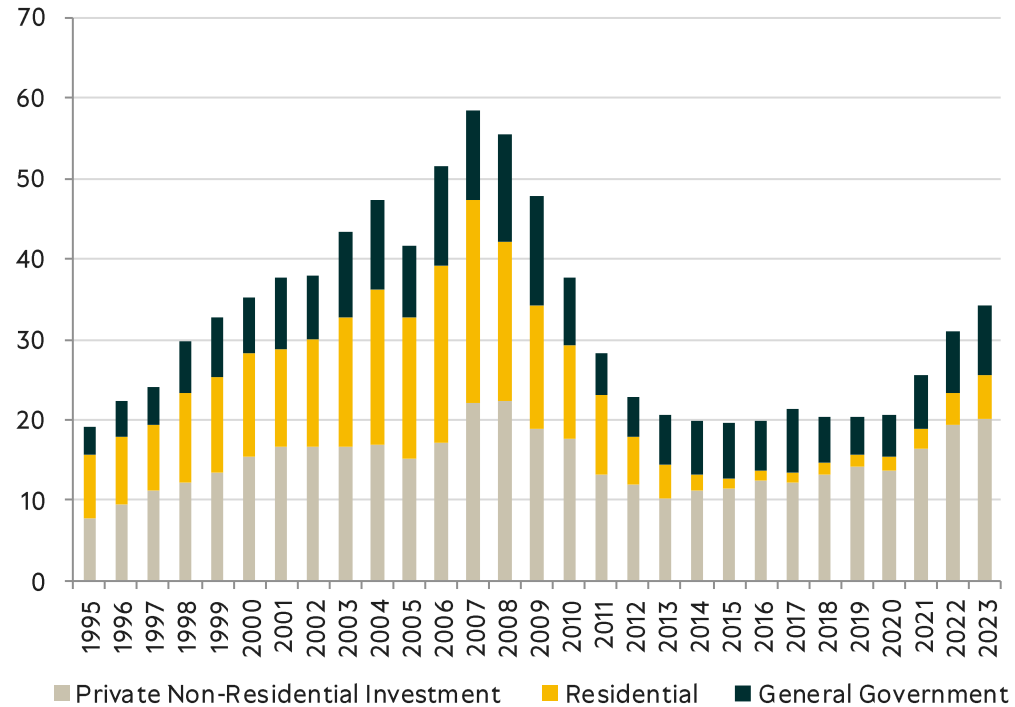


Gross Fixed Capital Formation:  
(as % of GDP, in current prices)

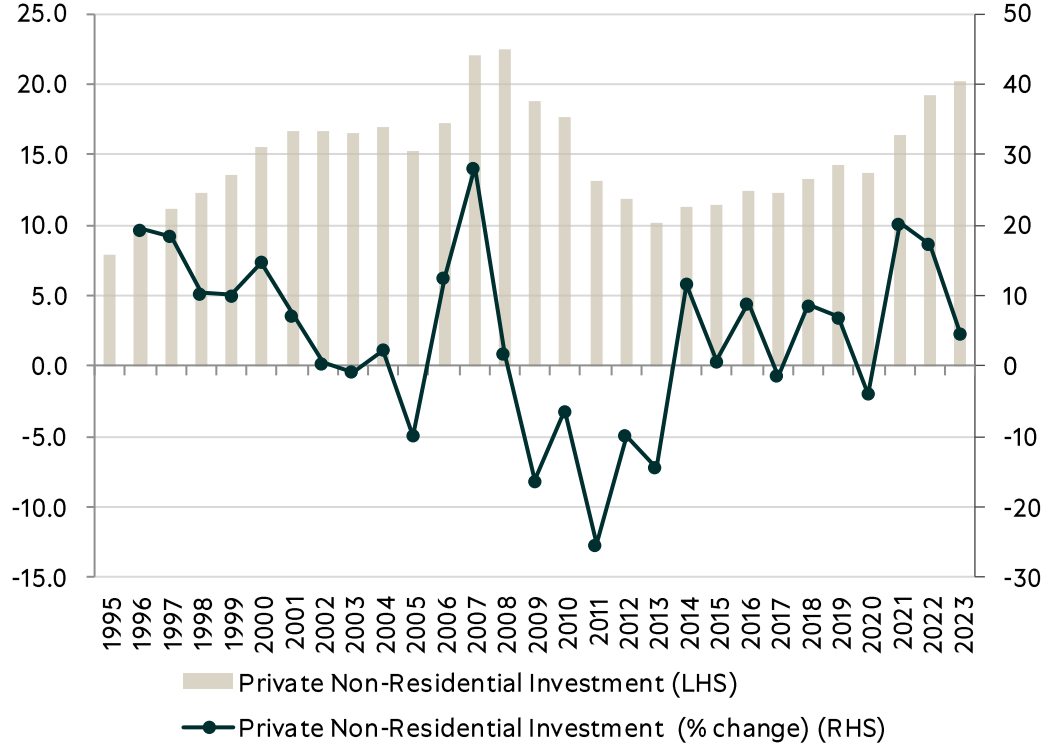


# Gross Fixed Capital Formation: Deceleration in Private (non-residential) investments

Gross Fixed Capital Formation Decomposition  
(€ bn, in current prices)

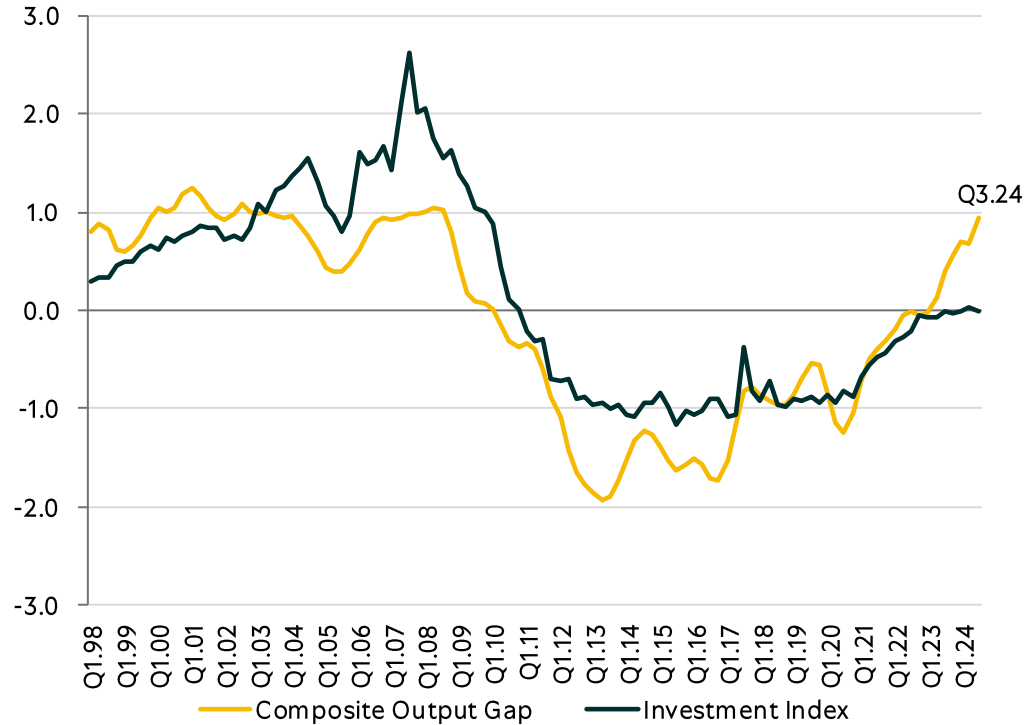


Private Non-Residential Investments  
(€ bn, in current prices & annual % change)

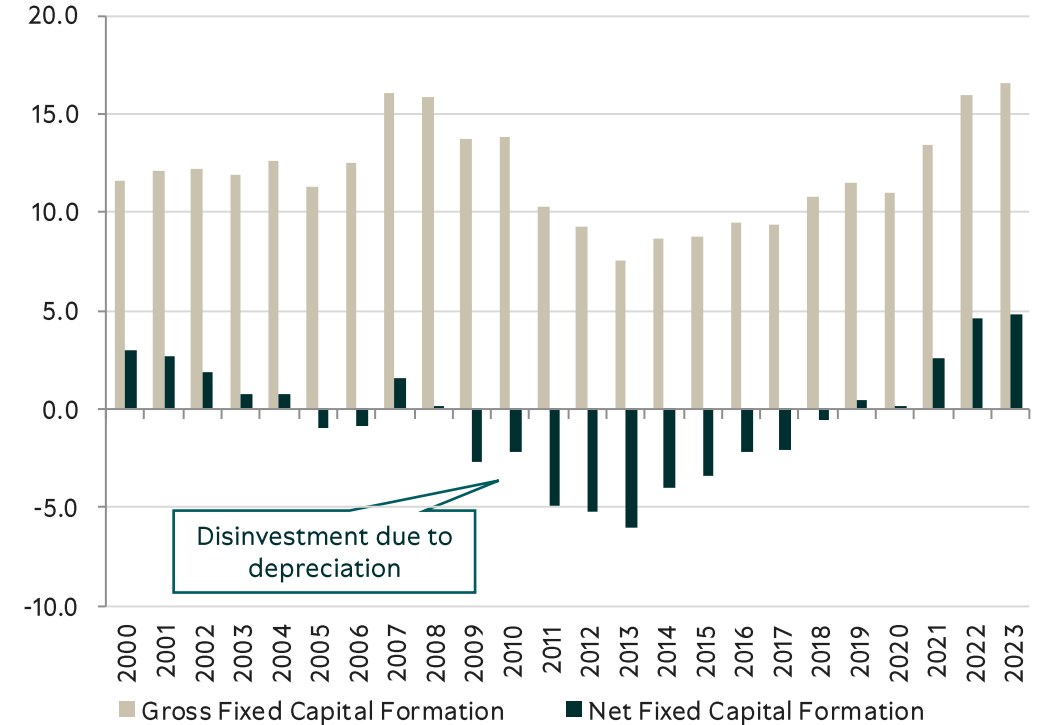


# Investment growth has failed to keep pace with a “tight” economy and a positive output gap

## Composite Output Gap Index Vs Investment Activity



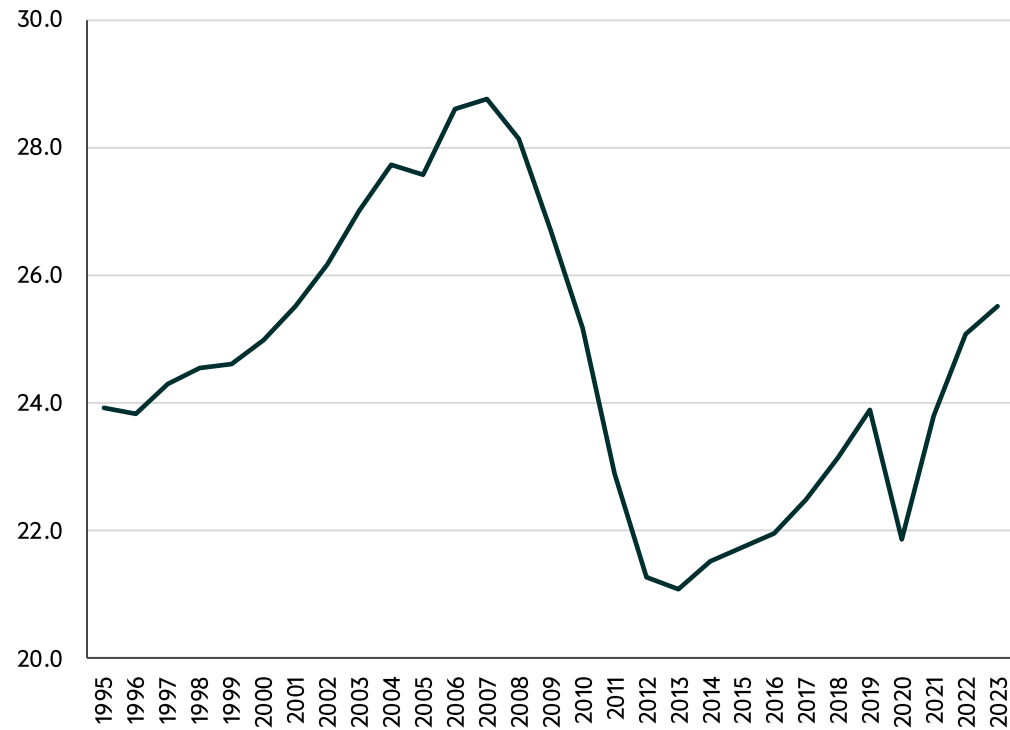
## Non-Financial Corporations' Investment Gap Gross & Net Fixed Capital Formation (€bn, in current prices)



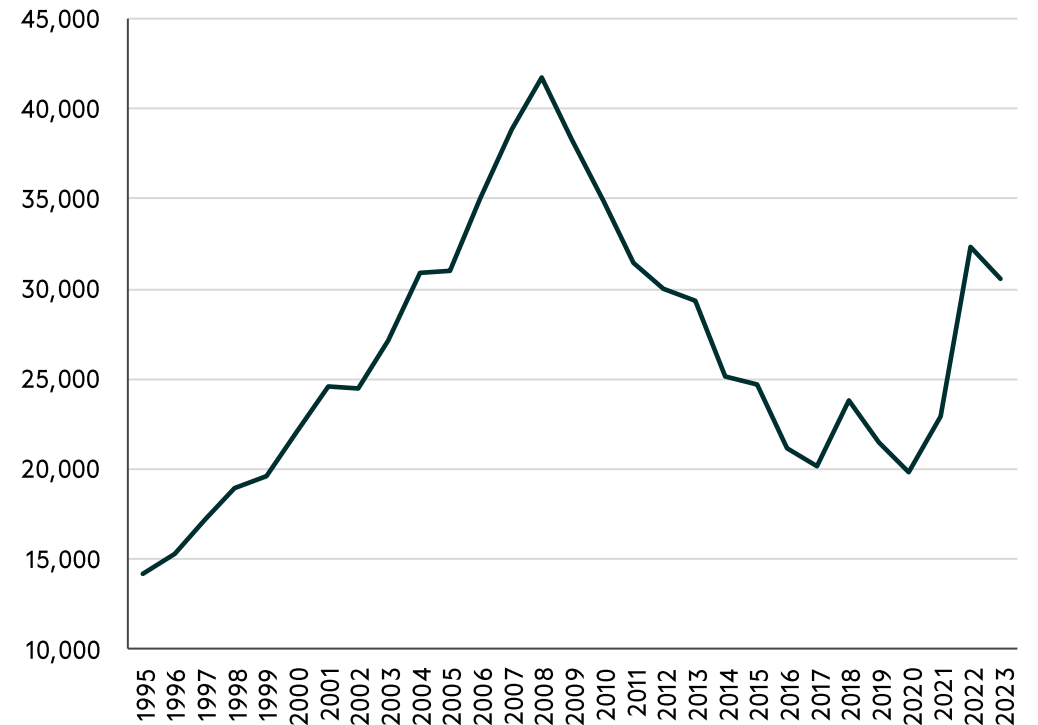


# Drivers of Investment: Both capital productivity and profitability are positive for investments

### Capital Productivity (GDP as % of net capital stock, in 2020 prices)

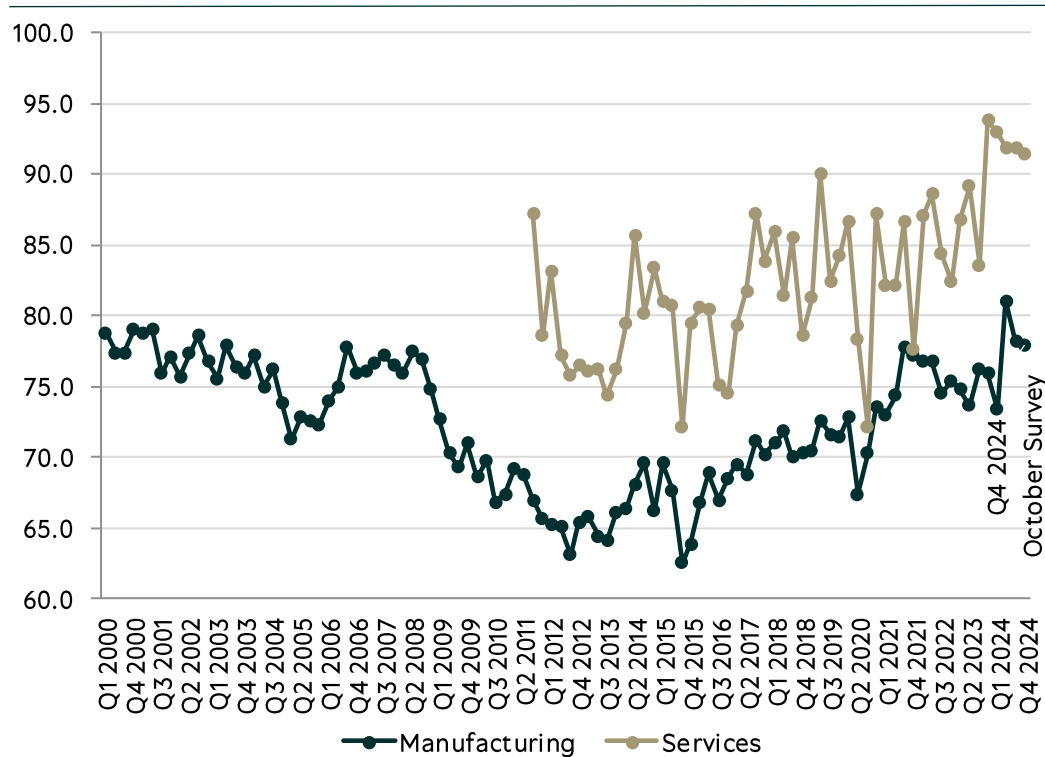


### Gross Operating Surplus of Non-Financial Corporations (€mn, in current prices)

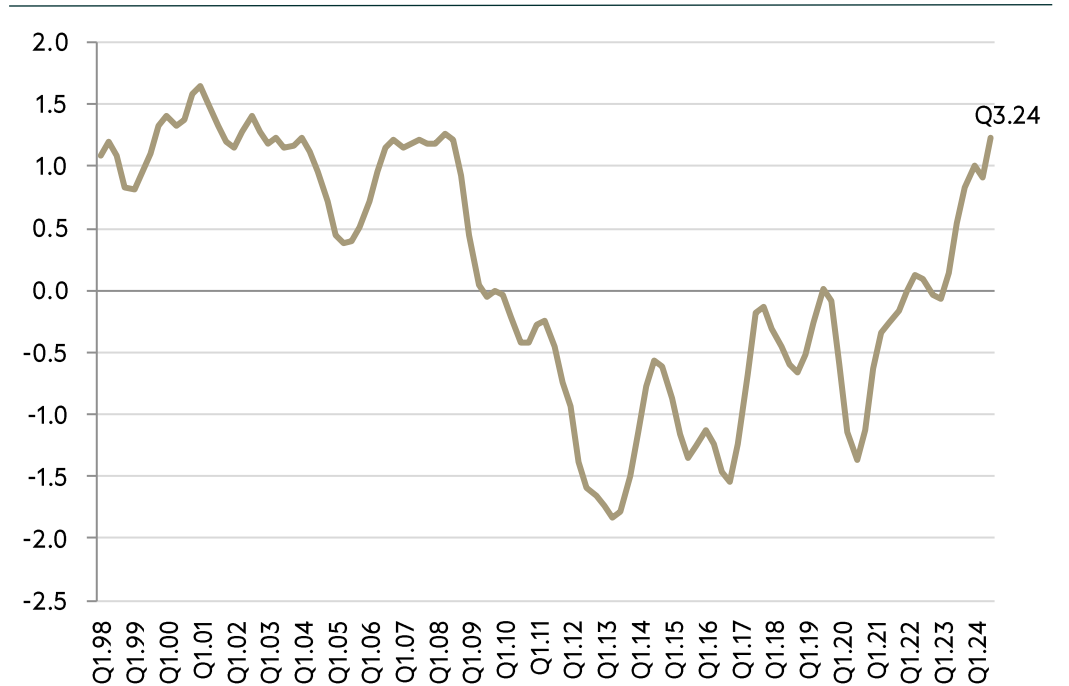


# Drivers of Investment: Capacity utilisation at record levels

## Level of Capacity Utilisation in Manufacturing & Services Industries (% , sa data)<sup>1</sup>



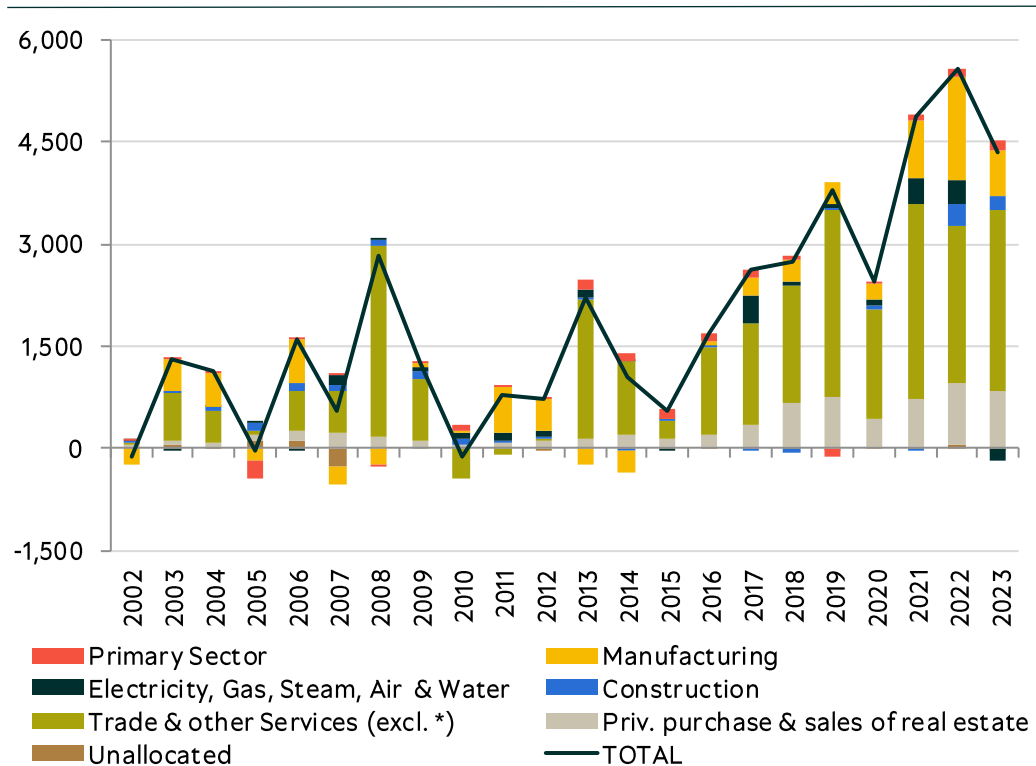
## Total Capacity Utilisation Index



Notes: 1. European Commission – Business & Consumer Surveys: Data collected in January, April, July and October each year

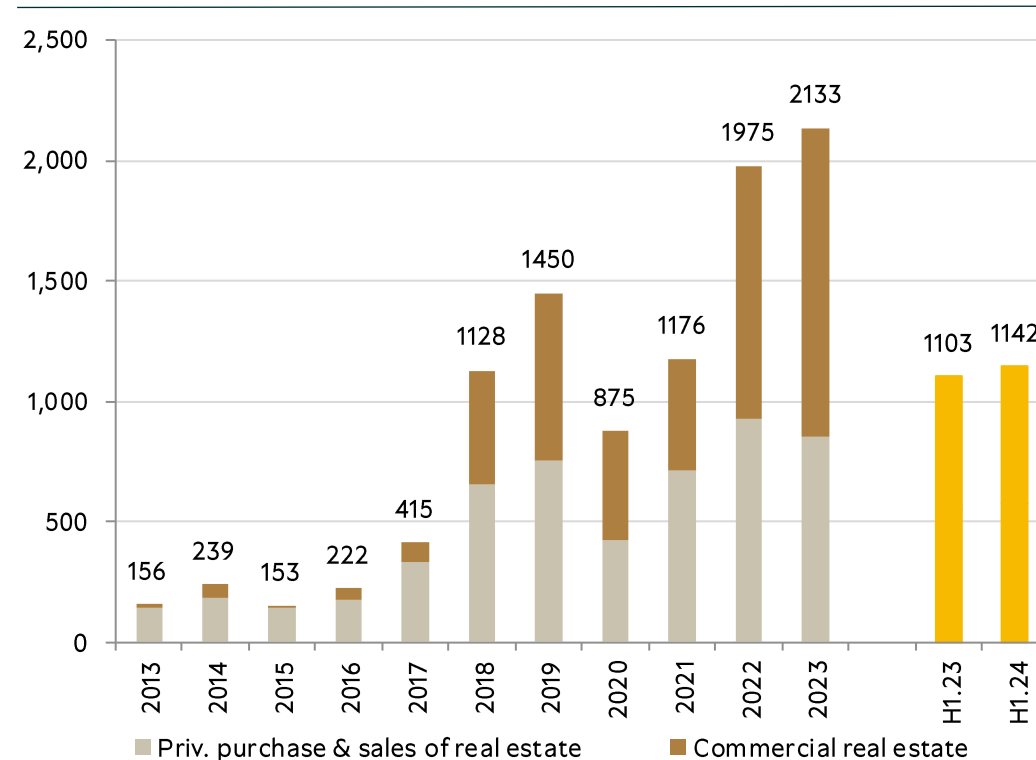
# Drivers of Investment: Progressively more open to foreign capital

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



•Notes: \* = [ excl. financial and insurance activities (section K)]

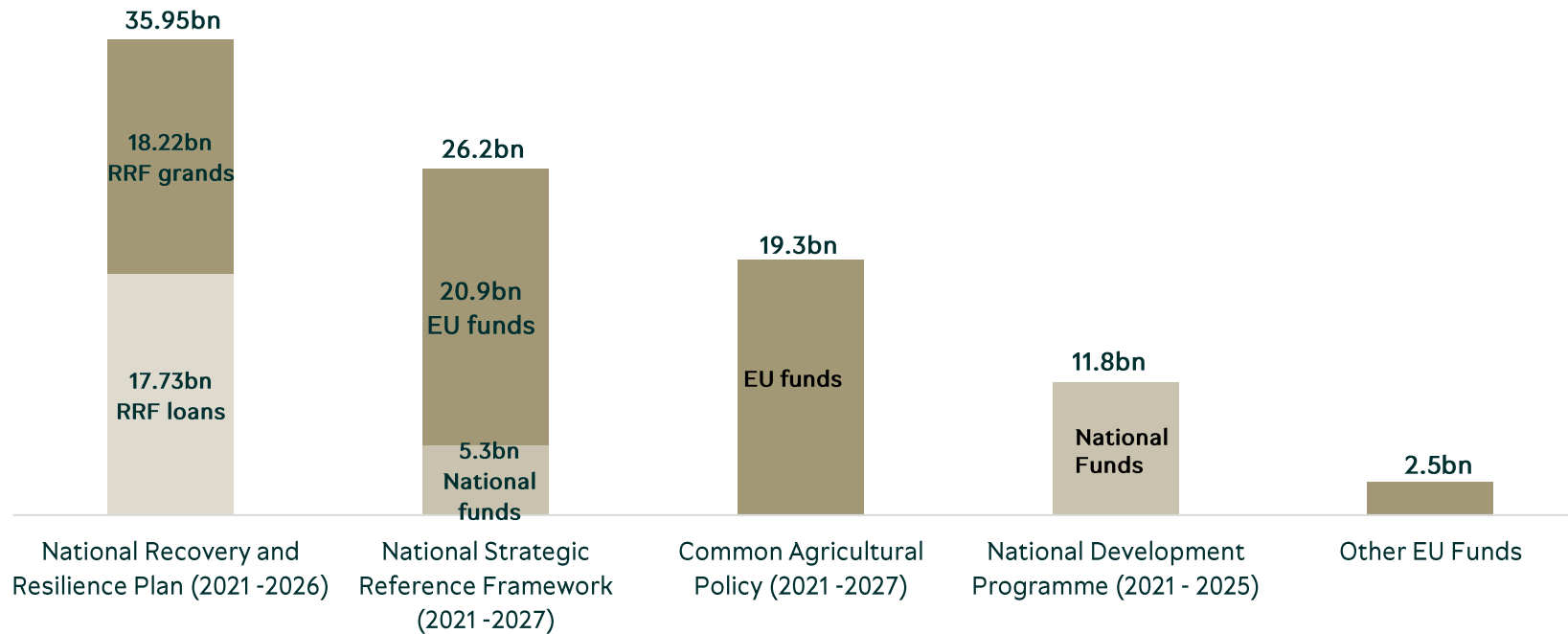
## Real Estate FDI in Greece (€ mn)



# Drivers of Investment: Total Funding Resources 2021-2027.

## A total amount of €96 bn is available for investment funding

### EU Contribution and National Resources by Funding Programme



- The National Recovery and Resilience Plan "Greece 2.0" was approved by ECOFIN on 13 July 2021. The Plan utilises investment resources of €31.2 billion, of which €30.5 billion European funds (€18.4 billion in grants and €12.7 billion in loans).
- On 31 August 2023, Greece submitted its amended recovery and resilience plan, including a REPowerEU chapter.
- On 8 December 2023, ECOFIN approved the amended recovery and resilience plan of Greece, which includes capital for REPowerEU amounting to €795 million, as well as an additional €5 billion that will be added to the existing loan program.
- The revised plan amounts to €35.95 billion, with €18.22 billion in RRF grants and €17.73 billion in RRF loans. It includes 381 milestones and targets, 75 reforms and 103 investments.

# RRF Funding Availability: €18.2bn received so far

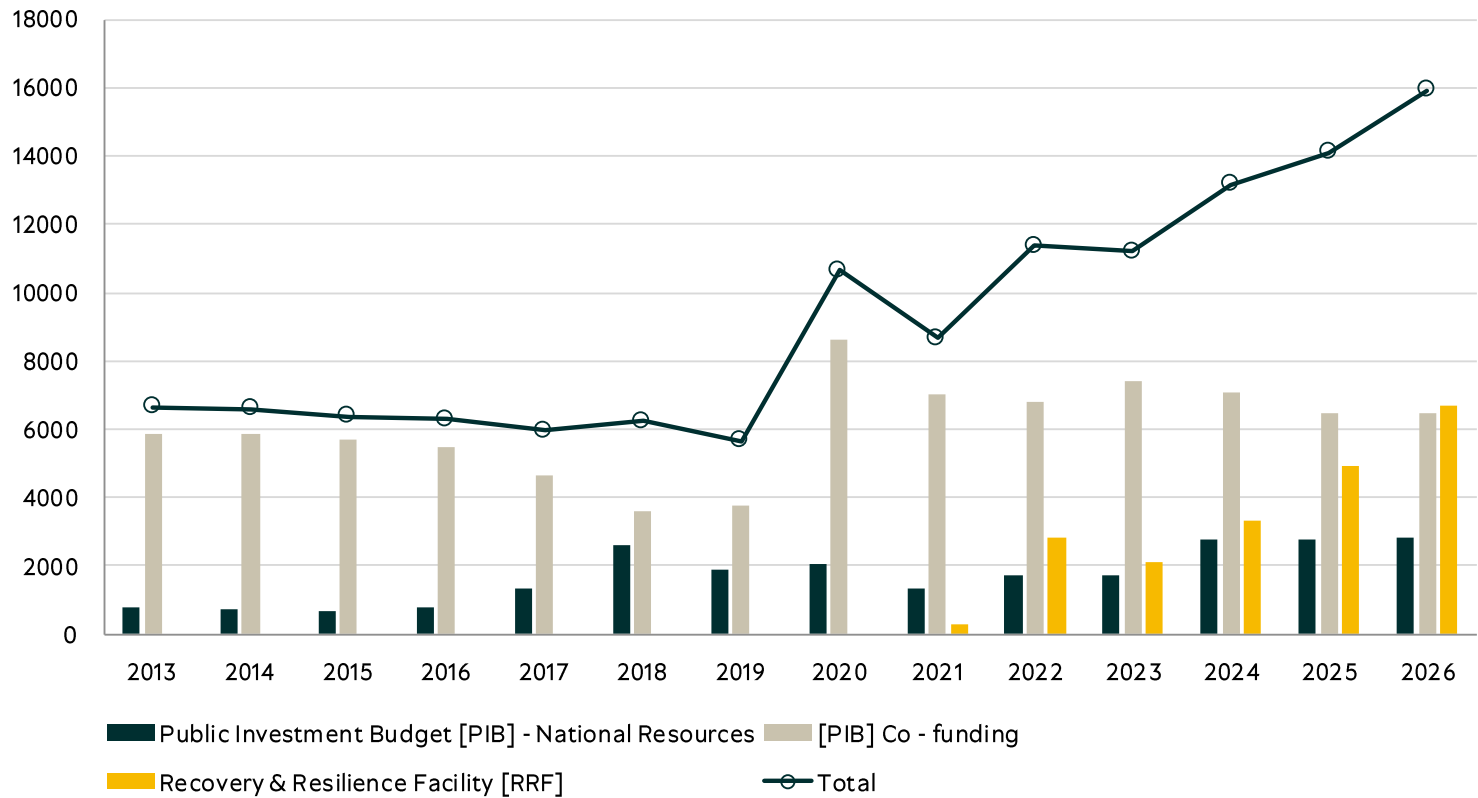
Category	Date	Amount	Sources & Notes
Prefinancing	1 Apr.'21 Jan.'24	€4.1 bn	<ul style="list-style-type: none"> <li>→ €2.31 bn grants</li> <li>→ €1.65 bn loans</li> <li>→ €0.158 bn prefinance REPowerEU (Jan. 24)</li> </ul>
Disbursements	1 Apr.'22	€3.56 bn	<ul style="list-style-type: none"> <li>→ €1.72 bn grants</li> <li>→ €1.85 bn loans</li> </ul> Fulfillment of 15 milestones & targets
	2 Jan.'23	€3.56 bn	<ul style="list-style-type: none"> <li>→ €1.72 bn grants</li> <li>→ €1.85 bn loans</li> </ul> Fulfillment of 28 milestones & targets
	3 Dec.'23	€3.64 bn	<ul style="list-style-type: none"> <li>→ €1.69 bn grants</li> <li>→ €1.95 bn loans</li> </ul> Fulfillment of 43 milestones & targets
	4 July '24	€2.3 bn	€2.3 bn loans Fulfillment of 1 target*
	5 Oct.'24	€1.0 bn	€1.0 bn grants Fulfillment of 20 milestones and targets
Total Amount	As of October 2024	€18.2 bn	<ul style="list-style-type: none"> <li>→ €8.6 bn grants</li> <li>→ €9.6 bn loans</li> </ul> This corresponds to 50.7% of all the RRF funds in the Greek plan, with 28% of all the milestones and targets in the plan fulfilled

\*The target in this payment request required that a cumulative €4.5 billion of RRF loan contracts are signed by financial institutions with companies to support private investment.

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.

# RRF in Practice: Out of €18.22 bn in RRF grants only €7 bn have been absorbed so far

## Public Investment Budget [PIB] & Recovery Resilience Facility [RRF] Expenditures (€mn)

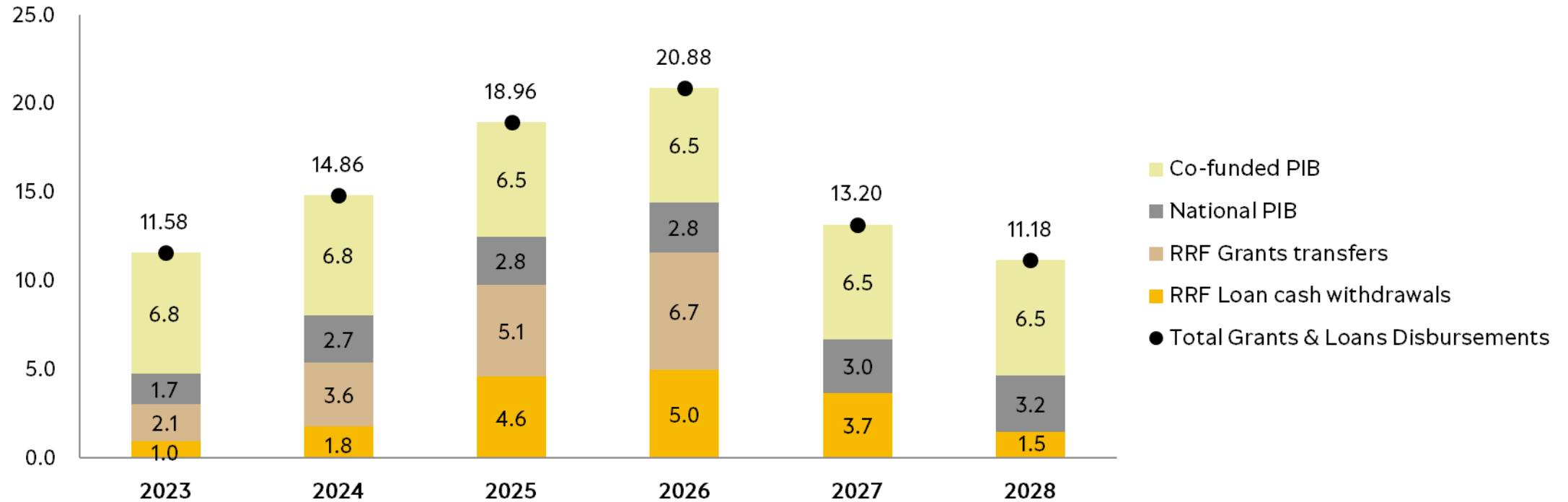


### RRF Grants

- A total of 800 investment plans, with a combined budget of €22.1 bn, have been submitted to the National Recovery and Resilience Plan, Greece 2.0, up to Oct.'24.

# MTFS 2025 - 2028 : Public Investment Budget

Public Investment Budget projections 2023-2028, € bn

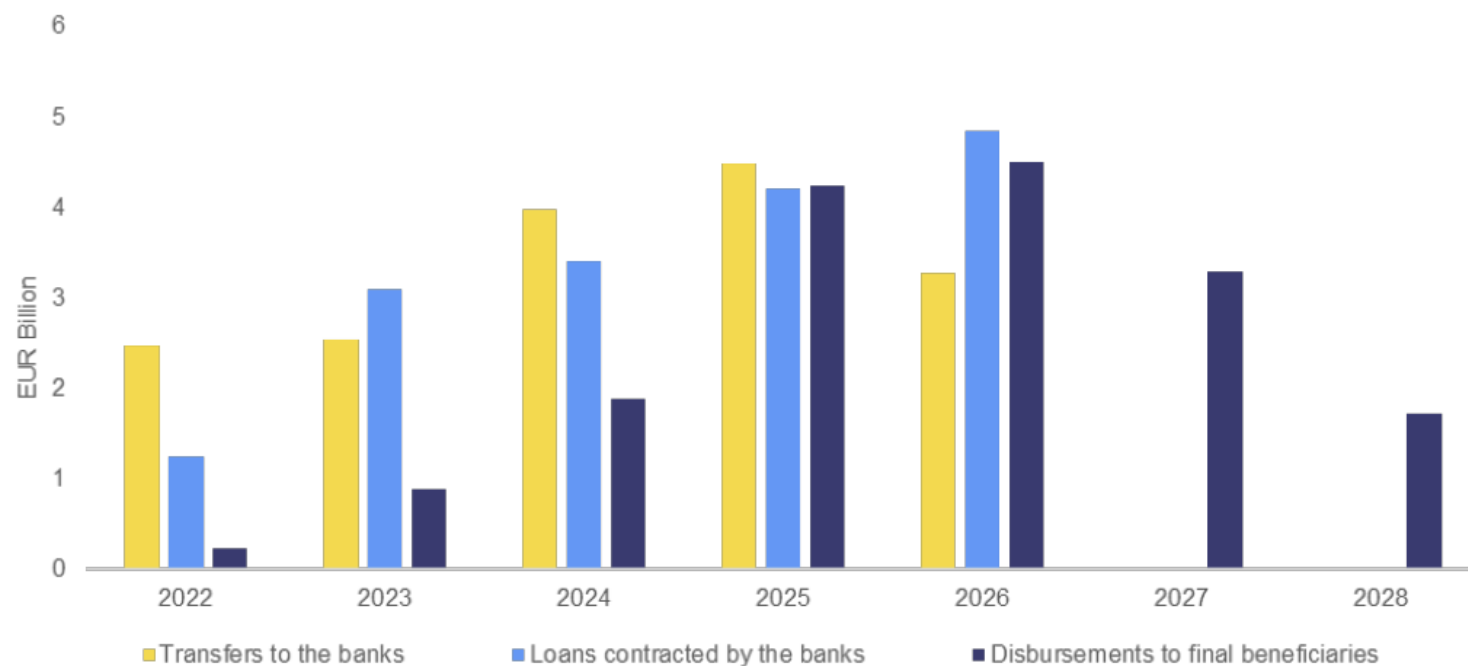


RRF Loan approvals	€ 3.4 bn	€ 3.8 bn	€ 4.9 bn	€ 4.4 bn
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Note: Grants include VAT

## The disbursements to final beneficiaries are expected to at least 2028

### Transfers to the banks, RRP loan contracts and disbursements to final beneficiaries

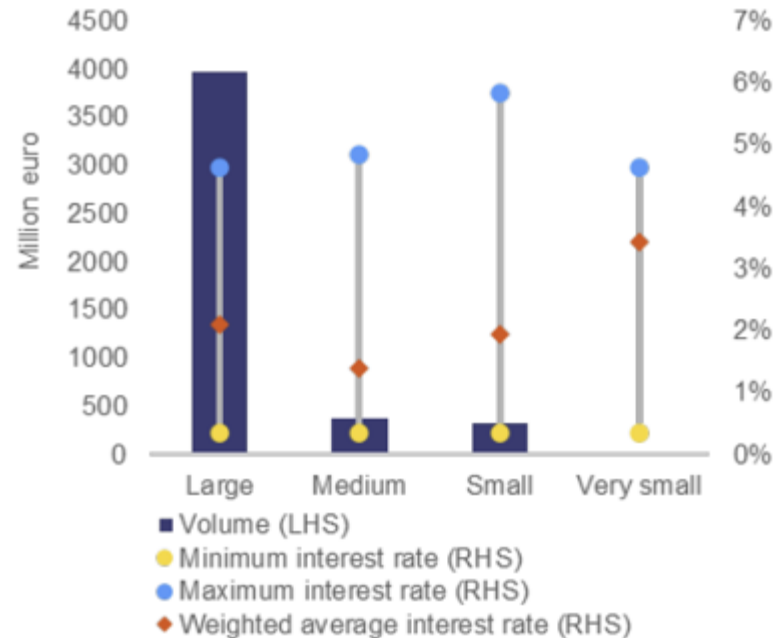


- The time profile is relevant. The Loan Facility is available between 2022-2026, and the full available amount is assumed to be “absorbed”, i.e. contracted by the banks within this period. In the meantime, the actual disbursement of RRP loans to the final beneficiaries is expected to take place between 2022-2028 as it is matched with the cash flow of the particular investment financed via the Loan Facility. The assumed time profile of disbursements is based on the estimations provided by the Greek authorities.

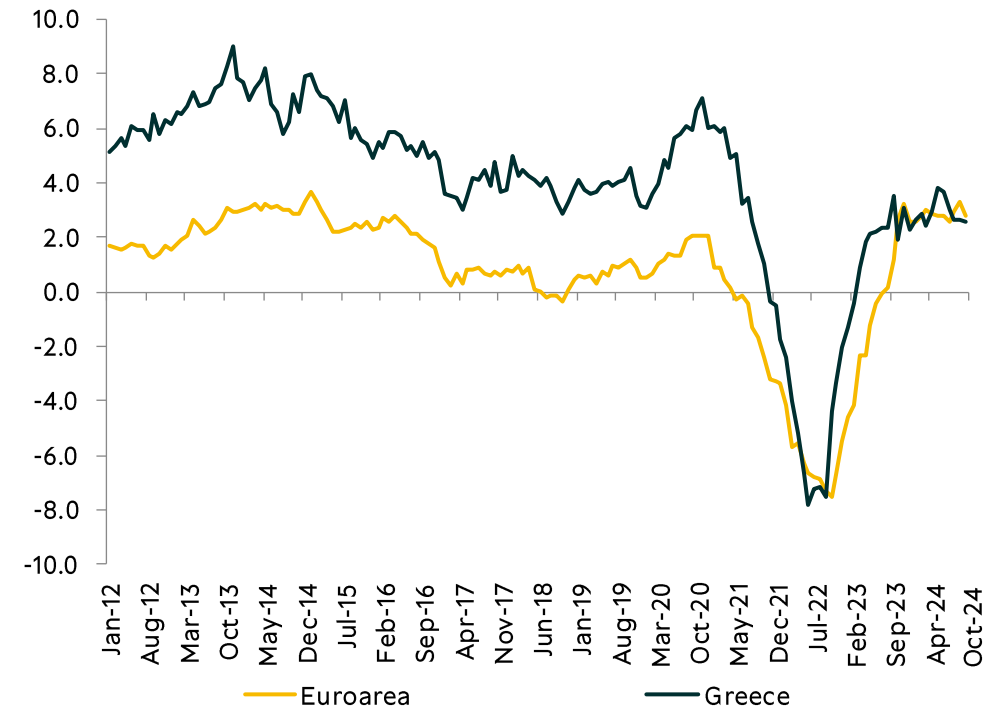


# After many years of substantially higher cost of money for Greek corporates, real rates have converged between EU and Greece

## RRP loan interest rates and volumes by company size



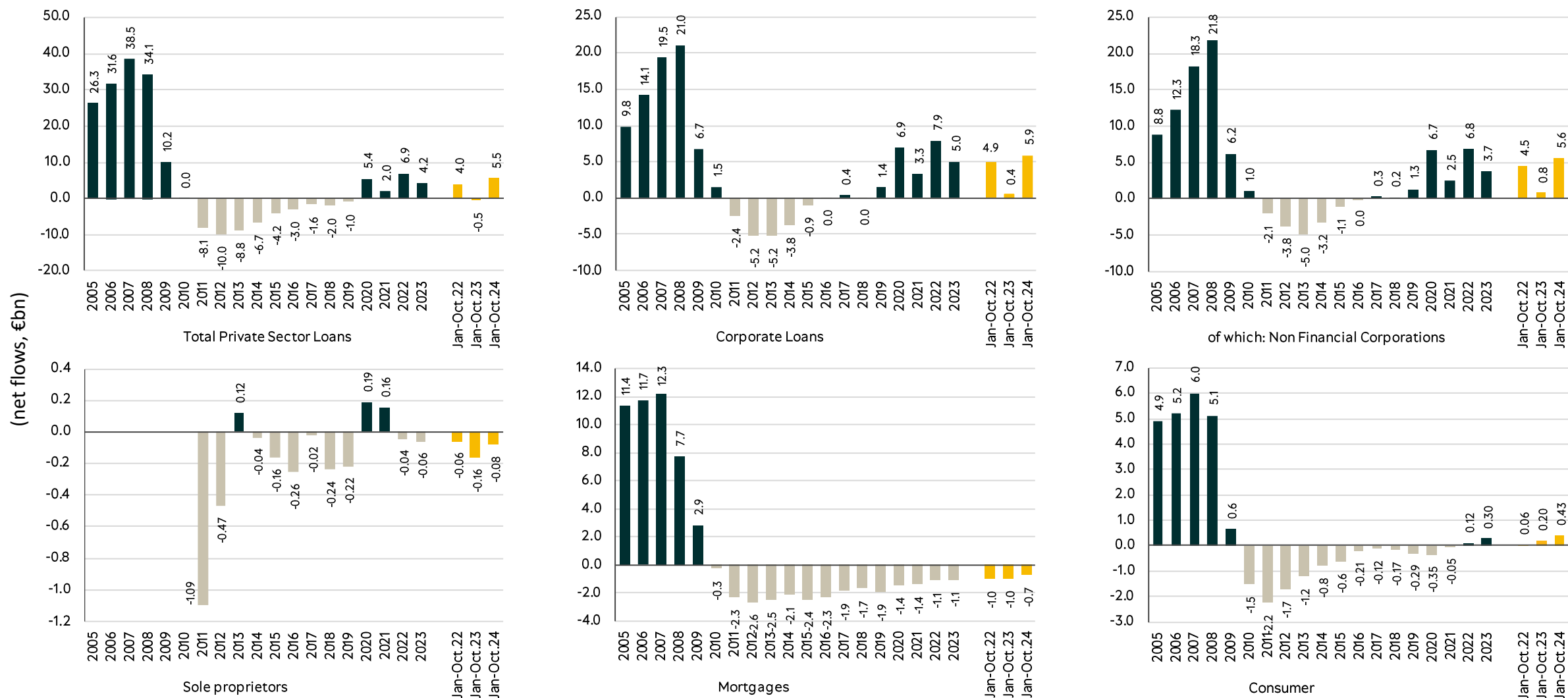
## Average Real Interest Rate on New bank loans (<€1mn) to Non-Financial Corporations (nominal rate minus change in HICP, %)



## 4. Banking Sector Developments

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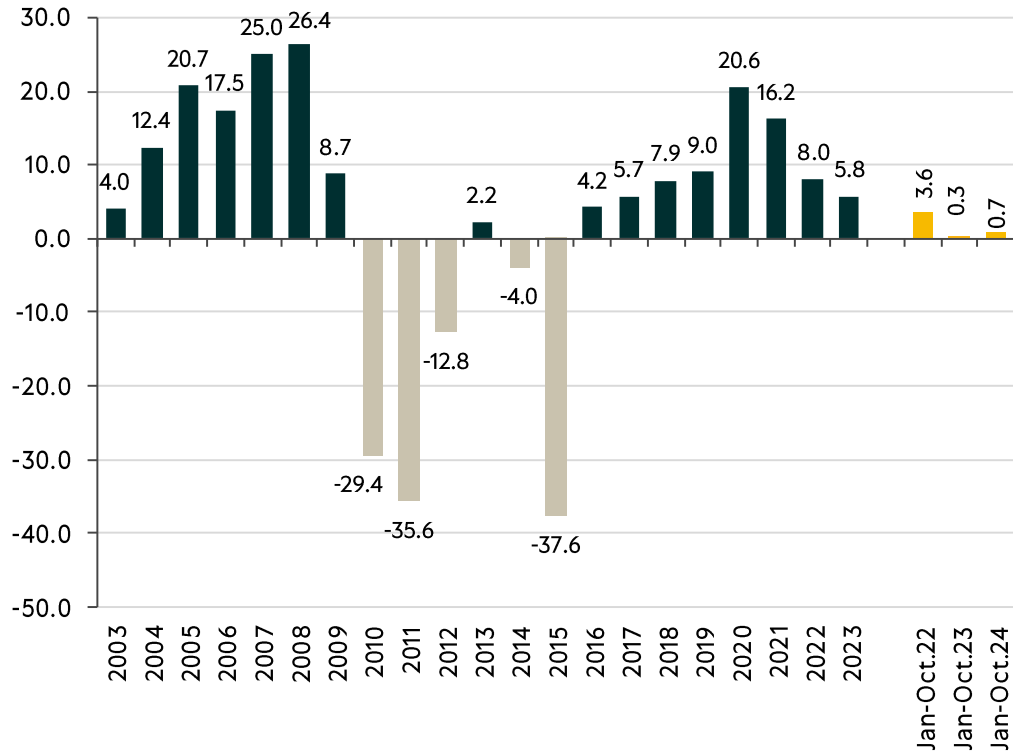
# Private sector credit: Positive net credit flows, driven by Corporate loans



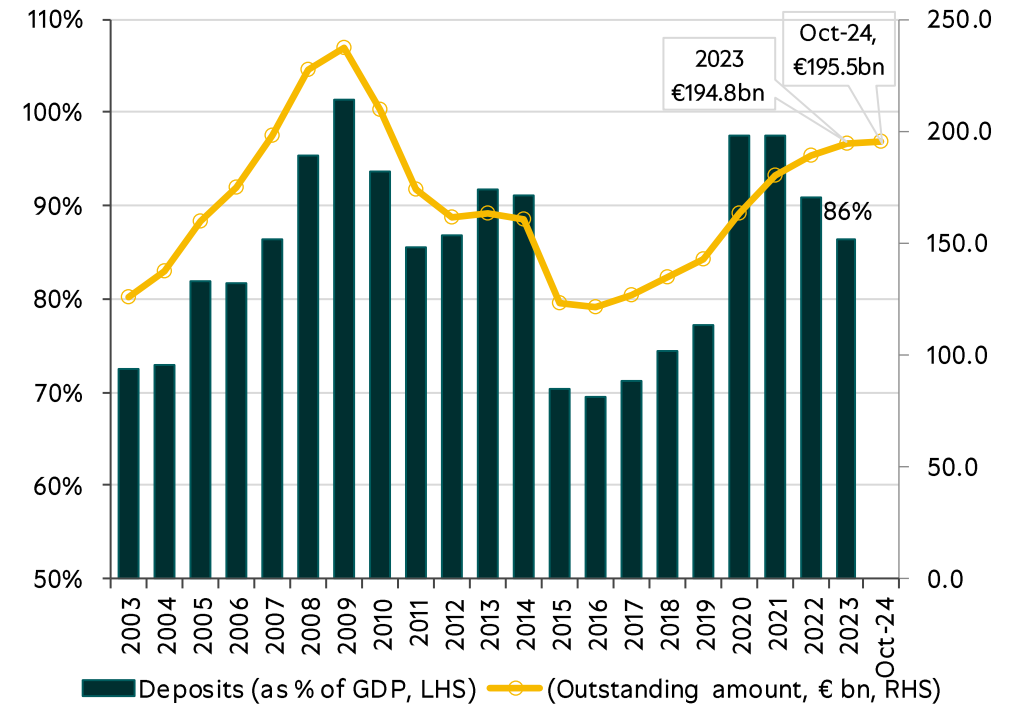
Notes: 1. Excluding the Bank of Greece. Including securitised loans and corporate bonds that have been derecognised from the balance sheet and serviced by credit institutions. As of June 2010 non traded corporate bonds are included in 'loans' rather than 'debt securities'. As of December 2016, loans 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.

# Private sector deposits: ...with equivalent inflows for deposits...

Private Sector Deposits<sup>1,2</sup> (net flows, €bn)



Private Sector Deposits<sup>1</sup> (% of GDP & €bn)



Notes:

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.

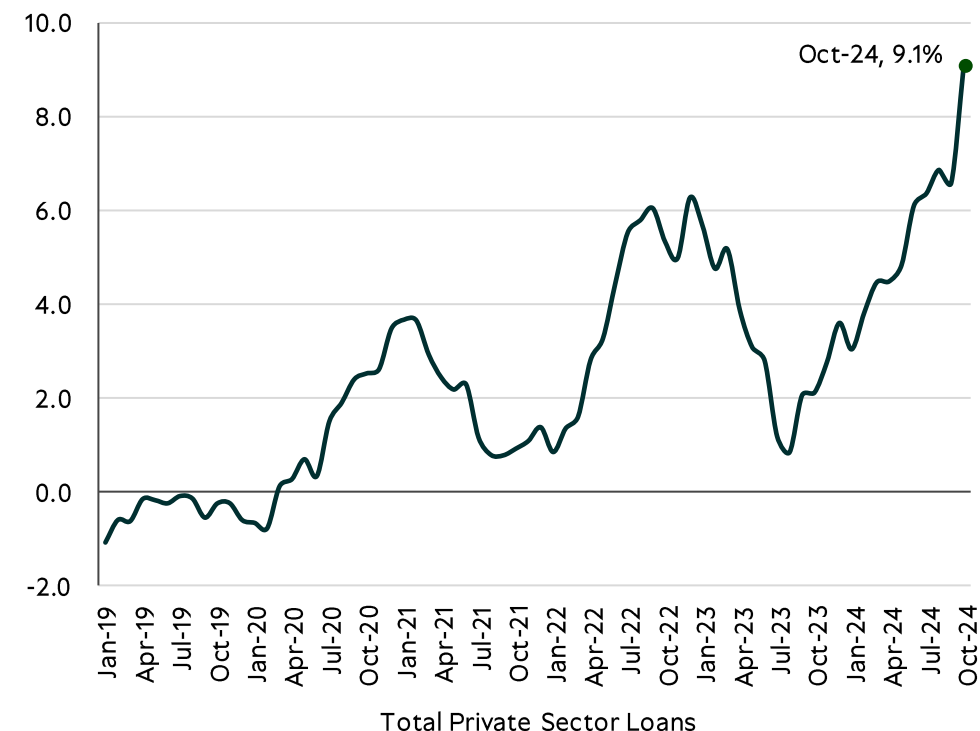
2. Flows are derived from changes in outstanding amounts corrected for foreign exchange valuations and reclassifications adjustments. The flow of deposits does not include the accounting increase in deposits that is related to securitisation operations and represent liabilities of credit institutions to Special Purpose Vehicles.

# Private sector Deposits & Loans: ...Growth rates seem to stabilize in positive territory

## Private Sector Deposits<sup>1</sup> (annual % change)



## Private Sector Loans<sup>2</sup>(annual % change)



**Notes:**

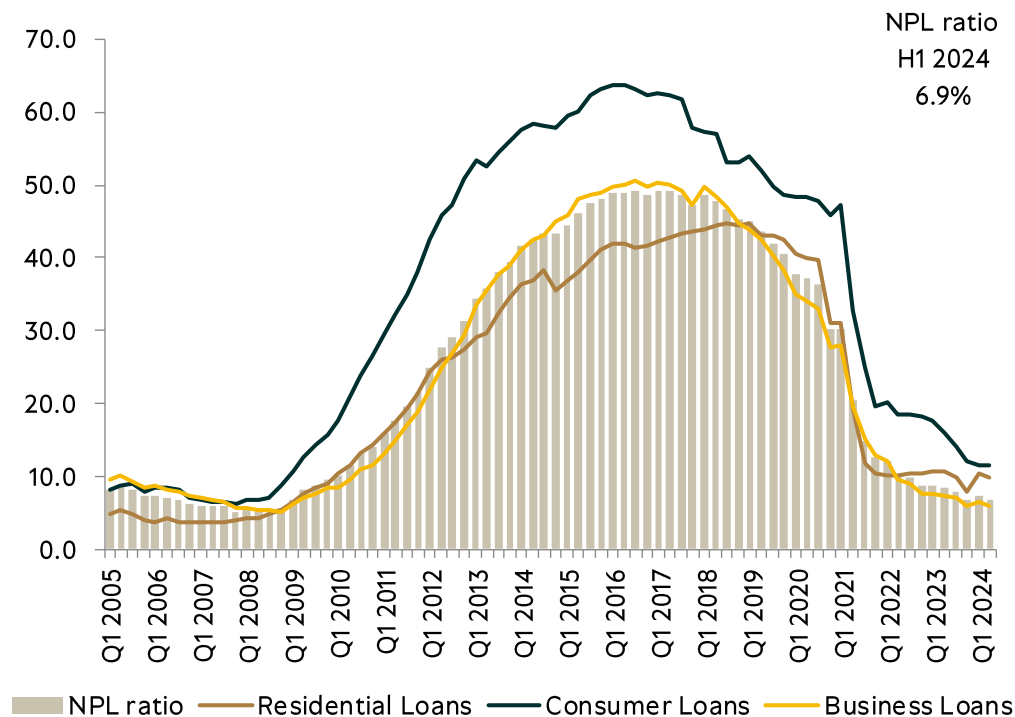
1. Excluding the Bank of Greece. As of December 2016, deposits of the Consignment Deposits and Loan Fund are excluded from the domestic deposits as the institution has been reclassified from the financial sector to the general government sector. As of March 2019, deposits and repos of shipping companies which have their registered office abroad, are no longer included in the deposits of the domestic economy, as they were reclassified to Other Countries. Growth rates are derived from changes in outstanding amounts corrected for foreign exchange valuations and reclassifications adjustments, i.e. from the sums of flows during the 12 months ending in the period indicated. Excluding liabilities of credit institutions to Special Purpose Vehicles related to securitisation operations

2. Excluding the Bank of Greece, 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. Growth rates are derived from the differences in outstanding amounts corrected for loan write-offs, exchange rate valuations and reclassifications.

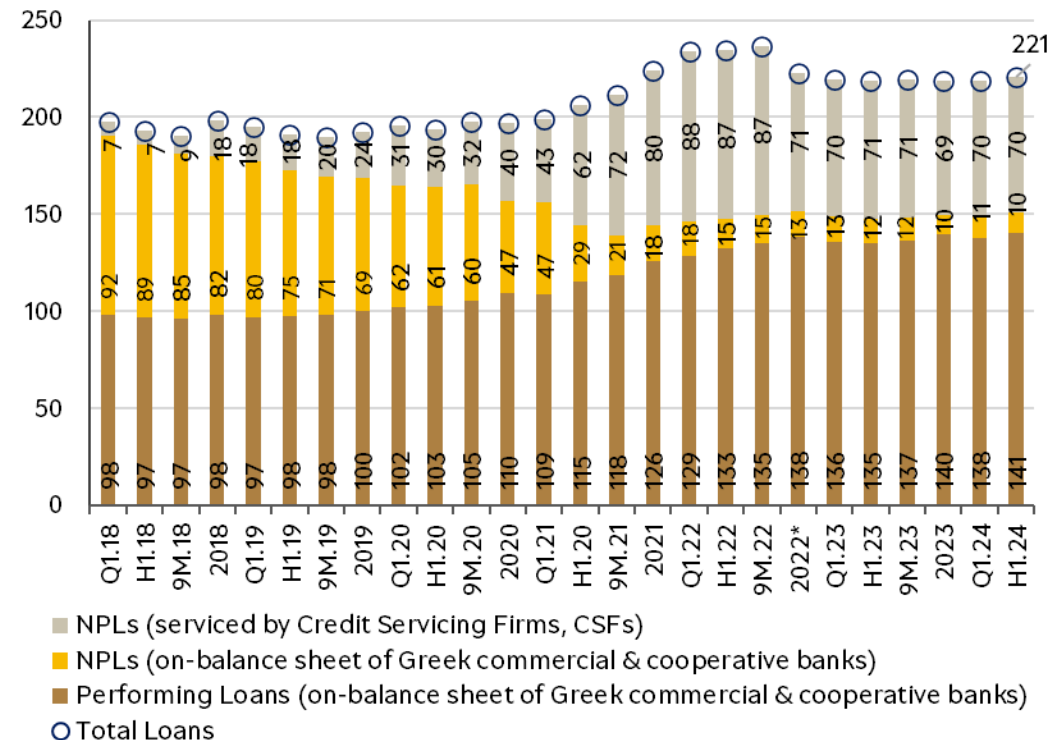
# A massive balance sheet clean-up has pushed NPL ratio to single –digit levels.

## Now credit growth must play its part

### Non-Performing Loans ratio on balance sheet gross loans<sup>1</sup> (%)



### Total Loans, on balance sheet gross loans<sup>1</sup> & loans that are serviced by the domestic CSFs<sup>2</sup>. (€ bn)



Notes : 1. (a) All items are on solo basis and refer to on-balance sheet gross loans and advances of Greek commercial and cooperative banks. (b) 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. (c) 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. (d) 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.) (e) 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.

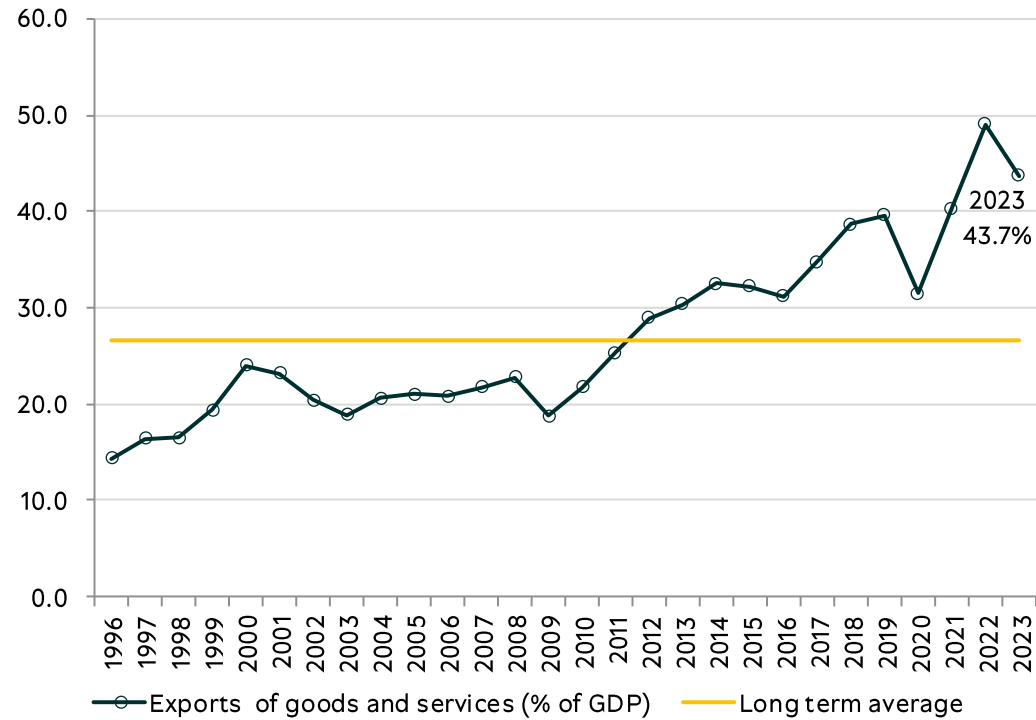
2. (a) Includes all financial institutions other than credit institutions. (b) It should be noted that as of Q4-2022 the nominal value of loans does not include off-balance sheet interest and the amounts of write-offs and write-downs of loans made by the credit institution that transferred the loan portfolio.

## 5. Competitiveness

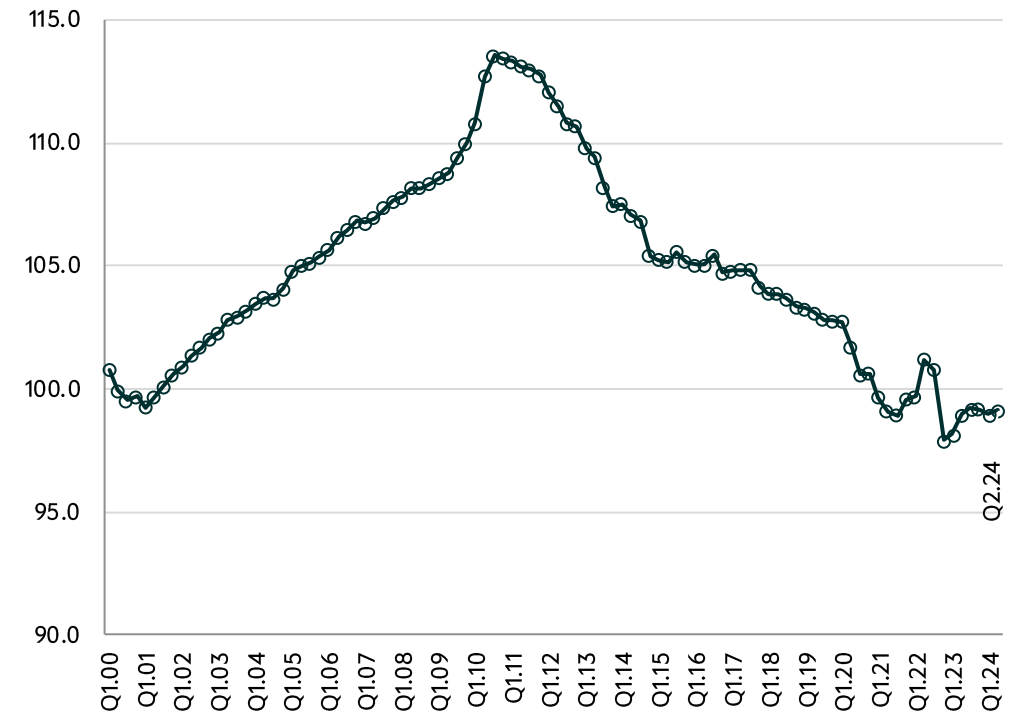
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# Conditions for Successful EA membership: A more extrovert and open Greek Economy and “Price Competitiveness”

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



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

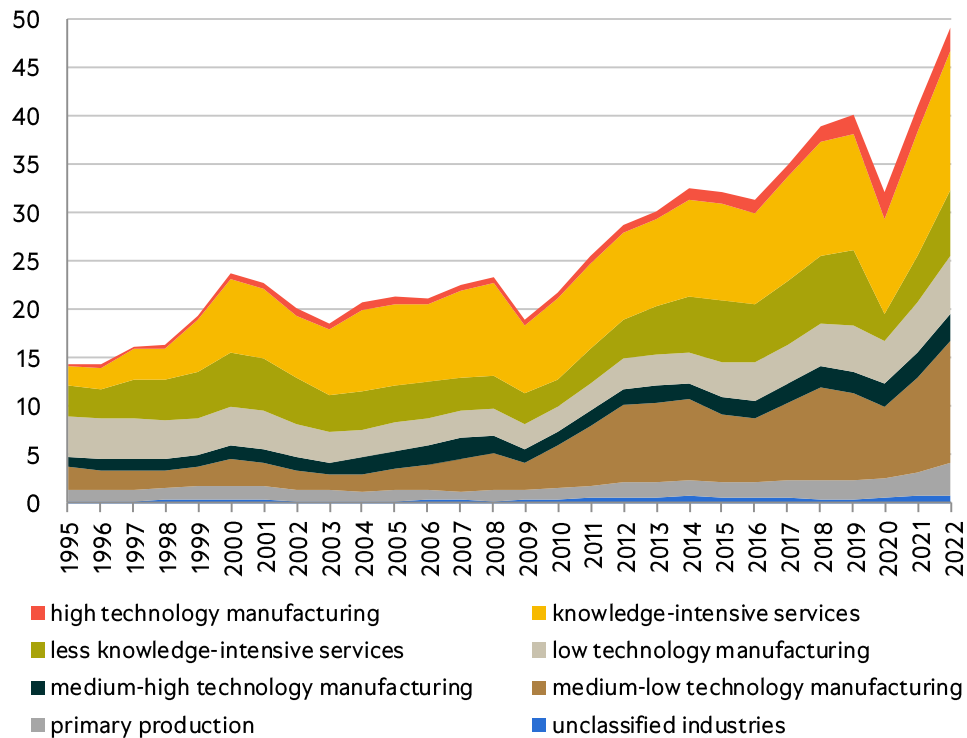




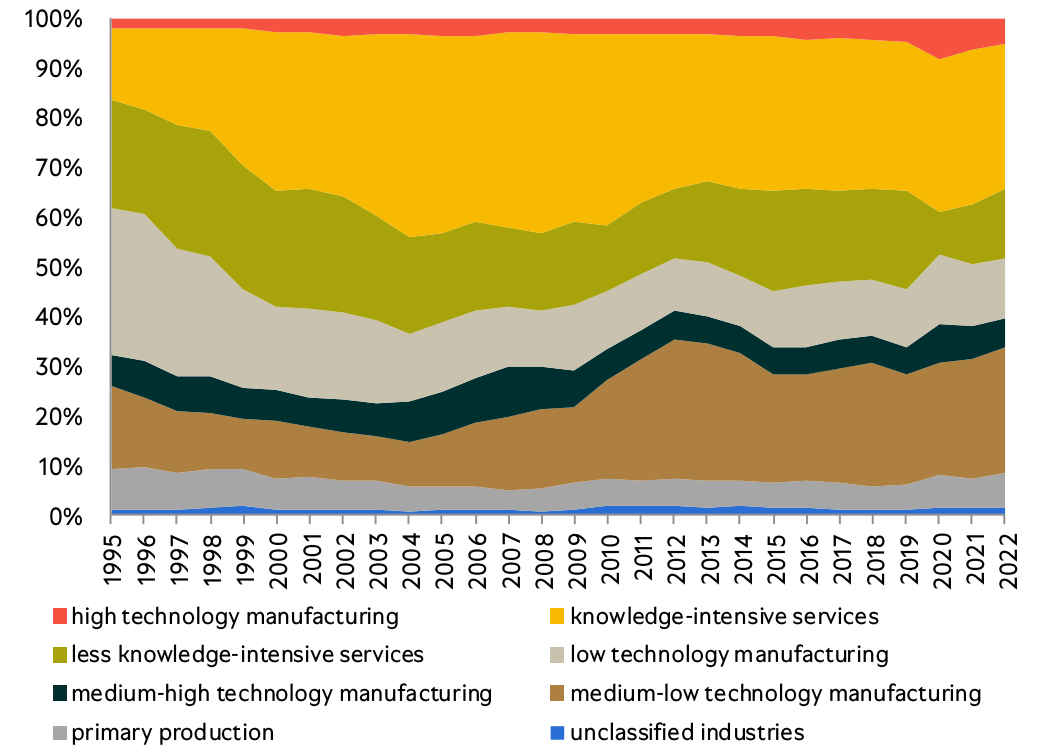
# Changes in exports structure of the Greek economy by technological or knowledge intensity, 1995-2022

- Greek highest share of exports are of medium-low technological products and of knowledge-intensive services in 2022, driven mainly by exports of refined petroleum products and water and air transport services, which have shown continuous growth over the last decade.
- The recent structural changes are exogenous and reflect the pandemic's impact, from suspended activities to the reopening of the economy, mainly by the fluctuation of exported accommodation and food and beverage services. Additionally, since 2019, there has been a significant increase in exported pharmaceutical products.

## Exports of goods and services to GDP (%)

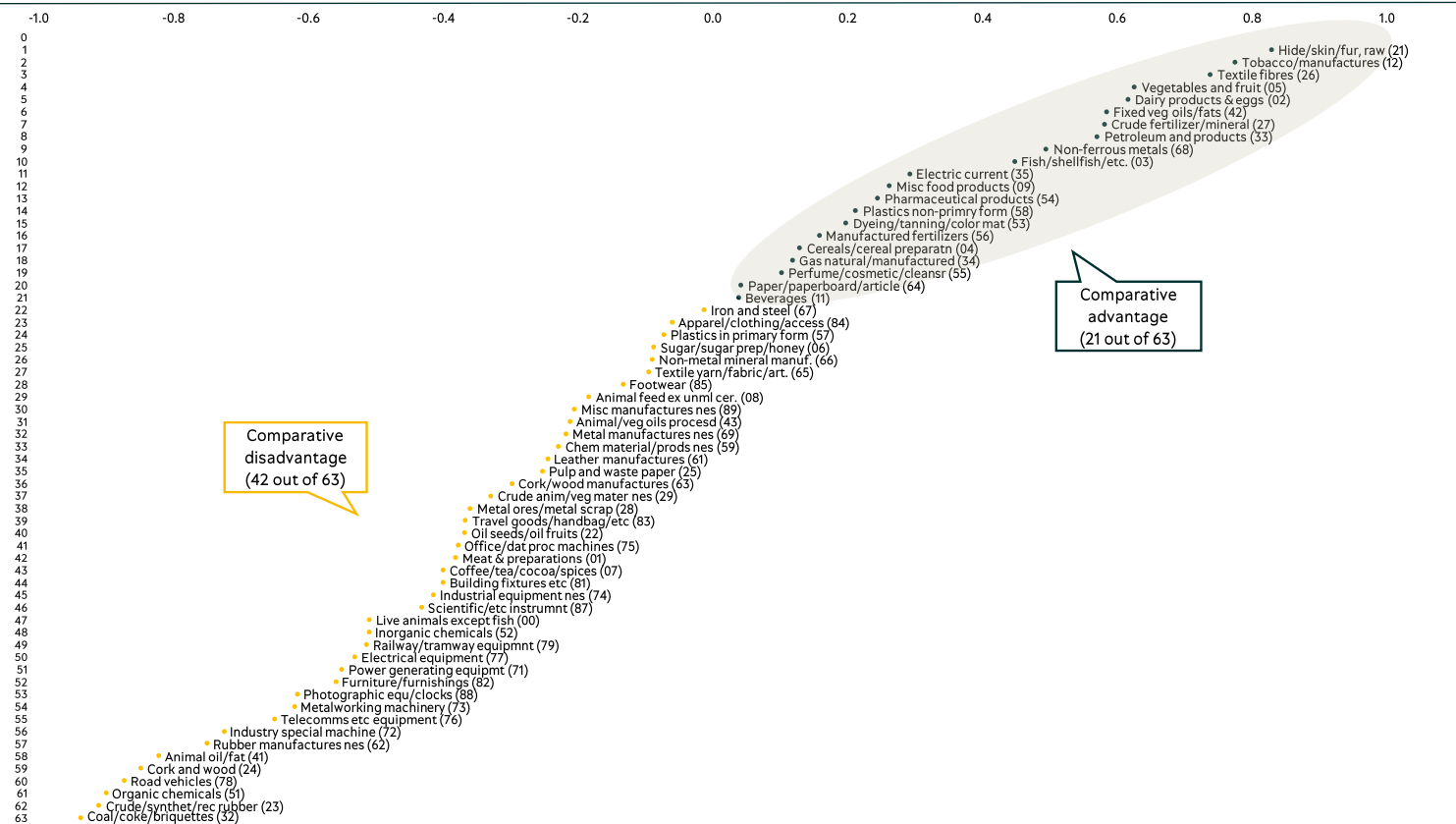


## Share of exports of goods and services to total (%)



# Greece has a significant comparative advantage in a number of goods

Revealed Symmetric Comparative Advantage (RSCA) by goods category, Greece, avg 2020-2022<sup>1,2</sup>



- Out of 63 product groups, Greece has global revealed comparative advantage in 21 of them, accounting to 69.7% of Greek exports. Excluding petroleum products the percentage falls to 41.9%.
- The products with the highest comparative advantage are the raw skin and furs, tobacco and its manufactures and textile fibres.

Notes:

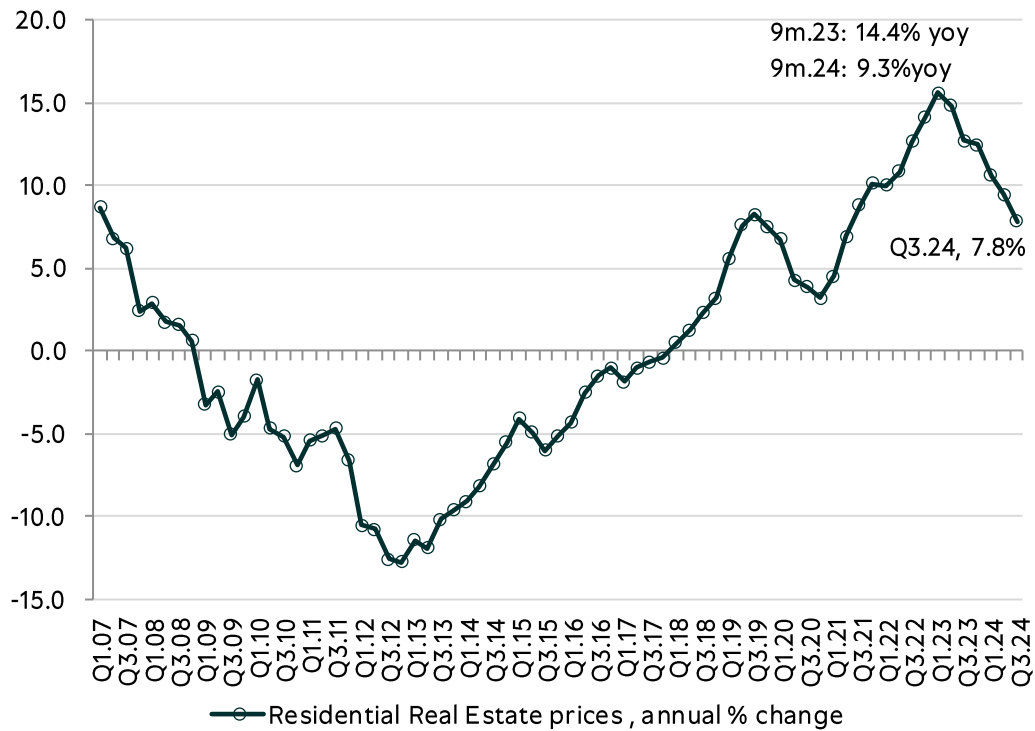
- Product categorisation is according to the Standard International Trade Classification (SITC) revision 3.
- Excluding product category "commodities and transactions, n.e.s." (9).

## 6. Real Estate

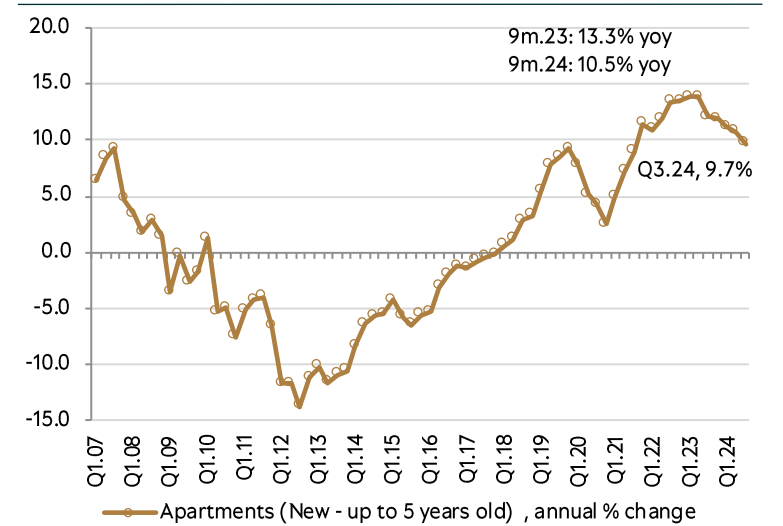
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# House Prices: Price increases irrespective of the age of the property

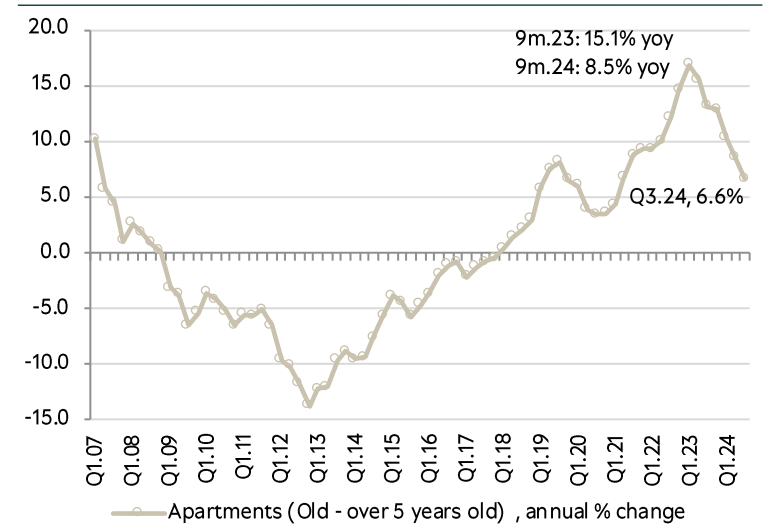
## Residential Real Estate Prices (annual % change)



## New – up to 5 years old (annual % change)

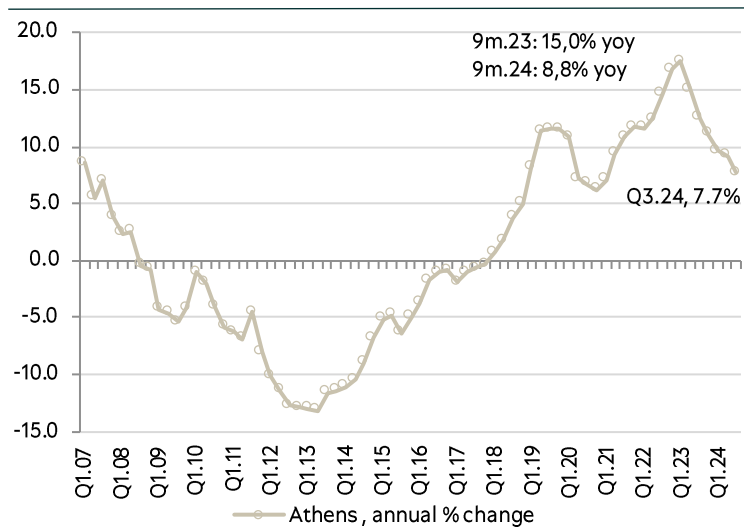


## Old – over 5 years old (annual % change)

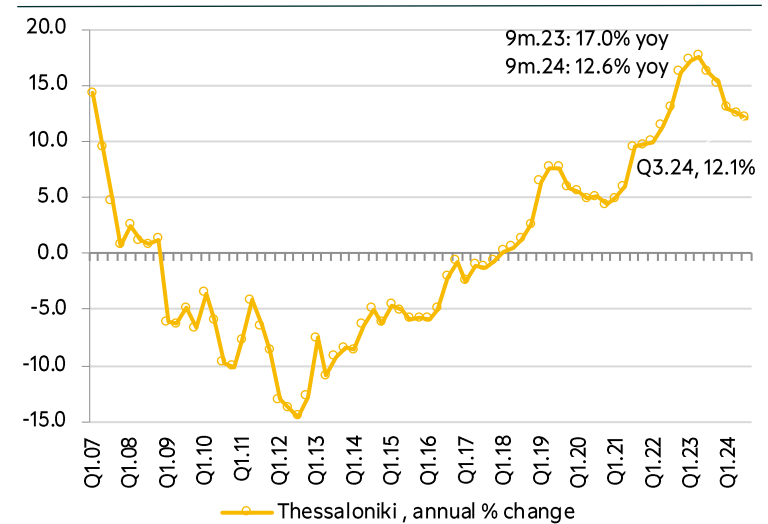


# ... and the geographical area

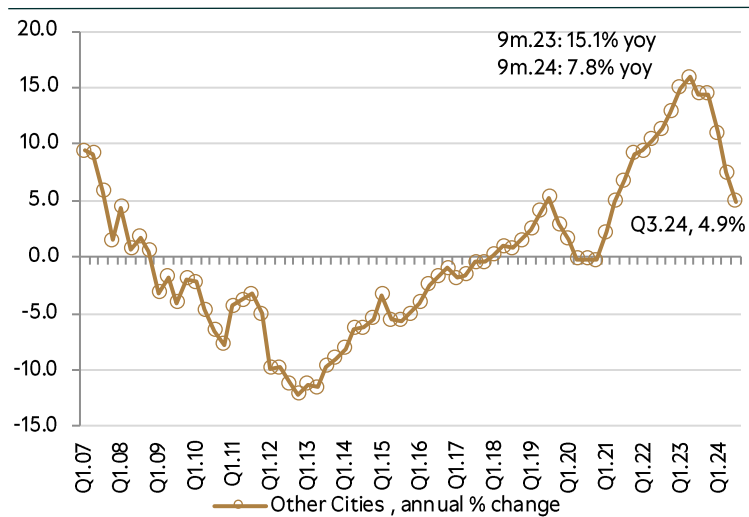
## Athens



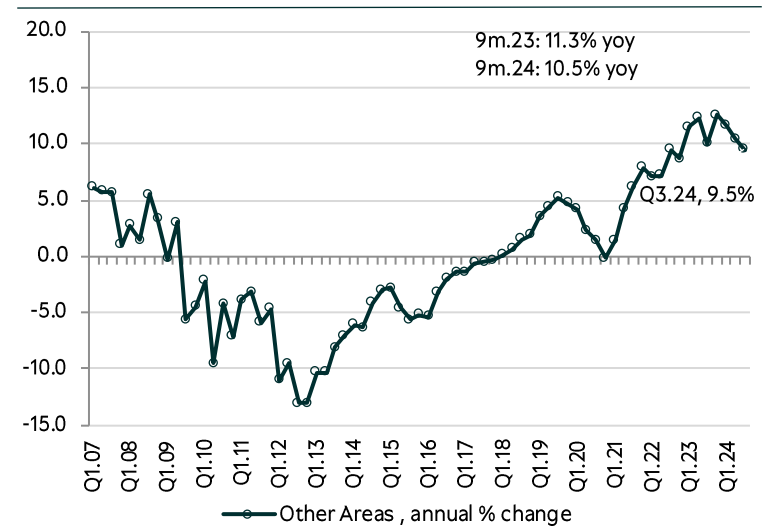
## Thessaloniki



## Other Cities

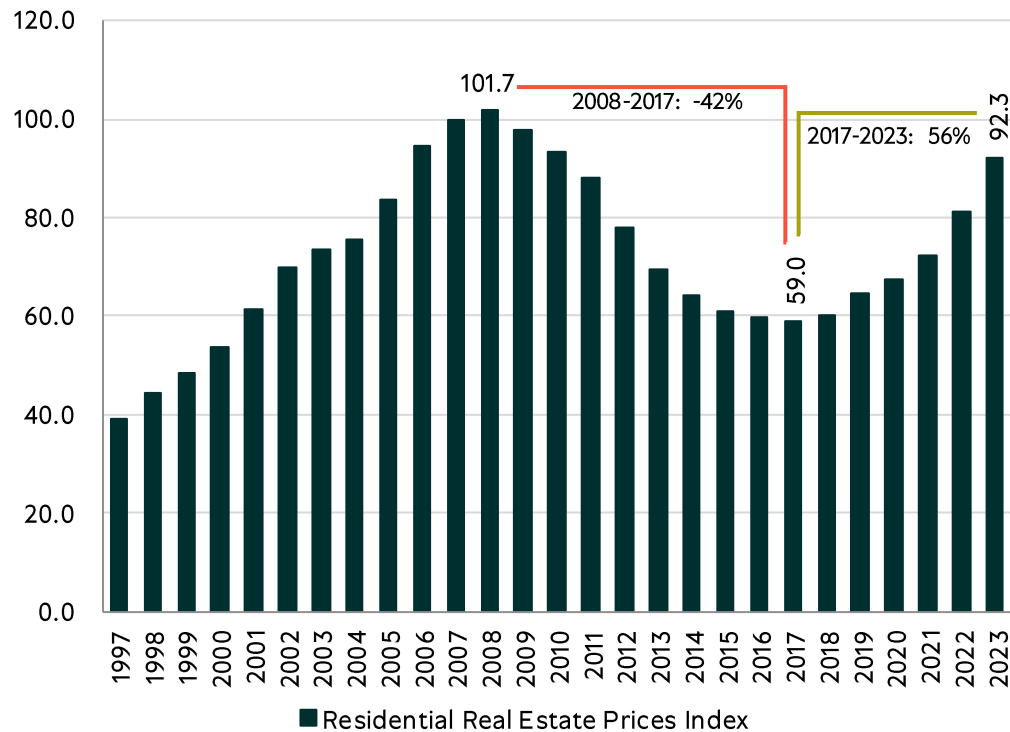


## Other Areas

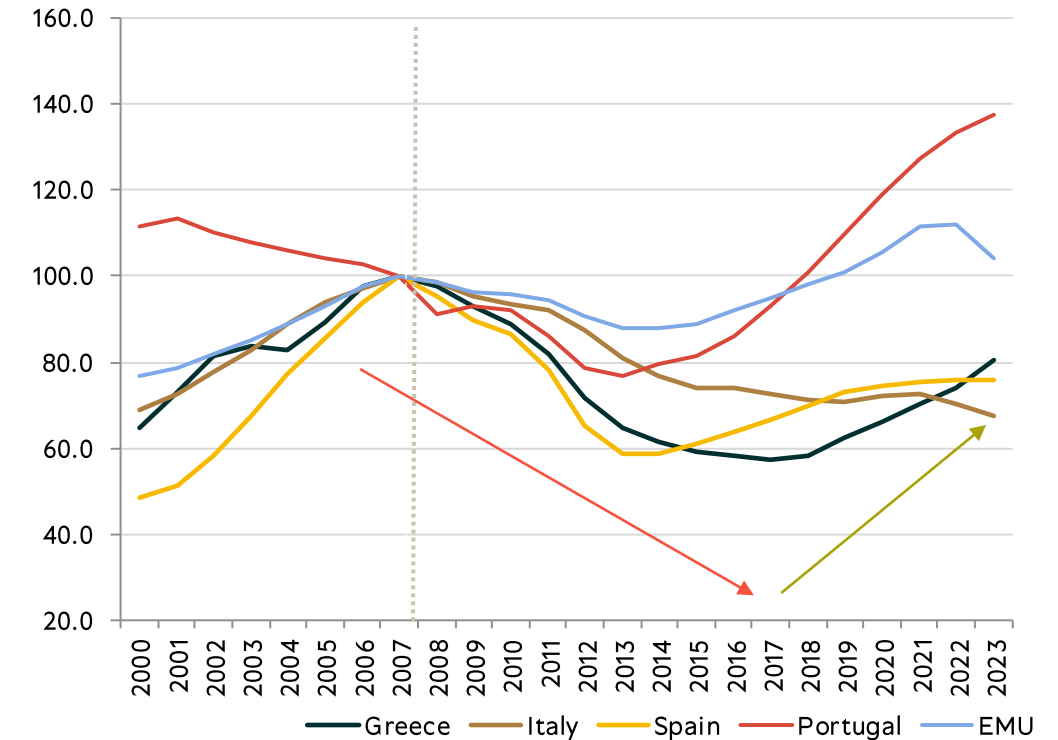


# Peak to trough – trough to peak: Despite all the headwinds in real terms (inflation adjusted) the 2007-2022 trajectory was similar to other Southern European economies'

## Residential Real Estate Prices Index (2007=100)



## Real House Price Indices<sup>1</sup> (in real terms, 2007=100)

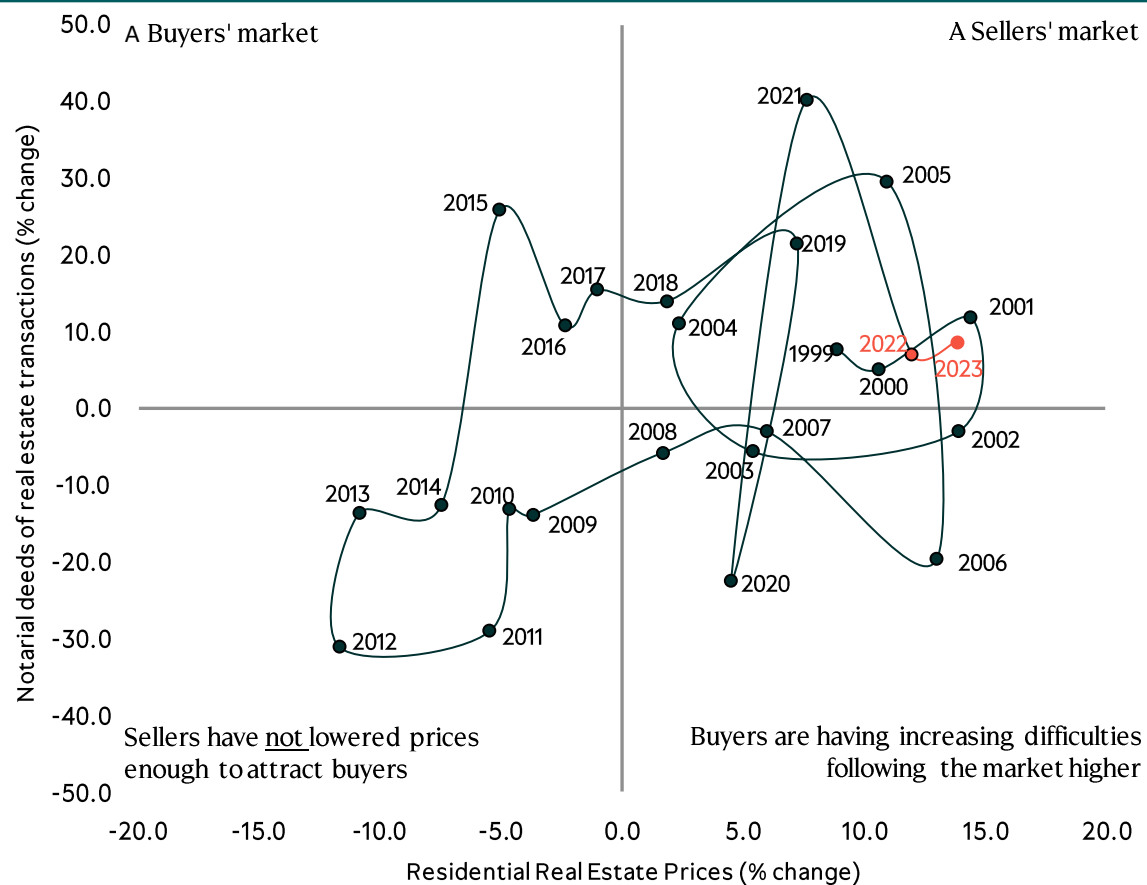


Note: 1. The real house price index is given by the ratio of the nominal house price index to the consumers' expenditure deflator in each country from the OECD national accounts database.

# Housing Cycle: Is the market about to enter the cooling-off phase of the cycle ?

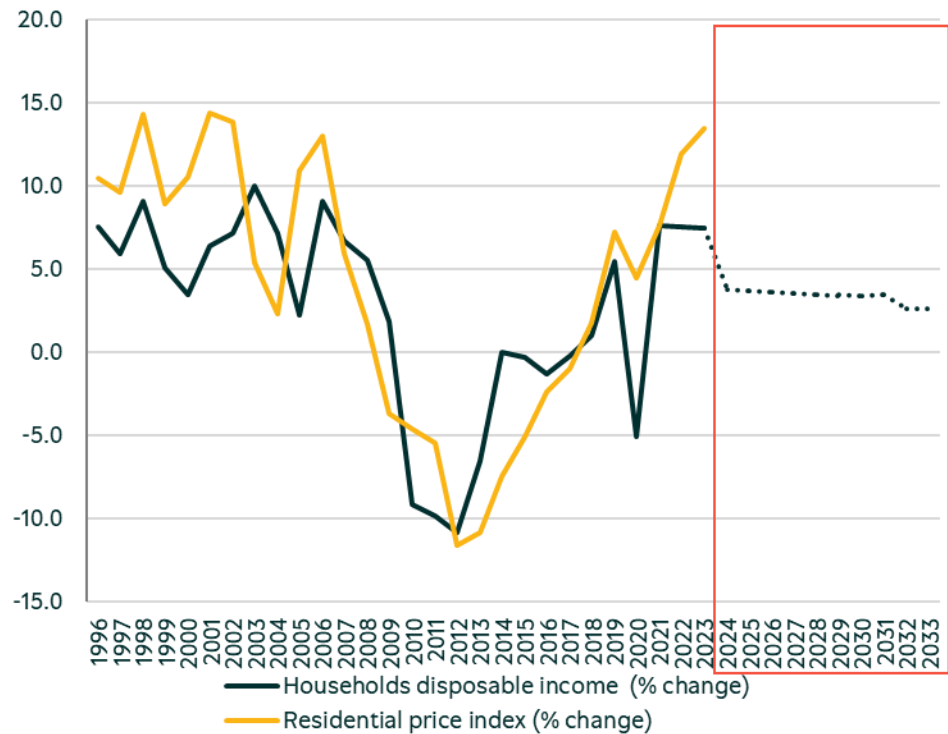
- Based on 2023 data, higher prices have led to a slowing down in the growth rate of transactions. That is a first signal that the housing market is about to enter the next phase of the business cycle where further prices increases result in a decline of the number of transactions.

## Notarial deeds of real estate Transactions (% change) Vs Residential real estate Price Index (% change)

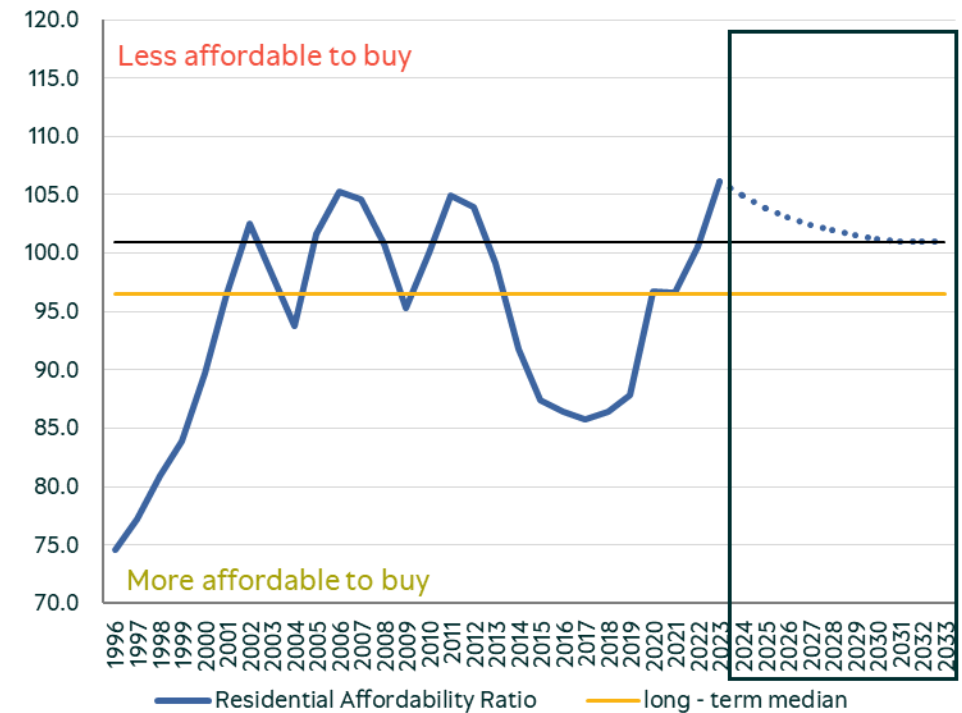


# The recent rally in residential real estate have “stretched” affordability driving prices ahead households’ disposable income. Low single–digit growth rates are necessary to avoid a bubble.

## A Statistical approach ... & ...



## ...A simple Affordability Assessment approach



Where:

RAR: Residential Affordability Ratio

HDI: Household Disposable Income, current prices at time t

RP: Residential price at time t

HDI<sub>t=2010</sub>: Household Disposable Income, current prices at base year 2010

RP<sub>t=2010</sub>: Residential price at base year 2010

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



# Housing Supply: Only New Permits and Revisions matter!

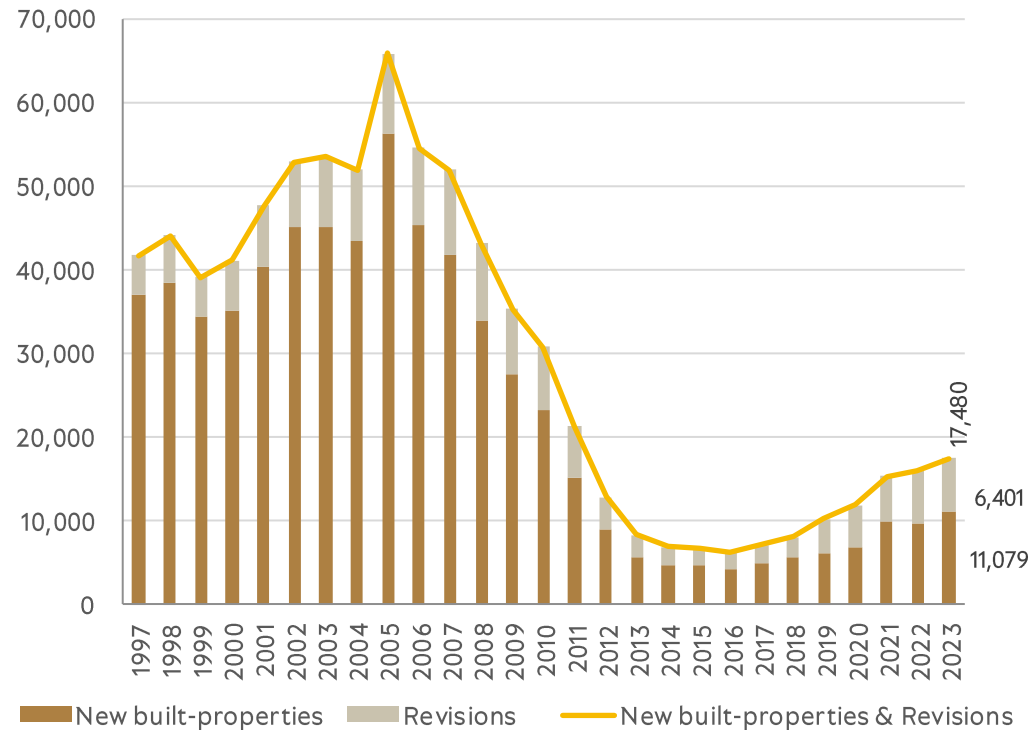
## Categories of Private Building Permits (number of permits)

	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	2023
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	11,079
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	2,689
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	6,401
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	3,035
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	2,204
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	1,290
<b>TOTAL</b>	<b>70,208</b>	<b>73,351</b>	<b>67,410</b>	<b>69,584</b>	<b>76,693</b>	<b>83,662</b>	<b>83,677</b>	<b>82,236</b>	<b>98,569</b>	<b>84,536</b>	<b>79,407</b>	<b>66,740</b>	<b>57,001</b>	<b>50,982</b>	<b>36,075</b>	<b>22,837</b>	<b>16,416</b>	<b>13,434</b>	<b>13,350</b>	<b>12,641</b>	<b>13,785</b>	<b>15,180</b>	<b>17,229</b>	<b>18,768</b>	<b>23,807</b>	<b>24,913</b>	<b>26,698</b>

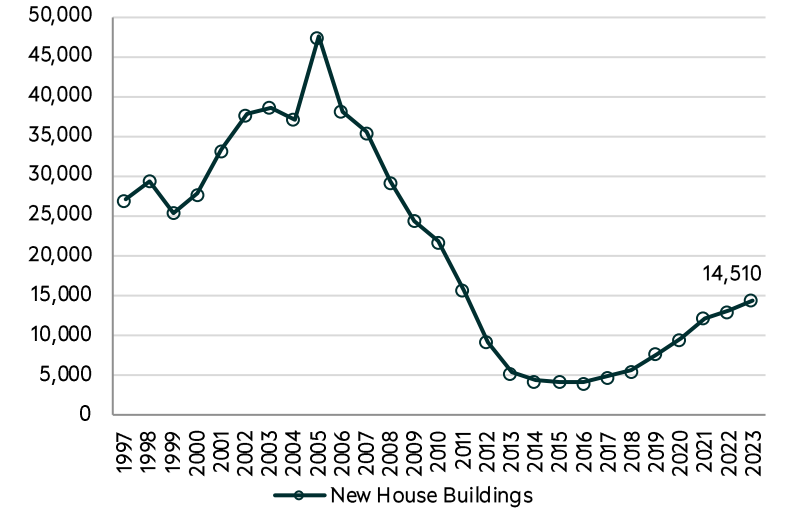
# Housing Supply: Separating residential from commercial developments

- But New - Built and Revision permits include both residential and commercial real estate.
- From the 17.5K permits 14.5K refer to residential construction and 3K to commercial.

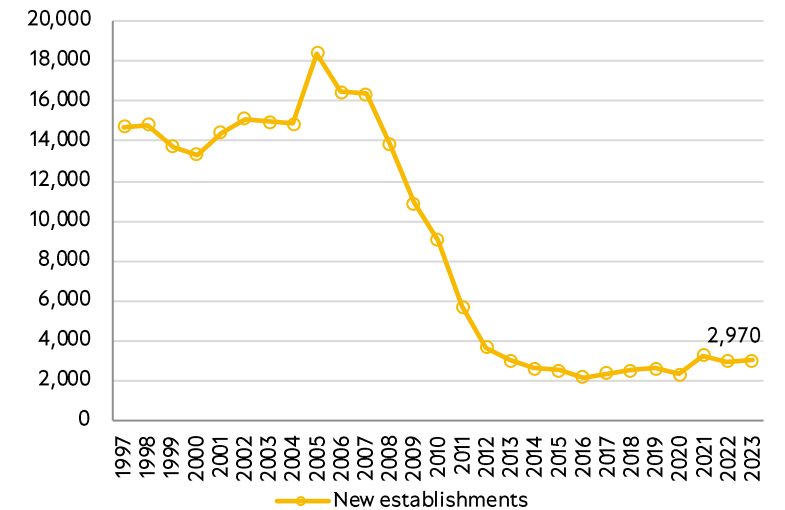
## New Built - properties & Revisions (number of Private Building Permits)



## House Buildings



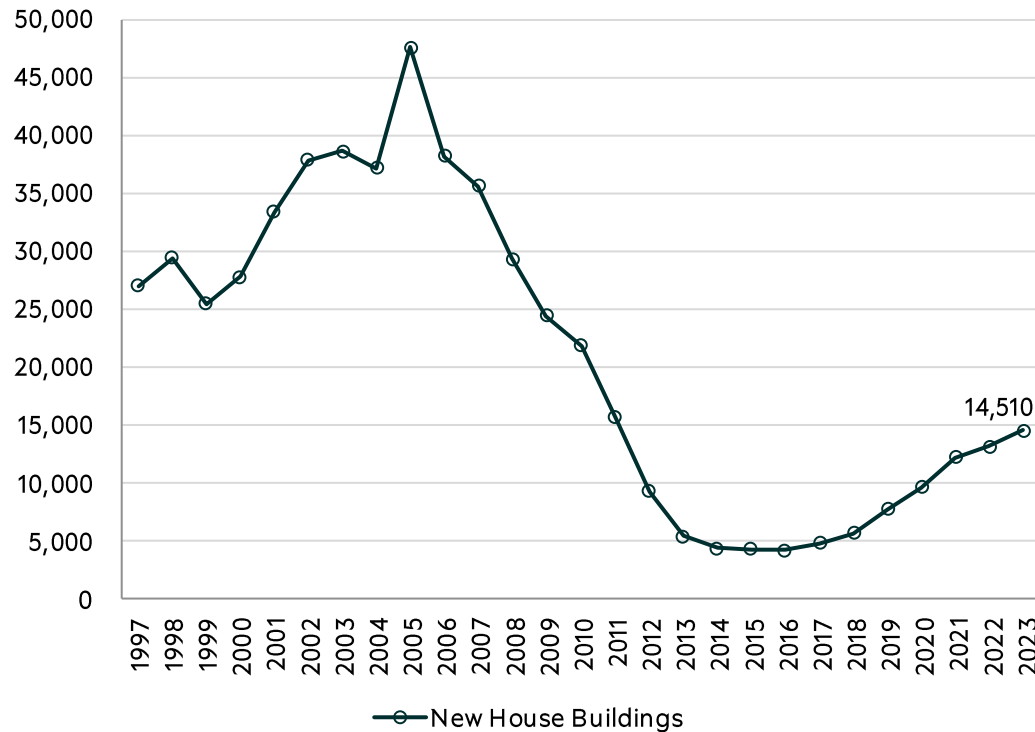
## Commercial



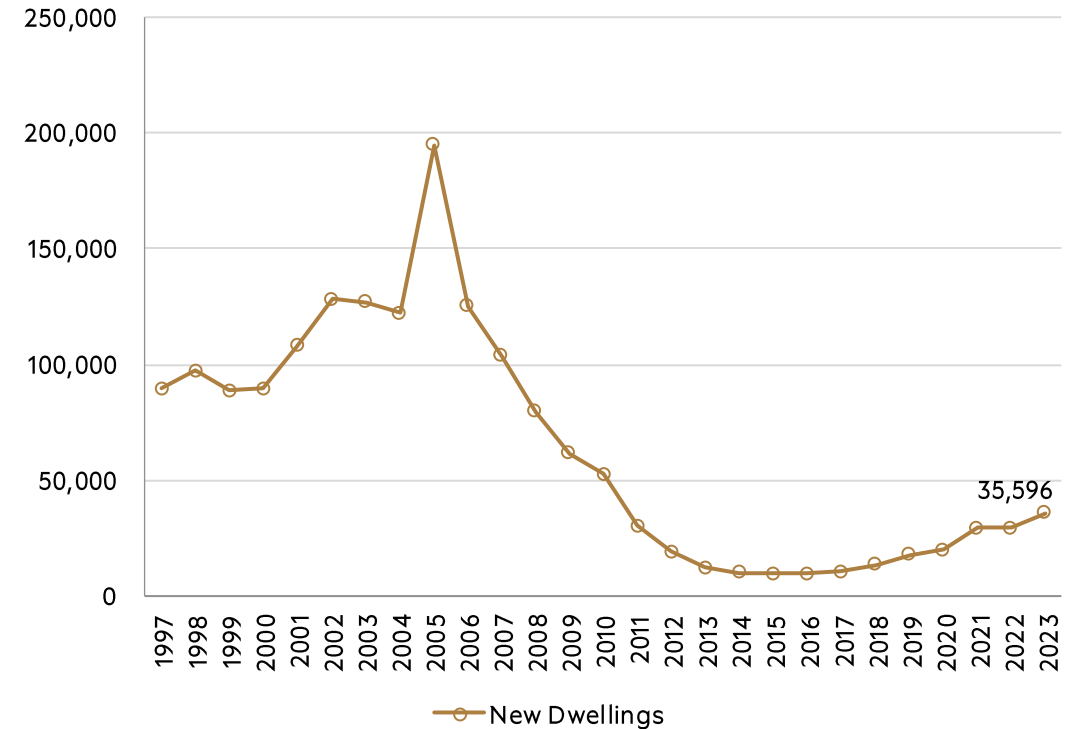
# Housing Supply: From Residential Buildings to Residential Units (Dwellings)

- Each Residential Development (Building) usually corresponds to more than one Residential Unit (i.e. flat or apartment).
- So, in 2023, 14.5K of permits means that in 2026 approximately 35.6K of residential units will be available for sale .

## House Buildings

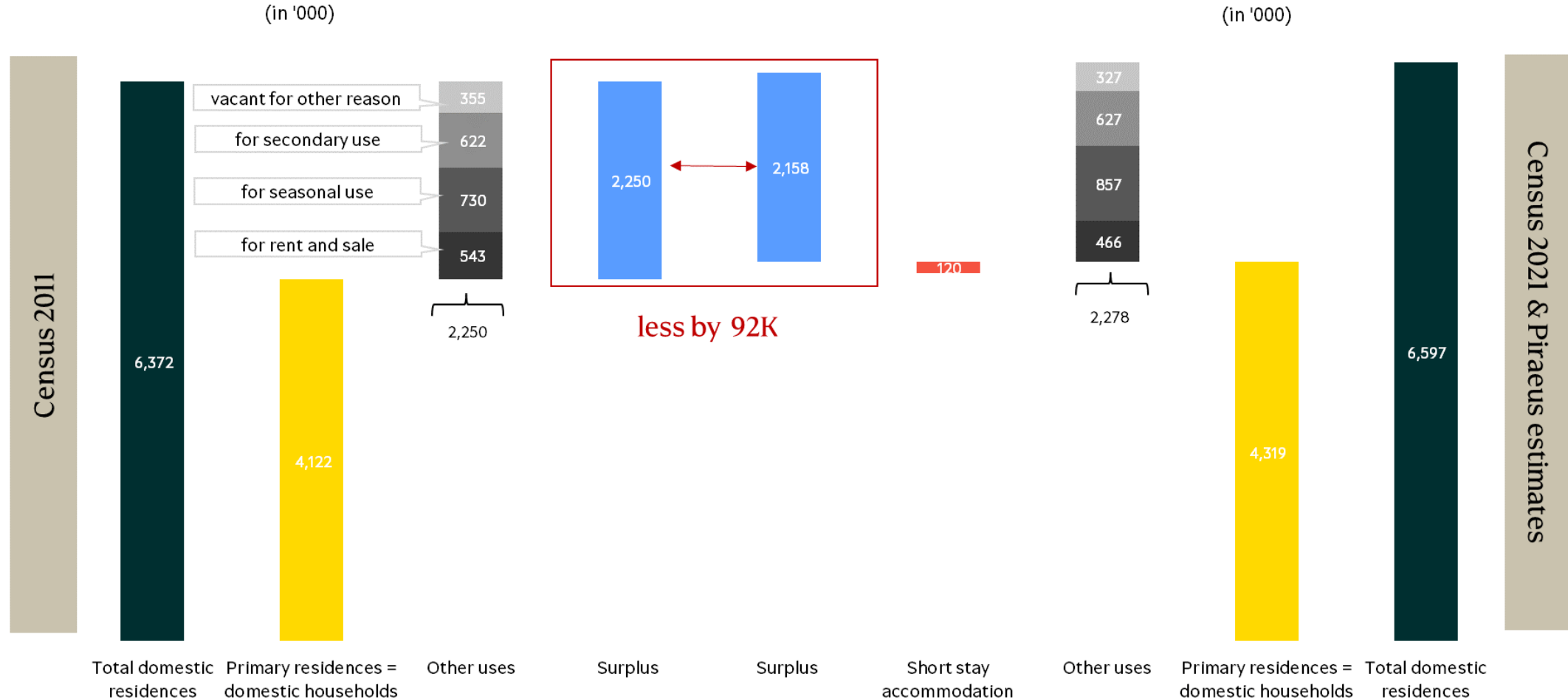


## New Dwellings



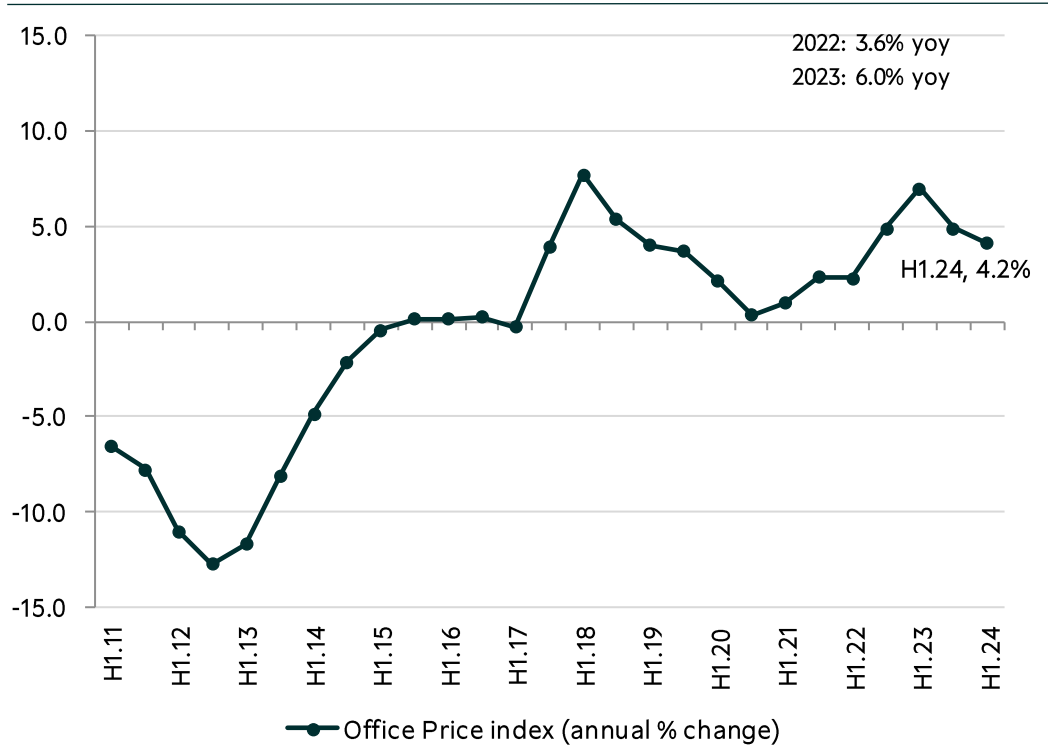
# The Supply - Demand Equilibrium: The reason behind the runaway house price increases is a housing shortfall of about 92,000 residences

- The imbalance between the supply of extra domestic residences (225K) and the demand for household formation (197K) and for short-stay accommodation (120K) has created a substantial depletion in the surplus of housing units available for uses other than primary residence by 92K units, that is driving prices up far beyond what fundamentals justify.

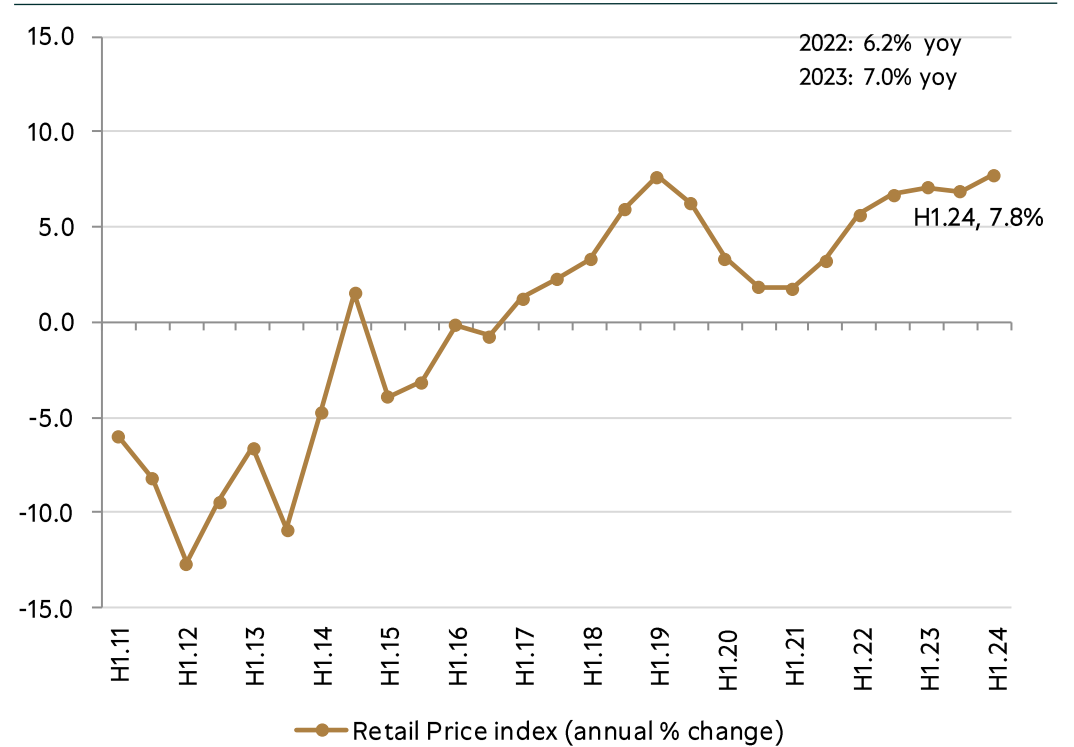


# Commercial Real Estate Market: A positive but more subdued picture

 Office Prices Index (annual % change)

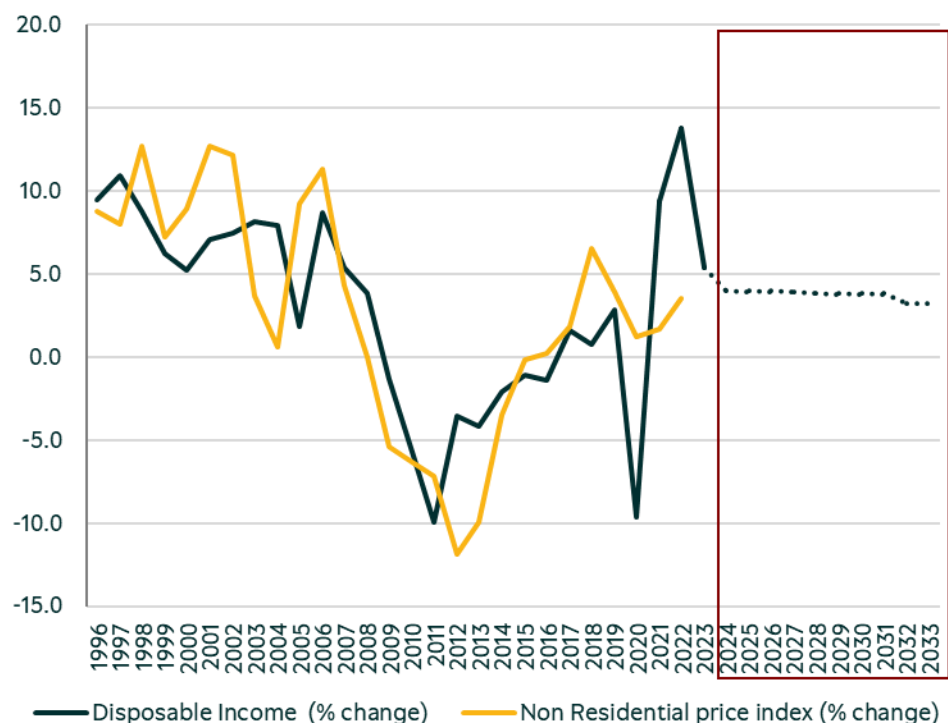


 Retail Price Index (annual % change)

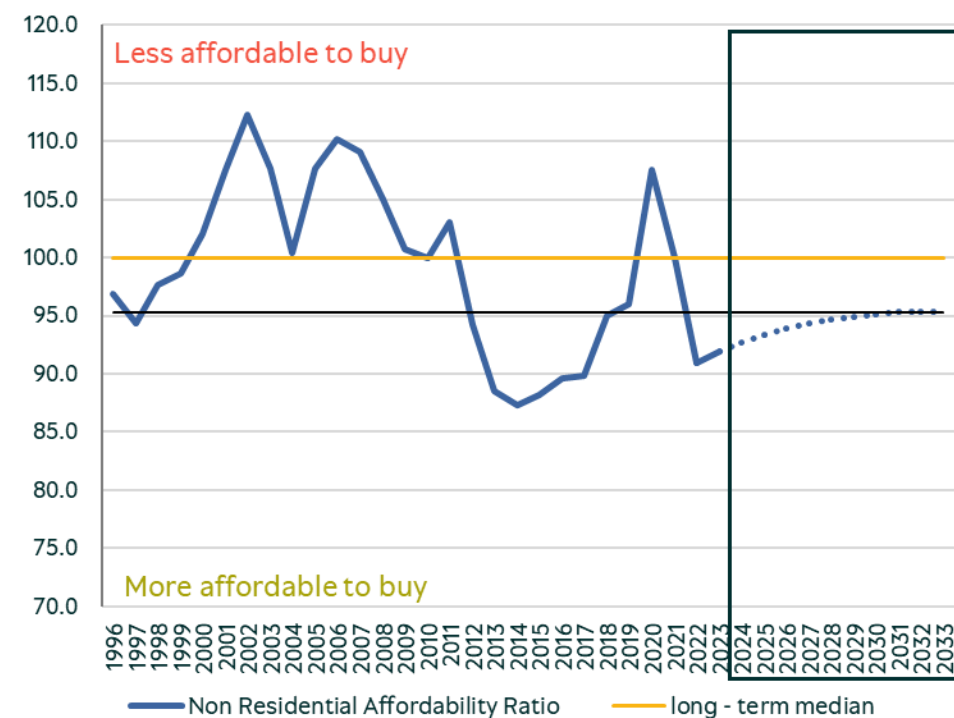


# Non - Residential Real Estate Outlook: without any runaway overvaluation recorded, growth in line with nominal GDP is expected in the medium term

## A Statistical approach ... & ...



## ...A simple Affordability Assessment approach



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

Where:

NRAR: Non Residential Affordability Ratio

DI: Disposable Income, current prices at time t

NRP: Non - Residential price at time t

DI<sub>t=2010</sub>: Disposable Income, current prices at base year 2010

RP<sub>t=2010</sub>: Non - Residential price at base year 2010

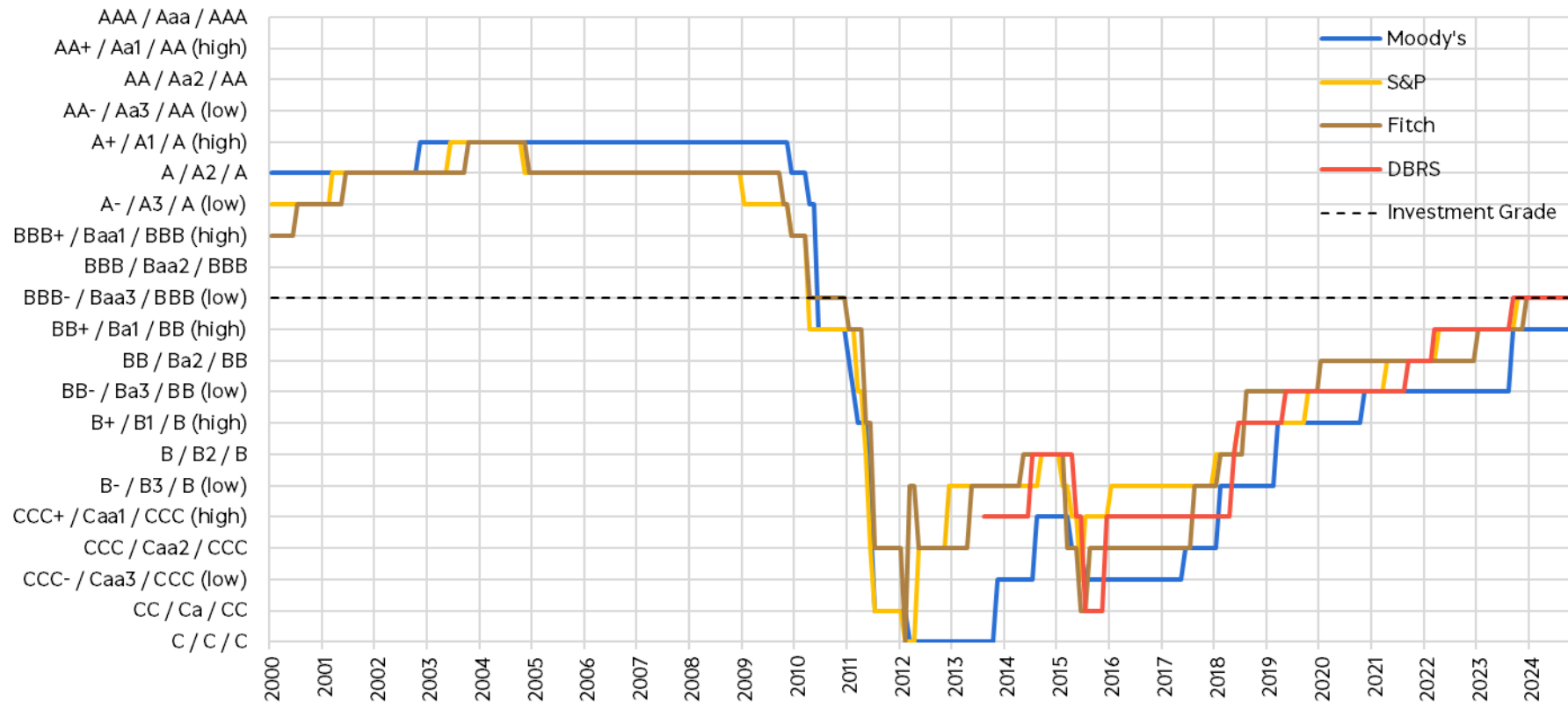
Note: Commercial (Non – Residential) Real Estate price index based on Bank of Greece "Office price index."

## 7. Public Finance

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# Greek Sovereign Rating History: It's been a rollercoaster ride !!

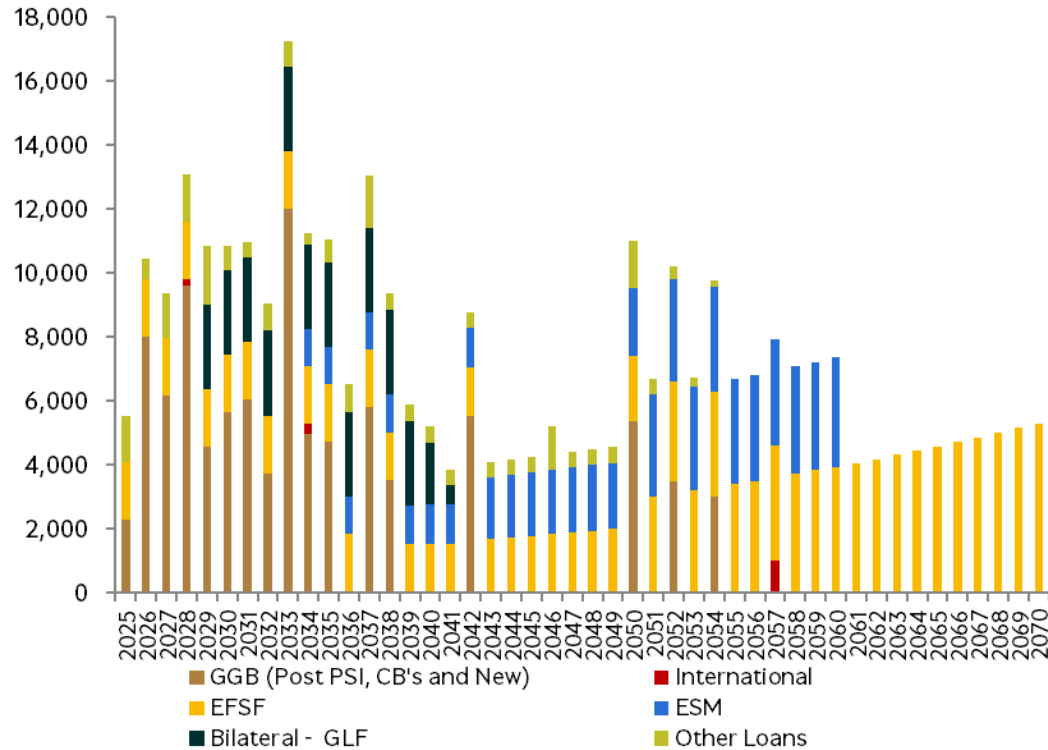
	Current LT Rating	Outlook	Last Rating Up/ Down grade	Latest Review	Next Scheduled Review
Fitch	BBB-	Stable	Dec 2023	Nov 2024	-
Moody's	Ba1	Positive	Sep 2023	Sep 2024	-
Standard & Poor's	BBB-	Positive	Oct 2023	Oct 2024	-
DBRS	BBB (low)	Positive	Sep 2023	Sep 2024	-





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

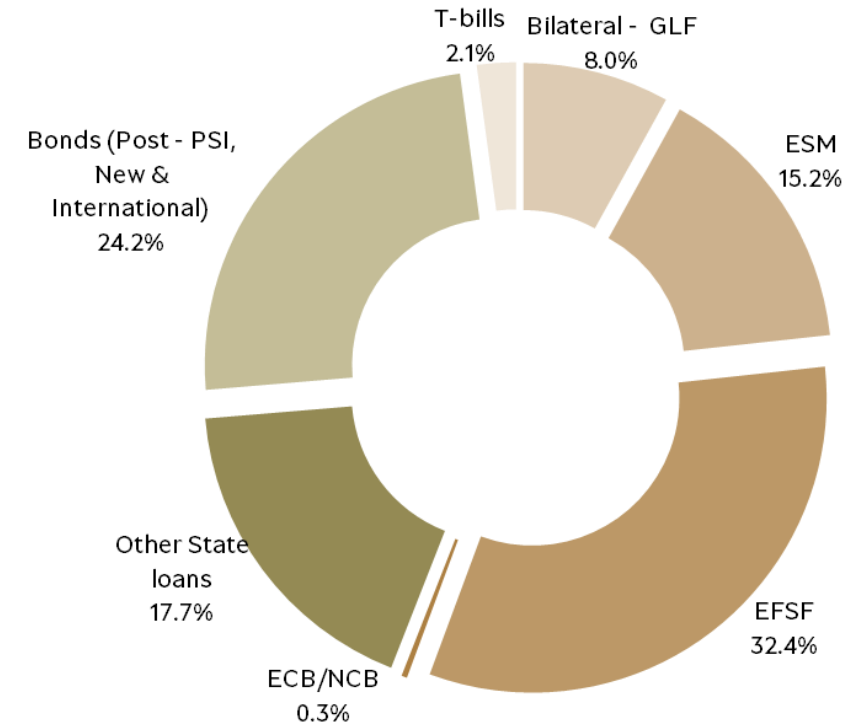
Bonds & Loans Maturities<sup>1,2</sup> (as of 18 December 2024, € mn)



Notes:

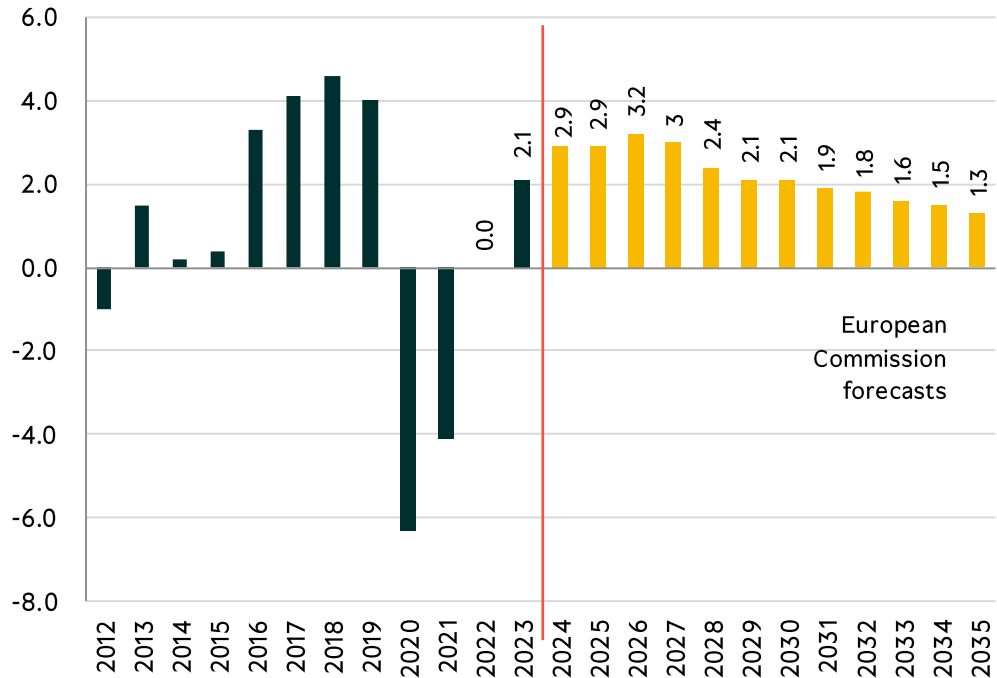
1. figures do not include T-bills and repos.
2. incl. the early repayments of Greek Loan Facility (GLF) made in 2023 and 2024 of principal payments originally due in 2025-2028.

Debt distribution by holder (%)<sup>2</sup>: The Official Sector holds 74% of total Central Government debt

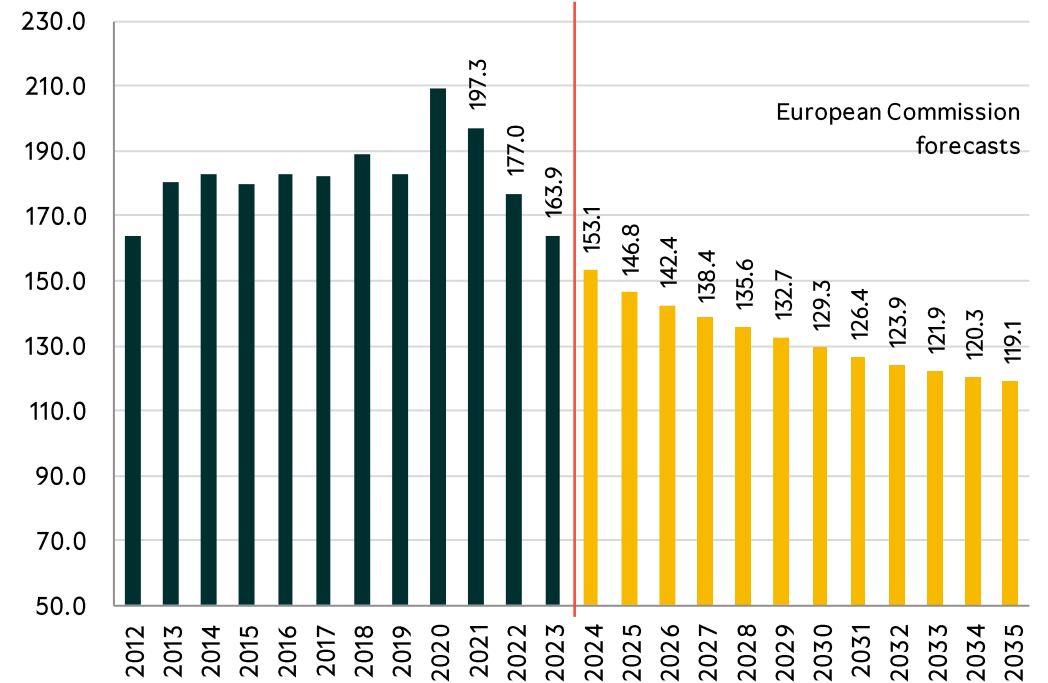


# Fiscal Balance & Debt Dynamics: Even without a debt buy back Debt / GDP declines to 136% by 2028

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

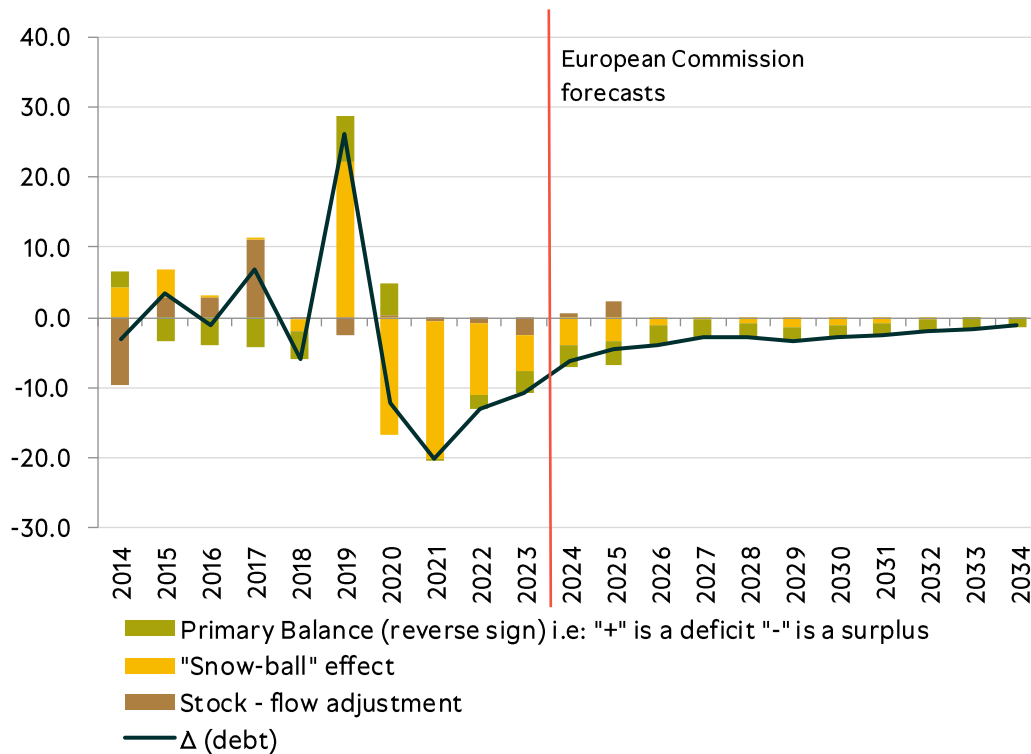


General Government Public Debt  
(% of GDP)

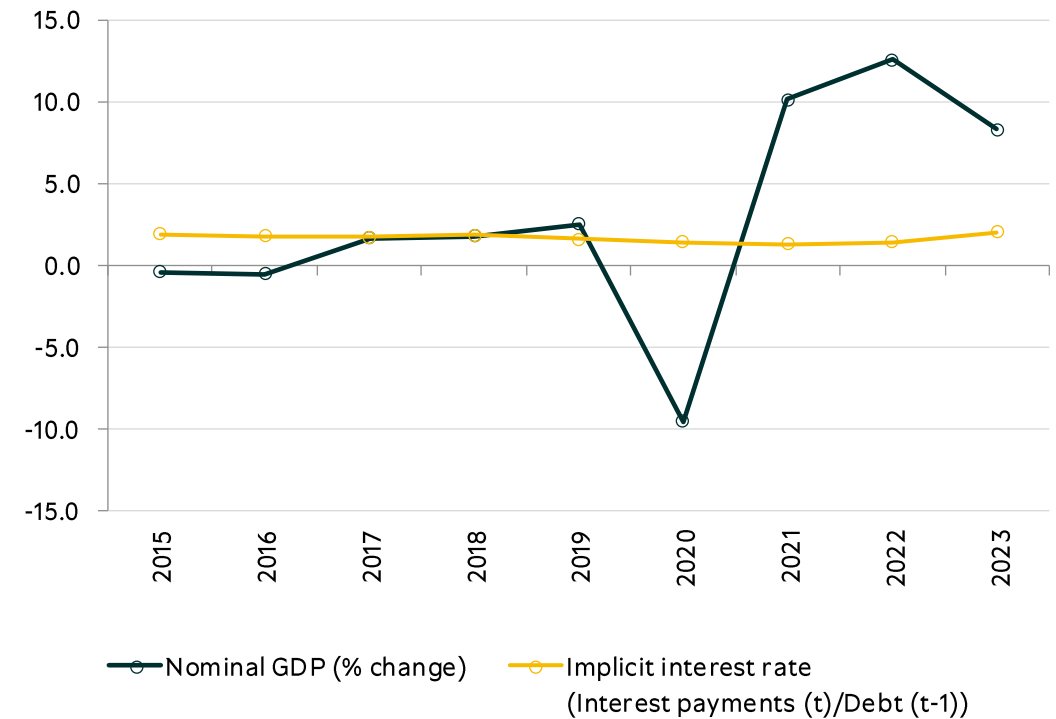


# Fiscal Balance & Debt Dynamics: it's all about fiscal rationalization (fiscal balance) & snowball effects

## Debt decomposition analysis



## Effective interest rate on public debt (%) & Nominal GDP growth (annual % change)



The change in the government gross debt-to-GDP ratio can be decomposed as follows :  $\Delta d_t = -PB_t + d_{t-1} \frac{(i_t - y_t)}{(100 + y_t)} + sf_t$

$d_t$ : General Government gross debt as a % of GDP at time t

$PB_t$ : Primary Balance as a % of GDP at time t

$i_t$ : interest rate of public debt (coupon payments at time t divided by outstanding amount of public debt at t-1)

$y_t$ : Nominal GDP annual % change at time t

$sf_t$ : Stock-flow adjustments as a % of GDP at time t.

$d_{t-1} \frac{(i_t - y_t)}{(100 + y_t)}$ : Snowball effect (i.e. when the nominal GDP growth rate is higher than interest rates, the debt to GDP ratio declines.)

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