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# Quarterly Report on the Euro Area

## Volume 23, No 4 (2024)

- **The stickiness of services inflation in the euro area** by C. Buelens
- **The distributional impact of high inflation and the related policy response** by B. Chafwehé, M. Ricci, M. Salto and D. Stöhlker
- **Capital income taxation in the euro area** by B. Guerzoni and F. Neher
- **The euro area chronicle** by S. Simoes

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EUROPEAN ECONOMY

*Economic and  
Financial Affairs*

The **Quarterly Report on the Euro Area** is written by the staff of the European Commission and coordinated by the Directorate-General for Economic and Financial Affairs under the direction of Maarten Verwey. It is intended to contribute to a better understanding of economic developments in the euro area and to improve the quality of the public debate surrounding the area's economic policy.

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European Commission  
Directorate-General for Economic and Financial Affairs

## **Quarterly Report on the Euro Area**

Volume 23, No 4 (2024)

EUROPEAN ECONOMY

Institutional Paper 305

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**Maarten Verwey**

Director-General

The main message from our autumn forecast was that early last year the euro area economy had resumed moderate growth, amidst further abating inflationary pressures. Our autumn forecast indicated that the real GDP of the euro area was expected to grow by 1.3% in 2025 and by 1.6% in 2026. At the same time, headline inflation in the euro area was expected to stabilise at 2.2% until mid-2025, and to gradually fall to 1.8% by the end of 2026. Since then, even if no fundamental change in the narrative underpinning our autumn forecast appears warranted, soft and hard data point to increased downside risks to our growth outlook and upside risks to our inflation outlook.

Although the unemployment rates in the euro area remained stable in November at historic lows, consumers' expectations of unemployment have edged up in recent months, in tandem with their perceptions of inflation. In addition, an unexpected increase in energy prices pushed inflation up in December. This push did not change the overall picture, as headline inflation in the euro area is estimated to have picked up to 2.4% in December and averaged 2.2% over the quarter, in line with the autumn forecast. Moreover, the outlook compared to our autumn projections has been dimmed by the increased uncertainty from both the external environment, including the threat of tariffs, and the protracted political uncertainty in some countries in the euro area.

Given the relevance of services inflation to the persistence of euro area inflation above the European Central Bank's target, Chapter I of this issue of the Quarterly Report on the Euro Area looks in detail at developments in services inflation and their root causes. This chapter argues that the observed persistence in services inflation primarily represents an adjustment to the superposition of two major shocks, namely lasting shifts in the patterns of services consumption due to the COVID-19 pandemic and the energy shock, which raised input costs and wages. In many ways, the observed pattern of services inflation appears consistent with its behaviour in the past, when scaled to the magnitude of the shocks, with the level of services inflation broadly justified by wage growth. Still, the pass-through from wages to services prices appears to have been particularly rapid, accompanied by more frequent price resets than in low-inflation periods. Additionally, the chapter shows that services inflation is still driven by ongoing consumption rebalancing from goods to services and delayed price adjustments in services sectors in which regulated and administered price setting is prevalent. With the projected slowdown in wage growth and the fading of transitory factors pushing up prices, services inflation is expected to gradually decline, provided that there are no new shocks with an upward effect on inflation.

As already discussed in issue 1/2023 of the Quarterly Report on the Euro Area, the effects of the recent surge in inflation have been far from uniform across population groups. Monetary and fiscal policy responses to the inflation shock also had heterogeneous effects across households. Chapter II explores the impact of high inflation on households in the euro area, considering both the direct effects of the shock and the indirect effects of the policy responses to it, using detailed micro-level data on household consumption, income and wealth. The chapter presents simulations of the three main direct channels through which inflation affects households: the devaluation of nominal assets and liabilities, the devaluation of nominal incomes, and the relative consumption channel. The results suggest that pension-

age households have been disproportionately affected by the devaluation of nominal wealth, as they typically hold larger net financial assets. The interplay between the devaluation of nominal balances and that of income also revealed a regressive impact of inflation on working-age households, with the two financial channels exerting a significantly greater influence than the relative consumption channel. Therefore, the recent cost-of-living debate, which focused mostly on the regressive effects of inflation via the different consumption baskets of low- and high-income households, misses important aspects. Regarding the monetary policy response, the negative impact of the increase in interest rates appears of second order compared to the negative impact of inflation on nominal incomes, confirming the need to focus on rapidly reducing inflation. Fiscal interventions have provided relief to households through income support and price control measures but could not avoid substantial losses, especially for the lower-income and pension-age groups. Given that most of the fiscal interventions were not targeted, one can infer that fiscal policy could have been more effective in reducing the unequal impact of high inflation.

Chapter III presents an analysis of trends and the impact of capital income taxation. Labour taxation constitutes more than 50% of total tax revenues in the euro area, compared to around 20% of tax revenues from capital taxation. The revenues from labour taxes are expected to decrease in the future, in particular due to the ageing population, exacerbating the revenue trends observed over the last three decades. In this context, increasing the role of capital taxation in the tax systems of the euro area is one possible avenue to support sustainable tax revenues. The debate on the pros and cons of such an increase covers various aspects that are discussed in the chapter. The traditional argument against increasing capital taxation rests on the expectation of a strong reduction in the tax base in response to rate increases due to tax avoidance and significant distortions to economic incentives. However, no academic consensus exists on the link between capital income taxation and economic growth. It is further argued that capital income taxation is not necessarily more distortive than labour taxation, for example, as taxes on labour may reduce incentives to participate in the labour market. Moreover, there are arguments in favour of increasing capital income taxation on allocative and distributional grounds. In turn, strengthened international cooperation, as well as new technologies for the exchange of information, can help broaden the capital tax base by increasing compliance and reducing tax avoidance.

This Report concludes with the Chronicle, highlighting the most significant euro-area events of 2024. Notably, 2024 marked the 25th anniversary of the euro—an occasion explored in our latest special QREA issue. This edition delved into the euro area's resilience in navigating a series of exceptional shocks over the past five years and its preparedness to face the challenges expected in the decade ahead, which I still invite you to read in case you did not do yet.



# I. THE STICKINESS OF SERVICES INFLATION IN THE EURO AREA

By Christian Buelens <sup>(1)</sup>

*The disinflation process in the euro area has been swift but uneven across the main components of the consumer basket. Services inflation has been particularly persistent, becoming the main driver of inflation in the euro area. Its stickiness has raised concerns about self-sustained interactions between the prices of services and wages, which could derail the disinflation process during the 'last mile' towards the inflation target. This article argues that the observed persistence in services inflation is primarily an adjustment to the interplay between two major shocks that hit the economy, namely shifts in service consumption patterns due to the COVID-19 pandemic and the energy shock, which raised input costs and wages. This pattern, if scaled up to the magnitude of the current shocks, appears in many ways to be consistent with how services inflation has played out in the past. Indeed, given the growth in wages, the level of services inflation appears broadly justified. However, the pass-through from wages to the price of services appears to have been particularly swift, with more frequent price resets than in low-inflation periods. In addition, services inflation is still driven by ongoing consumption-rebalancing from goods to services and by delayed price adjustments in service sectors where regulated and administered price setting is common. Services inflation is expected to gradually decline thanks to the projected slowdown in wage growth and the weakening of transitory factors that are currently pushing up prices.*

The euro area has seen a disinflation process that has been swift but uneven across the main components of the consumer basket. Inflation has fallen swiftly in the energy, food and manufactured goods sectors, but has been more persistent in the services sector. Services inflation's stickiness has raised concerns that it might be the result of self-sustained interactions between service prices and wage growth, and that this could derail the disinflation process during the 'last mile' towards the inflation target. However, as this chapter argues, slow movement is an inherent characteristic of services inflation and this suggests that the current stickiness could instead be an underappreciated feature of an adjustment process whose length reflects the severity and sector-specificity of the shocks of the past five years (i.e. the COVID-19 pandemic and the energy commodity price shock following Russia's full-scale invasion of Ukraine). This chapter reviews the recent stickiness in services inflation in the euro area (Section I) and in euro area countries (Section II) before assessing the role played by different drivers (Section III).

## I.1. RECENT INFLATION DEVELOPMENTS

The steep rise in euro area inflation, which peaked at 10.6% in October 2022, was followed by an equally rapid reversal that lasted until the end of 2023. Since then, disinflation has, as expected, continued at a slower pace towards the 2% inflation target (Graph I.1, Panel A). Inflation is becoming more 'well-behaved', with out-turns in 2024 close to expectations and projections, notwithstanding some surprises in its composition. At the end of 2024 inflation came close to reaching the 2% inflation target and, barring any new major shocks, is expected to reach it sustainably in 2025.

These sharp swings in inflation are closely linked to the COVID-19 pandemic, which disrupted production and consumption patterns, and to the energy commodity price shock triggered by Russia's full-scale war of aggression against Ukraine. The upward spike in inflation was mainly driven by energy and, to a lesser extent, food prices, but these two non-core items are currently making only a minor direct contribution to headline inflation. Indeed, throughout 2024 there were no major changes in the composition of inflation and core inflation accounted for the bulk of it. Core inflation's recent persistence can be almost entirely linked to services inflation, which has declined from its peak of 5.6% in July 2023 but has remained stuck at around 4% since November 2023. In January 2025, services inflation still stood at 3.9%, which was higher than at any point between the creation of the euro and the outbreak of the pandemic.

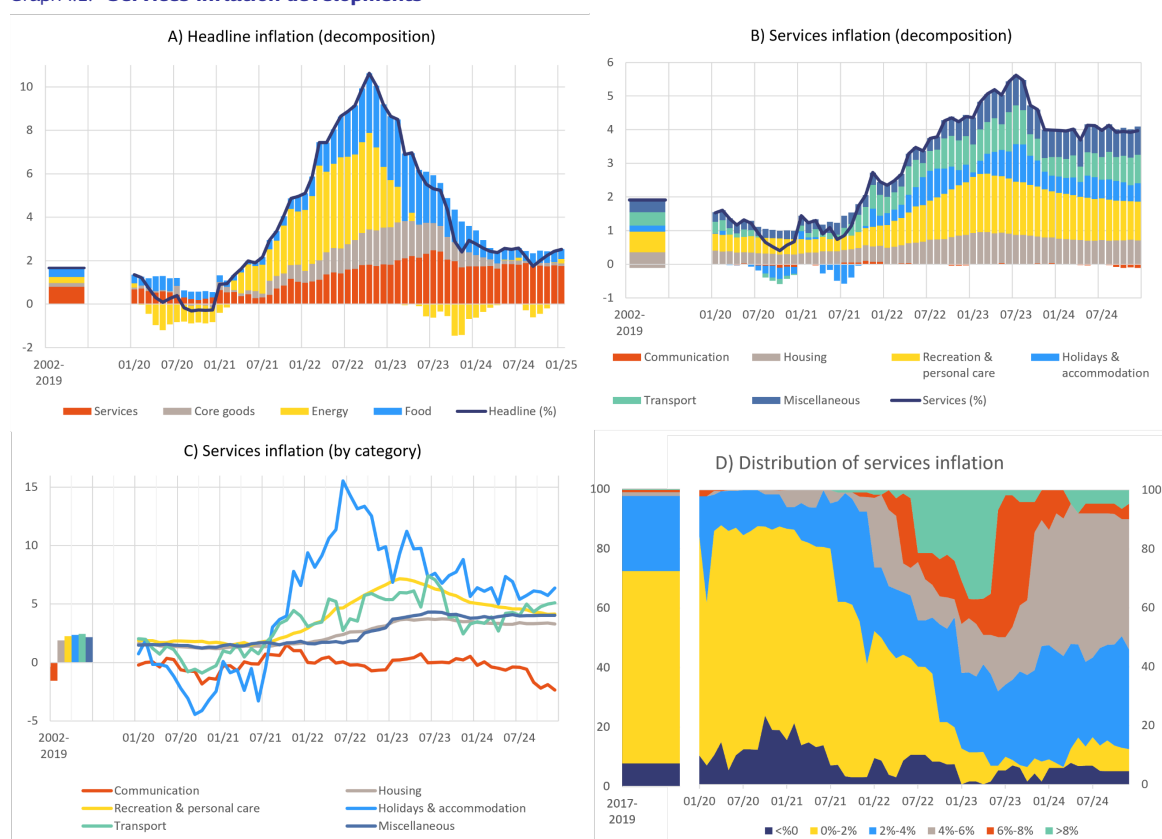
A look into the services basket confirms that high services inflation is broad-based (except for communication services). Across all service categories, inflation is still well above the long-term average

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<sup>(1)</sup> I have benefited from discussions and suggestions from Leonor Coutinho, Eric Ruscher and Przemek Wozniak.

and higher than before the pandemic. Most service categories (e.g. recreation and transport services) appear to have passed their inflation peak. However, this may not be the case for housing and other services where administrative pricing prevails (see Section I.3). A look at the distribution of inflation rates across services items reveals that more than half of the services basket recorded a price growth above 4% during 2024. On the eve of the pandemic, services with a price growth in that range were unusual (Panel D).

Graph I.1: Services inflation developments



Note: In panel D, the bands include the aggregate share of items falling into a given inflation range. The analysis was carried out at COICOP-5 level (available since 2017) and based on 108 items. The last observation for all panels is December 2024 (January 2025 for Panel A).

Source: Eurostat, own calculations.

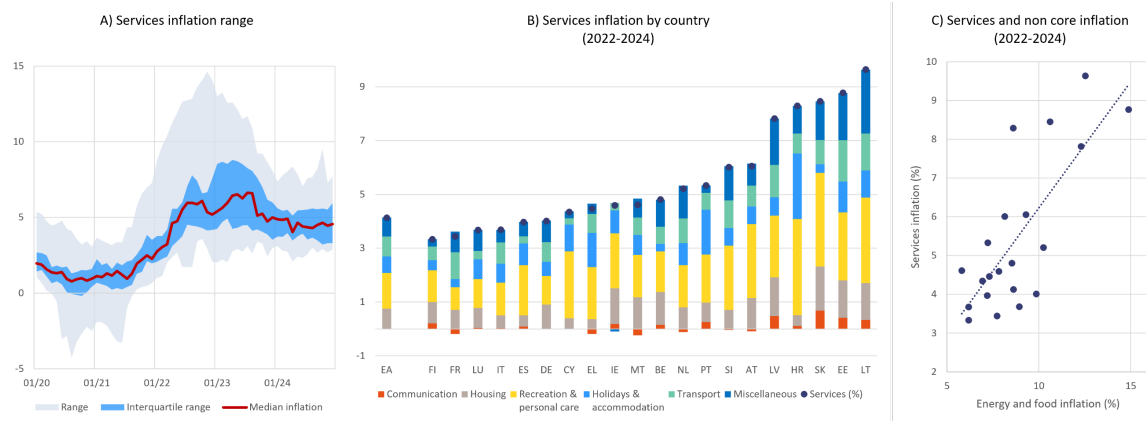
## I.2. SERVICES INFLATION ACROSS THE EURO AREA

Services are the main driver of inflation across euro area countries and remain a force behind inflation dispersion. High inflation dispersion (mainly as a result of asymmetric reactions to common shocks) has been one of the main characteristics of the inflation surge in the euro area. <sup>(2)</sup> Headline inflation dispersion has been receding, but this is less the case for dispersion in services inflation, which saw its range widening again in 2024 (Graph I.2). Services inflation has been particularly high in those countries that experienced the highest non-core inflation (energy and food combined) during the past three years (notably the three Baltic countries and the euro area countries in central and eastern Europe). In Lithuania, services inflation averaged about 10% between 2022 and 2024. Even at the low end, in Finland, service prices increased at a substantial annual rate of above 3%.

<sup>(2)</sup> Buelens, C., 'The great dispersion: euro area inflation differentials in the aftermath of the pandemic and the war', *Quarterly Report on the Euro Area (QREA)*, Vol. 22, No 2, 2023.



Graph I.2: Euro area services inflation differentials



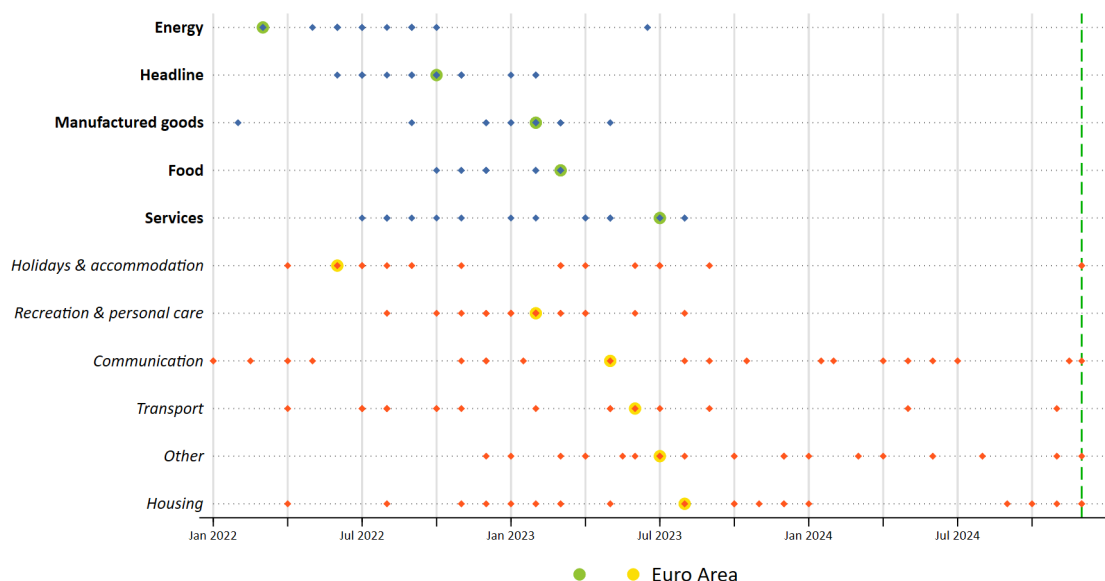
Source: Eurostat, own calculations.

Across the euro area, the pandemic and the energy commodity price shocks are reflected in the timing and sequence of peak inflation by main category (Graph I.3). There were rapid direct effects on retail energy prices, while the effects on food<sup>(3)</sup> and core categories took more time to pass through to consumers because they were primarily indirect. Services were the category that peaked last. Graph I.3 also shows considerable variation in the timing of the respective national peaks, although the sequence is broadly similar across euro area countries. This points to national differences in the transmission to consumer prices of the pandemic-specific changes in demand composition and the energy commodity price shock in the various categories. Services are the category for which national inflation peaks were the most spread out in time, underlining the role played by (heterogeneous) domestic conditions.

The heterogeneity in national inflation peaks is even stronger when one looks at subcategories of services. Hotels, and accommodation and recreation services were two categories that saw particularly strict lockdowns. They were also the first to peak shortly after the initial reopening of the economy. For the remaining subcategories, the euro area peak occurred later and the timing of national peaks varied greatly, again pointing to distinct national drivers that played a major role in price dynamics. In these subcategories, the national inflation peak was reached only recently or may not yet have arrived.

<sup>(3)</sup> Food inflation is an outlier in the disinflation context, because food prices played a non-negligible role in the inflation surge (particularly in countries with lower incomes). The surge in energy commodity prices had a strong indirect effect on food prices (reflecting fertiliser and other production costs), but there were other direct drivers of food commodity prices (war, weather and trade restrictions). See also Rezessy and Maravalli, [‘What’s behind the spike in food inflation – recent developments, drivers and outlook in the euro area’](#), *Quarterly Report on the Euro Area (QREA)*, Vol. 22(4), 2024.

Graph I.3: Euro area and national inflation peaks by category



Note: The graph shows the inflation peaks for the main categories and for service subcategories in the euro area (green and yellow dots) and nationally (blue and orange diamonds). The dashed vertical line indicates the most recent observation (December 2024). Country labels are omitted for readability.

Source: Eurostat, own calculations.

### I.3. ASSESSING THE DRIVERS OF SERVICES INFLATION

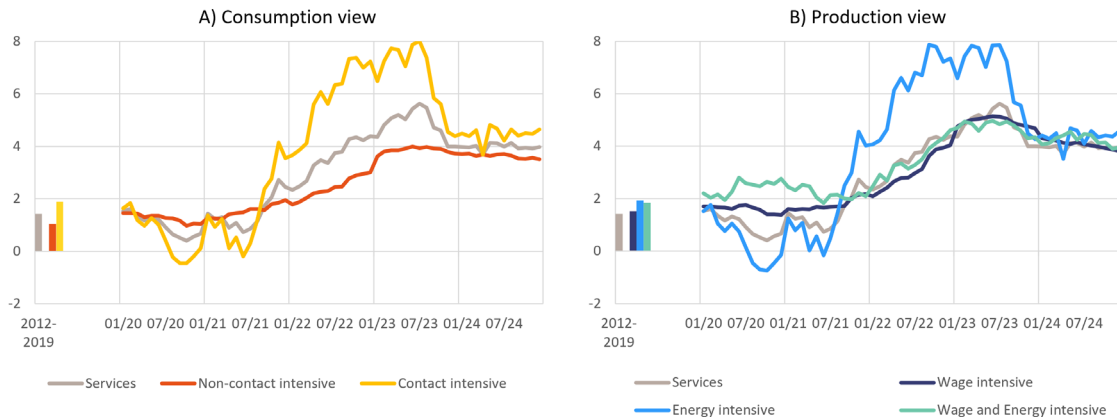
One way to look at services inflation in relation to its underlying drivers is to group individual services according to how they are consumed or produced. A first split (by consumption characteristics) groups services into contact-intensive services, which were subject to consumption restrictions during the pandemic but also to strong reopening effects; and non-contact-intensive services. Graph I.4 (Panel A) shows that the slowdown in services inflation was mainly due to an adjustment in contact-intensive sectors after the summer of 2023, with the non-contact-intensive ones playing only a modest role. There was a considerable gap between the two groups, but it should be noted that contact-intensive services inflation was generally higher even before the pandemic.

A second split is based on the cost structure of services. Individual services can be classified as wage-sensitive, energy-sensitive or wage-and-energy-sensitive according to the cost structures of input-output tables.

Following this classification, proposed by Fagandini et al. (2024)<sup>(4)</sup>, wage-sensitive items represent about 30% of the services basket, energy-sensitive items about 40%,<sup>(5)</sup> wage-and-energy-sensitive items about 6% and the remaining items about 25%. Graph I.4 (Panel B) shows that the price movements of wage-sensitive items were clearly smoother than those of energy-sensitive items – mirroring the dynamic characteristics of wages and energy commodity prices respectively. Inflation has been falling for both subgroups. The fact that wage-sensitive services inflation peaked at 5.1% in June 2023 before gradually declining to below 4% by December 2024 suggests that wage pressures on the price of services are easing. Energy-sensitive items oscillated in the 7.0%-7.8% range between summer 2022 and summer 2023 and have hovered at around 4.0-4.5% since the beginning of 2024.

<sup>(4)</sup> Fagandini et al., 'Decomposing HICPX inflation into energy-sensitive and wage-sensitive items', *ECB Economic Bulletin*, Issue 3/2024.

<sup>(5)</sup> Examples of wage-sensitive items include education services, repair and maintenance work, and refuse collection. Examples of energy-intensive services include transport services and package holidays. Postal services are an example of a wage-and-energy-sensitive item. One should also note that there is a strong overlap between contact-intensive and energy-intensive services.

Graph I.4: **Services inflation breakdown by wage-intensity and energy-production intensity, from the consumption and production points of view**

Note: Contact-intensive sectors include transport services (cp073); recreational and cultural services (cp094); package holidays (cp096); restaurants and hotels (cp11); and hairdressing salons and personal grooming establishments (cp1211). The classification as wage-sensitive, energy-sensitive or wage-and-energy-sensitive services follows Fagandini et al. (2024). The last observation for both panels is December 2024.

**Source:** Eurostat, own calculations.

### I.3.1. Wages as the main driving force of services inflation

Wages have a strong footprint in services inflation dynamics, accounting for almost 40% of input costs on average (Fagandini et al., 2024). The dynamics of service prices therefore reflect the pace of wage adjustment processes, which tend to be slow-moving and staggered (Box I.1).

Since the pandemic, wage growth has been strong and much higher than it was before the pandemic, but it is no longer intensifying (Graph I.5). High nominal wage growth can be explained by tight and resilient labour markets and attempts to recuperate past losses in real wages. <sup>(6)</sup> Euro area labour markets remain tight by historical standards despite subdued economic activity. In many sectors (including services), the availability of labour has been a significant constraint on activity (Graph I.6, Panel B). Labour shortages have been easing, but they are persisting and remain substantially higher than at the outset of the pandemic.

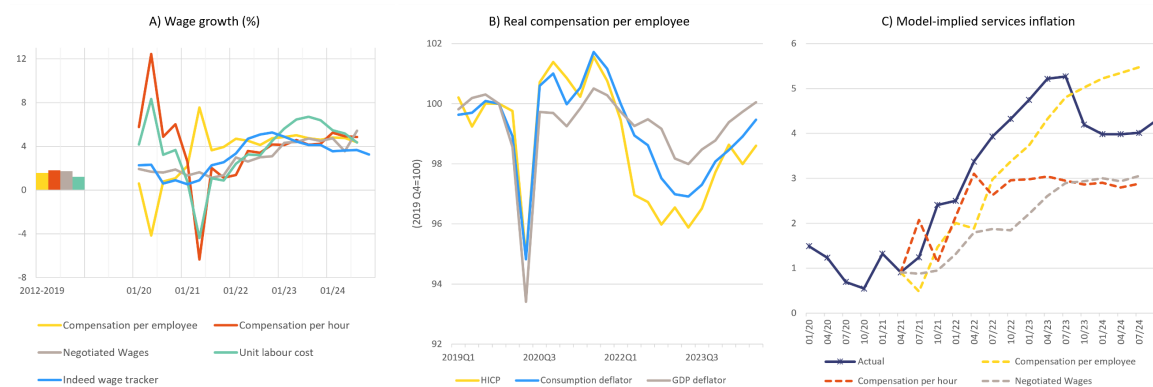
Compensation per employee grew at an annual rate of 5% in the fourth quarter of 2022 before slowing to 4.3% by the third quarter of 2024 (Graph I.5). Negotiated wage growth fell from a peak of 4.7% in the first quarter of 2024 to 3.6% in the second quarter, before rebounding to 5.4% in the third quarter. This volatility, which may be particularly related to one-off bonuses included in collective agreements, could skew the interpretation of wage data in the near term. However, a monthly wage-growth tracker based on online job advertisements (on the 'indeed.com' website), <sup>(7)</sup> which focuses on the wages of newly hired workers, confirms a downward trend despite some marginal rebounds over the summer. Nominal wage growth has nevertheless been outpacing inflation for almost two years, which means that the negative real wage gap that opened up as inflation picked up from late 2021 is narrowing (Graph I.5, Panel B). Going forward, wage pressures are expected to ease <sup>(8)</sup> as real wages recover and tensions on labour markets abate. Expectations of stable inflation in the overall context of disinflation should further ease wage demands.

<sup>(6)</sup> Kiss, Turrini and van Herck, 'The resilience of euro area labour markets to recent economic shocks', *Quarterly Report on the Euro Area*, Vol. 23 (2/3), 2024.

<sup>(7)</sup> Adrjan and Lydon, 'Wage Growth in Europe: Evidence From Job Ads', *Central Bank of Ireland Economic Letter*, No 7, 2022.

<sup>(8)</sup> European Commission, *Autumn 2024 Economic Forecast*, Institutional Paper 296, November 2024.

Graph I.5: Wage developments



**Note:** Employees include self-employed (Panels A and B). In Panel B, compensation per employee is deflated by the HICP index, the consumption deflator and the GDP deflator respectively. In Panel C, model-implied services inflation is obtained from an econometric model in which services inflation is regressed on its lag and on contemporaneous and four quarterly lags of annual (economy-wide) wage growth and quarterly oil price changes. The sample used for the estimation starts in 2001 and ends in 2019. Services inflation is then forecast as from 2021 Q3 based on the estimated equation.

**Source:** Eurostat, ECB, indeed.com, own calculations.

Services inflation has been high relative to its pre-pandemic dynamics, but it is not necessarily excessive in the light of the high pressure on wages. To provide a yardstick for assessing the order of magnitude observed, Graph I.5 (Panel C) shows simple estimates of services inflation based on different measures of wage growth (i.e. annual changes in compensation per employee, compensation per hour, and negotiated wages).<sup>(9)</sup> In order to limit the distortion to wage indicators during the pandemic and lockdowns,<sup>(10)</sup> the relationship is estimated on a pre-pandemic sample. Estimates of services inflation that depend on actual wage growth and energy prices are then calculated as of 2021 Q3.

Overall, current services inflation falls within the range of the estimates produced by the wage-indicator models and its level therefore appears broadly justified. Based on one of the three wage indicators (compensation per employee), services inflation should have exceeded actual out-turns (about 5%) in the first half of 2024. Based on the other two, inflation should have been somewhat lower than the out-turns (slightly above 3%).

Graph I.5 (Panel C) also suggests that the increase in service prices has been faster (and possibly larger) than had been predicted on the basis of past relationships. One possible explanation for this fast pass-through is that changes in service firms' price-setting behaviour cause non-linear patterns in the wage-price pass-through. To the extent that bargaining and wage-setting policies depend on the prevailing inflation regime, any significant increases in labour (and energy) costs will lead to more frequent price adjustments in a high-inflation environment. If many firms simultaneously adjust their prices, higher services inflation will result. Another reason for a strong pass-through relates to asymmetric pricing behaviour: during an upward cost shock, firms have a greater incentive to adjust prices to a profit-maximising level than during a downward cost shock. This non-linear element of the pass-through is consistent with recent international evidence from microdata.<sup>(11)</sup> This suggests that the pass-through from wage costs may have been faster in the last couple of years than in the pre-pandemic period (when wage growth was lower).

Wage growth thus appears to be the dominant driver of services inflation, but other factors could also help explain its level and duration. Two candidate drivers relate to the sector-specificity of the COVID-19

<sup>(9)</sup> Note that these are economy-wide labour cost data and are not services-specific.

<sup>(10)</sup> The measurement of wages and labour cost may be distorted by one-offs and the role of public support (job retention) schemes. Excluding the initial COVID period from the analysis partially circumvents this issue.

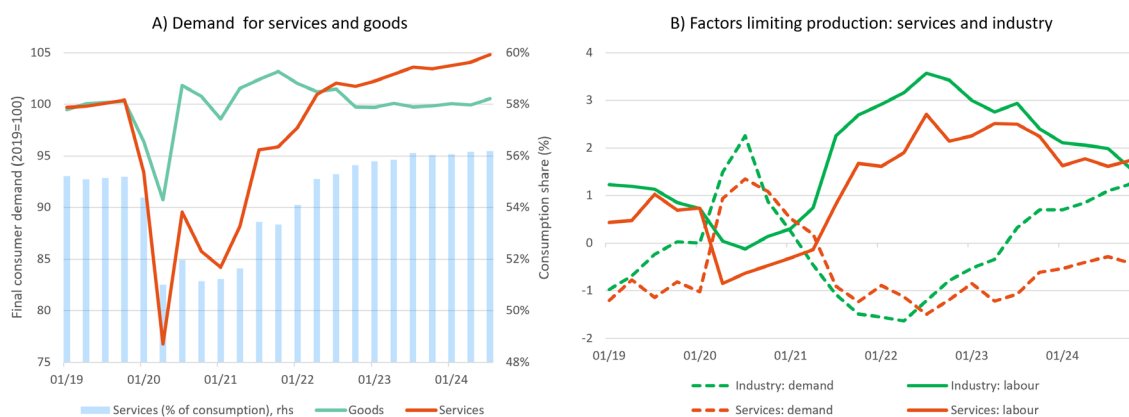
<sup>(11)</sup> See, for instance: Gautier et al., [Why prices transmit large-scale shocks more quickly](#), Banque de France, 2023; Bunn et al., [Price-setting in a high-inflation environment](#), VoxEU, 2023; Gödl and Gödl-Hanisch, [Wage Setting in Times of High and Low Inflation](#), unpublished, 2024. Gödl and Gödl-Hanisch also provide evidence that, while wage adjustments are more frequent in a high-inflation environment, the duration of wage agreements is shorter.

shock and one relates to the inherently slow updating of prices in Pandemic-related some service categories.

### I.3.2. Disruptions of consumption patterns

A first additional factor that has been driving services inflation in recent years is the strong demand for services in a context of a post-pandemic consumption restructuring that is still ongoing. The pandemic was an asymmetric sectoral shock that caused big swings in consumption patterns. Contact-intensive sectors were particularly hard hit by COVID-19 and the lockdowns imposed to contain its spread<sup>(12)</sup>. The initial lockdowns caused a contraction in consumer demand for both goods and services in the first two quarters of 2020. The fall in demand for goods was small and short-lived compared with that for services, and service consumption remained below 2019 levels until mid-2022 (Graph I.6, Panel A). Since the post-COVID-19 reopening, goods consumption has been stable while the demand for services has continued to grow, eventually returning to its pre-pandemic share of final demand. This points to some catching-up on service consumption that was not possible during the pandemic ('revenge spending'). This catching-up was accompanied by high labour shortages, which helped drive up the price of services (Graph I.6, Panel B). Labour shortages have abated since 2022 but remain well above their historical average, possibly reflecting structural changes in post-pandemic labour supply.

Graph I.6: **Consumer demand and factors limiting the production of services and goods**



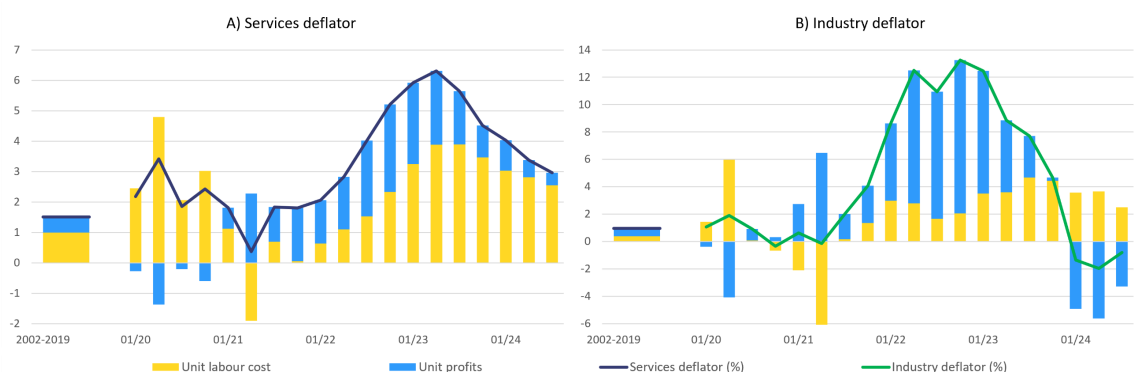
Note: Panel B shows the standard scores (z-scores) of the series. Zero thus corresponds to the long-term average and the units are standard deviations.

Source: Eurostat, European Commission (BCS), own calculations.

The effects of sectoral consumption dynamics are also reflected in the value-added deflators for services and for industry (goods manufacturing), particularly as regards the profile of unit profits (Graph I.7). In line with the demand profiles, growth in the industry deflator peaked in the final quarter of 2022 before falling into negative territory in 2024. The services deflator peaked later, in Q2 2023. Services deflator growth has steadily declined as both unit labour costs and unit profits contracted. The contribution of unit profits is strikingly different between the two sectors for the last available quarters: in the manufacturing sector, unit profits first cushioned and then offset rising labour costs, whereas in the services sector they still contribute to price pressures on services. Although unit profits have been declining, they could play a buffer role for wages going forward.

<sup>(12)</sup> Buelens, C., [Lockdown Policy Choices, Outcomes and the Value of Preparation Time A stylised model](#), Discussion Paper No 143, European Commission, Directorate-General Economic and Financial Affairs (DG ECFIN), 2021.

Graph I.7: **Services and industry deflators**



**Note:** Unit labour costs and unit profits are adjusted for self-employment. Services (Panel A) include wholesale and retail trade; transport, accommodation and food service activities; information and communication (NACE sectors G-I); financial and insurance activities (J); real estate activities (L); professional, scientific and technical activities; administrative and support service activities (M-N); public administration, defence, education, human health and social work activities (O-Q); and arts, entertainment and recreation; other service activities; activities of household and extra-territorial organisations and bodies (R-U). Sectoral deflators are not directly comparable to HICP categories because they also include transactions between businesses. Industry (Panel B) includes NACE sectors B-E (i.e. excluding construction).

**Source:** Eurostat, own calculations.

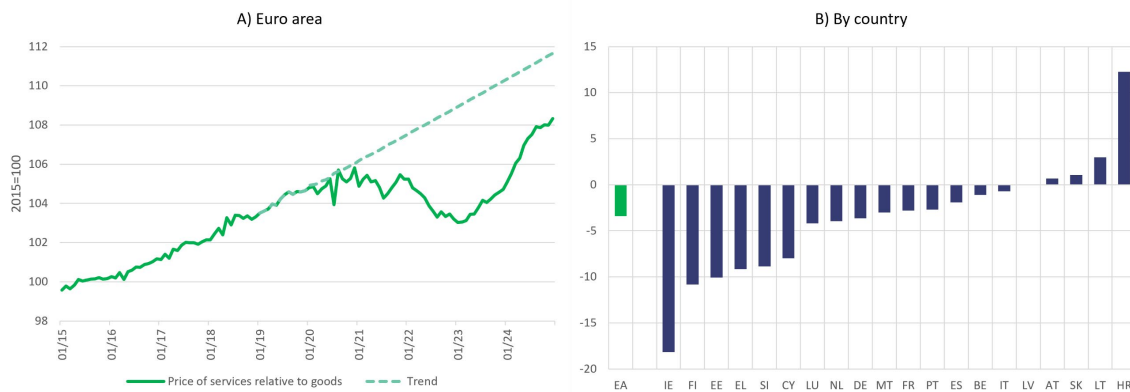
### I.3.3. Demand-shift inflation and potential residual price misalignments

A second factor behind services inflation, which results from changes in consumption patterns as described above, is changes in the relative prices of services that deviate from their pre-pandemic trend. Inflation refers in principle to simultaneous price changes across the consumer basket, but the prices of individual goods and services rarely change at the same rate because they depend on idiosyncratic supply or demand conditions. If prices were perfectly flexible, shifts in demand across sectors would lead to offsetting price changes that have no impact on inflation. This is not the case, however, when prices do not fall because of downward rigidities. Rebalancing demand across sectors can in such cases cause demand-shift inflation.<sup>(13)</sup>

The shifts in demand from services to goods at the start of the pandemic and then back again in a context of post-pandemic normalisation are reflected in the relative price of services. With the onset of the pandemic, the price of services relative to goods started to deviate strongly from the trends observed until then (Graph I.8). The downward deviation from pre-pandemic trends points to potential misalignments in the price of services, which appear undervalued overall relative to the price of goods. The strong dynamics of relative prices of services since mid-2023 indicates a return towards the pre-pandemic trend in relative prices. If this is indeed the case, some further catching-up with the price of services (relative to goods) is to be expected in euro area countries (Graph I.8, Panel B).

<sup>(13)</sup> Bonam, Dennis and Hobijn, Bart, 2024, *Downward Price Rigidities and Inflationary Relative Demand Shocks*, FRB of Chicago Working Paper No 2024-11, 12 April 2024.

Graph I.8: Gaps in relative services prices



Note: Panel A shows the service price index relative to the core goods price index (both are seasonally adjusted) and the pre-pandemic trend of relative prices. Panel B shows the gap between the relative price of services compared with that of core goods and the pre-pandemic trend in December 2024 (three-month rolling average).

Source: Eurostat, own calculations.

### I.3.4. Rentals and latecomers

As shown in Graph I.3, price growth peaked late in many countries or may still be about to peak in some service subcategories. There may therefore be other, more distinct, factors behind the persistent services inflation profile, which may, for example, be linked to institutional features such as regulation, indexation or administered prices, which cause inflation lags.

Since it picked up in mid-2022, inflation in housing services (mainly rents) has been high by historical standards; in 2024 it remained above 3% (Graph I.9, Panel A). In the euro area, the formation of rental prices, which account for 5% of the consumer basket, is typically subject to rent regulation. This tends to slow their adjustment to basic macroeconomic changes and to changes in market conditions, which have been tight recently. In addition, many countries have a high share of social rental housing, for which rents typically differ from the market price as regards both the level and the timing of adjustment. Furthermore, a few countries have implemented caps on rental increases to sever the relationship between rents and inflation dynamics and preserve purchasing power (ECB, 2023).<sup>(14)</sup> Rents are thus adjusted infrequently, generally retrospectively and in some cases based on indexation. The slow-moving nature of rental prices may therefore continue to contribute to sticky services inflation for a while. Rental inflation varies widely across the euro area, however. This means that inflation in the housing services segment may still not have peaked in many countries (Graph I.3). The past tightening of monetary policy may be one factor contributing to higher rents if landlords pass on higher financing costs to tenants.<sup>(15)</sup>

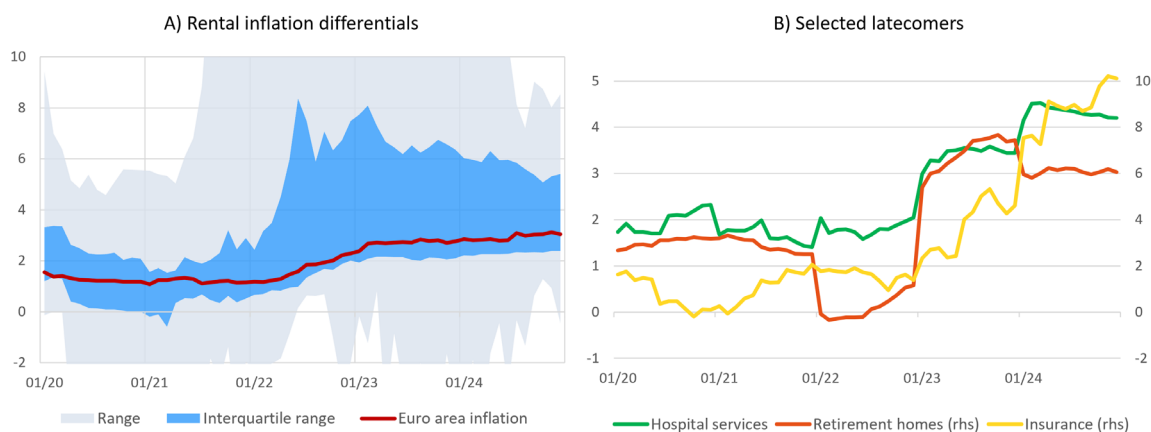
Another example of a 'latecomer'<sup>(16)</sup> are insurance prices (about 2% of the HICP basket), where inflation climbed above 10% by the end of 2024. Meanwhile, hospital services and retirement homes (jointly about 2% of the HICP basket), are examples of categories where administered prices are likely to play a role (Graph I.9, Panel B). Note that, for both examples, structural factors such as increased climate-related risks or demographic change may also play a role.

<sup>(14)</sup> Arioli et al., [Rent inflation in the euro area](#), ECB Economic Bulletin, Issue 7/2023.

<sup>(15)</sup> Banerjee et al., [Housing costs: a final hurdle in the last mile of disinflation?](#), BIS Bulletin No 89, 2024.

<sup>(16)</sup> Panetta, [Monetary policy after a perfect storm: festina lente](#), Speech, 26 June 2024.

Graph I.9: **Services inflation in latecomer categories**



Note: the last observation is for December 2024.

Source: Eurostat, own calculations.

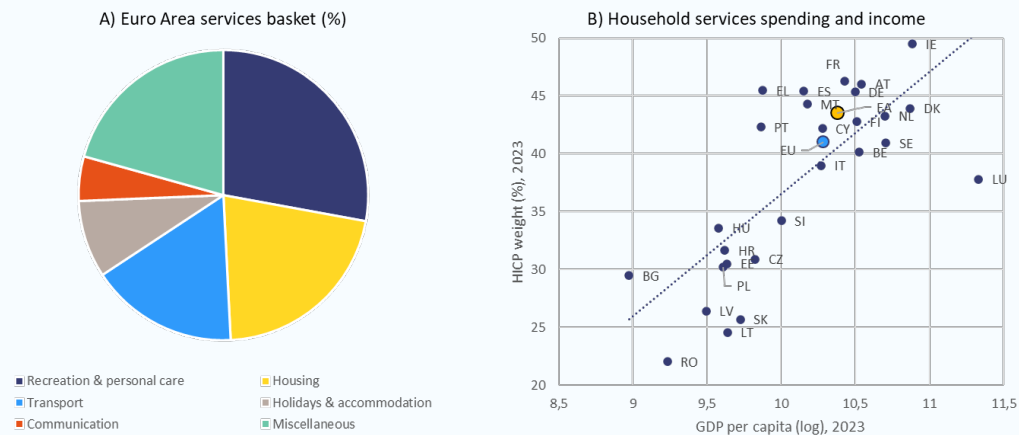
#### I.4. CONCLUSION

Services inflation in the euro area has been persistently high over the past year and has become the main driver of inflation. This chapter has argued that the observed persistence in services inflation is primarily an adjustment to the interplay of two major shocks: shifts in service consumption shares due to the COVID-19 pandemic; and the energy shock, which affected input costs and wages. In many ways, scaled up to the magnitude of the recent shocks that hit the euro area economy, this pattern appears consistent with how services inflation has played out in the past. Strong wage growth has been the main driver of services inflation and broadly justifies its level. The pass-through from wages to the price of services nevertheless appears to have been particularly swift, pointing to more frequent price resets than in low-inflation periods. Three other factors have also played a role. Firstly, demand for services remains strong relative to that for goods, possibly due to an ongoing normalisation of the composition of demand since the end of the pandemic. Secondly, the relative price of services has fallen since the pandemic as a direct result of the rebalancing of demand. A return to the pre-pandemic services-to-goods relative price trend appears to be ongoing. If this is indeed the case, it remains incomplete and may therefore be a source of remaining upward relative price pressure on services in the near term. Thirdly, service sectors where prices are particularly slow-moving (often due to regulation and administered price setting) may still contribute to dragging out the disinflation process. With the projected slowdown in wage growth and weakening of transitory factors pushing up prices, services inflation is expected to gradually decline.



### Box I.1: Services inflation: general characteristics and stylised facts

Services account for about 45% of the euro-area consumer basket. They include a varied set of economic activities which meet different consumption needs and which are provided or produced under very diverse conditions and in different environments. The most important service component in the euro area consumer basket (accounting for about 28%) relates to recreation and personal care, including consumption in restaurants or cafés and takeaway food. This is followed by housing services (primarily rents) (21%) and transport services (17%) (Panel A).



Note: the weights in Panel A are for 2024. In Panel B, Ireland's GDP is replaced with its modified gross national income.

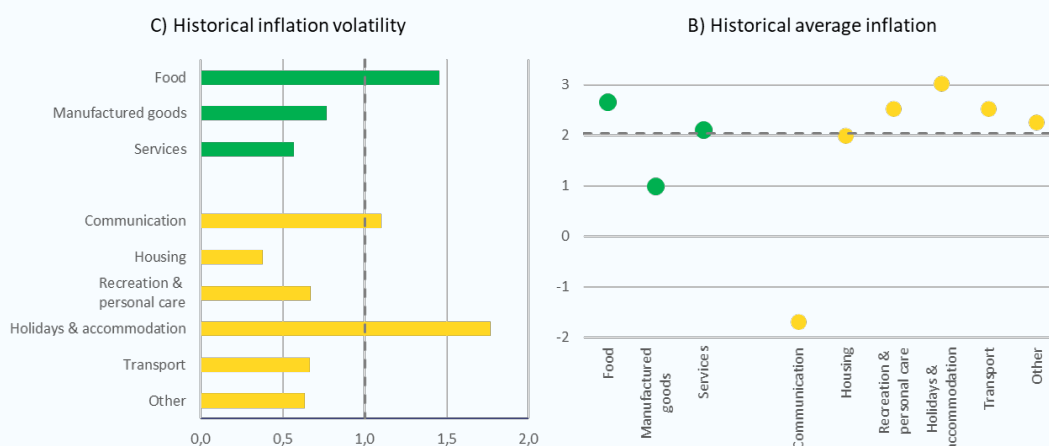
**Sources:** Eurostat and own calculations.

The share of household budgets spent on services varies considerably across the euro area, ranging from about 25% in Lithuania to almost 50% in Ireland. This divergence in spending patterns reflects a high income elasticity of demand for services. Countries with higher per capita income accordingly tend to spend larger proportions of their income on services (see Panel B). This has implications for inflation dynamics because it necessarily leads to variation in the footprint of services on the respective national headline inflation.

Service prices are characterised by slow movement and persistence. This is why they are generally classified under core inflation (together with manufactured goods), while items with volatile inflation (e.g. energy) are excluded from the inflation basket. As shown in Panel C, services inflation has been about half as volatile as headline inflation, making services the least volatile of the main inflation aggregates. However, this masks variation across service categories. Inflation is particularly slow-moving for housing and transport services, but price dynamics for holidays and accommodation services tend to be quite unstable and even more volatile than is the case for food prices.

(Continued on the next page)

Box (continued)



Note: Energy is omitted for readability purposes (relative volatility: 5.3; average: 7.2%). Relative volatility is measured by the inflation variation coefficient for a given category relative to that of headline inflation (dashed line). The dashed lines show the value for headline inflation. The common sample covers the period from 2001 to October 2024.

Sources: Eurostat and own calculations.

Over the past two decades, service prices have on average grown at the same pace as the rest of the consumption basket, despite offsetting price movements among services (Panel D). The price of communication has fallen, but the prices of recreation and transport services have grown faster than headline inflation.

One explanation for the stickiness of service prices lies in their cost structure and the dominant role of wages. Unlike goods, which are subject to stronger competitive pressures from international markets due to their tradable nature, services are predominantly produced domestically. Their intangible nature implies that their production is typically labour-intensive and that production costs are dominated by wages. The share of direct wages in the production cost of services is about 38%, which is almost double that for core goods (22%).<sup>(1)</sup> The dynamics of service prices therefore reflect wage adjustment processes, which tend to be slow-moving and staggered.

This can be illustrated by the correlation between services inflation and lagged wages (compensation per employee) as opposed to lagged oil prices. As shown in Panel E, services inflation is closely correlated with wages. The strength of this correlation diminishes with the distance of the lags but remains significant throughout the period under consideration. This services-wage inflation correlation pattern contrasts with that between services inflation and lagged annual oil price changes. Oil price changes have little immediate effect on the price of services but their effect increases over time. This points primarily to an indirect channel, because higher energy prices affect service production costs (including wages). Repeating this correlation exercise for individual service components shows that wage and energy sensitivities vary across components. For example, the impact of wages on the inflation dynamics of holiday and accommodation services appears to be much weaker than for housing and recreation services.

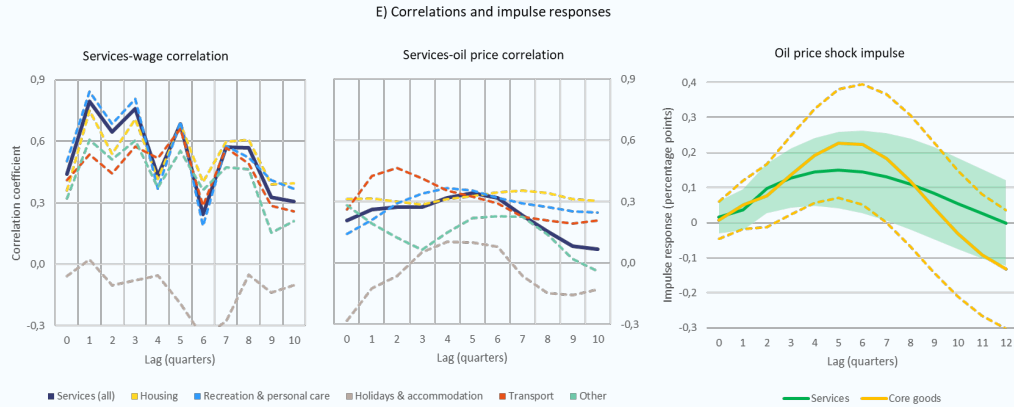
Differences in the persistence of services and core goods inflation are illustrated in the third chart of Panel E, which shows, using a basic econometric model, how inflation rates react to a sudden spike in oil prices. Overall, it shows a more drawn-out response for services, where prices take about

<sup>(1)</sup> Fagandini et al, 2024, 'Decomposing HICPX inflation into energy-sensitive and wage-sensitive items', *ECB Economic Bulletin*, Issue 3/2024.

(Continued on the next page)

Box (continued)

three years to return to pre-inflation levels – compared with a little more than two years for core goods.



Note: The first two charts show (i) the correlation between services inflation, and immediate or lagged growth in wages (compensation per employee); and (ii) the correlation between services inflation and crude oil prices between Q1 2001 and Q1 2020. Communication services are omitted. The third chart shows the response of services and core goods inflation to a shock in oil prices growth, using a standard vector autoregression model based on inflation for the main aggregates, oil price growth, wage growth and the unemployment rate. The bands show the 95% confidence interval.

**Sources:** Eurostat and own calculations.



## II. THE DISTRIBUTIONAL IMPACT OF HIGH INFLATION AND THE RELATED POLICY RESPONSE

By Boris Chafwehe, Mattia Ricci, Matteo Salto and Daniel Stoehlker

**Abstract:** *The recent surge in inflation has had a profound impact on household finances across the euro area, but its effects have been far from uniform across population groups. Monetary and fiscal policy responses to this shock have also had uneven effects on households. This chapter studies the impact of the recent unexpected surge in inflation on euro area households, considering both its direct effects and the policy responses. Detailed micro-level data on household consumption, income and wealth have made it possible to capture the three main direct channels through which inflation affects households: the devaluation of nominal assets and liabilities, the devaluation of nominal incomes, and the relative consumption channel. The results of the simulation suggest that the devaluation of nominal wealth has disproportionately affected pension-age households, while the impact on working-age households has been more regressive due to differences in nominal asset balances and income growth. Fiscal policy measures have not always been well targeted but have cushioned some of the losses for households. There have nevertheless been significant losses, especially for low-income and pension-age households. Interest rate changes, on the other hand, have increased the burden of servicing loans for indebted households, while mitigating the losses of older households which tend to have considerable interest-bearing assets. The analysis highlights the importance of considering the uneven effects of inflation when designing policy responses to mitigate its impact on household finances. <sup>(17)</sup>*

### II.1. INTRODUCTION

Between 2021 and 2023, the aftermath of the COVID-19 pandemic and the geopolitical tensions caused by Russia's war of aggression against Ukraine significantly influenced inflation trends both in the euro area and globally. The economic policy responses to these events, while different among them, have collectively increased inflationary pressures. The economic downturn triggered by the 2020 lockdowns and persistent supply chain disruptions gave way to an upturn following robust fiscal and monetary policy interventions. This combination of heightened demand and limited supply fuelled inflationary momentum from early 2021 onward. By October 2021, inflation had soared to 4.1%, a level not seen since the peak of 2008, and this in turn triggered an increase in commodity prices. The situation was exacerbated by Russia's strategic manipulation of natural gas supplies from the second half of 2021 onward, which intensified the surge in energy prices. The resulting spike in energy costs directly impacted consumer prices and indirectly added to the cost of a wide range of goods and services. Euro area headline inflation therefore reached a staggering 10.6% in October 2022 (as shown in Graph II.1). Following this peak, inflationary pressures became more widespread across different consumption categories. By the last quarter of 2023, however, inflation under the Harmonised Index of Consumer Prices (HICP) had receded to below 3%, driven by a reduction in energy costs and an improvement in the terms of trade.

This prolonged period of high inflation prompted discussions about its impact on EU households' financial well-being and purchasing power. The debate largely revolved around the observation that inflation had disproportionately affected goods that account for a significant proportion of low-income households' consumption baskets. Some studies assessed the potential repercussions on poverty levels and living standards in the euro area. <sup>(18)</sup> The main takeaway from these discussions is that, focusing solely on

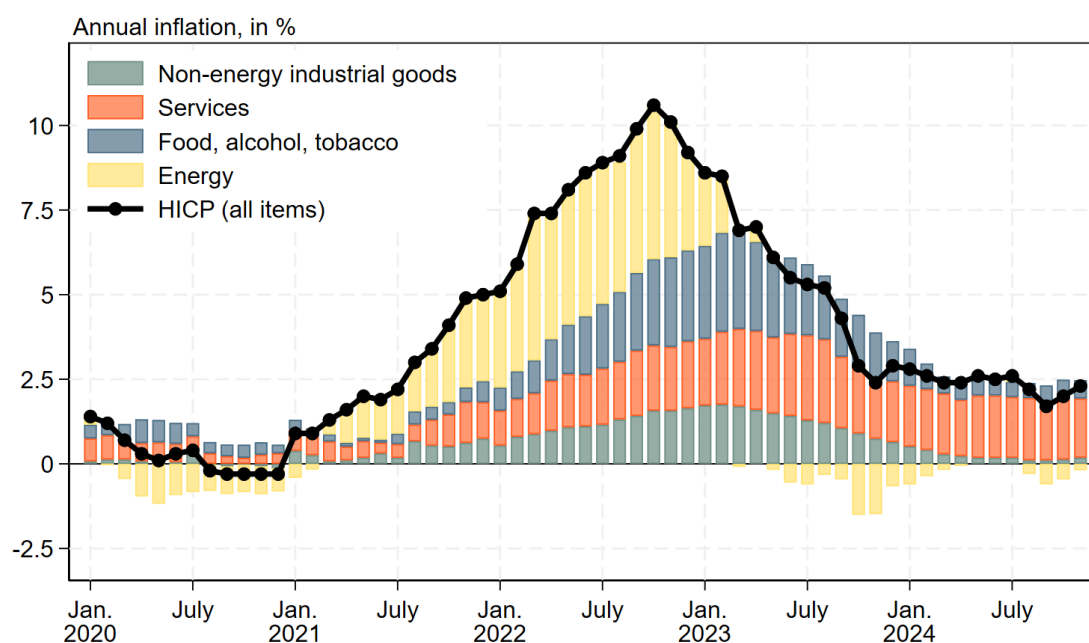
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<sup>(17)</sup> We would like to thank Salvador Barrios, Leonor Coutinho, and Eric Ruscher for their useful comments and discussions. All views and any errors expressed in this chapter are ours and should not be attributed to the European Commission. This chapter is based on an updated version of Chafwehé, B., Ricci, M., and D. Stöhlker, "The Impact of the Cost-of-Living Crisis on European Households." European Commission, JRC136870 (2024).

<sup>(18)</sup> For example, see Menyhért, B., *The effect of rising energy and consumer prices on household finances, poverty and social exclusion in the EU*, JRC EUR31257, 2022 and its shorter version *Inflation and its diverse social consequences across the euro area*, Quarterly Report on the Euro Area (QREA), Vol. 22(1), 2023, pp. 7-16. The study provides an empirical analysis using EU household survey data to preliminarily assess the social impact of rising energy and consumer prices in the EU. It examines detailed price data and household expenditure patterns to measure cost-of-living increases and purchasing power reductions across various EU household types and income groups. In addition, the study makes a first attempt at estimating the impact of price hikes on material and social deprivation and absolute poverty levels. Findings indicate that, starting in early 2021, inflation

consumption expenditure and excluding any government support measures, the adverse effects of inflation are most keenly felt by economically vulnerable groups and that the situation was especially difficult in less affluent Member States. This highlights the need for targeted and effective support measures to mitigate the risk of exacerbating economic disparities. Euro area governments did in fact implement fiscal policies aimed at shielding households, especially those most at risk, from inflationary pressures. The cost of these fiscal interventions is estimated at approximately 2% of GDP in both 2022 and 2023. <sup>(19)</sup>

Graph II.1: Euro area inflation and contributions by main product group between 2020 and 2023



Note: Annual inflation is the change in the prices of consumer goods and services between the current month and the same month of the previous year.

Source: Eurostat and authors' own calculations.

This debate sheds light on a crucial aspect of the socio-economic impact of persistent inflation on inequality, but it does not provide a complete and nuanced comparison of these effects across different households. In particular, an unexpected bout of inflation also alters the real value of households' nominal financial assets and liabilities. Assets include accumulated pension savings and various debt securities, which collectively accounted for over 100% of households' disposable income in 2022. Liabilities include, in particular mortgages, which in 2022 cumulatively exceeded 90% of disposable income. Likewise, the real value of the purchasing power of nominal incomes shrinks due to inflation. These changes in the real value of households' income and nominal wealth, which have significant implications for their overall financial health and economic resilience, must be factored into any thorough analysis of the impact of inflation. <sup>(20)</sup> The following section will explain that the value of real assets such as equity or housing, though part of the analysis of household wealth, is not affected by fluctuations in

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may have led to a 2% average rise in material and social deprivation, and a potential 5% increase in absolute poverty across the EU. The negative social consequences of inflation are notably higher in Central and Eastern European countries – particularly affecting disadvantaged and vulnerable groups, and potentially exacerbating poverty and social exclusion divides between EU-15 and non-EU-15 Member States.

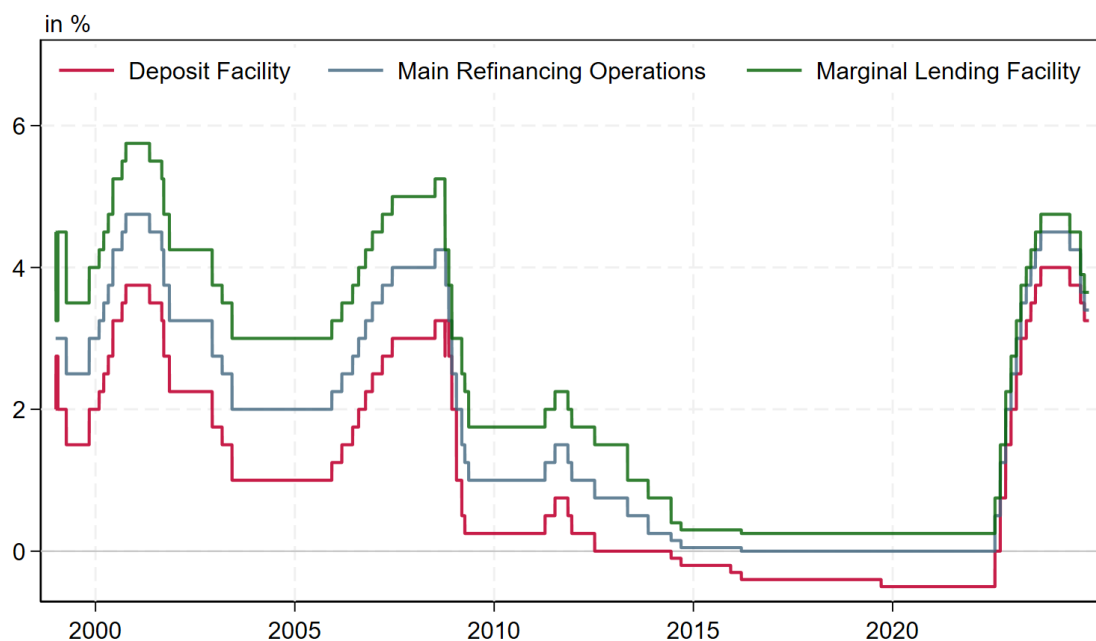
<sup>(19)</sup> See European Commission (2023), "Report on Public Finances in EMU, 2022", Institutional Paper 256; European Commission (2023), "The 2023 Stability & Convergence Programmes, Institutional Paper 253"; and European Commission (2024), "Report on Public Finances in EMU, 2023" Institutional Paper 295. See also Bańkowski, K. et al., "Fiscal policy and high inflation," ECB Economic Bulletin, Vol. 2, (2023).

<sup>(20)</sup> This information is taken from Eurostat's yearly sectoral financial accounts and non-financial accounts.

inflation and interest rates in our simulation owing to the specific assumptions applied in our analytical approach.

The response of the European Central Bank (ECB) to the inflation surge involved a series of interest rate hikes, which in turn influenced both interest income and interest expenditures. The ECB's interest rate tightening cycle started in July 2022 and continued until June 2024, when policy rates were reduced for the first time since the onset of the pandemic. Policy rates had peaked at 4% (i.e. the deposit facility rate) in September 2023 after a cumulative increase of 450 basis points during 2022 and 2023 (see Graph II.2). This monetary policy adjustment had far-reaching consequences for the economic landscape, affecting savers, borrowers and investors across the euro area.

Graph II.2: **European Central Bank (ECB) policy rates**



Source: European Central Bank.

For a thorough understanding of the impact of high inflation on euro area households, particularly between 2021 and 2023, several key factors must be considered. A comprehensive analysis must look at how households are affected by inflation depending on their consumption basket, as well as the effect of inflation on the real value of nominal household assets and liabilities. <sup>(21)</sup> It must also take account of the nominal income channel, which examines the erosion of nominal incomes due to inflation. In addition, the analysis should consider the mitigating influence of fiscal policy measures implemented across the euro area and the repercussions of the ECB's interest rate hikes. This multifaceted analysis requires a granular, micro-level approach that combines detailed data on individual households' consumption patterns, income and net financial position in order to paint an accurate picture of the overall situation (as we do in this chapter).

Section II.2 outlines the analytical framework used for this analysis, highlighting the different channels through which inflation affects households. Section II.3 sets out the data sources and describes the demographic features of the population being studied. Section II.4 presents the findings of the analysis, highlighting the significance of households' balance sheets in this context. Section II.5 provides a summary and draws conclusions from the study.

<sup>(21)</sup> Our analysis centres on households' net nominal financial position, under the assumption that real assets, such as real estate, generally appreciate in value in line with inflation. This assumption allows us to concentrate on the nominal components of wealth, which are more directly affected by fluctuations in inflation rates.

## II.2. THE CHANNELS THROUGH WHICH INFLATION IMPACTS HOUSEHOLDS

To simulate the impact of inflation on household wealth, the starting point is the household's 'intertemporal budget constraint', according to which total consumption (present and future) must equal total wealth, including future income streams and the net value of all assets and liabilities (see Box II.1 for details on the analytical framework).<sup>(22)</sup> Wealth at any given time is calculated as the aggregate of lifetime income minus lifetime consumption, plus wealth rolled over from the preceding period. Assuming that both the inflation shock and the policy response are unforeseen and transitory (confined to the duration of the simulation), the future relative prices of assets remain unaltered by the shock.<sup>(23)</sup> The immediate impact of the shock can therefore be approximated, at first order, using its effect on current economic variables.

In particular, based on the framework established by Chafwehé et al. (2024),<sup>(24)</sup> it can be demonstrated that inflation affects households' wealth through three direct channels:

1. The relative consumption channel considers how the general inflation rate compares with the inflation experienced by a specific household based on its own consumption basket. This channel is particularly relevant in relation to the cost-of-living crisis, because it highlights the disadvantage faced by low-income households, which tend to spend a larger proportion of their budget on essential items like food and energy that have seen particularly high price rises.
2. The income channel looks at real income growth in the light of nominal income increases and the devaluation of nominal incomes due to inflation. Not surprisingly, households with smaller nominal income increases are the ones most affected by rising prices.
3. The third channel considers the impact of inflation on the real value of net nominal financial positions. Households with significant nominal assets (e.g. bonds and savings accounts) face erosion of their assets' purchasing power. By contrast, households with substantial nominal debts (e.g. credit card debt and mortgages) benefit because their liabilities diminish in real terms.

The analysis also examines two indirect channels in the form of major policy responses to inflation from the fiscal and monetary perspectives:

1. Fiscal policy plays a crucial role when it comes to mitigating the impact of inflation through various measures (e.g. direct support to household incomes). This was particularly evident during the period of high inflation in the euro area. Policy measures were aimed at bolstering the financial resilience of households (particularly those in lower income brackets) with enhanced social benefits, targeted tax reliefs and one-off financial-assistance programmes. In addition, governments implemented various measures directly aimed at containing price increases. Examples of such measures in 2021-2023 included adjustments in consumption taxation, subsidies and caps on energy prices. Such measures directly affect the prices of goods and services, thereby providing relief to households facing increased cost-of-living pressures. Together, these fiscal strategies form a two-pronged approach that is intended not only to support household income in the face of inflationary pressures but also to control the inflation rate itself through price-side interventions.<sup>(25)</sup>
2. The examination extends to the domain of monetary policy (i.e. the ECB's strategy of modulating interest rates). When the ECB adjusts rates upwards, this affects the income that households earn from savings, the cost of their debts and the current price of their assets.

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<sup>(22)</sup> This holds under various assumptions, the main one being that markets are complete. See, among others, Auclert, A., "Monetary policy and the redistribution channel," *American Economic Review*, Vol. 109, pp. 2333-67, 2019 and Cardoso, M. et al., "The heterogeneous impact of inflation on households' balance sheets," mimeo, 2022.

<sup>(23)</sup> Under the assumptions of perfect foresight and of complete markets, the prices of nominal assets increase proportionally to compensate for the increase in the prices of goods, while the prices of real assets remains unchanged because, by definition, the expected income from those assets in real terms also remains unchanged by definition.

<sup>(24)</sup> Op. cit.

<sup>(25)</sup> On the extent of fiscal support during the inflationary episode, see among others, Amores, A.F. et al., "Inflation, Fiscal Policy, and Inequality: The Impact of the Post-Pandemic Price Surge and Fiscal Measures on European Households", *Review of Income and Wealth*, forthcoming.



Specifically, the URE concept is used to assess the effect of interest rate fluctuations on household balance sheets. URE measures the exposure of a household to changes in interest rates based on the difference between its maturing assets and liabilities. In particular, URE is defined as the sum of a household's net income and currently maturing assets, minus current consumption and currently maturing liabilities. This represents the net financing needs of a household at the current level of interest rates. <sup>(26)</sup> For instance, if a household has a mortgage with a variable interest rate and a savings account that adjusts to market rates, an ECB rate hike will result in higher mortgage repayments but also increased interest due on savings. URE effectively measures the overall impact of such interest rate fluctuations on a household's finances. <sup>(27)</sup> It should be noted that, under these assumptions, housing and equities do not affect URE calculations (see also the discussion on data in the next section).

The simulations in the present chapter are made under three critical assumptions. First, the change in inflation is assumed to be unexpected. The chapter therefore concentrates on the initial ('first-round') shock, disregarding any pre-emptive measures that households might have taken. The relevant assumption here is that this inflationary burst is an isolated incident that catches households off guard and leaves future inflation expectations unaltered, thereby suggesting that the price hike is transient and without lasting effects. The present analysis is therefore based on the notion that households were unable, due to the unforeseen nature of the inflation spike, to modify their portfolio of assets or consumption habits in anticipation of or response to rising prices. Second, the policy reaction lasts only for the duration of the inflation shock. <sup>(28)</sup> Third, the general equilibrium effects of any policy measures to reduce inflation, income and employment, which typically favour low-income households, are not considered. <sup>(29)</sup>

In short, the present analysis aims to provide an initial, data-based estimation of the impact on wealth of the major inflation seen in the euro area between 2021 and 2023. It should be stressed again that we have used a very broad notion of wealth that comprises all assets and savings, and that we have taken account of all channels and the related policy responses when assessing the distributional impact of high inflation on wealth.

### II.3. THE DATA

To carry out the simulations and quantify the impact of inflation, fiscal policy and monetary policy using appropriate microdata, it is necessary to combine household-level information from a variety of sources. This mainly includes data from the ECB's Household Finance and Consumption Survey (HFCS), Eurostat's Household Budget Survey (HBS) and EUROMOD, a microsimulation model that analyses tax-benefit systems across the EU.

The euro area aggregate is based on a set of six members: Belgium, Estonia, France, Germany, Italy and Spain. These countries were selected to capture their respective experience of the high-inflation crisis, reflecting differences in geography, economic conditions and inflation dynamics while covering almost

<sup>(26)</sup> Auclert (2019, op. cit.) demonstrates that (under the assumption of complete markets, which includes the availability of a comprehensive set of Arrow-Debreu zero-coupon bonds; and considering a one-off unexpected interest rate shock coupled with full rationality in asset pricing) the URE position of a household during a specific period adequately measures the adjustment in the flow of resources available for saving or the additional borrowing that households require due to the one-off shift in interest rates. The anticipated variations in the future pricing of different asset types can therefore be disregarded, which simplifies the calculation of changes in wealth resulting from interest rate fluctuations. Under these assumptions, the change in wealth due to an interest rate shift can be directly calculated using the URE, with the formula  $da/dr = URE$ .

<sup>(27)</sup> The analysis accounts for the asymmetrical pass-through effect of rising interest rates on different financial instruments. The impact is substantially greater for debt products (e.g. mortgages and loans) than for savings accounts, where it has been relatively muted. This discrepancy reflects the typical lag in interest rate adjustments for savings relative to the more immediate revisions applied to borrowing rates by financial institutions. The incorporation of this differential pass-through effect in the analysis ensures that the assessment of the inflation shock captures the actual (and often disproportionate) financial pressures faced by households with varying debt and savings profiles.

<sup>(28)</sup> Inflation has dropped back near to the ECB's target of 2% since October 2024. However, the deposit facility rate remains high at 3.25%, which is significantly above the -0.50% recorded at the beginning of 2022.

<sup>(29)</sup> For example, high inflation erodes the real wages of workers, which can in turn lead to decreased consumer spending and potentially higher unemployment (with the unemployment risk being skewed towards households in lower income brackets). By stabilising prices, central banks indirectly support stable employment. On the link between monetary policy and inequality, see (for example) Dossche, M., Slačálek, J. and G. Wolswijk, 'Monetary policy and inequality', ECB Economic Bulletin, Vol. 2, 2021.

80% of euro area income. The selected countries are spread across southern, western and eastern Europe, allowing us to examine the impact of the crisis on households in different regional contexts. Furthermore, the extent of inflation varied significantly between these countries: cumulative inflation over 2021-23 was particularly high in Estonia but was more contained in France. This variation enables us to assess how households in countries with a different experience of inflation are affected by the crisis, providing a more comprehensive understanding of the heterogeneous impact of inflation in the euro area as a whole.

This chapter focuses on the first phase of high inflation in the euro area (i.e. from January 2021 to December 2023), as set out in detail in Section II.1. The analytical approach used here is to assess the impact of an unanticipated inflation spike on household wealth. Surprise inflation is defined as the discrepancy between actual cumulative inflation over the three-year period under examination and expected cumulative inflation. The latter is derived from the forecasts of the Survey of Professional Forecasters (SPF) of January 2021. Comparing the forecasts with the actual inflation rates, one finds a cumulative forecast inflation rate in the euro area of 3.8% in 2021-2023 – considerably below the actual figure of 17.8%. It is this difference of approximately 14% for the euro area as a whole that has been used in the simulations.

To measure the relative consumption channel, which captures varying impacts of inflation due to differences in household consumption patterns, effective inflation rates are calculated for households (broken down by age and income). This is done using data on specific household consumption baskets extracted from the HBS. The HBS provides granular data on consumption expenditure across major COICOP (classification of individual consumption according to purpose) product group categories. In addition, the data allow households to be grouped into income deciles and age brackets so that inflation rates can be determined for each household group. For example, low-income households tend to spend more of their income on energy and food, which were particularly affected by the recent surge in inflation. People with above-average individual inflation rates therefore had to devote more resources to maintaining their consumption patterns than individuals whose individual inflation rates were below average.

The estimation of nominal income growth draws on data from EU Statistics on Income and Living Conditions (EU-SILC) <sup>(30)</sup> and makes use of EUROMOD, the tax-benefit microsimulation model developed by the European Commission's Joint Research Centre. <sup>(31)</sup> The aims of the analysis are to (i) gauge the impact of inflation on the real purchasing power of nominal incomes (focusing particularly on income components that are not fully indexed to inflation); and (ii) to look at how diminished purchasing power affects households' ability to afford goods and services. The effects of inflation on nominal income growth are based on adjustments to the 2021 EU-SILC data, which projected nominal incomes at household level for 2022 and 2023. In this process, the use of EUROMOD allowed the necessary calculations to be made to estimate the extent to which different sources of household income keep pace with inflation for various groups. <sup>(32)</sup> The inflation-induced erosion of purchasing power could therefore be assessed for diverse income sources.

The impact of inflation on the real value of nominal assets and liabilities was simulated on the basis of household balance-sheet data from the Household Finance and Consumption Survey (HFCS). Once the net nominal asset position of each household (defined as the difference between the value of their nominal assets and their outstanding liabilities) has been calculated, the figures can be adjusted to take account of the unexpected portion of the economy-wide inflation rate. This adjustment reflects the change in the real value of households' financial position due to unexpected inflationary developments.

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<sup>(30)</sup> EU-SILC is a cross-sectional and longitudinal sample survey that is coordinated by Eurostat and based on data from EU Member States. EU-SILC provides data on income, poverty, social exclusion and living conditions in the EU. EU-SILC stands for 'European Union Statistics on Income and Living Conditions'. More information and additional resources can be found at: <https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions/>.

<sup>(31)</sup> EUROMOD is an EU tax-benefit microsimulation model used by researchers and policy analysts to calculate, in a comparable manner, the effects of taxes and benefits on household incomes and work incentives for the population of each country and of the EU as a whole. More information can be found at: <https://euromod-web.jrc.ec.europa.eu/>.

<sup>(32)</sup> This is done using 'uprating factors' that are based on Eurostat data on income growth by sector and source. For more details on this procedure, see Amores, A.F. et al. (2024), op. cit.

The analysis also considers the indirect effects of fiscal and monetary policy responses to the inflation spike. In terms of fiscal policy, we focus on government measures designed to alleviate the immediate impact of the cost-of-living crisis on households. As already mentioned, these include both ‘price-side’ interventions to reduce consumer prices and ‘income-side’ measures to strengthen household incomes through fiscal transfers. The impact of price-side interventions is gauged by assessing the implicit effects of consumption-tax changes on inflation. This is calculated by comparing the standard Harmonised Index of Consumer Prices (HICP) with the HICP at constant tax rates (HICP-CT); this adjusts for changes in consumption taxes reported by Eurostat. <sup>(33)</sup> On the income side, the analysis takes account of fiscal measures such as social benefits and income support schemes that help households cope with rising living costs. These effects are assessed using microsimulation methods that examine how these policies cushion households in different income deciles and age groups. <sup>(34)</sup><sup>(35)</sup>

The exposure of different households to the ECB’s monetary policy decisions (in the form of interest-rate changes and their distributive consequences) is assessed on the basis of unhedged interest exposure (URE), as explained in the previous section. Once each household’s URE has been calculated based on HFCS data, <sup>(36)</sup> the impact of interest rate changes on household balance sheets is simulated by applying the household-specific URE to the 450 basis-point (bps) shift in the ECB policy rate over the three-year period under review.

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<sup>(33)</sup> One limitation of using the constant-tax inflation measure is that it does not include price-side measures which are not tax-related, such as price caps and compensation for higher energy prices. This means that the price-side fiscal effects that we report in this chapter are effectively a lower bound on the actual effects of the price-side fiscal response to inflation.

<sup>(34)</sup> For this analysis we used the standard EUROMOD model, together with its ‘Indirect Tax Tool’ extension, to simulate consumption taxes.

<sup>(35)</sup> Data on these fiscal measures are sourced directly from Amores, A.F et al. (2024) op. cit. For more details, see their paper.

<sup>(36)</sup> This methodology closely mirrors the analytical framework set out in Tzamourani, P., ‘The interest rate exposure of euro area households’, *European Economic Review*, Vol. 132(C), 2021.

**Box II.1: Analytical framework for assessing the impact of unexpected inflation on household wealth**

The chapter models household wealth and its dynamics using the perfect foresight framework of Auclert (2019), to which heterogeneity in individual consumption baskets, (partial) indexation of nominal incomes, and taxation are added. The impact of inflation on household wealth can then be assessed via a revaluation of nominal assets and liabilities, and at any accumulation of wealth during the period of the shock through the nominal income and consumption channels. Similarly the impact of the policy response on household wealth is assessed using interest rate exposure (i.e. the amount of wealth subject to re-financing) and net gains from temporary fiscal measures implemented in response to the cost-of-living crisis.

The starting point is the household's budget constraint. Households consume a basket of  $K$  different goods. Consumption of good  $k$  by household  $j$  in period  $t$  is denoted as  $c_{j,k,t}$ , and the price of good  $k$  in that period is denoted as  $p_{k,t}$ . The household budget constraint can be written as:

$$\sum_k P_{k,t} c_{j,k,t} = P_t y_{j,t} - P_t \tau(y_{j,t}; \{c_{j,k,t}\}_k) + B_{j,t}^{(t)} + \sum_{s \geq 1} Q_t^{(t+s)} (B_{j,t-1}^{(t+s)} - B_{j,t}^{(t+s)}) + P_t b_{j,t-1}^{(t)} + \sum_{s \geq 1} q_t^{(t+s)} P_{t+s} (b_{j,t-1}^{(t+s)} - b_{j,t}^{(t+s)}),$$

where  $B_{j,t}^{(t+s)}$  and  $b_{j,t}^{(t+s)}$  are individual holdings of, respectively, zero-coupon nominal and real bonds maturing in  $t + s$ , which trade at prices  $Q_t^{(t+s)}$  and  $q_t^{(t+s)}$  at time  $t$ . Note that every nominal or real asset can be represented as a function of those zero-coupon bonds.  $P_t$  is the aggregate price level i.e. the price of the consumption basket  $C_t$ , which is obtained using the average spending weight of households on individual goods  $k = 1, \dots, K$ .  $P_t y_{j,t}$  is the household's nominal income, which can be obtained from various sources such as labour, unemployment benefits, regular transfers, or pension entitlements, and which is expressed as net of regular taxes. Nominal incomes have a sticky component: it is assumed that individuals have a level of nominal income at  $t - 1$ , which is then partially indexed to actual inflation. The share is denoted as  $\lambda_{j,t}$ . Households pay taxes, that depend on their individual income as well as their consumption of goods,  $P_t \tau(y_{j,t}; \{c_{j,k,t}\}_k)$ .

Intuitively, the budget constraint equates total consumption expenditures of a specific households (left-hand side) with the sum of the household's net income, its nominal asset accumulation, and its real asset accumulation (right-hand side). The end-of-period real net wealth of household  $j$  at time  $t$  (denoted as  $a_{j,t}$ ) is the sum of the net nominal and real assets held by the household:

$$P_t a_{j,t} \equiv \sum_{s \geq 1} Q_t^{(t+s)} B_{j,t}^{(t+s)} + \sum_{s \geq 1} q_t^{(t+s)} P_{t+s} b_{j,t}^{(t+s)}$$

The direct ("first-order") impact on household real net wealth of a transitory and unexpected inflation shock can be computed as:

$$da_{j,t}^{\tilde{\pi}} = - \left[ \sum_{s \geq 0} Q_t^{(t+s)} B_{j,t-1}^{(t+s)} + (1 - \lambda_{j,t}) y_{j,t-1}^{(t)} + \left( \frac{d\pi_j}{d\tilde{\pi}} - 1 \right) c_{j,t} \right] d\tilde{\pi}$$

The first term is a function of the household's net nominal asset position. It represents the impact that households suffer due to a devaluation of the real value of their nominal assets. If the household is a net nominal debtor (i.e. it holds more liabilities than assets) it will gain from inflation as the real value of its debt is devalued. By contrast, if a household holds more nominal assets than liabilities (i.e. it is a net nominal creditor) its stock of net assets is devalued.

*(Continued on the next page)*

*Box (continued)*

The second term captures the loss that households suffer from the devaluation of the purchasing power of their nominal income. If nominal incomes fully adjust to inflation (i.e.  $\lambda_{j,t} = 1$ ) this effect is zero because in this case their purchasing power of nominal incomes is not affected.

The third term represents the difference between the household-specific inflation rate and the headline inflation rate at country level, taking into account each household's individual consumption pattern. For example, some households – typically at the lower end of the income distribution – are more exposed to rising energy prices due to their relatively high consumption of energy-intensive goods. Given that energy prices increased more than the prices of other goods following the inflationary shock, those households were net losers from the relative consumption channel.

Importantly,  $\tilde{\pi}$  is a measure of surprise inflation that excludes the price impact of changes in indirect taxes, such as consumption taxes.

Euro area governments have adopted a wide range of fiscal measures to cushion households from the cost-of-living crisis. Such measures are related either to the income side (e.g. social benefits and support programmes for low-income households) or to the price side (e.g. VAT reductions). In our framework we account for these policy interventions as shown in the following equation:

$$da_{j,t}^{(\tau)} = - \left[ d\tau_y(y_j, t) + d\tau_c(\{c_{j,k,t}\}_k) \right]$$

Interest rate fluctuations have a direct effect on the interest income flows received or paid by households. Our analysis focuses exclusively on such direct (first-order) interest rate effects and disregards the effect that monetary policy has on economic activity and inflation. The impact of interest rate changes on households' balance sheets can be summarised in terms of unhedged interest rate exposure (URE). URE is defined as the difference between maturing assets and liabilities at a given point in time. Maturing assets include households' net income. Maturing liabilities include households' current consumption. In net terms, it is the resource flow available to households for savings (or the amount they need to borrow) over a period of time that is exposed to current changes in interest rates. It is obviously important in this context to consider the maturity of each asset and liability, because longer maturities partially protect households from transitory interest rate changes (as in the case of mortgage loans with fixed-interest payments that do not need to be renewed, potentially at higher interest rates). Such assets and liabilities are considered to be 'hedged' against a change in the interest rate – unlike 'unhedged' ones with short maturities. Likewise, our analysis presumes that long-term bonds are held to maturity because selling early could reduce wealth. The impact of changing interest rates can be summarised as follows:

$$da_{j,t}^{(R)} = URE_{j,t} \times dR$$

Households with a positive URE (e.g. those who hold substantial amounts of sight account deposits or other short-term instruments) benefit from a rise in interest rates. By contrast, households with a negative URE (e.g. those holding substantial amounts of adjustable-rate mortgages) lose from an increase in interest rates because their interest payments on their maturing debt will increase.

### II.3.1. Relevant characteristics of the population

The primary findings are segmented by subgroups within the population, differentiated by income and age. First, households are divided into deciles according to gross income for each country. Then, once they have been placed in an income decile, households are broken down by age group. The two principal age groups are: working-age households (those with a household head under 65 years old) and retirement-age households (those with a household head aged 65 and above).

A key finding from the data is the age distribution of households across income deciles. Panel A of Graph II.3 shows that, if the lowest income decile is excluded, the proportion of working-age households is roughly equal to that of pensioners in the lower income brackets. The share of working-age households increases progressively in the higher income deciles and, in the top income bracket, workers outnumber pensioners by a ratio of six to one. This demographic distribution is particularly significant when examining the stock of nominal assets held by households. In general, retirement-age households tend to have positive nominal savings, while working-age households tend to have a negative net financial position.

Owner-occupied housing is the single most important asset in most households' portfolio. This may in turn be tied to a mortgage, which is the single most important liability. An increase in inflation, followed by higher interest rates, can have complex and varied implications for the value of homes and for their owners, whether or not they have a mortgage. For this analysis, it is assumed that real estate is a hedge against inflation because property values and rents often increase with inflation, thereby preserving their value. <sup>(37)</sup>

Homeowners with variable-rate mortgages may face higher monthly payments as interest rates rise, potentially straining their finances. Substantial and prolonged rate increases may increase the risk of default for some borrowers. Homeowners with fixed-rate mortgages have the advantage of predictable payments that are unaffected by rising interest rates in the short term. However, if they need to refinance or move in the medium to longer term, they may face higher rates at that time.

It is not uncommon to find that working-age households have lower home-ownership rates than their retirement-age counterparts in the same income decile (as illustrated in Panel B of Graph II.3). This disparity can largely be explained by life stage and career trajectory. Younger individuals have typically had less time to build up the financial reserves necessary for purchasing a home. Moreover, a desire for mobility and flexibility, which is more prevalent among those of working age, may diminish the appeal of home ownership, which is an asset typically associated with long-term residential commitment.

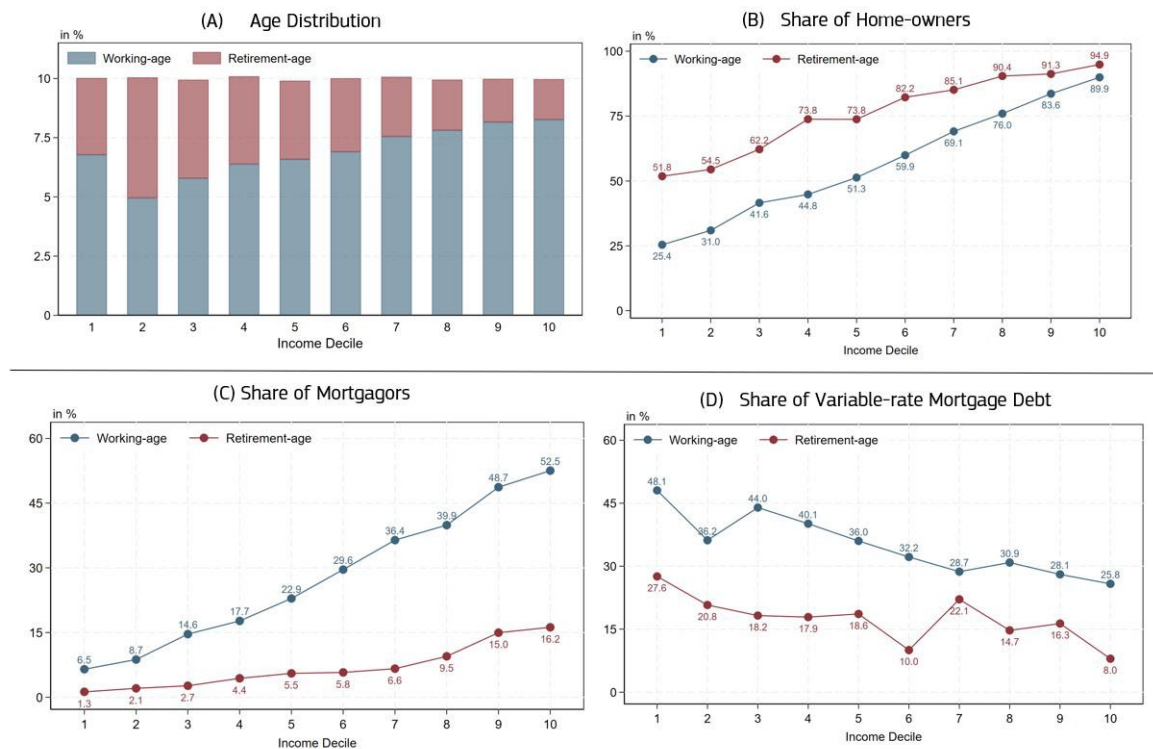
It is crucial to differentiate between outright homeowners and mortgagors because the former group is, once it has fully paid off its mortgage, insulated from fluctuations in mortgage value and interest rate adjustments. The proportion of homeowners relative to mortgagors typically shifts – often downwards – across income deciles – as becomes clear when one compares Panel B with Panel C in Graph II.3.

Turning to mortgage prevalence, Panel C of Graph II.3 shows that the share of mortgagors in the overall population also increases with income. However, the rate of home ownership is consistently higher within the same income decile than the rate of mortgage holding. This indicates that a greater proportion of individuals own their homes outright than are still servicing mortgage debt. In other words, home ownership does not always equate to having a mortgage. On average, a mere 6% of individuals in the retirement-age demographic have mortgages – in stark contrast to 30% for their working-age counterparts. Those with mortgages have a high debt-to-income ratio: working-age households face a remaining mortgage balance of roughly 200% of their disposable income, but this ratio is somewhat lower for retirement-age households – at approximately 150% of their disposable income.

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<sup>(37)</sup> The extent to which real estate keeps up with inflation can obviously in practice vary due to factors such as location, property type and the rate of inflation itself. Furthermore, higher interest rates generally lead to higher mortgage rates, which can dampen demand for home buying due to increased borrowing costs. This can put downward pressure on house prices because fewer buyers may qualify for mortgages and because existing homeowners may be less inclined to upgrade to a more expensive home. However, during inflationary periods, real assets such as real estate can become more attractive to investors looking to protect their capital from the eroding effects of inflation. This could potentially drive-up demand and, by extension, property values.

Graph II.3: **Population distribution across income deciles**



Note: Panel A shows the relative composition of each income decile based on the age of the household head. Every income decile is equal to 10% of the total population, so the height of each bar is 10%. Panel B shows the proportion of homeowners in each of the two age brackets. Households are considered homeowners if they have (any) positive amount of housing wealth. Panel C shows the proportion of mortgage holders. Households are considered mortgage holders if they have (any) positive outstanding amount of mortgage debt. Panel D shows the proportion of households with variable-rate mortgage debt (i.e. at least some outstanding mortgage debt subject to variable mortgage interest rates).

Source: HFCS and authors' calculations.

It is noteworthy that fixed-rate mortgages are common across all income deciles. Their prevalence increases slightly with increasing household income – a trend observed among both working-age individuals and pensioners (see Panel D). Households with fixed-rate mortgages are insulated from the financial strain of rising mortgage payments due to rising interest rates.

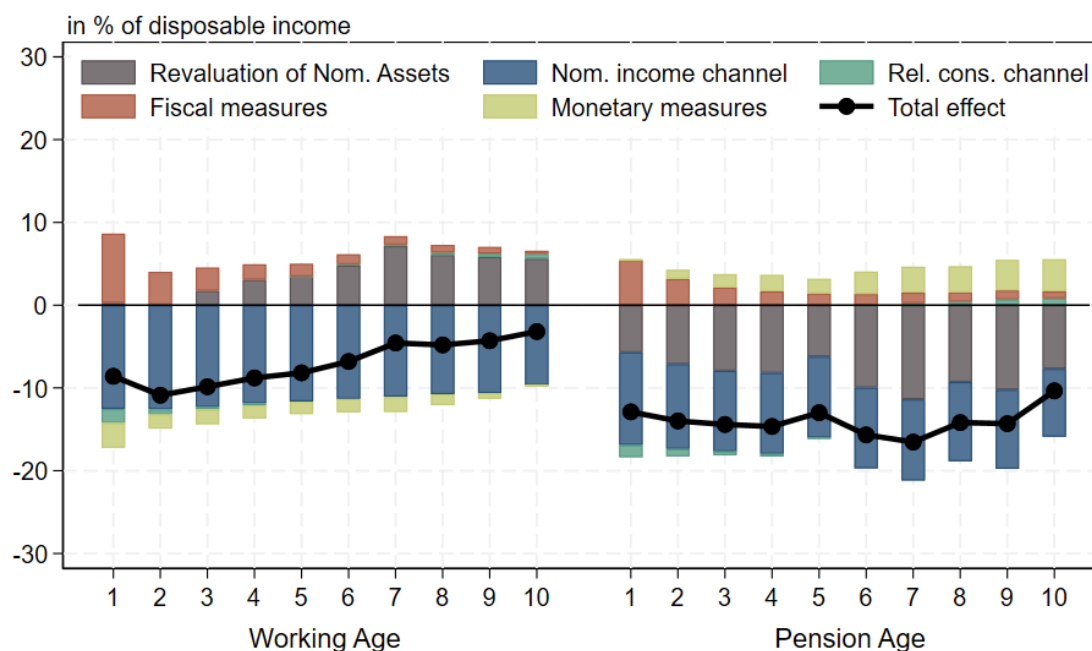
#### II.4. THE RESULTS OF THE SIMULATIONS: WINNERS AND LOSERS

Graph II.4 shows the direct and indirect effects of the inflation surge by income and age group in the euro area. The results show a clear difference between working-age and retirement-age households in terms of their losses due to inflation. On average, pension-age households lost nearly three times more than working-age ones, primarily due to the devaluation of their more substantial net nominal assets. Working-age households saw an average loss from inflation of about 5.5% of their annual disposable income, while pension-age households lost around 16%.

The simulations also point to a regressive impact among working-age households, with the lowest income deciles being more severely affected than the highest deciles. Conversely, the loss experienced by pension-age households was similar across the income spectrum, largely due to the rather uniform growth in pensions and to only minor differences in nominal asset and liability balances relative to disposable income.

Regarding the relative consumption channel, the simulation suggests that price increases in goods such as fuel and electricity affect lower-income deciles in particular, although the overall importance of that channel is dwarfed by the size of the other channels.

Graph II.4: **The direct and indirect impact of inflation on households in the euro area**



Notes: The graph shows the monetary loss from inflation relative to disposable income by income decile, through a revaluation of nominal assets and liabilities and reduced nominal income and consumption, together with the effect of fiscal and monetary policy responses. It shows the weighted average effects across the six selected countries (see above).

Source: Authors' calculations.

To understand the changes in household wealth during the period of high inflation, it is also important to look at the monetary and fiscal policy responses adopted in reaction to the inflation surge.

Fiscal policies in the euro area were mainly aimed at lower-income households. The lowest decile received support of up to 9% of their disposable income through various government measures. Support was also provided to middle-income and higher-income households, albeit to a more limited extent. <sup>(38)</sup> In terms of monetary policy, the simulation shows that working-age households are generally adversely affected by a rise in interest rates due to their negative unhedged interest rate exposure (URE), while pension-age households with positive URE gain from rising interest rates. In addition, the results point towards higher losses due to rising interest rates among lower-income households in all age brackets. This is partly due to this group being more likely to have variable-interest mortgages (see Graph II.3, Panel D). The results of the simulation therefore suggest that a monetary hiking cycle tends to have a regressive direct impact. It needs to be borne in mind, however, that the monetary policy channel is relatively less important than other channels.

#### II.4.1. The role of home-ownership and mortgage status

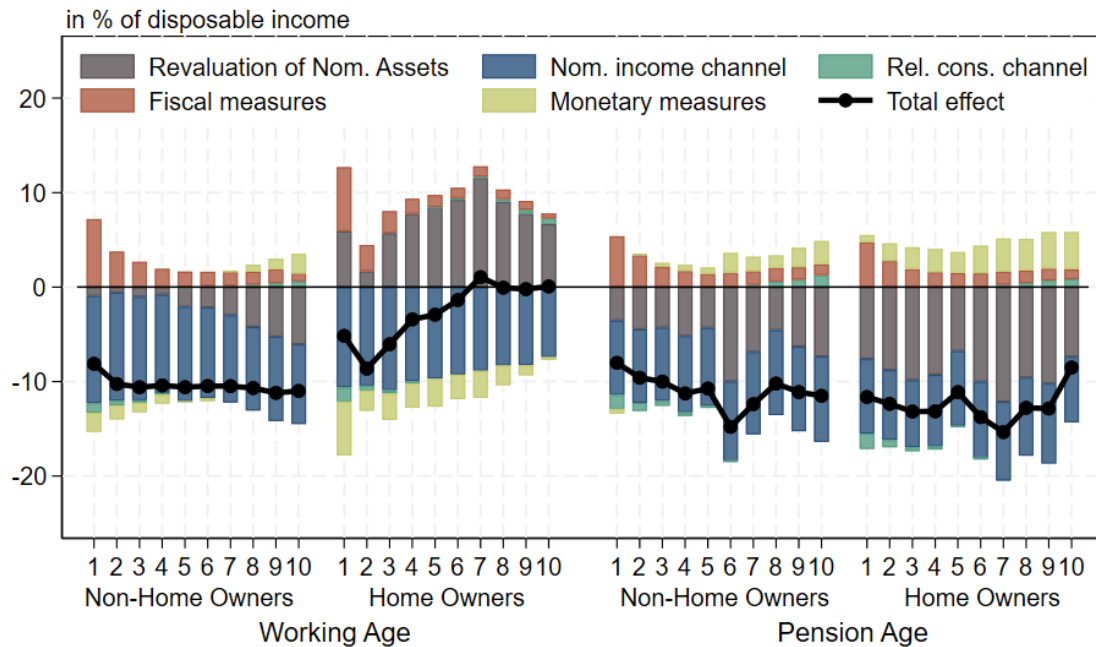
Graph II.4 shows that, generally speaking, working-age households experienced wealth gains from the devaluation of their nominal liabilities, while pension-age households faced losses due to the decrease in the real value of their accumulated nominal assets. Graph II.5 shows that homeowners in the working-age group gained the most from this channel, with the most substantial gains occurring in the middle-income

<sup>(38)</sup> It should be borne in mind that this analysis mainly covers tax-related price-side measures, which often have built-in mechanisms to more directly benefit lower-income households. However, our assessment does not include non-tax price-support measures such as price caps on energy, which are typically considered less targeted because they are applied uniformly across the board and therefore benefit all consumers, regardless of income level. The exclusion of such policies from our analysis could explain the discrepancy between our results and the general consensus that distribution of fiscal aid during the pandemic was mostly untargeted.



deciles (where the wealth revaluation of nominal liabilities could account for as much as 10% of disposable income). However, this pattern is not uniform across all income levels; in particular, homeowners in the lower deciles (except the lowest decile) saw smaller gains.

Graph II.5: **The direct and indirect impact of inflation on households in the euro area by housing status**



*Notes:* The graph shows, by income decile and housing status, the monetary loss from inflation relative to disposable income through a revaluation of nominal assets and liabilities and reduced nominal income and consumption, together with the effect of fiscal and monetary policy responses. It shows the weighted average effects across the six selected countries (see above). Households are considered homeowners when they have (any) positive amount of housing wealth.

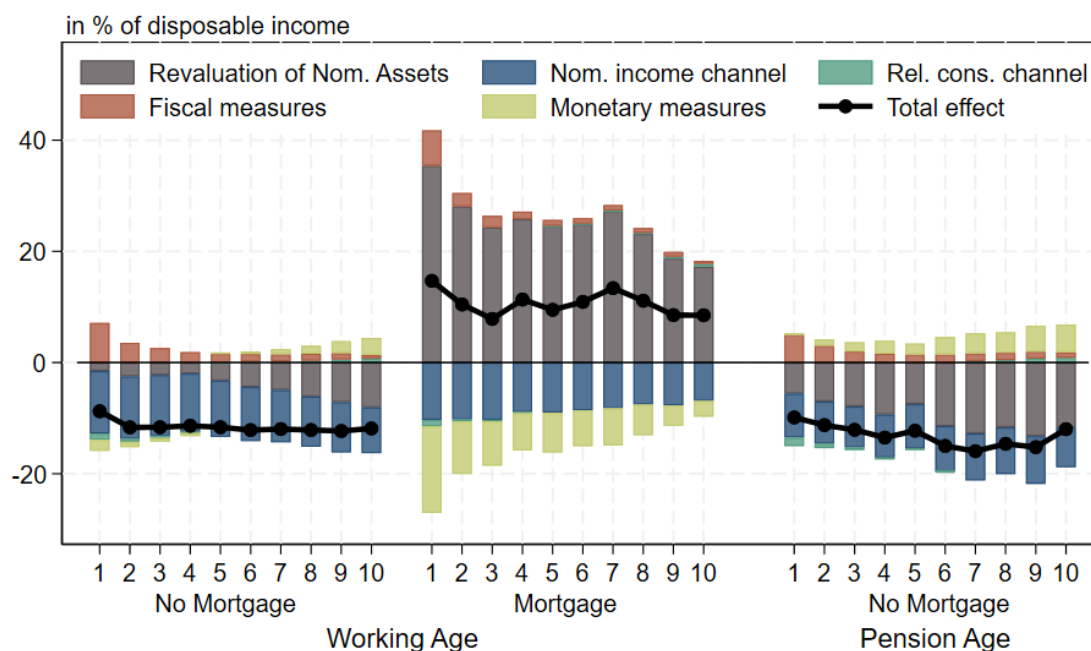
*Source:* Authors' calculations.

For non-homeowners, who typically hold positive net nominal assets, inflation results in wealth loss across all income deciles. The same is also the case for the pension-age group. However, for retirement-age households (whether or not they are homeowners), inflation appears to have a fairly uniform impact through the devaluation of their net nominal position, indicating that home ownership does not significantly affect the inflationary impact on this demographic group.

The difference in the impact of home ownership on different age groups becomes even clearer when one examines the role of mortgages more closely. Graph II.6 shows how the impact of inflation differs according to mortgage status, highlighting the fact that having a mortgage is a significant determinant of inflation exposure via the net nominal position. In particular, lower-income households with mortgages benefited the most from a positive revaluation of their net wealth due to inflation, while those in the lowest income decile experienced a roughly 35% increase in real net wealth over 2021-23. <sup>(39)</sup>

<sup>(39)</sup> Looking more closely at the specifics of mortgage contracts, both fixed-rate and adjustable-rate mortgages show similar gains from the devaluation of nominal liabilities. However, in the case of adjustable-rate mortgages, these gains are somewhat tempered by increased interest payments after the period of monetary tightening and this is reflected in their sizeable negative URE.

Graph II.6: **The direct and indirect impact of inflation on households in the euro area by mortgage status**



*Notes:* The graph shows by income decile and mortgage status, the monetary loss from inflation relative to disposable income due to a revaluation of nominal assets and liabilities, nominal income and consumption, together with the effect of fiscal and monetary policy responses. It shows the weighted average effects across the six selected countries. Households are considered mortgage holders if they have (any) positive outstanding amount of mortgage debt. Results for retirement-age mortgage holders are not shown, given the very small share of mortgage holders in that age bracket.

**Source:** Authors' calculations.

#### II.4.2. Further considerations in assessing the effects of the crisis on mortgage holders

The above findings indicate that mortgage holders fared relatively well during the recent cost-of-living crisis. However, three important considerations should be made on top of the assumptions made in the present analysis, as set out in Section II.2.

Firstly, the conclusions rest on the premise that interest rates and inflation will soon revert to pre-crisis levels. If the normalisation process is slower than anticipated (for example, due to inflation rates consistently exceeding targets or picking up again after a period of stabilisation), the impact on households with adjustable-rate mortgages may be more severe than this analysis suggests. An extended period of high interest rates could eventually translate into net financial losses for those households if their mortgage interest rates increase. The longer interest rates remain high, the greater the number of households that will face increased debt servicing costs due to higher monthly payments.

Secondly, while this chapter examines the impact on wealth of high inflation, it may not fully capture broader welfare loss implications. For instance, mortgage holders may face short-term liquidity problems despite an increase in real wealth due to inflation. This is particularly true for households with adjustable-rate mortgages, because rising interest costs could strain their liquid assets. This is likely to hurt younger homeowners in particular – despite being asset-rich, they are considered ‘wealthy hand-to-mouth’ because their wealth is largely in non-liquid forms such as immovable property. Any decrease in real income could disrupt their consumption, leading to a potentially substantial welfare loss.

Thirdly, the analysis concentrates on the direct and immediate effects of the crisis, on the assumption that current mortgage statuses remain unchanged. It does not consider the potential impact on future home buyers who might encounter higher mortgage rate (fixed or variable) as a result of the crisis. As a result, our static model does not reflect any dynamic shifts in the housing market or the financial planning of prospective homeowners.

## II.5. CONCLUSIONS

This chapter has simulated the effects of the recent spell of high inflation on euro area households, based on detailed household data on consumption, income and wealth. The simulations indicate that pension-age households were the hardest hit, primarily due to the impact of inflation on the real value of their nominal wealth. The interplay between nominal balances and income growth also led to inflation having a regressive impact on working-age households, with net financial position and nominal income exerting a significantly greater influence than the relative consumption channel. Fiscal interventions provided relief through income support and price-control measures, but substantial losses persisted (especially for the lower-income and pension-age demographic groups). Most of the fiscal interventions were not targeted, so one can infer that fiscal policy could have been designed to more effectively reduce the unequal impact of high inflation.

The balance of nominal assets (particularly the mortgage status) emerged as the critical factor in determining a household's financial outcome during the crisis. Households with mortgages generally experienced a gain because inflation reduced the real burden of their substantial negative nominal asset position. This particularly benefited those who had fixed-rate mortgages because they were shielded from the rise in interest rates. Conversely, those without a mortgage experienced losses that were comparatively similar for the working-age and the pension-age groups.

A further conclusion to be drawn from this chapter is that the effect of the relative consumption channel (i.e. the composition of the consumption basket) is relatively smaller than might have been expected, while the income effect on lower-income households is large. This indicates that important aspects were overlooked in the recent cost-of-living debate, which focused mostly on the regressive effects of inflation through the differing consumption basket of low and high-income households. Moreover, the negative impact of the increase in interest rates is small compared with the negative impact of inflation on nominal incomes. This underscores the need to focus primarily on reducing inflation. Even so, the main message –that the direct effects of high inflation are regressive in nature – remains true.



## III. CAPITAL INCOME TAXATION IN THE EURO AREA

By *Benedetta Guerzoni and Frank Neher*

*This chapter examines trends and implications of capital income taxation in the euro area. As demographic change is expected to challenge the revenue-generation function of labour taxation, national tax systems may need to shift part of the tax burden away from the labour. Capital income especially personal capital income taxation is sometimes considered a potential alternative tax base. Labour is the dominant tax base for most euro area Member States, but over the past 20 years a majority of countries in the euro area have increased the role of capital taxes in their tax mix. Still, capital income is generally taxed at a lower rate than labour. While earlier academic literature argued that capital income taxation negatively impacts savings and investment, the findings from recent research are more nuanced. Taxing capital income also has distributional effects, as the share of capital income over total income tends to be higher for higher income households. From a policy perspective, it may be particularly interesting to look at how tax systems treat income from capital gains and corporate profits. To ensure sustainable tax revenues in the future, possible strategies to increase revenues from capital taxation include promoting tax simplification, strengthening tax compliance (including by tackling tax avoidance) and reinforcing international tax cooperation. <sup>(40)</sup>*

### III.1. INTRODUCTION

There is a longstanding discussion about the appropriate taxation of capital in the context of fostering economic growth while designing simple, efficient and equitable tax systems. Understanding the implications of capital income taxation would also support effective tax policy choices in view of the expected shrinking of the labour tax base.

Taxation of each tax base (labour, capital and consumption) <sup>(41)</sup> has specific implications for economic behaviour, and the combination of taxes levied on the tax bases determines the equity and efficiency of the tax system. Economic theory argues that capital taxation influences savings and investment decisions, as well as capital accumulation. The design of capital taxes also has equity and distributional implications because capital assets and related capital incomes tend to be concentrated at the top of the income distribution.

This chapter focuses on capital income taxation in the euro area, analysing relevant trends and impacts as declining revenues from labour taxation require a shift towards other tax bases. Section III.1 analyses the recent trends and emerging challenges in relation to the labour and capital tax base in the euro area, including how capital income increases across income distribution levels. Section III.2 then considers capital tax revenues in the euro area and their role within the tax mix, as well as the ways in which euro area national tax systems treat capital income. Section III.3. summarises the academic view on capital income taxation and the arguments for and against a special tax treatment of capital income, with a focus on capital gains taxation of individuals and corporate income taxes. Finally, Section III.4 outlines potential ways forwards in relation to the future of capital income taxation, so as to ensure that euro area national tax system remain able to generate sustainable tax revenues.

### III.2. LABOUR AND CAPITAL TAX BASES: EMERGING TRENDS

The distribution of income from factor shares (labour and capital) provides a general idea about the development of the underlying tax bases. It can therefore inform tax policy decisions and tax systems' revenue-generation potential. Total income (measured by annual GDP) can be split into (i) labour (i.e. wages, salaries and employers' social contributions); (ii) gross operating surplus (the remuneration of the production factor capital); (iii) mixed income (a balancing item that includes the remuneration of both

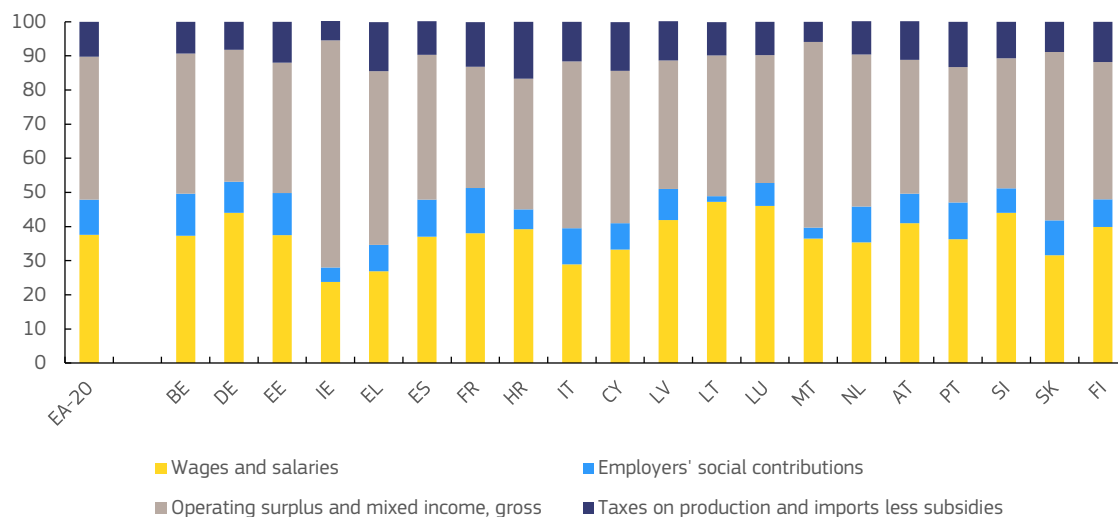
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<sup>(40)</sup> The authors would especially like to thank Daniel Stoehlker, who performed part of the quantitative analysis included in Section III.2, as well as Ana Xavier, Clare Southworth, Matteo Salto and Eric Ruscher for their valuable comments. Eventual errors are ours alone.

<sup>(41)</sup> Capital, labour and consumption are the three fundamental tax bases on which taxes can be levied. Capital taxation comprises the taxation of income from capital, which is the focus of the present article, as well as any taxation of capital assets. The taxation of capital incomes falls under personal income taxation (PIT) if the income recipient is a natural person and corporate income taxation (CIT) if the income is received by an incorporated entity.

capital and labour for unincorporated enterprises, e.g. sole traders) and (iv) net taxes (see Graph III.1). When comparing euro area trends in relation to the tax base of labour and capital income taxation, the evolution of the wage share and the combined share of gross operating surplus and mixed income to total GDP can provide some initial pointers <sup>(42)</sup>

Graph III.1: **Income components as a % of GDP (1), 2023**



Notes: The income approach to calculate GDP sums the compensation of employees, broken down into wages and salaries and employers' social contributions; taxes on production and imports less subsidies on production; gross operating surplus (i.e. the surplus (or deficit) on production activities before account has been taken of the interest, rents or charges paid or received for the use of assets) and mixed income (i.e. the remuneration for the work carried out by the owner (or by members of his/her family) of an unincorporated enterprise).

Source: Eurostat (online data code: nama\_10\_gdp).

The wage share is affected by a wide variety of drivers, which include technological changes; globalisation and global value chain integration; sectoral shifts; and institutional factors (e.g. labour or product markets regulations, and workers' bargaining power).<sup>(43)</sup> In the short run the wage share may be impacted by factors such as business cycles, transitory economic shocks, labour hoarding and job search frictions. Changes in the labour income share often reveal countercyclical dynamics due to the different time lags in the responses of profits and wages to economic shocks. For the euro area, the wage share peaked in 2009 at 37.4% and then decreased, albeit relatively slowly. It then increased somewhat steadily from 2015 to 2020, when it reached 38.3%, before declining substantially in the aftermath of the COVID-19 crisis. In 2023, the wage share of the euro area was 37.3%, slightly below the pre-pandemic levels (see Graph III.2). A lower wage share has traditionally been associated with higher income inequality, but empirical evidence suggests that the relationship between income inequality and the wage share in the euro area is more complex. <sup>(44)</sup>

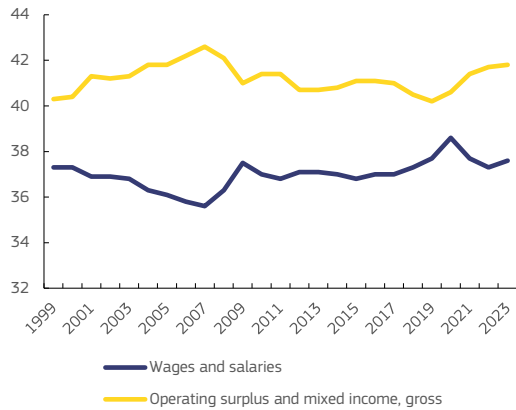
Unlike the evolution of the wage share, movements in the nominal growth of wages and salaries in the euro area have broadly reflected the business cycle, with the biggest increases recorded before the global financial crisis and after the pandemic shock. The nominal wage growth from 2014 to 2023 was 4% on average, 0.2 pp lower than the nominal growth of gross operating surplus and mixed income. This also resulted in wages and salaries making a lower contribution to total GDP growth, on average, than gross operating surplus (see Graph III.3).

<sup>(42)</sup> No public data are available on the actual tax base of income taxation in the EU/euro area. This section therefore focuses on the available indicators of factor shares in order to approximate the tax base. Tax revenue data for euro area Member States are the result of a combination of tax rates and tax bases, which are both set by heterogeneous tax systems and complex tax regulations.

<sup>(43)</sup> Archanskaia, E., Meyermans E. and Vandeplas A., 'The labour income share in the euro area', QREA, Vol. 17, No 4, 2019, pp. 41-57.

<sup>(44)</sup> [https://ec.europa.eu/economy\\_finance/publications/qe\\_euro\\_area/2008/pdf/qrea3\\_section2\\_en.pdf](https://ec.europa.eu/economy_finance/publications/qe_euro_area/2008/pdf/qrea3_section2_en.pdf).

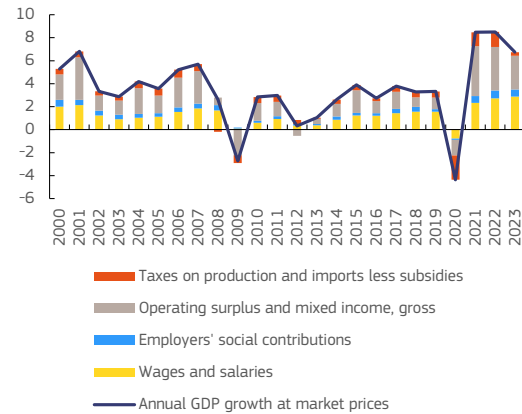
Graph III.2: Income factors as a % of GDP, euro area (1)



(1) euro area: EA11-1999, EA12-2001, EA13-2007, EA15-2008, EA16-2009, EA17-2011, EA18-2014, EA19-2015, EA20-2023

Source: Eurostat (online data code: nama\_10\_gdp).

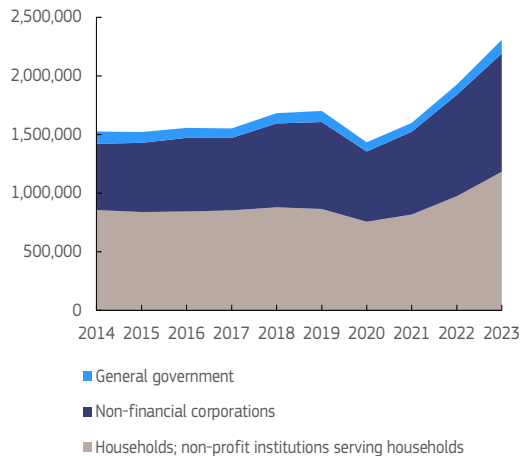
Graph III.3: GDP growth at current prices by income source, %



Source: Eurostat (online data code: nama\_10\_gdp).

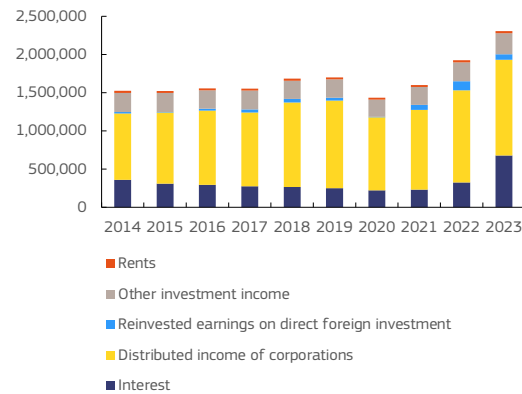
The share of gross operating surplus and mixed income in 2023 was at 41.8%, 1.5 pp higher than the historical low of 40.3% of 2020. Its average growth in nominal terms from 2014 to 2023 was around 4.2%. Besides profits, <sup>(45)</sup> the capital income tax base includes received property income, which comprises interest, dividends, rents and other investment income. Property income in the euro area (excluding financial corporations) remained broadly stable in nominal terms between 2014 and 2019 and, after a decrease in 2020, has grown rapidly due to the economic recovery and the increase in interest rates (see Graphs III.4 and III.5).

Graph III.4: Received property income (million euros), euro area



Source: Eurostat (online data code: nasa\_10\_nf\_tr)

Graph III.5: Breakdown of received property income (million euros), total economy excluding financial corporations, euro area



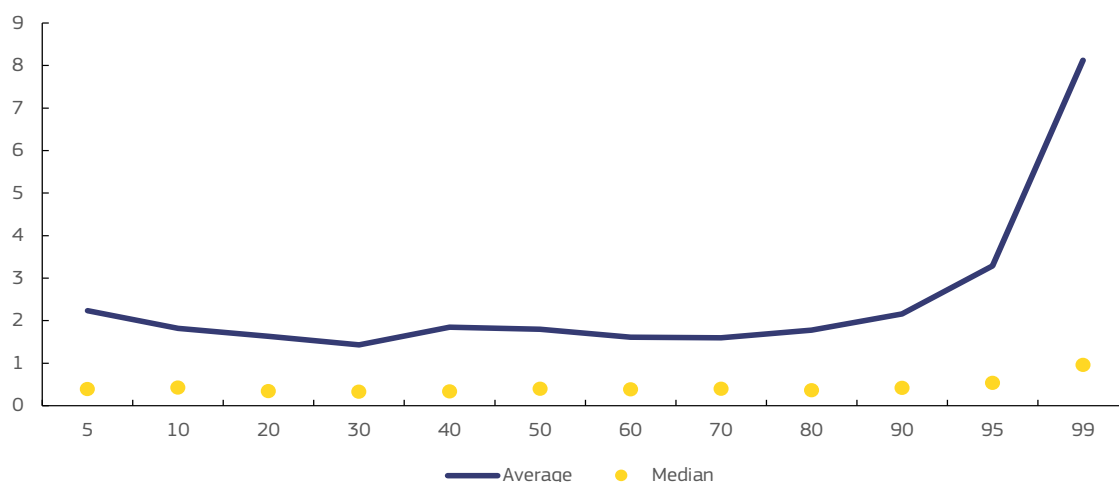
Source: Eurostat (online data code: nasa\_10\_nf\_tr)

The composition of household income varies along the income distribution curve. Employee and pension income tends to account for the largest share of household income. The available survey data suggest that higher income households generally receive a larger share of their income from financial assets. The share of income streams from financial assets is relatively stable for households between the 5<sup>th</sup> and 95<sup>th</sup> percentile at about 1.5 to 2% (see Graph III.6). It increases to 3.3% for households between the 95<sup>th</sup> and 99<sup>th</sup> percentile. It then rises sharply to more than 8% for households above the 99<sup>th</sup> percentile. The

<sup>(45)</sup> As profits de facto also include wages that self-employed award themselves, some measures of the wage share and capital share are corrected for the share of self-employed. For simplicity, the labour income share of sole traders and similar self-employed workers is not disentangled from their capital income share in this article.

median value for the top 1% remains close to 1%, which implies that the distribution has a long right tail. An important margin of heterogeneity is age, with those above the age of 65 having substantially higher average shares of financial income over total income. This is partly explained by the decline in labour income after the age of retirement.

Graph III.6: Average % of financial income in total gross income by income percentile (1), euro area

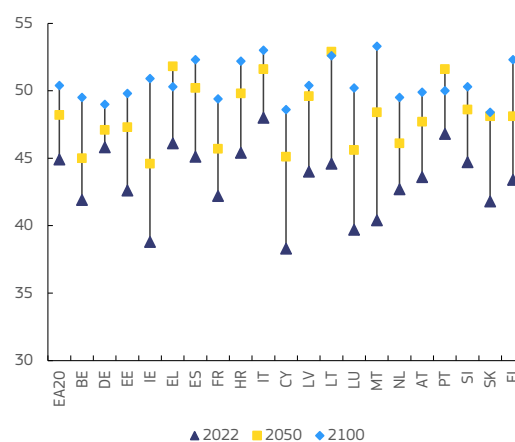


(1) Households with zero financial income are excluded.

Source: Joint Research Centre (JRC) based on the Household Finance and Consumption Survey (HFCS).

Population ageing is expected to significantly challenge the revenue-generation capacity of labour taxation, calling for a reflection on euro area Member States' tax structures. The median age in the euro area is expected to increase from 44.9 in 2022 to 50.4 in 2100 (see Graph III.7). From 2040 onward, the euro area population is projected to start declining, despite positive net migration into most Member States. In the long term, the euro area's working-age population (defined as people aged 20-64 years) is projected to decline by 13% (around 27 million people) between 2022 and 2070. In addition, demographic trends are contributing to widespread labour and skills shortages, which would in turn further dampen long-term potential output if they become structural. Population ageing will impact euro area Member States' fiscal position as the decline in working-age population reduces the contributory base of personal labour income taxation, limiting its ability to generate the necessary revenue to fund increased budgetary expenditure on pensions, healthcare and long-term care. An OECD study<sup>(46)</sup> has estimated an average revenue loss 8% in OECD countries by 2040 due to the strong reliance on personal labour income taxes and social security contributions. In this context, policymakers have repeatedly called for a shift away from labour taxation.<sup>(47)</sup>

Graph III.7: Projected median ages on 1 January 2022, 2050 and 2100, euro area



Source: Eurostat (online data code: proj\_23ndbi).

<sup>(46)</sup> Dougherty, S., P. de Biase, P. and Lorenzoni, L. 'Funding the future: The impact of population ageing on revenues across levels of government', *OECD Working Papers on Fiscal Federalism*, No. 39, OECD Publishing, Paris, 2022 <https://doi.org/10.1787/2b0f063e-en>.

<sup>(47)</sup> For example, see: [https://commission.europa.eu/system/files/2021-11/recommendation\\_on\\_the\\_economic\\_policy\\_of\\_the\\_euro\\_area.pdf](https://commission.europa.eu/system/files/2021-11/recommendation_on_the_economic_policy_of_the_euro_area.pdf) and European Council Conclusions, 26 27 June 2014, EUCO 79/14.



Graph III.8: Tax base proxy from national accounts and tax revenues for labour (% GDP), euro area



Source: Eurostat, DG Taxation and Customs Union.

and mixed income may be used as a proxy for the capital tax base. Graph III.8 and Graph III.9 show the dynamics of tax revenues compared with the proxies of the respective tax bases. The following section discusses recent trends in tax revenues across the euro area.

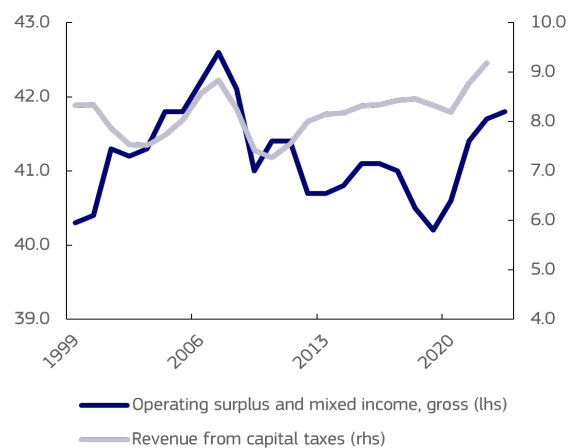
### III.3. CAPITAL AND LABOUR TAXATION IN THE EURO AREA

This section analyses the role of capital taxation in the euro area from the perspective of tax revenues. Tax revenues are most readily categorised by the type of tax which has generated them, like personal income taxes, corporate income taxes, value added taxes, excise taxes etc. - or subcategories of these taxes. To understand the tax base, the [Taxation Trends Data](#) prepared by the DG for Taxation and Customs Union (DG TAXUD), attributes tax revenues to the underlying tax base (i.e. labour, capital and consumption). Capital taxes can take many forms, and can be based on capital income, ownership or transfers. Income-based capital taxes are levied on income from dividends, interest and royalties, capital gains income, corporate income and other income derived from assets. Capital ownership is taxed with net-wealth taxes and recurrent property taxes. Capital transfers can be taxed with inheritance taxes, gift taxes and some stamp taxes. <sup>(51)</sup>

Furthermore, as the tax burden on labour also impacts work incentives, it has been argued that recurrent taxes on immovable property, consumption taxes and environmental taxes might be less distortive <sup>(48)</sup>. However, an increasing reliance on consumption taxation could have a regressive impact on the distribution of households' disposable income, <sup>(49)</sup> because the share of income spent on consumption decreases at higher income levels. Consumption taxes must therefore be carefully designed and/or compensatory measures enacted to correct this effect when relevant. <sup>(50)</sup>

Tax revenues are the product of the specific tax rates that are applied to their relevant tax base. In line with the previous discussion, wages and salaries may be considered as a useful proxy for the labour tax base, while gross operating surplus

Graph III.9: Tax base proxy from national accounts and tax revenues for capital (% GDP), euro area



Source: Eurostat, DG Taxation and Customs Union.

<sup>(48)</sup> For example, see Arnold, 'Do Tax Structures Affect Aggregate Economic Growth? Empirical Evidence from a Panel of OECD Countries' 2008, available at <https://doi.org/10.1787/236001777843>. The implications of revenue neutral tax shifts however are critically discussed. See for example Xing, J., 'Tax structure and growth: How robust is the empirical evidence?', *Economics Letters*, 117, 2012, <https://doi.org/10.1016/j.econlet.2012.05.054>; and Baiardi et al., 'Tax policy and economic growth: does it really matter?' *International Tax and Public Finance*, 2019, <https://doi.org/10.1007/s10797-018-9494-3>.

<sup>(49)</sup> See for example Warren, N., 'A Review of Studies on the Distributional Impact of Consumption Taxes in OECD Countries', *OECD Social, Employment and Migration Working Papers*, No. 64, OECD Publishing, Paris, 2008, <https://doi.org/10.1787/241103736767>.

<sup>(50)</sup> See for example the considerations on the design of a progressive VAT in De la Feria, R. and Swistak, A., 'Designing a Progressive VAT'. Working Paper WP/24/78, International Monetary Fund, Washington, D.C., 2024.

<sup>(51)</sup> Net-wealth taxes take total wealth net of all liabilities as the tax base. Recurrent property taxes take property values as the tax base. Stamp taxes are taxes imposed on certain legal documents, usually involving the transfer of property or other assets.

### Box III.1: Types of personal income tax systems

Personal income tax systems can be differentiated according to how they treat different types of income. In an integrated tax system, all income sources are taxed together under a unified system. Under a schedular approach, different income types are treated separately. In a dual income tax system, labour income is treated differently from capital income (e.g., interest, dividends and capital gains). Different sources of capital income might also receive different tax treatment. However, capital income is often taxed at a flat rate, while labour income is taxed at progressive rates. Each method has its implications for simplicity, equity and economic behaviour. Table 1 provides an overview of personal income tax systems in the euro area.

Table 1: Personal income taxation: taxes on capital and labour income in the euro area

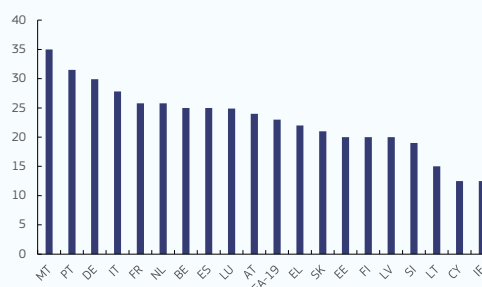
Type of system	Comprehensive income tax system	Dual income tax system	Semi-dual income tax system	Other
Definition	Taxes all realised income (e.g., from labour, capital) together under the same rate schedule.	Taxes labour and capital income separately. Labour income is usually taxed at progressive rates and capital income is typically taxed at lower flat rates.	Taxes some forms of capital income with labour income and other forms of capital income separately.	Combines elements of comprehensive and dual income taxation.
Countries	Luxembourg (1), Malta, Cyprus	Finland, Greece, Italy, Latvia, Lithuania, Netherlands, Slovenia, Spain	Belgium, Estonia, Ireland, Slovak Republic	Austria (2), France (3), Germany (4), Portugal (5)

Note: (1) In Luxembourg, recipients of income from corporate bonds can opt for that income to be taxed separately at a 20% final withholding tax rate; (2) Austria applies a flat 27.5% withholding tax rate to capital income, but taxpayers can opt for capital income to be included in total income and taxed under the PIT schedule; (3) France applies a flat 30% tax rate to capital income (excluding rental income), but taxpayers can opt for this to be included in total income and taxed under the PIT schedule. Rental income is included in total income and taxed under the PIT schedule; (4) Germany applies a flat 25% withholding tax rate to capital income, but taxpayers can opt for this to be included in total income and taxed under the PIT schedule; (5) Portugal applies a flat 28% withholding tax rate to capital income, but taxpayers can opt for this to be included in total income and taxed under the PIT schedule.

Source: Hourani et al. 2023 <sup>(1)</sup>

As indicated in Figure 1, top statutory CIT rates in euro area countries vary between 12.5% (Ireland and Cyprus) and 35% (Malta), <sup>(2)</sup> but the availability of tax support schemes typically results in lower effective tax rates. <sup>(3)</sup> Most EU Member States apply a flat-rate system in which a single rate is charged on all corporate profits, while others have progressive rate structures (e.g. Luxembourg) or specific regimes for certain small and medium sized companies (e.g. Belgium and France). Estonia and Latvia do not tax retained earnings, and only impose corporate income taxation when profits are distributed. In some Member States (e.g. Germany and Portugal), surcharges and top-up rates may apply depending on the municipality or region where the company is based.

Graph 1: Top statutory tax rates for corporate income tax, 2022



<sup>(1)</sup> Hourani, D., Millar-Powell, B., Perret, S., and Ramm, A., *The taxation of labour vs capital income: a focus on high earners, 2023*, <https://dx.doi.org/10.1787/04f8d936-en>

<sup>(2)</sup> It should be noted that Malta offers a refund of up to six sevenths of corporate income taxes if specific conditions are met.

<sup>(3)</sup> Statutory and effective tax rates are documented in the European Commission's [Taxation Trends Database](#).

Each of these taxes is designed to capture revenue from the wealth and income generated by capital, with varying impacts on savings, investment, and economic behaviour. The present chapter focuses on the taxation of capital income and will therefore disregard questions related to inheritance and gift taxes, property taxes and net-wealth taxes. <sup>(52)</sup>

The tax burden can increase through tax base broadening <sup>(53)</sup> and tax rate increases. Both should in principle increase the effective tax burden of a given taxpayer. There is nevertheless some empirical evidence that suggests that taxpayers react more strongly to tax rate rises than to tax-base broadening. <sup>(54)</sup> Indeed, most available empirical evidence focuses on changes in tax rates. The effect of changes in tax rates is captured by the elasticity of taxation (i.e. the percentage change of the tax base given a 1% change in the tax rate). While in principle one would expect a symmetric effect between tax rate increases and decreases, this appears not necessarily to be the case. <sup>(55)</sup> Some evidence suggests that output reacts more strongly to CIT rate cuts than to rate increases. <sup>(56)</sup> Similarly, investors appear to react more strongly to reductions in capital gains taxes than to increases. <sup>(57)</sup>

The total tax burden (i.e. capital, labour and consumption taxes) differs significantly across Member States. In 2022, France registered the highest tax revenue-to-GDP ratio in the EU (at 46.2% of GDP), followed by Belgium, Austria and Finland (all of them above 43% of GDP). By contrast, Ireland had the lowest ratio (20.9% of GDP), although in this case the prominent flow of foreign investment largely amplifies the denominator (GDP) and hence distorts the ratio. <sup>(58)</sup>

Overall, the tax mix has remained relatively stable over time. Graph III.8 and Graph III.10 depict tax revenues from labour, capital and consumption in the EA19 and EU27 between 1995 and 2022. The importance of different tax bases is similar in the EU27 and in the EA19. Labour taxes (which include SSCs) make up more than 20% of GDP and more than 50% of tax revenues in the EA19. Revenues from capital taxes at around 8% of GDP constitute around 20% all tax revenues in the EA19. While the trend lines seem rather flat, there are some fluctuations. Compared with 1995, the 2022 data shows higher revenues from capital and lower revenues from labour. In 2022, 22.5% of revenues in the EA19 came from capital taxes, compared to 18.8% in 1995. Conversely, the share of revenues from labour decreased by about 2.3 pp over that period.

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<sup>(52)</sup> Capital income taxes create overall more revenues than asset-based taxes. Since an income flow is the taxbase, such taxes also sidestep the problem of valuing assets. Proper valuation is a considerable problem in the context of net-wealth and recurrent property taxation.

<sup>(53)</sup> The tax base can be broadened for example by reducing exemptions or increasing tax compliance.

<sup>(54)</sup> Dabla-Norris, E., and Lima, F., 'Macroeconomic effects of tax rate and base changes: Evidence from fiscal consolidations. *European Economic Review*, 153, 2023.

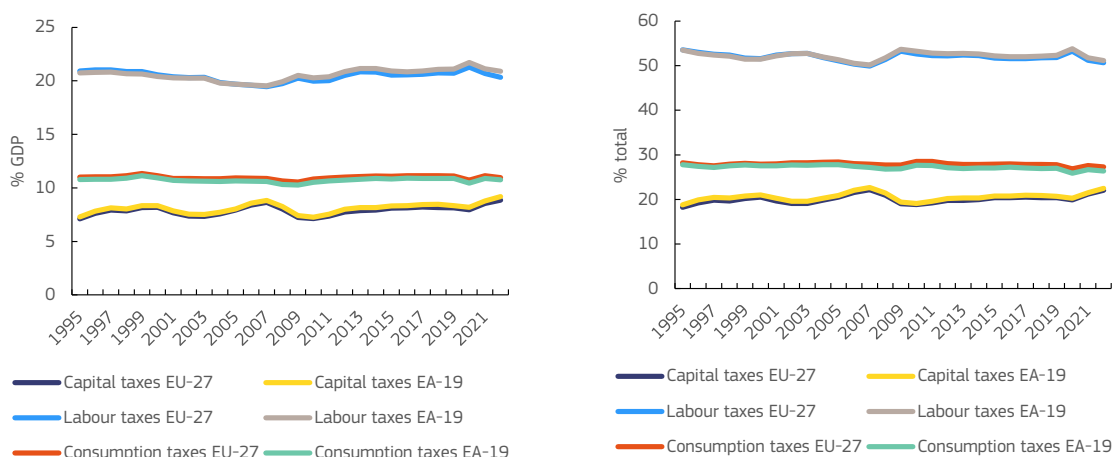
<sup>(55)</sup> Amaglobeli, M. D., Crispolti, M. V., and Sheng, X. S., 'Cross-country evidence on the revenue impact of tax reforms.' *International Monetary Fund*, 2022.

<sup>(56)</sup> Hussain, S. M., and Malik, S., 'Asymmetric effects of exogenous tax changes.' *Journal of Economic Dynamics and Control*, 69, 268-300, 2016; Ziegenbein, A., 'When are tax multipliers large?'. *Journal of Economic Dynamics and Control*, 158, 2024.

<sup>(57)</sup> Agapova, A., and Volkov, N., 'Asymmetric tax-induced trading: The effect of capital gains tax changes.' *The Quarterly Review of Economics and Finance*, 79, 2021.

<sup>(58)</sup> Unless specified differently, data on tax revenues for EU countries referred in this report are based on the 2024 edition of the European Commission's DG TAXUD's Taxation Trends data, released on 15 March 2024 (cut-off date: 31 January 2024, which entails that ratios on GDP are calculated using the GDP data available in that date).

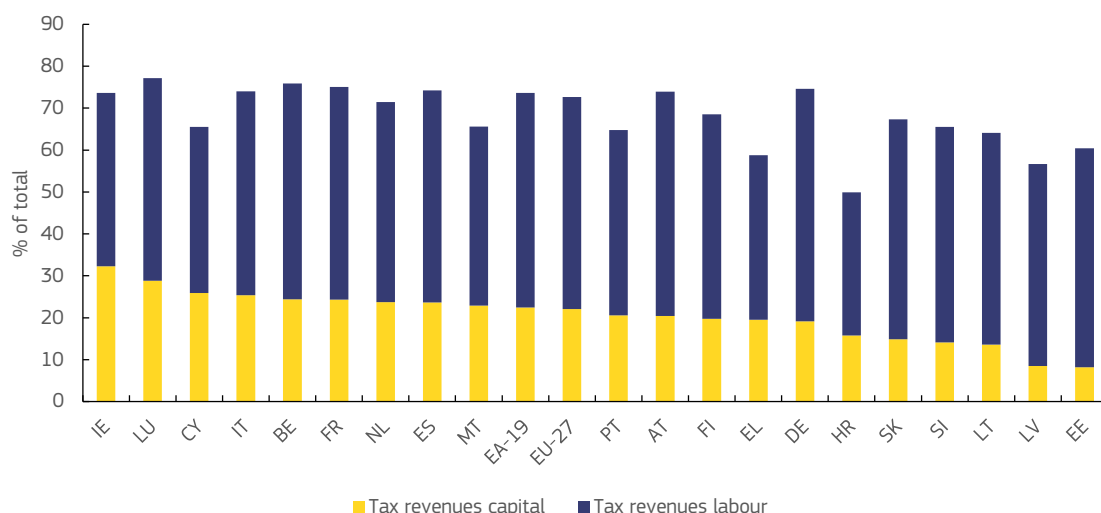
Graph III.10: Revenues from taxes on labour, capital and consumption, (% of GDP and % of total)



Source: European Commission, based on National Tax Lists data.

While labour is the dominant tax base, some countries in the euro area obtain up to 30% of their tax revenues from capital taxation. Graph III.11 focuses on the role of capital and labour tax revenues across countries. Labour is the dominant tax base in most Member States. Germany and Austria are most reliant on labour taxes, which account for over 53% of their tax revenues. Capital taxes are an important source of revenue in Ireland, Luxembourg, and Cyprus. This might be due to the favourable corporate tax environments in these countries. By contrast, capital taxes play a subdued role in Estonia and Latvia with less than 10% of tax revenues derived from capital taxes. Both these Member States tax corporate profits only at the time of their distribution. The role of corporate income taxation (CIT) for capital taxes is discussed further below.

Graph III.11: Tax revenues from labour and capital as share of total (1), 2022



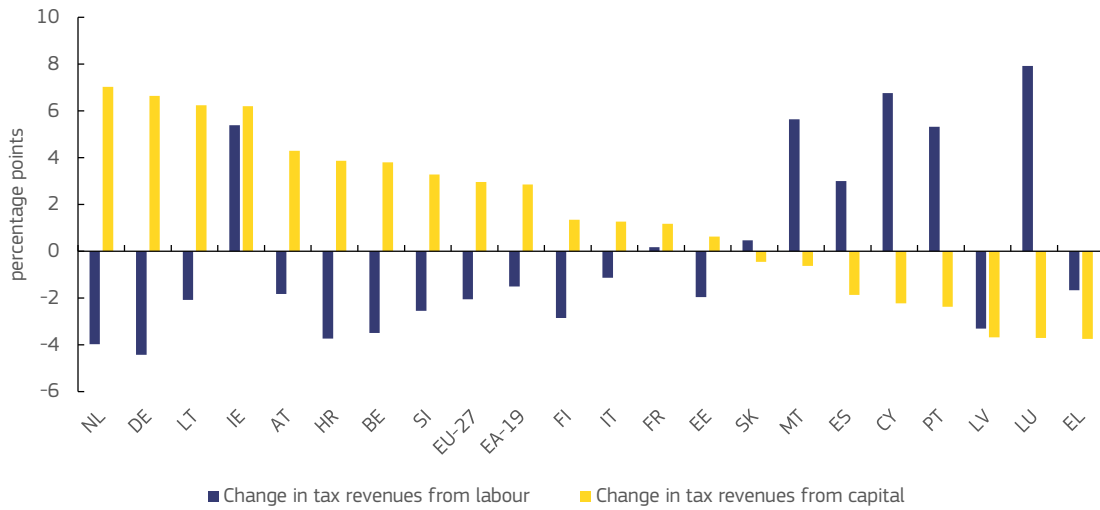
(1) Sorted by tax revenues from capital, largest to smallest.

Source: European Commission, based on National Tax Lists data.

Over the past 20 years, most euro area countries have increased the role of capital taxes in their tax mix. Graph III.12 shows that the Netherlands, Germany and Lithuania have managed to increase their capital tax revenues by more than 6 pp, while decreasing the share of revenues from labour taxes. By contrast, Luxembourg, Portugal and Cyprus have experienced the opposite dynamic as revenues from labour have increased in importance while revenues from capital have decreased in importance. In Greece and Latvia, the share of capital and labour have both decreased, which implies that consumption taxes have become

more important. Ireland has increased the role of capital and labour taxes and thus reduced its reliance on consumption taxes.

Graph III.12: **Changes in tax revenues from labour and capital 2002-2022 (1), share of total**



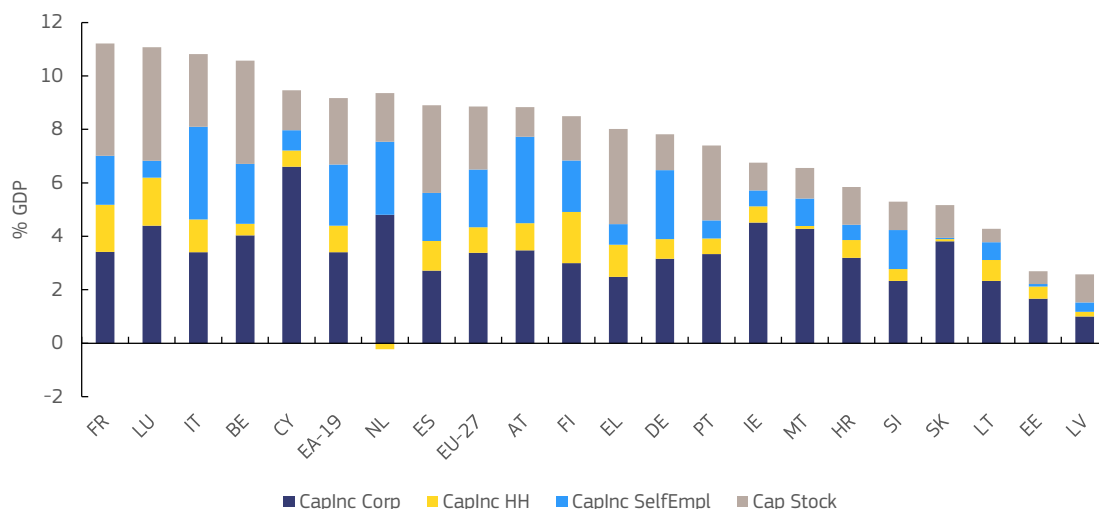
(1) Sorted by change in revenues from capital income.

Source: European Commission, based on National Tax Lists data.

Taxes on corporate income make the greatest contribution to overall capital tax revenues while taxes on capital income of household make the least. Both individuals and companies contribute to tax revenues from capital stocks. Graph III.13 shows the composition of revenues from capital taxes as a share of GDP. <sup>(59)</sup> France, Luxembourg, Italy and Belgium have capital tax revenues in excess of 10% of GDP. Latvia, Estonia, and Lithuania are much less reliant on capital taxes, with total contributions below 5% of GDP. Luxembourg and France have particularly high revenues from capital stocks, while Italy stands out with substantial revenues from the taxation of self-employed capital income.

<sup>(59)</sup> The definition of different categories of capital taxes are provided in the [methodology underlying the Taxation Trends Data](#). [Top statutory tax rates](#) for personal income tax and corporate income tax are provided by the European Commission’s Taxation Trends Data collection.

Graph III.13: **Composition of capital tax revenues, % of GDP (1), 2022**

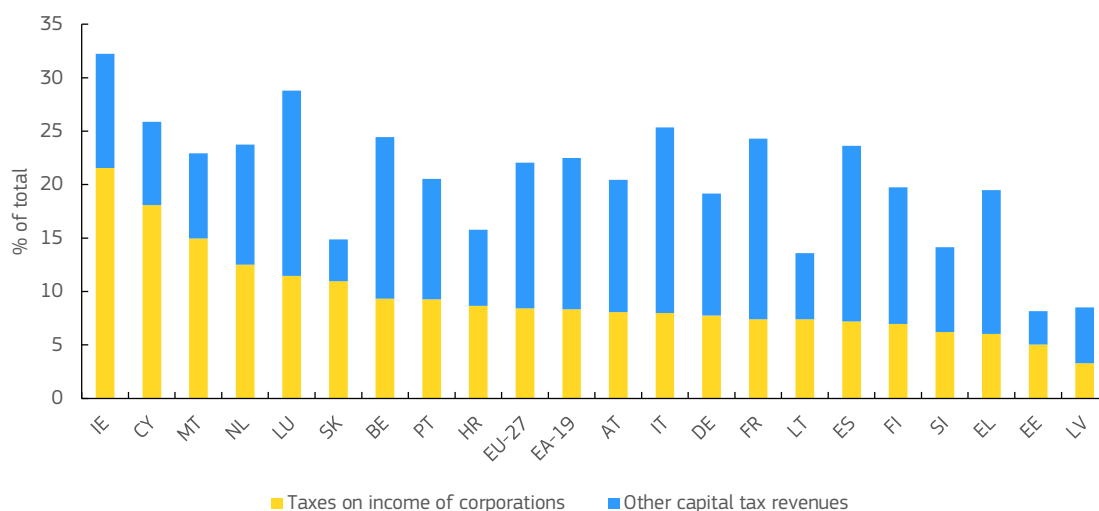


(1) Sorted by total tax revenues from capital. CapInc Corp is tax revenue from corporate income, CapInc HH is revenue from taxes on households' capital income, CapInc SelfEmpl is revenue from taxes on capital income of the self-employed and Cap Stock is revenues from taxes on capital assets. Negative values on revenues for household income in the Netherlands indicate that tax expenditures for that group is higher than revenues there.

**Source:** European Commission, based on National Tax Lists data.

There is no discernible pattern between CIT revenues and overall capital taxes. Graph III.14 presents revenues from taxes on income of corporations and all other capital tax revenues as a share of total tax revenues. Taxes on income of corporations is essentially CIT, although we see tiny differences in some Member States. <sup>(60)</sup> Contrary to the perspective in Graph III.13 which is based on revenues as a share of GDP, Graph III.14 shows revenues as a share of the total tax revenues and thus the importance of capital taxes in the tax mix. Graph III.14 also shows that for several countries taxes on income of corporations / CIT make up more than half of all capital tax revenues (e.g. Ireland, Cyprus and Estonia). Other countries have relatively high capital tax revenues with a more limited role for CIT (e.g. Italy, France and Spain).

Graph III.14: **Composition of capital tax revenues as % of total (1), 2022**



(1) Data sorted by taxes on income of corporation.

**Source:** European Commission, based on National Tax Lists data.

<sup>(60)</sup> Differences arise from the specific definition of the Taxation Trends in Europe data. See Annex 1 for the definition of categories of capital income by economic function according to the [taxation trends methodology](#).

### III.4. THE ACADEMIC VIEW ON THE EFFECTS OF CAPITAL INCOME TAXATION, WITH A FOCUS ON CAPITAL GAINS TAXATION OF INDIVIDUALS AND CORPORATE INCOME TAXES

Compared to the earlier economic literature, recent research provides a more nuanced picture of the potential negative impacts of capital income taxation. Earlier economic literature argued that higher taxes on personal capital income (which includes interest, dividends, and capital gains) would reduce the after-tax return on investments, making the act of saving less attractive relative to current consumption. Reduced savings would lead to a reduction in the overall capital stock over time, negatively impacting productive capacity and economic growth. However, a range of more recent papers have shown that such conclusions depended on the specific assumption underlying early models, which are now widely regarded as too simplistic and, in many cases, empirically invalidated. More recent and complete models suggest that the relation between capital income taxation and savings is less clear-cut and indicate that capital taxation could also play a positive role preventing over-saving and stimulating labour supply.

Recent academic literature presents a number of arguments for capital income taxation on allocative and distributional grounds. It is difficult for tax authorities to distinguish labour and capital income. This is especially the case for high-income earners who often have some leeway to classify their income as labour or capital income. A more equal tax treatment of capital income can therefore reduce tax avoidance through income shifting, thus supporting the equity of the tax system.<sup>(61)</sup> Higher income taxes on labour than on capital could result in disincentives for human capital accumulation.<sup>(62)</sup> It has also been argued that preferential capital income taxation can promote excessive automation.<sup>(63)</sup> Capital income taxation can also capture economic rents—excess returns that go beyond normal investment gains, such as those from monopolistic positions or speculative activities. Taxing these rents is efficient because it targets income that does not result from additional effort or risk-taking, thus allowing governments to raise revenue without significantly distorting economic behaviour. In addition, not all individuals can borrow equally against future income, making it inefficient to rely solely on labour income taxes to achieve redistribution and revenue goals. Taxing capital income thus mitigates inefficiencies from borrowing constraints and the heterogeneity in savings rates, promoting overall economic efficiency.<sup>(64)</sup> Analysing optimal taxation, Gerritsen et al. (2024) find that positive taxes on capital income are Pareto efficient if taxpayers differ in earnings potential driven either by investment skills or scale effects in wealth accumulation for wealthy individuals. Optimal taxes on capital income increase with earning heterogeneity.<sup>(65)</sup>

Changes in capital income taxation can have significant distributional effects. Since capital income is disproportionately earned by high-income individuals, raising taxes on capital income is often seen as a progressive measure that can help reduce income inequality. In this context, Mallards et al. (2022) show how corporate tax cuts lead to increases in income inequality.<sup>(66)</sup> On the other hand, Zidar (2019) shows that tax cuts for high-income earners do not significantly increase growth or labour participation.<sup>(67)</sup> While we have seen that reaction to tax cuts and tax hikes are not symmetric, this might still suggest that

<sup>(61)</sup> Diamond, P., and Saez, E., 'The case for a progressive tax: From basic research to policy recommendation.' *Journal of Economic Perspectives*, 25(4), 2011, pp. 165-190; Stantcheva, S., 'Dynamic taxation.' *Annual Review of Economics*, 12(1), 2020, pp. 801-831; Piketty, T., Saez, E., and Zucman, G., 'Rethinking capital and wealth taxation.' *Oxford Review of Economic Policy*, 39(3), 2023, pp. 575-591.

<sup>(62)</sup> Jacobs, B., and Bovenberg, A. L., 'Human capital and optimal positive taxation of capital income.' *International Tax and Public Finance*, 17, 2010, pp. 451-478. Diamond, P., and Saez, E., 'The case for a progressive tax: From basic research to policy recommendation.' *Journal of Economic Perspectives*, 25(4), 2011, pp. 165-190.

<sup>(63)</sup> Acemoglu, D., Manera, A., and Restrepo, P., 'Does the US tax code favor automation?' (No. w27052). National Bureau of Economic Research, 2020.

<sup>(64)</sup> Diamond, P., and Saez, E., 'The case for a progressive tax: From basic research to policy recommendation', *Journal of Economic Perspectives*, 25(4), 2011, pp. 165-190.

<sup>(65)</sup> Gerritsen, A., Jacobs, B., Spiritus, K., and Rusu, A. V., 'Optimal taxation of capital income with heterogeneous rates of return', *The Economic Journal*, 2024.

<sup>(66)</sup> Nallareddy, S., Rouen, E., and Serrato, J. C. S., 'Do corporate tax cuts increase income inequality?', *Tax Policy and the Economy*, 36(1), 2022, pp. 35-91.

<sup>(67)</sup> Zidar, O., 'Tax cuts for whom? Heterogeneous effects of income tax changes on growth and employment', *Journal of Political Economy*, 127(3), 2019, pp. 1437-1472.

increasing taxes on personal capital income could enhance revenue (and reduce income inequalities) without much adverse impact on economic activity among high-income groups.

In terms of possible distortions to economic incentives, it is also argued that capital income taxation is not necessarily more distortive than labour taxation. Taxes on labour may reduce incentives for participation in the labour market at the intensive margin (i.e. hours worked) and at the extensive margin (i.e. the decision to take up employment). Recent academic findings have argued that labour supply elasticities are higher than previously thought, particularly for older workers and second earners (often women) making distortions from taxing labour correspondingly high. <sup>(68)</sup>

Especially for high income earners, no academic consensus exists on the link between capital income taxation and economic growth. Some studies find positive growth effects from reducing capital income taxes, <sup>(69)</sup> but others find no significant relation between top income taxes and growth. <sup>(70)</sup> Arin et al. (2023) confirm the negative investment effect of higher CIT rates but find the opposite for higher personal income taxes. <sup>(71)</sup> Their research suggests that higher personal income taxes could motivate companies to retain and invest earnings instead of paying profits out to investors.

Taxpayer characteristics and context are also important determinants for the impact of changes to capital income taxation. It has been shown that the goods-producing sector increases investment and output in reaction to a corporate tax cut while the service sector increases only dividends. <sup>(72)</sup> Sims and Wolff (2018) and Demirel (2021) show the importance of overall macroeconomic conditions, with tax cuts being more effective during economic expansion and when the economy is operating close to its production frontier. <sup>(73)</sup> Bertolotti and Marcellino (2019) show that risk is another factor. Reactions to tax changes are more muted in times of higher uncertainty <sup>(74)</sup> Choi and Shin (2023) show that households' level of indebtedness can also influence the impact of tax changes. <sup>(75)</sup> Finally, Gunter et al. (2021) show that the initial level of taxation is relevant to the output reaction to a given tax change. <sup>(76)</sup>

The remainder of this section zooms in on two forms of capital income taxation that could be considered particularly relevant from a policy perspective, capital gains taxation and corporate income tax. In recent years, the increasing concentration of very high wealth levels and related tax avoidance strategies on the part of high and ultra-high net-worth individuals, have drawn political attention towards capital gains taxation, especially in the context of personal income taxation. The taxation of corporate income has also been an important policy priority, resulting in strengthened international coordination for the taxation of multinational corporations. <sup>(77)</sup> The tax treatment of dividend income interacts with corporate income

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<sup>(68)</sup> Keane, M. P., 'Recent research on labor supply: Implications for tax and transfer policy', *Labour Economics*, 77, 2022.

<sup>(69)</sup> Mertens, K., 'The near-term growth impact of the tax cuts and jobs act', 2018; Gemmell, N., Kneller, R., and Sanz, I., 'The growth effects of tax rates in the OECD', *Canadian Journal of Economics/Revue canadienne d'économique*, 47(4), 2014, pp. 1217-1255.

<sup>(70)</sup> Piketty, T., Saez, E., and Stantcheva, S., 'Optimal taxation of top labor incomes: A tale of three elasticities', *American economic journal: economic policy*, 6(1), 2014, pp. 230-271; Hope, D., and Limberg, J., 'The economic consequences of major tax cuts for the rich', *Socio-Economic Review*, 20(2), 2022, pp. 539-559.

<sup>(71)</sup> Arin, K. P., Devereux, K., and Mazur, M., 'Taxes and firm investment' *Journal of Macroeconomics*, 76, 2023.

<sup>(72)</sup> Cloyne, J., Kurt, E., and Surico, P., 'Who gains from corporate tax cuts?', No. w31278, National Bureau of Economic Research, 2023. The reasons underlying this result are still subject to discussion, because the incidence of CIT is not fully understood. Contingent on supply and demand elasticities and the level of competition in a given market, tax decreases can lead to supply increases or are simply passed through to owners in the form of higher profits. As mentioned in the text, the incidence can also fall on clients and workers.

<sup>(73)</sup> Sims, E., and Wolff, J., 'The state-dependent effects of tax shocks. *European Economic Review*', 107, 2018, pp. 57-85; Demirel, U. D., 'The short-term effects of tax changes: The role of state dependence', *Journal of Monetary Economics*, 117, 2021, pp. 918-934.

<sup>(74)</sup> Bertolotti, F., and Marcellino, M., 'Tax shocks with high and low uncertainty', *Journal of Applied Econometrics*, 34(6), 2019, pp. 972-993.

<sup>(75)</sup> Choi, and., & Shin, J., 'Household indebtedness and the macroeconomic effects of tax changes', *Journal of Economic Behavior & Organization*, 209, 2023, pp. 22-52.

<sup>(76)</sup> Gunter, S., Riera-Crichton, D., Vegh, C. A., and Vuletin, G., 'Non-linear effects of tax changes on output: The role of the initial level of taxation', *Journal of International Economics*, 131, 2021.

<sup>(77)</sup> For example, see the OECD/G20 Base Erosion and Profit Shifting Project, "Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy", available at: <https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf>.



taxation and therefore has interesting implications in its own right. The taxation of dividends will not be analysed in detail here, however, because dividends are one source of capital income along with interest, royalties and others. A discussion of the taxation of each income source is beyond the scope of this chapter.

### Capital gains

Increases in wealth concentration and tax avoidance strategies exclusively available to high and ultra-high-net worth individuals have contributed to a renewed policy interest in the taxation of capital gains (i.e. an increase in the value of assets held).<sup>(78)</sup> Assets prices (especially the prices of company shares) have boomed in recent years, further increasing top-wealth shares.

Most euro area countries tax capital gains at different and lower rates than labour income. However, there is a large heterogeneity of approaches across the euro area. Some countries tax capital gains along with other personal income but provide relief such as partial exemptions. Other countries tax capital gains separately from labour income, either at flat rates (possibly with other capital income) or at progressive rates, which tend to be lower than the rates levied on labour income. Most countries that levy social security contributions on labour income do not do so for capital gains. Some countries exempt all or most capital gains from taxation. Common features favouring capital gains over other forms of income include favourable tax treatments for housing assets; holding period requirements for assets to qualify for favourable tax treatment; and allowances for individuals to offset capital losses from all assets and allowances for excess losses to be carried forward to offset future capital gains are.

Many countries justify favourable tax treatment for capital gains as a way of boosting long-term economic growth through greater domestic savings and investment. In addition, national jurisdictions may give a more favourable capital gains tax treatment to housing assets (particularly owner-occupied housing) than to other assets. Findings from the academic literature suggest that it is not clear that capital gains tax relief increases aggregate savings and investment, and that capital gains tax relief appears to have limited impact on overall economic growth.<sup>(79)</sup> In addition, there is little economic justification for treating realised capital gains from financial assets, housing, collectibles, crypto assets, or any other asset differently from each other.<sup>(80)</sup> All differences induce changes in asset portfolios of investors that erode the capital income tax base and create economic distortions that may not favour investment and competitiveness.

The favourable tax treatment of capital gains has been argued to have a number of drawbacks:<sup>(81)</sup> (i) economic distortions and loss of horizontal equity because capital income is proportionately less taxed than labour income; (ii) a loss of vertical equity because high and ultra-high net worth individuals disproportionately own assets and therefore benefit from the favourable tax treatment; and (iii) a loss of potential revenue for the states (up to 2.0% of countries' tax revenues between 2019 and 2021 according to the OECD).

In most tax-systems, income from capital gains is only taxed upon realisation, i.e., when assets are sold, and value increases are realised.<sup>(82)</sup> The profit realised from the sale of capital assets constitutes a realised capital gain. Research from the OECD<sup>(83)</sup> shows that realised capital gains have increased in

<sup>(78)</sup> The potential role of capital gains taxation for taxing high-wealth holders is discussed in depth in Hebous, S.; Klemm, A., Michielse, G., and Osorio-Buitron, C., 'How to Tax Wealth', IMF How to Note 2024/001, International Monetary Fund, Washington, DC, 2024 and Slemrod, J., and Chen, X., 'Are capital gains the Achilles' heel of taxing the rich?', *Oxford Review of Economic Policy*, 39(3), 2023, pp 592-603.

<sup>(79)</sup> Hourani, D. and Perret, S. 'Taxing capital gains – country experiences and challenges', OECD Taxation Working Papers, OECD Publishing, Paris, 2025.

<sup>(80)</sup> See the [Annual Report on Taxation 2023](#), European Commission.

<sup>(81)</sup> See for example Hebous, S.; Klemm, A., Michielse, G., and Osorio-Buitron, C., 'How to Tax Wealth', IMF How to Note 2024/001, International Monetary Fund, Washington, DC, 2024.

<sup>(82)</sup> Note that the taxation of unrealised capital gains is not identical to the taxation of wealth. The tax base for wealth taxation is the total value of an asset while the tax base for unrealised capital gains taxation is the increase in value. Both forms of taxation share problems of monitoring and valuation. For specific asset types like publicly traded stocks, these problems are mitigated.

<sup>(83)</sup> Hourani, D., and Perret, S. 'Taxing capital gains – country experiences and challenges', OECD Taxation Working Papers, OECD Publishing, Paris, 2025.

many OECD countries. Among countries with available data, realised capital gains represented between 1% and 6% of GDP over the past two decades and have been increasing as a share of GDP since the global financial crisis. Unrealised capital gains are mostly not taxed due to difficulties in monitoring and valuation. The share of economic resources controlled by wealthy individuals thus increases without generating much taxable income. The realisation basis of taxation can incentivise tax minimisation behaviours such as income shifting and capital gains deferral.

The challenges arising from favourable capital gains taxation have prompted calls to reform the way capital gains are currently taxed, including alternatives to the realisation basis of taxation. For example, capital gains could instead be retrospectively taxed on an accrual base, or on deemed returns. Alternatively, several options for targeted tax reforms are possible. <sup>(84)</sup>

Nevertheless, an important negative consequence of increasing personal capital income taxes is the potential for capital flight or behavioural changes. High and ultra-high net worth individuals and investors may relocate their capital to lower-tax jurisdictions in order to avoid high taxes, thus reducing the overall tax base and may lead to reduced tax revenues. This effect is particularly prominent in small, open economies where capital is highly mobile. Empirical research suggests that capital income taxes can lead to the reallocation of capital, benefiting jurisdictions with lower tax rates. <sup>(85)</sup> Therefore, attention to the design of capital gains taxation is important both from an investment and an equity perspective.

### Corporate income tax (CIT)

The corporate income tax (CIT) is an important type of capital income tax and typically has corporate profits as its tax base. The CIT can be considered as a backstop or withholding for personal income taxation (PIT), as it is easier to tax a company directly than taxing the revenues of a potentially large number of shareholders individually. Other justifications for CIT are: that the tax is a compensation for the government-funded public services that corporations benefit from; an instrument to tax economic rents or excess profits; and an instrument to tax rich company owners, hence making the tax system more progressive.

In 2022, the share of CIT in total tax revenue in the EA-19 was 8.3% (8.4% in EU-27), compared to 23.7% for PIT and 26% for consumption taxes (23.9% and 27% in the EU-27, respectively). Over the last two decades, the average CIT rate in the EA-19 has declined notably (from 35.8% in 1995 to 23% in 2023), even though the share of CIT revenue in GDP has remained relatively stable (at around 2.5% of GDP). This so-called “rate – revenue puzzle” is explained by an expansion of the tax base of corporations (particularly changes in the legal definition of the tax base and increases in the share of profits in overall corporate incomes) (e.g. Fuest and Neumeier, 2023; Griffith and Miller, 2014). <sup>(86)</sup>

Contrary to the widespread view that the economic incidence of corporate taxes falls on capital owners, workers and consumers might also be impacted. This would make the CIT less progressive than often assumed. Fuest et al. (2018) have found that an increase in corporate taxes significantly decreases wages, and in particular, that low-skilled, female, and young workers bear half of the overall corporate tax burden on average. <sup>(87)</sup> Similar results are found in studies made at firm-data level. <sup>(88)</sup> By contrast, Clausing (2013) has found no statistically significant and robust association between an increase in CIT rates and a decrease in wages. <sup>(89)</sup> The incidence of the tax will ultimately depend on labour- and consumer supply and demand elasticities.

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<sup>(84)</sup> See for example Hourani and Perret (2025), *op. cit* for possible options.

<sup>(85)</sup> Chirinko, R. S., and Wilson, D. J., ‘Tax competition among US states: Racing to the bottom or riding on a seesaw?’, *Journal of Public Economics*, 155, 2017, pp. 147-163.

<sup>(86)</sup> Fuest, C., and Neumeier, F., ‘Corporate taxation. Annual Review of Economics’, 15(1), 2023, pp. 425-450; Griffith, R., and Miller, H., ‘Taxable corporate profits’, *Fiscal Studies*, 35(4), 2014, pp. 535-557.

<sup>(87)</sup> Fuest, C., Peichl, A., and Siegloch, S., ‘Do higher corporate taxes reduce wages? Micro evidence from Germany’, *American Economic Review*, 108(2), 2018, pp. 393-418.

<sup>(88)</sup> For example, Arulampalam, W., Devereux, M. P., and Maffini, G., ‘The direct incidence of corporate income tax on wages’, *European Economic Review*, 56(6), 2012, pp. 1038-1054.

<sup>(89)</sup> Clausing, K. A., ‘Who pays the corporate tax in a global economy?’, *National Tax Journal*, 66(1), 2013, pp. 151-184.

Regarding investment, theory suggests that lower CIT rates reduce the cost of capital and should therefore boost investments. Many empirical studies have confirmed the theoretical prediction that higher CIT rates reduce investment by decreasing the after-tax return on capital.<sup>(90)</sup> The severity of this effect, however, depends on the general economic environment, financial conditions and how easily capital can move across borders.<sup>(91)</sup> Conversely, accelerated depreciation allowances and tax credits (rather than non-targeted tax cuts) are often found to be effective to boost investment.<sup>(92)</sup> Considerable heterogeneity in response depends on corporations' particular characteristics (e.g. size, age, sector and liquidity) and tax planning opportunities. Younger, less established firms are often more sensitive to tax incentives than larger, more mature firms with better access to financing and tax optimisation strategies.<sup>(93)</sup>

Tax incentives like accelerated depreciation and tax credits are part of the toolset for industrial policy and can be used for a diverse set of policy objectives like stimulating innovation, the green transition, strategic independence, employment etc.<sup>(94)</sup> The IMF has recently recommended that such efforts need to be coordinated on the level of the single market to mitigate negative spillovers.<sup>(95)</sup> Using tax incentives instead of direct subsidies can facilitate the administrative burden of implementation but might increase the complexity of the tax system. The design and targeting of such incentives is therefore important.<sup>(96)</sup>

Compared with investment, the relationship between CIT and economic growth seems more nuanced. While higher taxes may discourage investment and innovation, the revenue generated can fund public services and infrastructure, which in turn supports long-term growth. For instance, reinvesting tax revenue in public goods and infrastructure may mitigate the negative impact of higher CIT on economic growth because the improved infrastructure can indirectly benefit firms. However, if higher tax revenues are not used productively, high taxes can depress economic activity and growth. The overall economic impact of CIT therefore depends on how tax policies are structured and how revenues are used. Gechert and Heimberger (2022) analysed 42 studies which mostly show that tax cuts do indeed increase growth.<sup>(97)</sup> However, once the researchers correct for the so-called publication bias,<sup>(98)</sup> the empirical evidence no longer supports the claim that tax cuts boost growth.

Corporations with cross-border activity can minimise their tax liability through profit shifting toward subsidiaries located in low tax jurisdictions. The most common ways of shifting profits to subsidiaries where they will be taxed at a lower rate (or where their tax base will decrease) are transfer pricing, intra-group lending and borrowing and the strategic allocation of intangible assets (patents, trademarks,

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<sup>(90)</sup> Arin, K. P., Devereux, K., and Mazur, M., 'Taxes and firm investment. *Journal of Macroeconomics*, 76, 2023; Jacob, M., 'Real effects of corporate taxation: A review. *European Accounting Review*', 31(1), 2022, pp. 269-296.

<sup>(91)</sup> For example, Zwick, E., and Mahon, J., 'Tax policy and heterogeneous investment behaviour', *American Economic Review*, 107(1), 2017, pp. 217-248.

<sup>(92)</sup> Ohn, E., 'The effect of corporate taxation on investment and financial policy: Evidence from the DPAD', *American Economic Journal: Economic Policy*, 10(2), 2018, pp. 272-301.

<sup>(93)</sup> Hanappi, T., Millot, V., and Turban, S., 'How does corporate taxation affect business investment?: Evidence from aggregate and firm-level data', 2023. Note that consumption taxes (Jacob et al. 2019) and personal income taxes (Jacob and Vossebürger 2022) affect corporate investment in much the same way as CIT. These studies even conjure that the effect on investment is of similar magnitude for the different types of taxes.

<sup>(94)</sup> An overview of relevant policy tools is provided for example by: Evenett, S., Jakubik, A., Martín, F., and Ruta, M., 'The return of industrial policy in data', *The World Economy*, 47(7), 2024.

<sup>(95)</sup> Hodge, A., Piazza, M. R., Hasanov, F., Li, X., Vaziri, M., Weller, M. A., and Wong, Y. C., 'Industrial policy in Europe: A single market perspective', No. 2024/249, International Monetary Fund, 2024.

<sup>(96)</sup> A coordinated approach is proposed by the European Commission in its recent communication 'A Competitiveness Compass for the EU'. The Commission will invite Member States to ensure that the elements of their tax systems which impact private investment incentives, such as depreciation rules and tax credits, are conducive for a clean production business case. See European Commission (2025), COM(2025) 30.

<sup>(97)</sup> Gechert, S., and Heimberger, P., 'Do corporate tax cuts boost economic growth?', *European Economic Review*, 147, 2022.

<sup>(98)</sup> Publication bias can result from the fact that empirical research work is more likely to be published when showing an effect as compared to showing the absence of an effect. Authors therefore might selectively report significant results and omit insignificant results since the former are more likely to be published.

etc.).<sup>(99)</sup> One indication of profit shifting are excessive profits of foreign corporations in a given jurisdiction, with strong empirical patterns in some jurisdictions.<sup>(100)</sup> About 35% of profits realised abroad (totalling EUR 932 billion in 2022) have been found to be shifted with the result that receipts from corporate income taxes were reduced by an estimated 10% globally. For the EU profit shifting is estimated to reduce CIT revenues by up to 20%.<sup>(101)</sup>

While corporations are the tax subject of the corporate income tax, they are not carrying the final tax burden since tax incidence can only fall on real people. There is nevertheless some indication that corporations can avoid taxation more easily than individuals. In general, it is easier for a company to switch tax residency than for individuals. In addition, it seems that there are more tax avoidance strategies available to corporations than to individuals. The role of holding companies in tax avoidance is only one case in point. Another strategy is the widely observed share buyback of corporations. Instead of distributing profits as taxable dividends, companies used retained earnings to buy back their own share, driving up the share price. Shareholders' wealth increases as a result but remains untaxed until gains are realised.<sup>(102)</sup>

### III.5. POTENTIAL WAYS FORWARD TO ENSURE SUSTAINABLE TAX REVENUES: STRENGTHENING TAX COMPLIANCE AND INTERNATIONAL TAX COOPERATION

The need for sufficient tax revenues without harming work incentives, especially in a context of a declining labour force, suggest shifting some of the tax burden away from labour to other tax bases.<sup>(103)</sup> When shifting the tax burden away from labour, however, policymakers may need to pay attention to the possible effects in terms of competitiveness, revenue generation and redistributive implications. For example, pursuing higher capital tax revenues is often seen as beneficial from an equity perspective, because they primarily target high-income individuals who derive significant income from capital. However, there is the general worry that more taxes on capital in a given country might shift investments abroad. These effects underscore the importance of balancing revenue needs, equity considerations, and potential efficiency implications when formulating tax policy.

The need to generate revenues while shifting some of the burden from labour taxation could be achieved by broadening the capital tax base.

Strategies to broaden the capital tax base include promoting tax simplification and increasing tax compliance by reducing tax avoidance. The latter, in the recent past, has been enabled by the automatic exchange of information on tax matters between different jurisdictions. Effective international coordination would prevent taxpayers from exploiting loopholes across jurisdictions, maximising results. International coordination is also instrumental to increase of the tax rates for capital-based taxes (as agreed, for example, in the context of the OECD's Base Erosion and Profit Shifting (BEPS) initiative). Those aspects will be outlined in more detail in the following paragraphs.

Promoting tax certainty and tax simplification for businesses operating in the euro area could reduce compliance costs and incentivise investment, supporting business activities and broadening the corporate tax base. In this respect, the Commission has recently presented a proposal for a Directive on Business in

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<sup>(99)</sup> The tax burden across jurisdictions can vary due to differences in rates and/or tax base definition. Rate differences are readily observable while tax base differences are not well understood. There is no common indicator to compare tax base definitions.

<sup>(100)</sup> Tørsløv, T., Wier, L., and Zucman, G., 'The missing profits of nations', *The Review of Economic Studies*, 90(3), 2023, pp. 1499-1534; Delis, F., Delis, M. D., Karavitis, P. I., and Klassen, K. J., 'Corporate governance and profit shifting: The role of the audit committee', *European Accounting Review*, 32(4), 2023, pp. 809-839.

<sup>(101)</sup> Wier, L. S., and Zucman, G., 'Global profit shifting, 1975-2019', No. w30673, National Bureau of Economic Research, 2022.

<sup>(102)</sup> Assets like stocks can be used as collateral for bank loans. Loans provide liquidity which can be used for consumption without an underlying taxable income stream. The reliance on non-taxed liquidity is a common strategy for taxpayers with sufficiently large asset holdings.

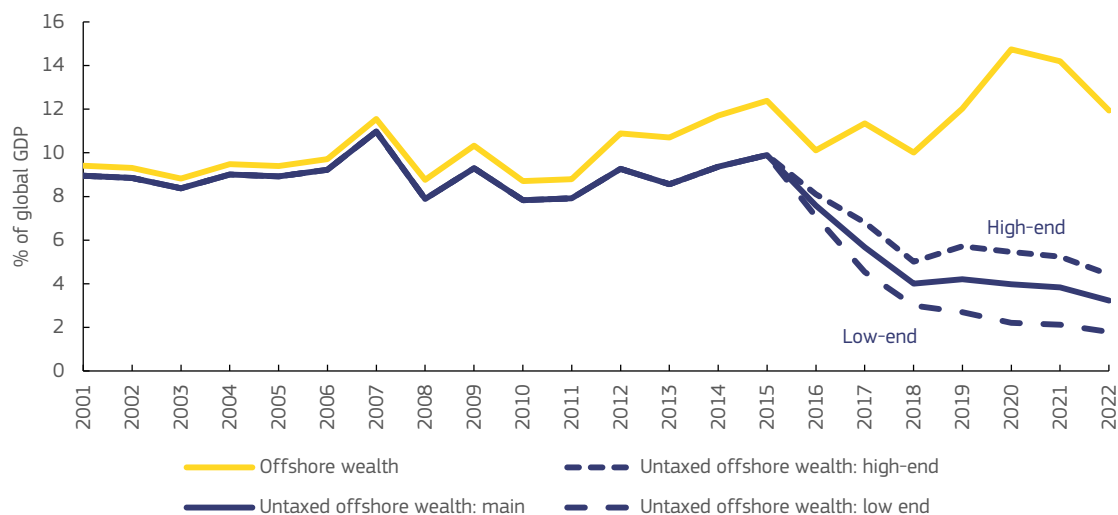
<sup>(103)</sup> This article does not discuss the policy implications of shifting taxation from labour to consumption. Broader considerations on tax shifts can be found in, for example, Mathé, M., Nicodème G. and Ruà, S., 'Tax shifts. Taxation papers', Working Paper no 59, European Commission, 2015, available at [https://taxation-customs.ec.europa.eu/document/download/98dc0955-0423-4600-8e96-555d4f4a5214\\_en?filename=taxation\\_paper\\_59.pdf](https://taxation-customs.ec.europa.eu/document/download/98dc0955-0423-4600-8e96-555d4f4a5214_en?filename=taxation_paper_59.pdf).

Europe: Framework for Taxation (BEFIT).<sup>(104)</sup> This is expected to reduce tax compliance costs and encourage cross-border investment, thereby stimulating economic growth and ultimately corporate tax revenues.<sup>(105)</sup>

Increasing tax compliance may be an additional strategy to increase the capital tax base. Aggressive tax planning (ATP) strategies allow taxpayers –companies and individuals – to reduce their tax liability through arrangements that may not be strictly illegal but are in contradiction with the intent of the law. Fighting ATP, particularly in relation to corporate taxation, has been one of the Commission’s tax-related priorities in recent years. The Anti-tax Avoidance Directive (ATAD) lays down minimum standard measures for addressing the most common forms of aggressive (corporate) tax planning and tax avoidance practices that directly affect the functioning of the internal market.

At the individual level tax evasion might be linked to capital income from the tax administration (e.g. by holding their assets abroad). Tax evasion on the income earned on offshore assets (e.g. interest, dividends and capital gains) has substantially declined over the last decade but remains one of the key challenges posed by globalisation. Withholding taxes on interest and dividends do, to some extent help further mitigate administrative difficulties because they use banks and large corporations to collect taxes.

Graph III.15: **Unreported offshore household financial wealth – three scenarios (% of world GDP)**



**Source:** European Tax Observatory.

The European Tax Observatory has estimated the likely evolution of the global offshore tax evasion<sup>(106)</sup> following the introduction of international common reporting standards (CSR) on the automatic exchange of bank information.<sup>(107)</sup> In the low-end scenario, 15% of offshore wealth was untaxed in 2022, representing 1.8% of world GDP; in the central scenario 27% of offshore wealth was untaxed,

<sup>(104)</sup> Document COM(2023) 532 final of 12 September 2023, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023PC0532&amp%3Bqid=1700565513879>.

<sup>(105)</sup> Document SWD(2023) 308 final of 12 September 2023, Impact assessment report accompanying the proposal in document COM(2023) 532 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023SC0308&amp%3Bqid=1700565612918>.

<sup>(106)</sup> Alstadsæter, A., Godar, S., Latitude, A., Nicolaidis, P. and Zucman, G., 'Global tax evasion report 2024', European Tax Observatory, 2023.

<sup>(107)</sup> In all scenarios, it is assumed that 30% of the global offshore wealth that is supposed to be captured by the common reporting standard (CSR) is not properly reported to the relevant tax authority. The low-end scenario assumes that 50% of this non-reported wealth evades taxes, corresponding to the average non-compliance rate found for income not subject to third-party reporting (essentially self-employment income) in the economics literature on tax evasion. The central scenario assumes that non-compliance on unreported foreign wealth is 90%, implying that 27% of offshore wealth goes untaxed. The high-end scenario assumes that a portion of CRS-reported wealth is also non-compliant, but with a low non-compliance rate of 10%. For additional information, see Alstadsæter et al. (cited in the previous footnote).

representing 3.2% of world GDP; and in the high-end scenario 37% of offshore wealth was untaxed, representing 4.4% of world GDP (see Graph III.15).

Successful implementation of anti-avoidance measures leads to a broader tax base and therefore supports an increase in capital income tax revenues. In this respect, international policy coordination and exchange of information are central to a fair and efficient tax system. Isolated tax policies can lead to gaps and mismatches, offering opportunities for tax avoidance and evasion. An important development for the enforcement of capital income taxes is the increasing prevalence of arrangements to exchange information between countries for tax purposes.

The standard for automatic exchange of financial account information in tax matters (the AEOI standard) started being implemented in 2017. It was developed by the OECD, working with G20 countries, and then adopted by the Global Forum on Transparency and Exchange of Information for Tax Purposes (the Global Forum). To date, 123 jurisdictions (including developed and developing countries) have either commenced exchanges under the AEOI standard or are set to do so in the near future. A recent article<sup>(108)</sup> suggests that the automatic exchange of information has reduced possibilities for evasion, making the tax base less elastic and potentially reducing the distortionary effects of higher top tax rates. Intensifying efforts at global level will help further reduce tax avoidance and evasion, thereby promoting transparency and a level playing field. In the EU, the Directive on Administrative Cooperation<sup>(109)</sup> enables the exchange of information between the Member States' tax authorities, in order to help ensure that all taxpayers bear their fair share of the tax burden.

Strategies to increase capital tax revenues may also focus on increasing capital tax rates. However, without effective multilateral action, efforts by one country can be easily circumvented by shifting activities to more lenient tax regimes. Higher rates for capital-based tax may drive capital relocation to lower-tax jurisdictions, suggesting further international coordinated efforts on top of the progress on exchange of information. In this respect, the OECD's Base Erosion and Profit Shifting (BEPS) initiatives led to a landmark agreement to increase effective corporate tax rate. In particular, Pillar Two of the agreement establishes an effective tax rate of at least 15% to multinational groups with consolidated revenue of at least EUR 750 million.

In terms of further ways forward, a next step in international tax cooperation could be the development of an asset registry that would further boost transparency.<sup>(110)</sup> The feasibility of such an asset registry with EU scope has recently been analysed in a study for the Commission.<sup>(111)</sup>

Capital income might become more important in the future due to developments in robotisation, automation and the use of artificial intelligence (AI), pushing policymakers to further shift the tax balance toward capital taxation.<sup>(112)</sup> Comprehensive and universal taxation of all forms of capital income could assure revenue neutrality when factor income shares change and would not distort the specific uses of capital.

Advances in AI also offer promising tools to increase tax compliance by improving tax collection and monitoring by tax administrations. As EU tax administrations collect and exchange increasing amounts of data on taxpayers, AI may help authorities to manage this big data more efficiently. This would be particularly relevant for risk-assessment of tax fraud and avoidance, tax inspections and red flagging, because AI tools show potential to swiftly process data and detect cases of non-compliance and abuse.

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<sup>(108)</sup> Boas, H., Johannesen, N., Kreiner, C., Larsen, L. and Zucman, G., 'Taxing capital in a globalized world: the effects of automatic information exchange', No w32714, National Bureau of Economic Research, 2024.

<sup>(109)</sup> [https://taxation-customs.ec.europa.eu/taxation/tax-co-operation-and-control/administrative-co-operation-and-mutual-assistance/enhanced-administrative-cooperation-field-direct-taxation\\_en](https://taxation-customs.ec.europa.eu/taxation/tax-co-operation-and-control/administrative-co-operation-and-mutual-assistance/enhanced-administrative-cooperation-field-direct-taxation_en).

<sup>(110)</sup> For example, ICRICT, 'It is time for a global asset registry to tackle hidden wealth, 2022. <https://www.icrict.com/wp-content/uploads/2022/04/ICRICTGARreportEN.pdf>.

<sup>(111)</sup> European Commission: Directorate-General for Financial Stability, Financial Services and Capital Markets Union, Gojsic, D., Akhvlediani, T., Korenblit, A., De Groen, W. et al., 'Feasibility study for a European asset registry in the context of the fight against money laundering and tax evasion' – Executive summary, Publications Office of the European Union, 2024, <https://data.europa.eu/doi/10.2874/151361>.

<sup>(112)</sup> For example Bastani, S., and Waldenström, D., AI, automation and taxation, 2024, <https://www.ifn.se/wfiles/wp/wp1501.pdf>.

## ANNEX. THE EURO AREA CHRONICLE

by Sara Simoes

The Commission, the Economic and Financial Affairs Council and the Eurogroup regularly take decisions that affect how the Economic and Monetary Union works. To keep track of the most relevant decisions, the QREA documents major and legal and institutional developments. This issue covers developments in 2024.

The year 2024 marked the 25<sup>th</sup> anniversary of the euro and a key decision that year was the adoption of the new macroeconomic governance framework by the Parliament and Council. Based on Commission proposals, it comprises three pieces of legislation <sup>(113)</sup> The reform's overall objective is to reduce debt ratios and deficits in a gradual, realistic, sustained and growth-friendly manner, while promoting reforms and investments in areas that increase growth potential and improve fiscal sustainability, and in strategic areas such as digital, green or defence. At the same time, the new framework provides appropriate room for counter-cyclical policies and help address existing macroeconomic imbalances. <sup>(114)</sup>

In March the Eurogroup agreed on a statement on the future of the Capital Markets Union (CMU), and in May agreed on avenues for its delivery. On 11 March, preparing for the next European legislature (2024-2029), the Eurogroup identified three priority areas – Architecture, Business and Citizens – for action with the aim of improving the functioning of European capital markets. <sup>(115)</sup> Concerning architecture, the aim is to develop, within the EU, an agile capital markets framework that allows better cross-border diversification of risk by reducing barriers and developing a competitive, consistent, streamlined, and smart regulatory and supervisory system that works for businesses, investors, and savers, and ensures financial stability. As for business, the objective is to increase investments in the EU, especially in the sustainable and digital sectors, and ensure that businesses, including SMEs, have access to the appropriate funding to grow within the EU, can be competitive and are not hindered by excessive administrative burden. Regarding citizens, the goal is to facilitate access to capital markets by creating easier access routes to a larger choice of investment possibilities for their savings and pensions. In May, the Eurogroup agreed on a high-level roadmap for follow-up to the Eurogroup statement on the future of CMU. <sup>(116)</sup><sup>(117)</sup> The roadmap includes initiatives to be brought forward by the Commission over the course of the new legislative cycle, and measures at the national level.

On 19 June 2024, the Commission adopted the Spring Package of economic policy coordination documents under the European Semester. The package provided guidance to build a robust and future-proof economy that secures competitiveness, resilience and long term prosperity for all, while maintaining sound public finances, in the face of a challenging geopolitical environment.<sup>(118)</sup> The 2024 Spring Package included country reports which analysed the economic, employment and social developments in each Member State and took stock of the implementation of the RRP and Cohesion Policy programmes. These reports also identified key challenges, with a particular focus on competitiveness, and priority reforms and investments. Based on that analysis, the Commission proposed country-specific recommendations (CSRs) for the 27 Member States, focused on: i) fiscal policy, including fiscal structural reforms; ii) continuing or accelerating implementation of the national recovery and resilience plans and Cohesion Policy programmes; iii) outstanding and/or newly emerging structural challenges, with a focus on improving

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<sup>(113)</sup> Regulation of the Council and the European parliament on the effective coordination of economic policies and on multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97; Council Regulation amending Regulation (EC) No 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure; Council Directive amending Directive 2011/85/EU on requirements for budgetary frameworks of the Member States.

<sup>(114)</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/04/29/economic-governance-review-council-adopts-reform-of-fiscal-rules/#:~:text=Today%20the%20Council%20adopted%20three%20cstates%20through%20reforms%20and%20investment>.

<sup>(115)</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/03/11/statement-of-the-eurogroup-in-inclusive-format-on-the-future-of-capital-markets-union/>.

<sup>(116)</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/05/14/eurogroup-president-statement-on-the-follow-up-to-the-eurogroup-agreement-on-the-future-of-the-capital-markets-union/>.

<sup>(117)</sup> [https://www.consilium.europa.eu/media/2pwbdeil/egplus\\_cmu\\_wp\\_final.pdf](https://www.consilium.europa.eu/media/2pwbdeil/egplus_cmu_wp_final.pdf).

<sup>(118)</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_3290](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_3290).

competitiveness.<sup>(119)</sup> The package also contained post-programme surveillance reports for Cyprus, Greece, Ireland, Portugal and Spain. These are prepared twice-yearly, and like in previous years concluded that all five Member States retain the capacity to repay their debt. The Commission also assessed the existence of macroeconomic imbalances in Member States, which overall, after the large terms-of-trade shock of 2022, tended to ease. <sup>(120)</sup>In addition, the package comprised a report (the so-called report under Article 126(3) TFEU) assessing the respect of the public deficit criterion for several Member States. As a result, in July the Council adopted decisions establishing the existence of excessive deficits for Belgium, France, Italy, Hungary, Malta, Poland and Slovakia. <sup>(121)</sup>

On 26 June 2024, the Commission published its 2024 Convergence Report. The report concluded that the six non euro-area Member States examined (Bulgaria, Czechia, Hungary, Poland, Romania and Sweden) displayed mixed results in terms of nominal convergence. None of the six Member States met all the criteria for joining the euro area. <sup>(122)</sup>

On 4 November, the Eurogroup adopted a statement on the competitiveness of the European economy. In November 2023, the Eurogroup had launched a series of discussions on competitiveness challenges. <sup>(123)</sup> The Eurogroup discussions considered the new European Competitiveness Deal<sup>(124)</sup> aimed at strengthening the European Union's competitiveness and resilience, including by harnessing all instruments and policies in a comprehensive and coherent manner at both EU and Member State level. It was agreed by the European Council on 17–18 April 2024. The discussions also considered the conclusions of the report by Enrico Letta 'Much more than a market' report and the Mario Draghi's report on 'The Future of European competitiveness'. Ministers agreed on a set of policy priorities and actions to meet these emerging and persistent challenges, including addressing the EU's innovation and productivity challenges to boost growth, reducing the cost of energy and building EU energy resilience through coordination and integration, strengthening EU economic security in a fragmenting global trade environment, revitalising the Single Market to preserve European prosperity, and coordinating investment strategies to finance EU priorities.

The Autumn Package kick started the 2025 cycle of economic policy coordination under the European Semester. A first part of the package, published on 26 November, was mainly dedicated to the assessment of the medium-term fiscal plans, which are the cornerstone of the new economic governance framework, integrating fiscal, reform and investment objectives. <sup>(125)</sup> As a complement to the above mentioned report under Article 126(3) TFEU, in autumn the Commission also discussed compliance of Austria and Finland with the deficit criterion. The Commission decided that there was no case to initiate more excessive deficit procedures. The package also included the recommendations with corrective paths for the eight Member States (Belgium, France, Hungary, Italy, Malta, Poland, Romania and Slovakia) in excessive deficit. For most of these Member States, the corrective paths are based on the net expenditure paths that the Member State set out in their medium-term plans. This is in line with the strong emphasis placed on national ownership of fiscal commitments under the new economic governance framework. In the absence of an (approved) medium-term plan, as was the case for Belgium (and Hungary at the time), the corrective path in the recommendations were based on the Commission's four-year reference trajectories. The recommendations can be amended once a medium-term fiscal plan is presented and approved by the Commission and the Council.<sup>(126)</sup> Subsequently, a second part of the package was

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<sup>(119)</sup> [https://commission.europa.eu/publications/2024-european-semester-country-specific-recommendations-commission-recommendations\\_en](https://commission.europa.eu/publications/2024-european-semester-country-specific-recommendations-commission-recommendations_en).

<sup>(120)</sup> [https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/macro-economic-imbalance-procedure/depth-reviews\\_en](https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/macro-economic-imbalance-procedure/depth-reviews_en).

<sup>(121)</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/07/26/stability-and-growth-pact-council-launches-excessive-deficit-procedures-against-seven-member-states/>.

<sup>(122)</sup> [https://economy-finance.ec.europa.eu/publications/convergence-report-2024\\_en](https://economy-finance.ec.europa.eu/publications/convergence-report-2024_en).

<sup>(123)</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/11/04/competitiveness-of-the-european-economy-statement-of-the-eurogroup-in-inclusive-format>.

<sup>(124)</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/11/08/the-budapest-declaration/>.

<sup>(125)</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_5922](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_5922).

<sup>(126)</sup> For Hungary, on 16 January 2025, the Commission adopted a recommendation for an amended Article 126(7) recommendation, following its positive assessment of their plan.



published on 18 December, addressing socio economic challenges and macroeconomic stability risks.<sup>(127)</sup> It included a recommendation on the economic policy of the euro area for 2025, which was organised along three main themes: competitiveness, resilience and macroeconomic and financial stability. The second part of the package also included the Alert Mechanism Report on developments regarding macroeconomic imbalances and vulnerabilities in the EU Member States.<sup>(128)</sup>

The Commission assessed a series of medium-term plans<sup>(129)</sup> submitted by the Member States. In November, for 20 Member States, the Commission recommended that the Council endorses the net expenditure path included in these plans.<sup>(130)</sup> For five out of those plans, the net expenditure path was based on an extension of the adjustment period from four to seven years, underpinned by a set of reform and investment commitments included in the plans. In the case of the Netherlands, the Commission proposed that the Council recommend a net expenditure path consistent with the technical information the Commission transmitted in June 2024. The medium-term plan of Hungary was still under assessment<sup>(131)</sup> and the medium-term plans of Belgium, Bulgaria, Austria, Lithuania and Germany would be submitted at a later stage.<sup>(132)</sup> The Commission also assessed the Draft Budgetary Plans for 2025 presented by 17 euro area Member States,<sup>(133)</sup> which are the first step in the implementation of the medium-term plans.

The euro area recommendation, which is supported by the Euro Area Report, presents policy advice to euro area Member States on topics that affect the functioning of the euro area as a whole.<sup>(134)</sup> This year's euro area recommendation calls on Member States to act both individually, including through the implementation of their Recovery and Resilience Plans, and collectively within the Eurogroup to improve competitiveness, to foster economic resilience and to continue ensuring macroeconomic and financial stability. In particular, the recommendation calls to i) strengthen innovation, including in critical technologies; ii) improve the business environment, reinforcing access to funding and reducing administrative burden and regulatory complexity; iii) support public and private investment in areas of common priorities, such as the green and digital transitions and the build-up of defence capabilities; iv) promote upskilling and reskilling of the workforce, while further increasing labour market participation; v) ensure compliance with the new fiscal framework, improve debt sustainability and monitor risks to macro-financial stability.

In 2024, disbursements to the Member States under the RRF continued, amounting to EUR 66.4 billion. This means that since the RRF's creation until the end of 2024 about €268 billion have been disbursed under the RRF to euro area Member States. This is slightly over half of the total amount of support committed under the RRF for euro area Member States (EUR 531 billion). Disbursements were EUR 177.7 billion in grants and EUR 90.6 billion in loans. Moreover in 2024, revisions to plans have been approved by the Council concerning the RRFs for 12 euro area Member States. The changes aim to reduce administrative burden and are expected to facilitate the RRF's implementation, unlike keeping the reform ambition of the plans.

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<sup>(127)</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_6427](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_6427).

<sup>(128)</sup> In 2025, in-depth reviews will be prepared for nine Member States: Cyprus, Germany, Greece, Italy, Hungary, the Netherlands, Romania, Slovakia, Sweden and Estonia.

<sup>(129)</sup> This concerns the following Member States: Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Ireland, Greece, Italy, Latvia, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

<sup>(130)</sup> This concerns the medium-term plans of Finland, France, Italy, Spain and Romania.

<sup>(131)</sup> The Commission adopted a recommendation for a positive assessment of the Hungarian plan on 16 January 2025.

<sup>(132)</sup> Due to recent or upcoming elections, the Commission and relevant Member States have agreed to extend the deadlines for submission for these Member States.

<sup>(133)</sup> Austria, Belgium and Spain did not yet submit a draft budgetary plan as no budget was submitted to their national Parliaments and were thus not included in the assessment presented in the Autumn Package.

<sup>(134)</sup> [https://commission.europa.eu/publications/2025-european-semester-recommendation-euro-area\\_en](https://commission.europa.eu/publications/2025-european-semester-recommendation-euro-area_en).



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