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Wages, profits and productivity in an inflationary environment

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The high rate of inflation in Ireland since mid-2021 has been largely driven by external factors, such as the global supply chain disruption arising from the COVID-19 pandemic and the surge in the prices of globally traded commodities following the Russian invasion of Ukraine in February 2022. However, the extent to which high inflation persists following such external shocks is in part determined by their spill-over to the price of domestically provided goods and services. It has been evident for some time that prices have been rising in a much larger share of the consumer basket than just in its food and energy components, with core inflation (which excludes food and energy) being higher than headline inflation in May 2023.

This *Box* focuses on how domestic factors have influenced inflation developments in recent years using National Accounts data for the Gross Value Added (GVA) of the domestically oriented sectors of the economy.[2] By considering developments in unit labour costs (ULC) and unit profits in the output prices of these sectors, it is possible to consider their roles in inflationary developments in recent years, and what we might expect to see happening labour costs and profits during the process of

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[2] The "domestic" sectors exclude those whose output is dominated by foreign-owned MNEs. Specifically the "domestic" sectors exclude Reproduction of Recorded Media (NACE 18.2), Chemicals and Chemical Products (NACE 20), Basic Pharmaceutical Products & Preparations (NACE 21), Computer, Electronic & Optical Products (NACE 26), Manufacture of Electrical Equipment (NACE 27), Manufacture of Medical and Dental Instruments and Supplies (NACE 32.5), and Information & Communications (NACE 58-63). Domestic sectors accounted for 44 per cent of total GVA in 2022. GVA is GDP less net product taxes, and can be derived by adding capital compensation (Gross Operating Surplus and Gross Mixed Income) and compensation of employees (wages, salaries and employer social security contributions).

disinflation now expected to take place.[3] The analysis decomposes changes in the GVA deflator of these sectors into the relative contribution of ULC and unit profits accompanying those changes.[4]

ULC is the amount of the selling price of a firm's unit of output that is used to compensate the labour input used in producing that good or service. Changes in ULC can be further disaggregated into changes in labour compensation per hour worked and labour productivity per hour worked. Labour compensation includes wages and salaries as well as employer social insurance or pension contributions. If labour compensation rises faster than productivity, then ULC increases, and its contribution to domestic inflation may also increase.

Unit profit is the proportion of the selling price of a unit of a firm's output that is used to compensate the owners of the business for providing capital.[5] It is roughly equivalent to an EBITDA margin (earnings before interest, tax, depreciation and amortisation) in a company's financial accounts. It is important to note that unit profit can change for a number of reasons, which can either add to each other or offset each other. These can include the business maintaining or increasing the cash returns to its owners or an increase in the cost of the firm's debt that is not offset by a reduction in another driver of unit profit. Unit profits may also rise for precautionary purposes to offset future increases in wage or tax costs, or in response to a higher risk premium on a business as a result of past losses, or indeed to fund future investment.[6] As with ULC, higher unit profits can be associated with a higher inflation rate in the economy.

Since the onset of the pandemic in 2020, the contribution of ULC to domestic price rises has remained relatively static, declining marginally from 1.3 percentage points in 2020 to an estimated 0.8 percentage points in 2022 (Figure 1). Underlying this, however, have been some differing developments in hourly labour compensation and productivity (Figure 2). In 2020, there was a starker reduction in hours worked than in output, related to the effects of pandemic-related restrictions, which in turn led to higher productivity growth and compensation growth. At the same time, a greater proportion of the loss in hours worked was in lower-paid employment, which had the effect of pushing

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[3] See Byrne, McLoughlin and O'Brien (2022) for a discussion on the GVA deflator of the domestic sectors as a means of evaluating domestic price pressures.

[4] GVA at basic prices, which does not include taxes or subsidies on products, is used in this *Box* as such taxes and subsidies are not sectorised in the National Accounts and cannot be attributed to just the domestic sectors. As a consequence, and unlike similar analyses such as Arce, Hahn and Koester (2023), European Commission (2023) and Mojon, Nodaru and Siviero (2023), the contribution of unit taxes to GVA inflation is not considered here. If one were to add total economy taxes and subsidies on products to the GVA at basic prices of the domestic sectors, the results for the contribution of ULC and unit profit to GVA inflation would change marginally.

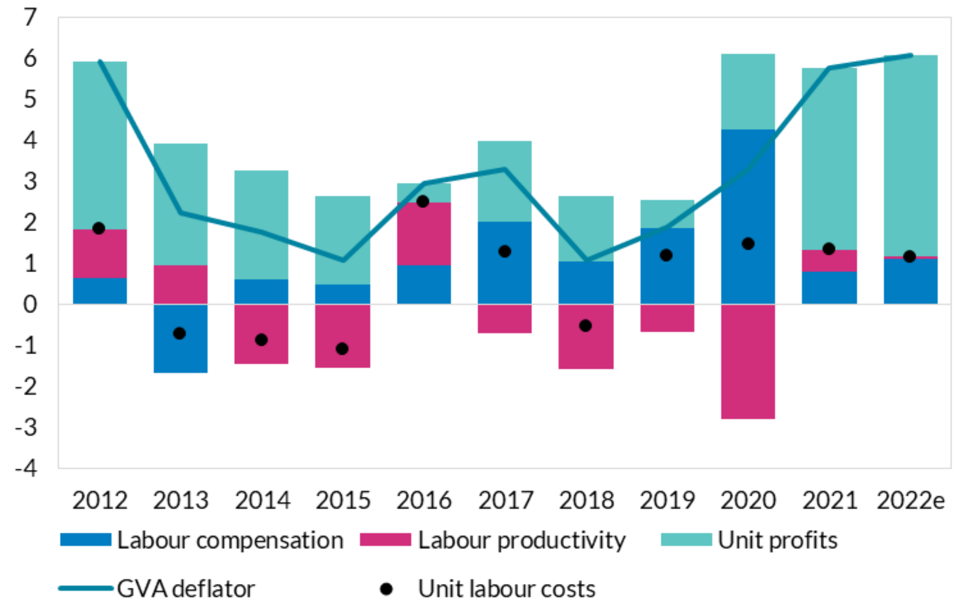
[5] ULC in this *Box* includes the proportion of Gross Mixed Income that accrues to labour, which reflects the labour earnings of self-employed persons. Unit profit includes the proportion of Gross Mixed Income that accrues to the owners of capital, such as dividend payments.

[6] Maintaining profit margins with an increase in non-labour input costs does not necessarily mean businesses need an active re-pricing strategy (Colonna, Torrini and Viviano, 2022).

up growth in compensation per hour in that year. During 2021 and 2022, productivity growth has been flat or slightly negative, whereas hourly compensation has increased slightly in both years.

Unit profits contributed more to domestic inflation than unit labour costs in recent years

Figure 1: Decomposition of changes in the GVA deflator for domestic sectors.



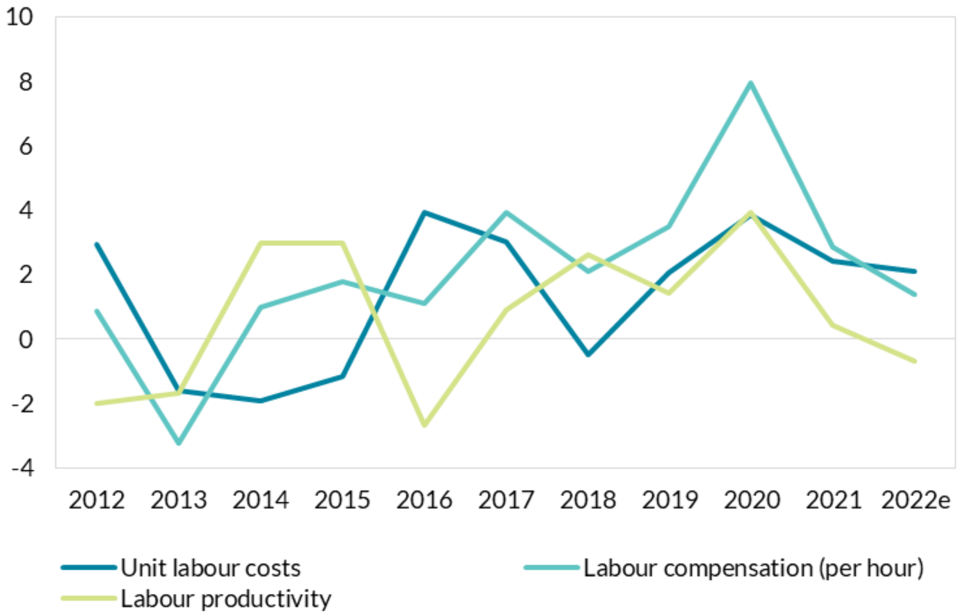
Source: CSO Quarterly National Accounts, CSO Productivity in Ireland 2021 and Central Bank staff estimates.
Note: The ULC contribution is the sum of the contributions of labour compensation and labour Productivity. GVA inflation is then the combination of the ULC and unit profits contribution.

However, unit profit has contributed more to GVA inflation than ULC in both 2021 and 2022, at circa 5 percentage points each year (Figure 1). Unit profits increased by about 10.5 per cent in 2021, and by just below 9 per cent in 2022.[7] Combined with strong growth in the domestic economy, overall capital compensation has risen in the domestic sectors by in excess of 15 per cent in both years, following a fall of 3.5 per cent in 2020 (Figure 3).

[7] For example, if profit per unit of output was 20 per cent in a given year, a 10 per cent increase would imply a profit per unit of output of 22 per cent in the following year.

Increase in unit labour costs since 2020 as rise in hourly compensation is higher than productivity growth

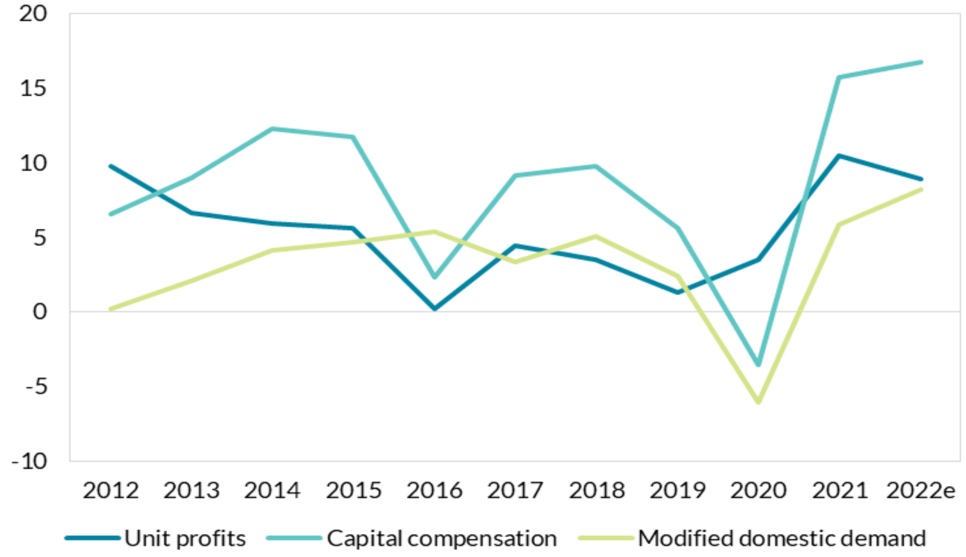
Figure 2: Annual rate of change in unit labour costs, labour compensation per hour worked and labour productivity in domestic sectors.



Source: CSO Quarterly National Accounts, CSO Productivity in Ireland 2021 and Central Bank staff estimates.
Note: The percentage change in ULC is roughly equal to the percentage change in labour compensation minus the percentage change in labour productivity.

Increase in unit profits and domestic demand driving overall growth in profits in 2021 and 2022

Figure 3: Unit profits and Capital compensation growth, domestic dominated sector growth in MDD



Source: CSO Quarterly National Accounts, CSO Productivity in Ireland 2021 and Central Bank staff estimates.

The extent of overall profit growth since the start of the pandemic has been evident in corporates across various sectors (Figure 4). In aggregate, Irish-owned corporates are estimated to have experienced similar growth in profits since 2020 to foreign-owned corporates. Irish-owned corporates in most of the sectors for which the CSO publishes data have seen annual average increases in profits in excess of 20 per cent in the years since 2019. Administrative services, agriculture, industry and construction are estimated to have seen lower annual average growth in corporate profits over the period. In addition to the evidence for corporates more widely, survey evidence specifically for SME's points to the capacity of most SME's in recent years to maintain or increase their gross profit margins (Adhikari and McGeever, 2023).

Profit growth has been strong across corporates in many different sectors

Figure 4: Growth in gross corporate profits for Irish and Foreign-owned enterprises and total net corporate profit, annual average 2020-2022

Source: CSO Frontier Series - Corporate Profits.
Note: Net profit is gross profit less the consumption of fixed capital (depreciation).

A period of disinflation is expected in the Irish economy in the coming years, with price increases easing substantially. Accompanying this disinflation will be some combination of changes in wage rates, productivity and unit profits in the domestically dominated sectors of the economy. For domestically determined inflation to ease as envisaged in this *Bulletin* alongside the expected growth in hourly labour compensation (an average of 5.7% per annum), unit profits would have to remain static at their 2022 levels if productivity growth continued to stagnate over the next three years. However, if unit profits were to rise by their long-term average rate of 4.2 per cent per annum over the period, productivity growth would have to average 2.4 per cent per year for underlying inflation to come down and wage rates to increase as forecast in this *Bulletin*.[8]

The strength of demand conditions in the economy alongside higher inflation has presented a favourable environment for rising profits in 2021 and 2022. The surge in demand as various pandemic restrictions were eased, and the shifts in demand from services to goods and back again, provided scope for unit profits to rise in a period of constrained supply across many sectors. The unit profit contribution to GVA inflation averaged 1.7 percentage points per annum from 2001 to 2020, much

[8] Productivity growth in the domestic sectors averaged 1.6 per cent per annum from 2001 to 2022.

lower than the circa 5 percentage points in both 2021 and 2022. These increased overall profits and profit per unit of output may provide some buffer for future further increases in wages, such as those envisaged in this *Bulletin*, without the need to increase output prices. Similarly, additional productivity growth to match or exceed growth in hourly labour compensation would continue to limit the contribution of ULC to domestic price pressures.