cent lower than for the same period in 2019 — up from 22 per cent lower in Q2 2020. Although a gradual reduction in the number of subsidised workers took place over the summer months, the Employment Wage Subsidy Scheme has returned to similar levels seen in its temporary predecessor at the end of May (see Figure 1.3D).

The impact of Covid-19 disruptions to **output and value added** in the domestic Irish economy at a sectoral and regional level is considered in Box C. The analysis combines PUP data by sector and region (kindly supplied by the Department of Employment Affairs and Social Protection) with CSO data for regional gross value-added excluding foreign-owned multinational firms, which is imputed from sector-level aggregates. The findings suggest substantial falls in output for all regions in Q2 2020, but that Dublin's activity was relatively less affected than elsewhere in Ireland. This is due to a higher share of employment and activity in Dublin in sectors that have been less exposed to lost value-added as a result of the pandemic.

Box C: The regional impact of Covid-19 on Ireland's domestic economy

This Box highlights some of the regional differences in terms of activity lost due to Covid-19. For the analysis we estimate lost gross value added (GVA) excluding foreign-owned multinational firms across sectors and regions of Irish economy in Q2 2020.

The estimates are based primarily on the impact of the pandemic on regional employment, and also with reference to value-added outturns from the CSO's latest *Quarterly National Accounts*. This approach effectively assumes that employment and activity impacts have been concentrated in Irish-owned entities. The advantage of excluding foreign-owned multinational firms is that it allows for a more realistic analysis of the likely losses in Irish incomes in the form of domestic profits and labour earnings (see FitzGerald, 2020).[22]

Initial estimates for losses of GVA excluding foreign-owned multinational firms (GVAX) for a sector (j) and region (k) of the economy are imputed as:

$$\frac{GVAX_{j,k,2017}}{Employment_{j,k,2017}} * PUP_{j,k,Q2\ 2020}$$

That is, we calculate economic activity by worker in each sector for each region in 2017, and estimate the loss by each sector and region by seeing how many workers were displaced by the Covid-19 disruption using the region-sector PUP numbers. This estimate assumes a uniform output of any lost worker within a regional sector, and also that this productivity has remained unchanged since 2017. While basic, it provides a preliminary comparison of the sectoral impact of the pandemic across regions in Ireland.

[22] 2017 output data is used as this is the latest available breakdown of GVA by sector and region published by the CSO, along with GVA excluding foreign-owned multinational firms (S.11a, S.11c, and S.12a) by industrial sector group in the *Institutional Sector Accounts*. Imputation is then used to derive a more detailed breakdown of gross value added excluding foreign-owned multinational firms by sector and region. The results are therefore approximations. The South-West and Mid-West regions have been combined due to confidentiality suppression.

Next, as a check on the preliminary estimates above, we compare the aggregate estimated losses in GVAX to the actual annualised sectoral losses in total GVA in Q2 2020, as shown in Table C.1. This shows that in certain sectors such as agriculture, hospitality, professional admin/support, and arts/entertainment, imputed GVAX losses based on lost employment are likely to be underestimated. As a result, we allocate additional lost GVAX for each sector to regions in proportion to the 2017 regional GVA breakdown. Figure C.1 presents results.

Table C.1: Lost activity in many sectors is underestimated by lost employment

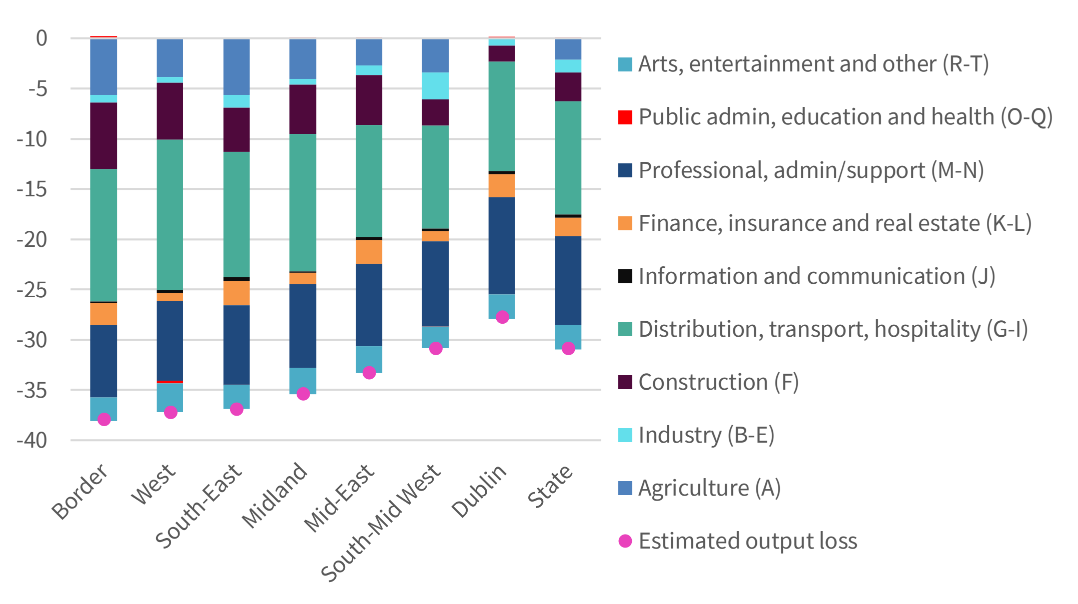
€ billion, annualised

Sector group	Estimated loss in GVAX	Actual loss in total GVA	Additional loss in GVAX
Agriculture (A)	0.2	2.6	2.4
Industry (B-E) [a]	1.5	1.5	N/A
Construction (F)	3.5	3.6	0.1
Distribution, transport, hospitality (G-I)	8.9	13.9	5.0
Information and communication (J) [a]	0.4	0.4	N/A
Finance, insurance, real estate (K-L)	2.1	2.3	0.2
Professional, admin/support (M-N)	2.0	10.8	8.8
Public admin, education, health (O-Q)	2.7	-0.1	-2.8
Arts, entertainment, other (R-T)	0.4	3.0	2.6
Total estimated output loss	21.8	38.0	16.3

Sources: CSO; Department of Employment Affairs and Social Protection; and Fiscal Council workings.
Notes: The table compares employment-based losses in estimated GVAX with actual losses in total GVA (annualised for seasonally adjusted outturns in Q2 2020 compared to Q4 2019). [a] Employment-based estimates for lost domestic activity in Industry (B-E) and Information and communication (J) are preferred to actual GVA losses, given total GVA in these sectors is dominated by foreign-owned multinational firms.

Figure C.1: Q2 2020 activity in Dublin was likely less affected than elsewhere

% change (based on 2017 gross value added data by sector and region)



Sources: CSO; Department of Employment Affairs and Social Protection; and Fiscal Council workings.
Note: South-West and Mid-West have been combined because of repressed data due to confidentiality.

While all regions suffered severe declines in domestic value added in the second quarter, the fall was least acute in Dublin. This reflects a lower negative contribution from agriculture and construction than in other regions, given the higher share of employment and activity in Dublin in sectors that have been less reliant on PUP support.

In regions that are particularly reliant on the tourism and hospitality sectors, such as in the West (counties Galway, Mayo, and Roscommon), the estimated fall in activity is the second-largest. The largest contribution to the decline is in the sector group including hospitality (G-I).

Further analysis of the impact of Covid-19 on the Western Region and Atlantic Economic Corridor is available in Lydon and McGrath (2020) — see also Lydon (2020) for a regional labour market analysis of the impact of Covid-19.

For the State as a whole, the estimates in Figure C.1 show domestic activity losses due to the pandemic in Q2 2020 of about 30 per cent. This is a sharper decline compared to domestic demand in the second quarter, which was close to 20 per cent below its pre-pandemic (Q4 2019) level. Although some of this difference in performance is likely to reflect a weakened net exports position for the domestic economy, it also highlights the importance of foreign-owned multinational firms in Ireland. The difference implies that the Irish economy would be worse off in a downturn if foreign-owned firms were not supporting domestic activity and employment. This emphasises that the risks to the economy of a fall in future foreign direct investment would exceed the related losses in corporation tax.

Personal consumption expenditure fell sharply in Q2 2020 by 22 per cent in volume terms, with similar declines across goods and services. Compared to high-frequency indicators such as credit/debit card and ATM statistics, which fell €3.8 billion in the quarter, the year-on-year decline in the value of consumption excluding cars was more severe at €5 billion. Similarly, retail sales values excluding motor trades declined by 15 per cent whereas the value of goods consumption, excluding cars, fell by 18 per cent. These differences suggest some upward revisions to personal consumption are possible. Nonetheless, while the indicators all confirm that a large decline in consumption took place as a result of Covid-19, the fall was less severe than forecast by the Department in *SPU 2020*, and marginally less severe than in the Council's Mild scenario in the May 2020 *Fiscal Assessment Report*.

Budget 2021 forecasts for consumption in Q3 2020 reflect the stronger recovery indicated by a number of high-frequency data sources. Retail sales have been exceptionally strong since June, which likely reflects pent-up demand from the