

## Appendix E: Tax Forecasts Decomposed

This appendix examines the latest tax revenue forecasts produced by the Department of Finance in *Budget 2019* for the projection horizon 2018–2023. In particular, it shows the yearly changes in the forecasts of VAT, corporation tax, excise duties, and the PAYE and USC components of income tax (see Appendix Figure E1).<sup>1</sup> For a detailed description of the IFAC’s forecast replication model, see Hannon (2014).

The changes on the tax forecasts (year-on-year) are attributed to a number of components: (i) “**macro**” is the part of the forecast driven by the growth in the relevant macro driver (e.g. wage growth and its corresponding elasticity when analysing income tax); (ii) “**one-offs**” refer to non-recurring items that impact on expected tax receipts; (iii) “**policy**” impacts account for the estimated impacts from policy changes in a given year (e.g., discretionary tax cuts); (iv) “**carryover**” effects account for policy impacts carried over from previous years; (v) “**other**” represents potential elements affecting the forecasts (calculated as the difference between IFAC’s internal forecasting exercise and that carried out by the Department of Finance), including judgement applied by the Department of Finance.

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<sup>1</sup> The generic formula applied by the Department of Finance to forecast revenue is given by:

$$\text{Rev}_{t+1} = (\text{Rev}_t - T_t) * (1 + B_{t+1} * E) + T_{t+1} + M_{t+1} + M_t + J_{t+1},$$

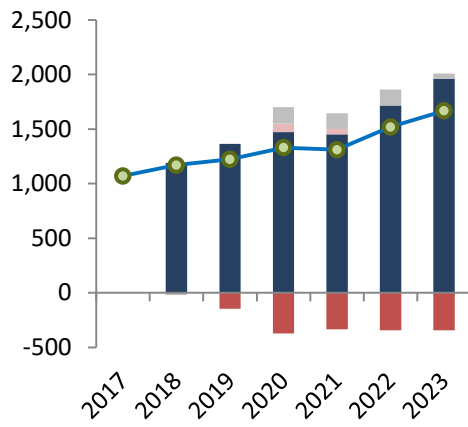
where revenue forecasts ( $\text{Rev}_{t+1}$ ) depend on their lag stripped of one-off items ( $T_t$ ), one-off items in the current period ( $T_{t+1}$ ), the macro drivers ( $B_{t+1}$ ) and their associated elasticity ( $E$ ), current policy ( $M_{t+1}$ ) and carryover policy impacts ( $M_t$ ), and judgement ( $J_{t+1}$ ). See Hannon (2014) for a discussion of this approach. Rewriting the formula in terms of annual changes yields:  $\Delta\text{Rev}_{t+1} = \text{Rev}_t * B_{t+1} * E - T_t * B_{t+1} * E + \Delta T_{t+1} + M_{t+1} + M_t + J_{t+1}$ . In this way, yearly revenue changes for each tax head are attributed to the addition of: (i) the macro driver, which covers the parts of the formula affected by  $B_{t+1}$ ; (ii) changes in one-off items, as shown in  $\Delta T_{t+1}$ ; (iii) current and previous policy changes ( $M_{t+1}$  and  $M_t$ , respectively); and other adjustments, mainly judgement, as covered in the component  $J_{t+1}$ .

## Appendix Figure E1: Tax Forecasts Decomposed

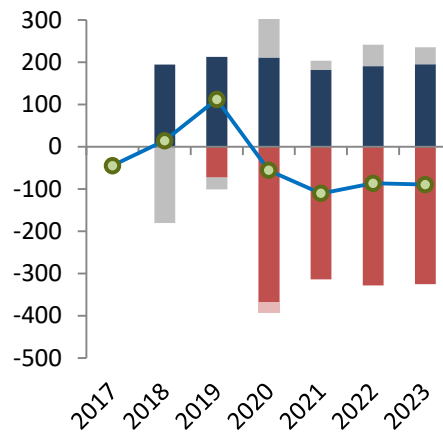
€ million, year-on-year change

■ Macro ■ One-offs ■ Policy ■ Carryover ■ Other/Judgement ● Total Revenue

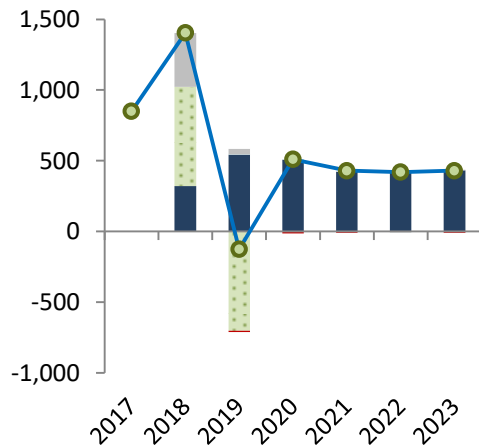
### A. PAYE



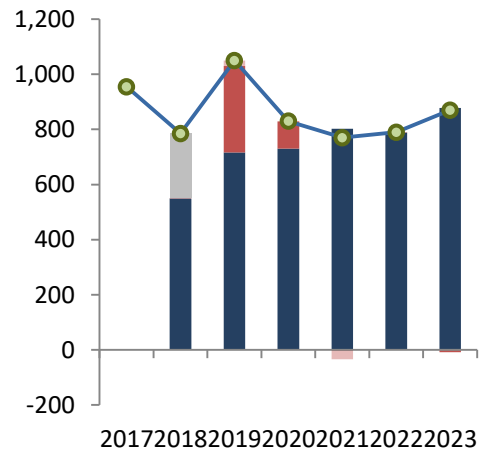
### B. USC



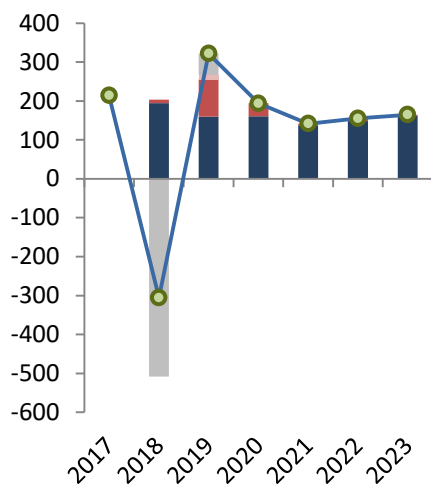
### C. Corporation Tax



### D. VAT



### E. Excise Duties



Sources: Department of Finance; and internal IFAC calculations.