

Box A: The inflationary impact of Budget 2024 tax cuts

Estimating the macroeconomic effect of a change in policy is difficult. The key problem in estimating an effect of a policy change is that everything in the economy affects everything else. For instance, tax changes affect GDP, and GDP affects tax revenue. They are simultaneously determined. Isolating the impact of tax changes on GDP is therefore difficult.

Often, in order to estimate the macroeconomic effects of a policy change, a policy shock—a policy change that is exogenous, uncorrelated, and uncontaminated by other macroeconomic variables—is needed. This box uses tax policy shocks to estimate the inflationary impact of tax cuts in Ireland.

The Narrative approach

One approach to estimating the macroeconomic effects of tax policy is the Narrative approach. This approach, pioneered by Romer & Romer (2010), seeks to identify tax policy shocks by analysing the motivation for each tax change, and separating out tax policy changes that are motivated with the macroeconomic effects in mind.

The Narrative approach has been used to identify tax policy changes that are exogenous to macroeconomic factors. For the US, Romer & Romer (2010), estimated the macroeconomic effects of tax changes, while Cloyne (2013) did similarly for the UK.

Exogenous changes are those policies that are taken without a short-term macroeconomic goal in mind. For instance, tax changes that are motivated by ideological reasons, such as certain changes to carbon tax could be classified as exogenous to macroeconomic conditions. Likewise, changes that are made to comply with court rulings or EU VAT directives, could be classified as exogenous, as they are not motivated by current or prospective economic conditions, but are instead imposed externally. Endogenous changes would be those that are taken to stimulate the economy, address a contemporaneous budget deficit, fund increased government spending, or respond to inflationary pressures.

Data

Using data from every budget speech in Ireland between 1947 and 2019, the key motivation for each policy change is identified. These policy changes are classified into changes that are exogenous to macroeconomic factors, and that are endogenous to macroeconomic factors using the classification approach of Cloyne (2013).

A first exogenous “baseline” series is constructed based on the motivation for each individual measure. But given that tax measures are often not taken in isolation, a second “alternative” series using the overall budget motivation is also considered.

Estimation

Using these exogenous series, together with quarterly data for the Irish macroeconomy, we can estimate the macroeconomic effects of tax changes. This is done using a Vector Autoregression framework:

$$\mathbf{Z}_t = \mathbf{A}_0 + \mathbf{B}(L)\mathbf{Z}_{t-1} + \mathbf{C}(L)\mathbf{x}_t + \mathbf{e}_t$$

where \mathbf{Z}_t is a vector of macroeconomic variables (GNI*, consumption, modified investment, government consumption, and consumer price inflation) and \mathbf{x}_t is the exogenous tax series. As is standard in the literature, 4 lags of the endogenous variables are used, while 12 lags of the exogenous series are used.

Results

Figure 0 shows the response of consumer prices to a 1% of GNI* cut in taxes using the baseline exogenous tax policy series and the alternative exogenous tax policy series.

For the baseline series, following a 1% of GNI* cut in taxes, prices are 1% higher after eight quarters. However, the confidence intervals are wide and also include the possibility that the point estimates are zero or negative.

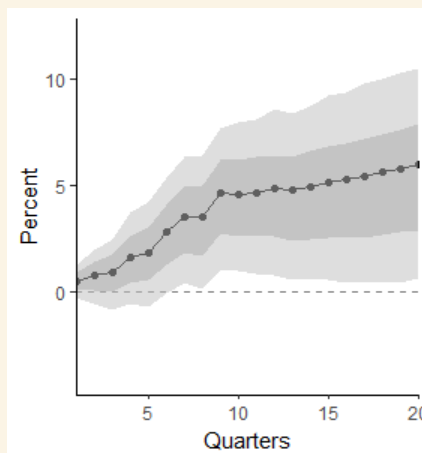
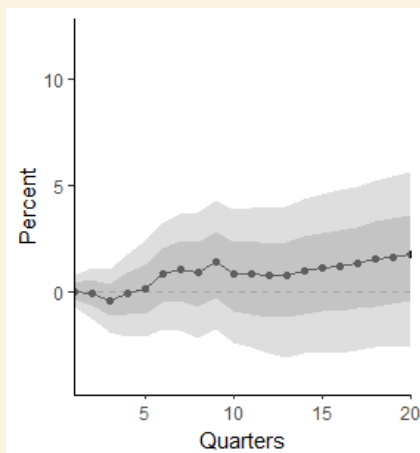
For the alternative series, following a 1% of GNI* cut in taxes, prices are 3.6% higher after eight quarters. In this case, no change in prices is outside of the 95% confidence intervals.

Nº8 Tax cuts raise prices over the medium term

Response of consumer prices to 1% of GNI* cut in taxes

A. Baseline (based on individual measures)

B. Alternative (based on overall budget packages)



Sources: Fiscal Council workings.

Notes: Based on a vector autoregression (VAR) model of GNI*, consumption, modified investment, government consumption and the consumer price index, with 4 lags for endogenous variables, and 12 for the exogenous tax series. The 66 and 95% confidence intervals are based on bootstrapped standard errors.

A separate question is whether the impacts of different tax instruments have different macroeconomic impacts. For instance, do consumption tax cuts have a negative impact on prices? Or do income tax cuts have a positive impact on prices?

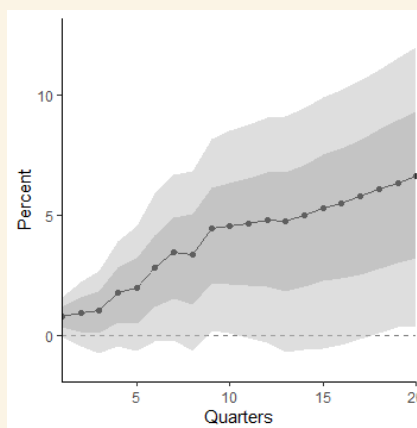
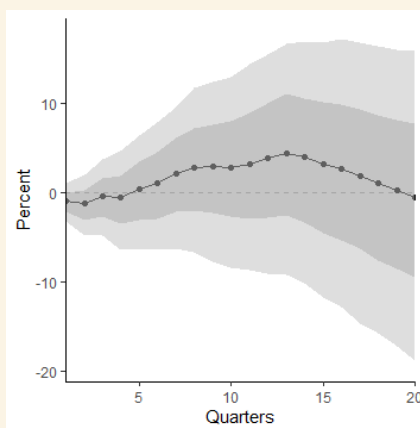
Figure Nº9 uses the alternative series and splits tax changes into those that apply to consumption (e.g., VAT and excise) and those that apply to income (e.g. income tax, USC). In this case, while most of the point estimates for consumption are positive, the impact is smaller and not statistically significant. However, for income taxes, there is a clear positive impact of income tax cuts on consumer prices.

Nº9 Income tax cuts are more inflationary than consumption tax cuts

Response of consumer prices to 1% of GNI* cut in consumption taxes

A. Consumption taxes

B. Income tax



Sources: Fiscal Council workings.

Notes: Based on the same VAR specification as used for overall tax cuts.

What do the budget tax cuts mean for consumer prices?

This box illustrates that tax cuts have an inflationary impact. Using the estimates presented in this box, we can give a sense of how inflationary *Budget 2024* tax cuts were. *Budget 2024* announced net tax cuts of 0.5% of GNI*.³ Using the above estimates, this would raise consumer prices by 0.5 to 1.8% after eight quarters, relative to a baseline in which no new tax measures were introduced in *Budget 2024*.

³ This is based on the full-year estimates of tax and PRSI measures.