Box 5: Supply-side estimates

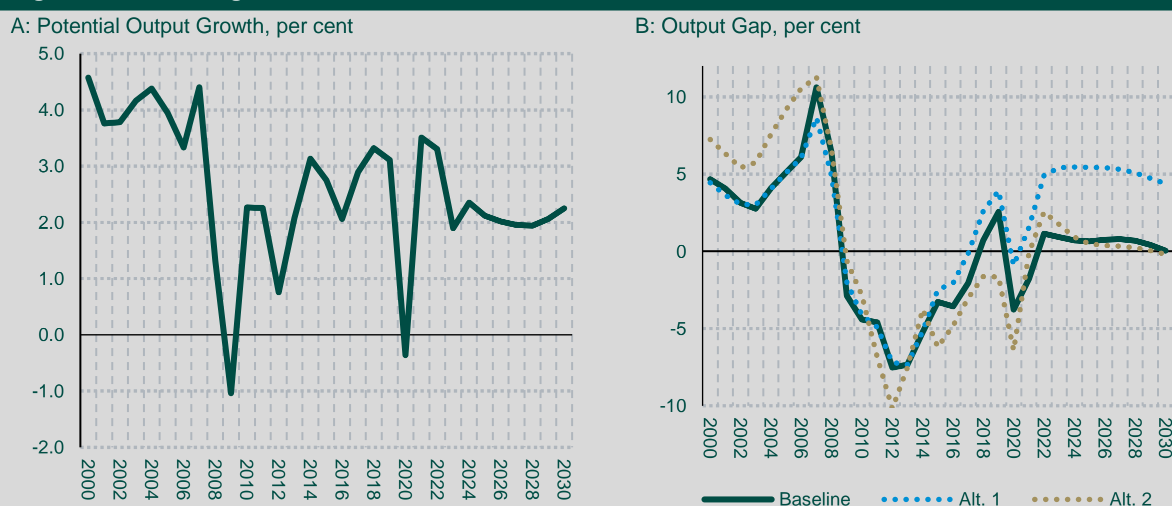
In the long-run, the amount of goods and services that can be produced by a country depends on the productive capacity of the economy, the latter determined by factors such as the size of the labour force, the stock of fixed capital and how efficiently these resources are used. This measure of capacity is referred to as an economy's potential output.

In reality, actual output in a given year is rarely the same as its potential output due to fluctuations in business activity. The difference between actual and potential output is referred to as the output gap, and is considered a measure of the business cycle. A positive output gap indicates that the economy is temporarily operating beyond capacity, often resulting in an increase in inflation, while a negative output gap indicates an economic downturn and is usually associated with high unemployment. In theory, calibrating the policy mix in order to minimise the output gap, and so avoiding both excessive unemployment and inflation, is one of the most efficient ways that policy can contribute to boosting living standards in a sustainable manner.

In reality, estimating the output gap in real-time is notoriously difficult. For instance, there are a range of indicators of a positive (or negative output gap) such as a very low unemployment rate, high credit growth, a current account deficit, or the inflation rate. More formally, mathematical models can be used to directly estimate potential output and, hence, the output gap.

The Department has a range of estimation methods,^ focusing primarily on the domestic sector – so as to avoid MNC-related distortions - and incorporating data on indicators related to the business cycle such as the unemployment rate, inflation and credit growth. The baseline series below (**figure 14A**) represents the mid-point of the range of methods, which indicates potential output growth for the domestic Irish economy of on average just over 2 per cent a year, with a small though consistently positive output gap indicating some element of over-heating. This positive output gap is driven mainly by labour market conditions, with unemployment at near record low levels.

Figure 14: Modelling results



Source: Department of Finance workings.

As a sensitivity check, the Department also calibrates these models with alternative data sources, and the output gap associated with alternatives are presented above (**figure 14B**). In the first such case (Alt.1), potential output is re-estimated using the CSO Covid-19 adjusted unemployment rates for the pandemic period.^^ This approach suggests that the output gap is at the highest level seen in the Irish economy since 2008.

A second approach (Alt. 2) uses GNI* instead of 'Domestic-GVA' as a measure of economic output. While GNI* has recovered much faster than domestic GVA since the pandemic this method results a very similar pattern to the baseline model with a positive output gap in the short-to-medium term.

While there is no one-size fits all method for estimating the output gap, the range of methods above illustrate that there is some element of over-heating which is likely to persist into the medium term, with clear and obvious implications for policy.

^ Murphy, G., Nacheva, M., & Daly, L. (2018). Estimating Ireland's output gap; an analysis using selected statistical filters. Department of Finance
^^ The Covid-19 Adjusted Unemployment Rate series treats all persons in receipt of the Pandemic Unemployment Payment as unemployed.