

Central Administration of Statistics

Changes to the methods of estimating GDP in 2020

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Introduction

The financial crisis that began at the end of 2019 had significant effects both on the sources of data and on the assumptions and methods used in estimating GDP. This note sets out the main changes that were introduced to take account of these effects. A separate note explains how a unitary exchange rate was derived from the multiple exchange rates for the purpose of converting estimates of GDP (and other aggregates) from Lebanese pounds to US dollars.

Imports and exports

The actual values of imports and exports of goods and services implicitly affect the value added within the economy, which is the difference between the value of outputs and inputs. Exports are a part of total output and imports are a part of intermediate consumption.

Imports and exports of goods are recorded by the Customs Administration in both US dollars and Lebanese pounds (LBP). During 2020, Customs continued to use the existing official exchange rate of 1,507.5 to convert the USD values into LBP. These values therefore understated the actual value of the goods.

The actual value of exported goods was estimated on the basis that the exporters were able, if they wished, to change their foreign currency receipts into LBP at the parallel market rate. The Customs values of exports were therefore adjusted by the ratio of the average monthly parallel market exchange rate to the official rate. In the case of imports, where importers were obliged, if necessary, to obtain dollars on the parallel market, the Customs values of imported goods were therefore adjusted in the same way.

However certain imported goods were subsidised. For these, the Ministry of the Economy and Trade provided CAS with a list of affected goods, so that their value in USD could be identified. For a proportion (85%, 90% or 100%) of this value, dollars were made available at the original official rate (1,507.5), or at another official rate (3,900) introduced halfway through the year. From this information, the Customs value of these imports were adjusted to reflect their actual value.

For imports and exports of services, quarterly data in USD from the BdL were converted into LBP using the average quarterly parallel rate.

In the expenditure measure of GDP, imports and exports are however valued at the unitary rate of exchange, by adding or subtracting the implicit taxes and subsidies, as appropriate.

Gross fixed capital formation (GFCF)

Also on the expenditure side, a refinement was introduced to the method of estimating GFCF. The benchmark estimates had been extrapolated in line with indicators based on the imports of machinery and equipment. The calculation of the indicators was improved from 2016 onwards by deducting exports of the same type.

Total output at current prices

For a majority of economic activities, indicators of total output are derived from sales data provided by VAT traders on their quarterly VAT returns. However, receipts from sales abroad were recorded in the returns at the official rate of exchange (1,507.5), thereby understating the actual value based on the parallel exchange rate. While there is no explicit category for exports on the VAT return, there is one for zero-rated sales, a majority of which will be exports. Data on zero-rated sales was therefore used to provide indicators of the proportion of total sales of each activity that was exported. Estimates were made of the missing value and adjustment factors calculated. The latter were applied to the indicators of total output in each quarter of 2020.

Intermediate consumption

For most economic activities, the indicators of total output in volume terms are also used as volume indicators for their intermediate consumption (IC) and hence for their gross value added (GVA). Except where direct estimates of IC at current prices are readily available, these volume indicators of IC are then inflated to current prices using price indices for the IC of each activity. These are derived using input-output coefficients to combine the implied price movements of products, based on the total supply of goods and services, both imports and local production.

To mitigate the effects of the multiple exchange rates and high rates of inflation, this model was refined in two ways. First, in deriving the prices of imports it had been assumed that the rates of tax on imports had remained stable over time. However, in 2020, this was no longer the case, as they were calculated using the official rate of exchange, thus reducing the effective rates when measured against the actual value of the imports. Indicators of the value of imports were therefore adjusted accordingly. The second refinement was to offset the effect of export prices implicit in the total supply data.

Despite these refinements, the variability of price movements (combined with possibly inappropriate coefficients) meant that, for some activities, the process led to implausible input-output ratios for the year 2020. In these cases, the 2019 ratios were taken into account.

Gross domestic product

The GVA at current “basic” prices is calculated before adding the taxes and deducting the subsidies on products, including the taxes and subsidies implied by the existence of multiple exchange rates. The method adopted for calculating these implied taxes and subsidies is described in a separate note. The results of this calculation were used to derive GDP on from the GVA on the production side. Exactly equal (and opposite in the case of imports) adjustments were made to the exports and imports (initially based on actual valuations) on the expenditure side. This ensured a correct balance of supply and demand at current prices. Volume changes, based on prices of the previous year (2019), were not affected by these adjustments.

Conclusion

The changes described above were an attempt to mitigate the effects of the financial crisis on the data sources and compilation methods used in estimating GDP. The overall internal consistency of the estimates suggests that the value of the GDP is a reasonable estimate. However, the more detailed estimates of value added are only indicative and should be used with caution.