

National Accounts Department

Compilation of the Swedish Activity indicator and Sales indicator

In the wake of the coronavirus outbreak, demand for statistics that can quickly show the effects of the current crisis has increased. The sales indicator and activity indicator are two examples of economic statistics that Statistics Sweden has produced to meet this need. The sales indicator gives an early indication of production in the business sector, while the activity indicator provides a picture of economic activity as a whole.

In the project in which the GDP indicator¹ was developed, the possibility of producing monthly GDP was also evaluated. This resulted in publishing a quarterly GDP indicator to start with at the time. Now, in connection with the coronavirus crisis, with heightened demand for fast statistics, thoughts have once more turned to a monthly GDP, resulting in a monthly publication that has come to be called the activity indicator.

For the time being, the activity indicator is considered to constitute experimental statistics and only the year-on-year percentage progression of GDP will be presented – no subcomponents. The statistics are published in the form of an article each month approximately two to three days after the Production Value Index has been published; that is to say, around 37 days after the end of the reference month. The activity indicator will be evaluated after the end of 2020.

During 2005–2009, Statistics Sweden published an activity index. The activity index was based on less data and coverage than the activity indicator. The activity indicator covers all components of GDP from the production and use side.

The activity indicator gives an early indication of economic activity

The main principle in the quarterly calculation of GDP is to produce a measure of each main component for the use and production side, respectively, of GDP. The same applies to the activity indicator. Hence, a calculation is needed on the one hand for each item in the balance of resources (use side), and on the other hand a calculation of the

¹ Sweden's economy – a statistical perspective, fourth quarter 2019.

progression of value added in various sectors of the economy (the production side). The activity indicator is published approximately 37 days after the end of the reference month. At that time, there is sufficient information to compile estimations for all GDP components. The degree of divergence needed from regular sources and methods varies between areas, and depends mainly on the extent of data consistency in relation to regular calculation procedures. The factor that is absent on a monthly basis is data on investment in inventory. For gross fixed capital formation and investment in inventory, data on the companies' expenditure is available in the VAT register instead. The expenditure of companies covers fixed capital formation, investment in inventory and consumption.

Calculations of the activity indicator

GDP from the production side

The activity indicator is calculated for both the use and production sides of the economy. GDP from the production side consists of the sum of the value added in the various sectors of the economy, and the net of product taxes and product subsidies. GDP from the production side is calculated using the Production Value Index for industry and sales data from VAT for the service sector. The factor that differentiates the activity indicator from the GDP indicator is that no inventory adjustment is made for industry.

The value added of public administration can also be calculated according to principles similar to those applying to regular compilation. The progression of production in fixed prices is based on a combination of sources for labour input in the public sector and a collection of direct measures of the production of certain types of publicly provided services, such as the number of enrolled pupils in municipal schools or the number of treatments performed at the regions' hospitals. A subset of the production measures is available in time, and hours worked are mainly compiled from a preliminary labour force survey in which model assumptions are used for estimations of the final days of the month. Value added, and also the public-sector consumption of the use side, can then be model-estimated from the production.

GDP from the use side

GDP from the use side is estimated using a regression model. The regression model is based on five indicators:

- *Household consumption* is based on an average of the household consumption indicator and VAT-based household consumption.
- The export of goods and services is based on foreign trade in goods plus foreign trade in services from the VAT register.
- Import of goods and services is based on foreign trade in goods plus foreign trade in services from the VAT register.
- Public-sector consumption is based on volume measures and hours worked for the public sector.

- Expenditure according to the VAT register that covers fixed capital formation, inventory and consumption

The largest component of the use side, household consumption, is perhaps the area that has required the least work in terms of producing methods, as Statistics Sweden produces a monthly household consumption indicator that can constitute input data for the activity indicator. The household consumption indicator has methods for approximately 90 percent of household consumption that correspond to those in a regular calculation of quarterly GDP and that are relatively accurate for total household consumption. An estimation is also made of household consumption from the VAT register. An average of these estimations is used to estimate household consumption. The household consumption indicators do not cover the foreign items, but for these ARIMA forecasts are performed that adjust both foreign trade and household consumption. The net effect of these on GDP is zero.

Foreign trade can roughly be broken down into trade in goods and trade in services. For trade in goods, the regular primary source *Foreign trade in goods* can be used. For services, the primary source will be the VAT register because the quarterly survey Foreign trade in services is not available monthly. Trade in goods is much more certain, although here too there are uncertainties, for instance due to the fact that the data used for the indicator is at a much more aggregated level than in the regular calculations.

For the activity indicator, an estimation is made of investment in industry and gross fixed capital formation based on the companies' expenditure in the VAT register. The companies' expenditure covers investment in inventory and gross fixed capital formation, but also the companies' consumption.

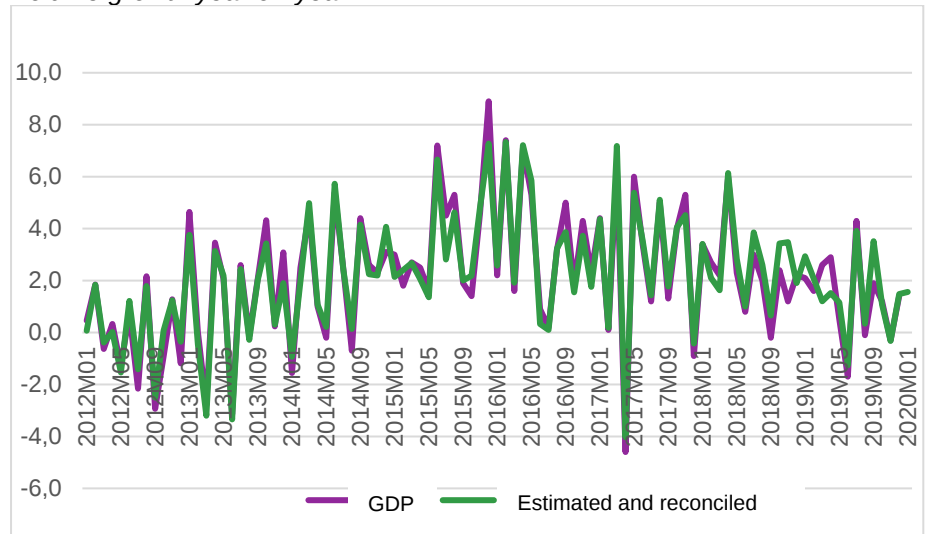
Reconciled estimation

GDP from the production and use side is then reconciled using 50 percent from the production side and 50 percent from the use side. That is to say, the production and use side are adjusted by 50 percent of the difference between the production and use side. This corresponds to the principle that is also used in the quarterly GDP calculations and in the GDP indicator.

Today, there is a time series from 2012 for the activity indicator. In the diagram below, a comparison is made between the activity indicator and the ordinary quarterly outcome for GDP that is published 60 days after the end of the quarter.

GDP and activity indicator

Volume growth year-on-year



Source: National Accounts, data until 1Q 2020

The quarterly GDP outcome has been broken down by month using the monthly pattern of the activity indicator. A comparison of the absolute difference between the activity indicator and the GDP outcome gives 0.5 percentage points during the period 1Q 2012–1Q 2020.

For the year-on-year progression of GDP, the absolute difference in the test results from the indicator of below 0.5 percentage points can be seen in relation to the absolute difference in the quarterly GDP indicator of 0.3 percentage points. Uncertainty is thus greater for the activity indicator although the timeliness of the statistics means that accuracy might be lower.

The sales indicator gives an initial sign of activity in the business sector

The sales indicator, which is currently published around 20–25 days after the end of the reference month, gives an early picture of activity in the business sector in current prices.

The aim of the sales indicator is to provide as good an estimation as possible of sales for the month in the business sector. It is thus to serve as an early indication of production in the business sector and shall be evaluated in relation to the outcome of the Production Value Index (PVI).

The VAT register is the basis for the sales indicator

The sales indicator is essentially based on monthly data from the VAT register. Companies with a turnover exceeding SEK 40 million must submit VAT returns each month 25 days after the end of the reference month. Companies with a turnover of SEK 1–40 million may submit VAT returns each month, but the requirement is for them to submit quarterly returns. The smallest companies, with a turnover of below SEK 1 million, only need to submit VAT returns annually.

For companies that have not reported VAT during the month, turnover data is retrieved from PVI. This is done for the 500 largest companies. In March, this involved a size-weighted response rate of 70 percent at the time of compilation of the sales indicator. Companies are matched between the relevant period this year and the same period last year. In this matching process, sales in the current period and last year's sales are taken. A growth rate is then calculated between this year's and last year's sales data by sector. This is used to extrapolate last year's level.

The sales indicator is produced for the 89 industrial groupings of the National Accounts. The statistics are published broken down by goods and services. Furthermore, growth rates are published for the sectors that have performed strongly or weakly in the month concerned.

The sales indicator constitutes experimental statistics and will be produced during 2020. A decision will then be made on continued publication.

For any questions please contact:

Daniel Lennartsson
daniel.lennartsson@scb.se
+46 10 479 64 29