

## H. Country examples

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#### ***Example of Germany***

29.25. In Germany, the seasonal adjustment of foreign trade data as well as of other important economic indicators entails close collaboration between the Central Bank and the Federal Statistical Office. The original data collected by the Federal Statistical Office are seasonally adjusted and calendar-adjusted by both institutions using the same X-12-ARIMA procedure (which represents the evolution of the well-known X-11 model developed by the United States Bureau of the Census). As a second step, both institutions examine the results and have to decide in common whether any of the processing parameters that are crucial for the quality of the results have to be adjusted or not. In the case where the parameters are changed, the calculation of seasonally adjusted figures is repeated by both institutions. In this way each institution verifies the calculation of the other. This shared approach results in the publication of an agreed upon product, which eliminates the risk confusing the users of trade statistics.

#### ***Example of Italy***

29.26. In Italy, monthly trade time series are seasonally adjusted by means of TRAMO-SEATS (Windows version). In particular, intra- and extra-European Union series (at import and at export) are adjusted directly and separately, while the series referring to total trade (intra- and extra-European Union) at import or at export are obtained indirectly as sums of the corresponding seasonally adjusted series, owing to the well-known aggregation problem. The models selected by TRAMO-SEATS are revised at the beginning of a new year, but the estimated SA coefficients are revised monthly as soon as a new observation is added to the series. While this approach obviously implies the need for some revisions for the nearest time lags, it gives more consistent overall-year information as compared with raw data. The selected models are available to researcher or users on request.

#### ***Example of the United States of America***

29.27. Monthly merchandise trade series are seasonally adjusted using factors that are produced once a year during an annual revision cycle. Factors are produced for each month of the coming 12-month period, and are revised for the previous three years. The X-13ARIMA-SEATS program is used to analyse data series and generate the seasonal adjustment factors. Data are aggregated into 269 total import and export five-digit end-use commodity groupings which are examined for trading-day variation and seasonality. The end-use commodity classification system combines data into broad categories based on principal uses of the commodities; utilization of the system ensures methodological consistency with quarterly adjusted balance-of-payments data. Seasonal factors are generated for those groups that show significant predictable seasonality. The factors are used to adjust the data in the most detailed end-use categories. These detailed adjusted data are then summed to the one-digit end-use level for release with the monthly merchandise trade totals.

#### ***Example of Norway***

29.28. In the case of monthly data, the main figures for import and export are adjusted seasonally using X-12-ARIMA, in addition to a number of selected series at the two-digit level of SITC. A few monthly data series at the three-digit level of SITC are also adjusted. In the case of quarterly data, seasonal adjustments are applied to volume indices on total imports and exports in addition to some selected series as described above in the case of monthly figures. Norway's External Trade Division is assisted by one or two experts, when needed, who support all fields dealing with seasonal adjustments in Statistics Norway. These experts also participate from time to time in the conduct of a more in-depth evaluation of the methods used.