

Turnover indices, indices of services production and volume of sales indices for trade

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0 Foreword

This document aims to present the methodology applied for the development of turnover indices and the associated volume indices – the index of services production (ISP) and the volume of sales indices (VSIs) for trade. These indices are largely derived from a common key source – the VAT source from the *Direction Générale des Finances Publiques* (Directorate-General for Public Finance, DGFIP) – and developed according to common production principles. These indices cover the majority of the market activity undertaken in France (with the exception of agriculture and financial services) and, when combined with other indicators (industrial production index, producer price indices or consumer price indices, data concerning foreign trade, employment, etc.) describe the development of the economic situation in France at an early stage.

The Generic Statistical Business Process Model (GSBPM)¹ is an international standard defined by the United Nations Economic Commission for Europe, Eurostat and the OECD to provide a generic description of a statistical production process. The GSBPM defines the majority of the concepts relevant to describing statistical production activities and establishes eight standard phases within a statistical production process; in doing so, the GSBPM contributes to the standardisation and harmonisation of language within the statistical community, which reduces the risk of misunderstandings and misinterpretations between statisticians and during exchanges between the latter and users of statistics. It was therefore only natural that we would take the opportunity to structure this edition of INSEE-Méthodes around the breakdown of phases used by the GSBPM, which should facilitate comparisons with the practices applied in other statistical processes in France or those used to develop sets of production and turnover indices for foreign countries.

1 <https://statswiki.unece.org/display/GSBPM>

1 Specify needs: why turnover indices?

1.1 Respond to the need to track activity at an early stage

Turnover indices are used to measure, on a monthly basis and at as early a stage as possible, trends in the value of the activities undertaken by companies in the industrial, construction, trade and traded services sectors. They therefore cover the majority of market activity, with the exception of agriculture and financial services and, when combined with other indicators (industrial production indices, price indices, business climate, etc.), constitute an essential short-term monitoring tool. This is a need that has been expressed at both national and European level (see 1.2).

In order to also measure changes in volume, i.e. changes not caused by price effects, derived volume indices are established for trade and services: indices of services production (ISPs) and volume of sales indices (VSIs) for trade. The methodology used to construct these indices is also described in this document. For industry and construction, volume indices aimed at tracking activity are established on the basis of other sources to allow for early measurements and a better understanding of the concept of production in these sectors: these are the industrial production index and the production index for construction (see 1.4).

This edition of INSEE Méthodes describes the methodology used to construct turnover indices. VSI and ISP indicators.

1.2 Users within and outside of Official Statistics

These indicators (in terms of value and volume) are used on their own for the short-term monitoring of economic activity, or as inputs to other statistical processes, such as the compilation of the quarterly national accounts, trade accounts, and European turnover and production indices, etc.

These indices have multiple users, both within and outside of Official Statistics. These include, for example, INSEE's national accountants (quarterly or annual accounts), forecasters or economists working in all kinds of structures (banks, international bodies, trade unions, etc.) and even the media.

1.3 Indices subject to French and European regulation

At national level, statistical production is based on [Law No 51-711 of 7 June 1951 on Legal Obligation, Coordination and Confidentiality in the Field of Statistics](#). The development of the indices under review in this edition of INSEE-Méthodes is primarily based on the use of data contained in the monthly VAT declarations completed by companies, which the Directorate-General for Public Finance (DGFIP) sends to INSEE for the purposes of compiling statistics on the basis of [Article L135-D of the tax procedure handbook](#).

These indices also meet the requirements for monitoring economic activity at European level. In order to provide the European Central Bank (ECB) with short-term economic indicators, in 1998 the European Union adopted a regulation on short-term business statistics establishing a harmonised framework for measuring supply and demand, factors of production and producer prices, known as the STS (Short-Term Statistics) Regulation. This regulation was amended several times before being repealed in 2020 to be integrated into a broader regulation covering all business statistics with a view to improving consistency and broadening the coverage of these indicators.

Since 1 January 2021, the dissemination of turnover indices has therefore been covered by Regulation (EU) [2019/2152](#) of the European Parliament and of the Council of 27 November 2019 on European business statistics (EBS Regulation) and Commission Implementing Regulation (EU) [2020/1197](#) of 30 July 2020. For short-term business indicators, the new regulation rebalances expectations between the industrial and construction sectors on the one hand and trade and services on the other in order to reflect the increasingly large share taken by the services sector and the declining share of the industrial sector in European economies in recent decades.

It therefore includes the following key amendments to the activity indices:

- A shift from quarterly to monthly indices for wholesale trade and trade and repair of motor vehicles and motorcycles;
- The extension of the volume of sales index to all trade (by adding trade and repair of motor vehicles and motorcycles and wholesale trade);
- The extension of the coverage of services to real estate activities, rental and leasing activities, services related to buildings and landscape activities;
- The introduction of a monthly production index in the services sector;
- The adoption of the concept of kind-of-activity unit (KAU) to break the indices down by activity; Council Regulation (EEC) No 696/93 of 15 March 1993 defines KAU as follows: “The kind of activity unit (KAU) groups all the parts of an enterprise contributing to the performance of an activity at class level (four digits) of NACE Rev. 1 and corresponds to one or more operational subdivisions of the enterprise.”

France was already producing a set of activity indicators on a monthly basis and had also embarked on early developments that enabled it to respond to this regulation in advance. Therefore, all extensions (index of services production, extended coverage of the volume of sales index for trade) were in place from as early as March 2017.

The associated turnover and volume indices are included in the “Industry, trade and services” category of Euro indicators published by Eurostat (<https://ec.europa.eu/eurostat/web/euro-indicators/information-data/industry-trade-services>). This category includes early indicators for turnover, production and prices in industry, construction, trade and services. They must be provided no more than 60 days following the end of the month under review (see 2), and within 30 days for the establishment of early indicators for retail trade (see 5).

1.4 Structuring of short-term economic indicators

INSEE produces various short-term indicators for industry, construction, trade and services, as shown in the summary table below:

Table 1: summary of the various indices

Sector/measure	Value indices	Volume indices	Main price indices
Industry	Turnover index	IPI ²	IPPI ³
Construction	Turnover index	VPCI ⁴	
Trade	Turnover index	VSI	CPI ⁵
Services	Turnover index	ISP	SPPI ⁶ et CPI

The indicators presented in this edition of INSEE Méthodes are highlighted in green.

These various indicators are used, for the most part, in the preparation of quarterly accounts [12] (initial estimate and detailed results), which provide a consistent and unified framework for the analysis of the French economy.

It should be noted that INSEE produces two types of short-term indicator: indicators (such as the business climate indicator) calculated on the basis of outlook surveys and based primarily on qualitative and opinion data⁷ and quantitative indicators established on the basis of quantitative information recorded *a posteriori*. Turnover indices fall into this second category, as do the industrial production index and producer price indices.

1.5 The international methodological framework

The turnover indices are in line with the expectations and the common methodological framework defined in the European EBS Regulation and the EBS Methodological Manual.¹ European countries discuss these methodological recommendations under the supervision of Eurostat, particularly in the *STS Task Force* and the *STS Working Group*. They are also the subject of bilateral discussions between national statistics institutes, which aim to improve the methodology and quality. Lastly, the process of developing the associated turnover and volume indices was subject to a quality approach carried out within the framework of international standards (see 7.2).

2 <https://www.insee.fr/en/metadonnees/source/indicateur/p1646/description> et INSEE Méthodes No 133 - July 2019

3 <https://www.insee.fr/en/metadonnees/source/indicateur/p1639/description> et INSEE Méthodes No 140 - September 2021

4 https://www.insee.fr/en/statistiques/documentation/Evolutions_indice_prod_construction_2023_ENG.pdf

5 <https://www.insee.fr/en/metadonnees/source/indicateur/p1653/description>

6 <https://www.insee.fr/en/metadonnees/source/indicateur/p1640/description> et INSEE Méthodes No 140 - September 2021

7 Outlook surveys are qualitative surveys used to monitor the current economic situation and predict short-term trends. They are conducted regularly among company heads or households. The resulting indicators include synthetic indicators, such as the business climate indicator in France (<https://www.insee.fr/en/statistiques?debut=0&theme=30&conjoncture=23>).

2 General concepts and principles

2.1 Different concepts of activity measurement

2.1.1 Turnover indices

The concept of turnover used to calculate turnover indices is the amount of revenue (excluding taxes) generated by the company (or legal unit) with third parties in the course of its normal, everyday business activity. It is the sum of sales of commercial goods, products manufactured by the company, services rendered and related activities.

Turnover is exclusive of VAT and other similar deductible taxes directly linked to turnover, as well as all duties and taxes on goods or services collected by the company.

Income classified as other operating income, financial income and exceptional income in the company's accounts is excluded from turnover.

The use of indices makes it possible to prioritise the quality of the measurement of the change in the variable of interest⁸ over the estimate of a level, which is difficult to achieve where there is little historical data. The level-based approach is preferred when drawing up annual structural business statistics, available at a later stage⁹.

Turnover indices are value-based, which means that activity is measured at current prices. Therefore, a monthly change of +2% could be the result of activity that is stable in terms of volume and a 2% increase in prices, or *vice versa*. They are calculated for industry, construction, trade and services.

2.1.2 Derived volume indices for trade (VSI) and services (ISP)

The purpose of volume indices, the index of services production (ISP) and the volume of sales index (VSI) for trade is to track changes in activity in terms of volume in the services and trade sectors in a similar way to the industrial production index (IPI) and the volume production in construction index (VPCI).

The ISP and VSI are obtained on the basis of the corresponding services and trade turnover indices, deflated by price indices to obtain a volume-based measurement. In line with the requirements of the EBS Regulation, the concept of volume differs for services and trade:

- As is the case for industry with the industrial production index, for services, the EBS Regulation specifies that this is a measure of production in the sense of value added (sales less inputs). However, the concept of value added is difficult to capture in early indicators and the elementary indices established can be regarded as a proxy only by assuming that the ratio of intermediate consumption to production evolves little in the short term. In order to establish aggregated indices “without double counting”, the weights used are based on the value added of the national accounts (see 2.2.9).

⁸ For example, value of activities for turnover indices.

⁹ see [9].

- Conversely, for trade, the concept of volume required by the EBS Regulation relates to the volume of sales (i.e. total sales at constant prices). For these activities, the measurement of value added is indeed linked to the concept of the trade margin, which is potentially volatile and very difficult to identify in early indicators. A volume calculation in terms of VA would require an estimate of “trade margin prices”, which are not included in short-term statistics. In line with the decision to calculate volume of sales indices rather than sales production indices for commercial activities, the weights used are based on the annual turnover by branch of activity at the base price calculated by the national accounts.

2.2 Description of the indices

2.2.1 Introduction: target concepts and proxies

The methodology used to calculate the associated turnover and volume indices is largely based on the concepts stipulated in the EBS manual [5]: concept of turnover, temporal coverage and depth, adjustment of data, etc. Nevertheless, it is sometimes difficult to precisely achieve a target theoretical concept, in which case it is replaced by a similar concept, or proxy, allowing a degree of quality to be achieved that is adequate for the initial objective. There are several reasons for such small deviations, the main one being the result of a dual trade-off between cost and effectiveness for both the statistics institute and the companies. The VAT source used here (see below) therefore offers enormous advantages as an administrative source: near-exhaustive coverage, an almost zero non-response rate and the ability to limit the response burden for companies when compared with a dedicated survey, for example. However, it does have some limitations: although the VAT source allows for an effective measurement of the concept of turnover (excluding fraud and in spite of a number of difficulties, see 3), it may be somewhat less suitable for measuring production for certain specific activities with long cycles or that are tracked by means of aggregated invoicing (e.g. every two months for an activity that is ongoing), particularly in industry or certain service sectors. Likewise, the application of the concept of the “kind-of-activity unit” (KAU) (see 2.2.7) remains approximate within turnover indices (use of the concept of legal units), although this approximation does appear to be satisfactory for France, particularly in trade and services. Lastly, the relationship between turnover indices and some of the deflators used to derive production indices may not be perfect (see below).

Overall, the proxies sometimes used to produce the associated turnover and volume indices are considered to be very satisfactory, both at the aggregated level and for the majority of activities tracked, and, as mentioned above, reflect an efficiency-based approach.

Nevertheless, it is useful to bear them in mind when analysing certain specific activities.

Conversely, some of the objectives of the EBS Regulation are exceeded, particularly with regard to coverage, since indices are calculated to cover “other service activities”, which represent a significant proportion of activities.

2.2.2 Theoretical coverage

The coverage of interest – hereinafter referred to as turnover index coverage – covers all market legalunits belonging to a set of sectors required by the EU EBS (European Business Statistics)

Regulation [No 2019/2152](#) (see Appendix 9.1) as well as certain activities in the market sector that are not required by EBS, but are relevant for monitoring the economic situation and accessible within the main data source used (in particular French Classification of Activities (*Nomenclature d'activités française*, NAF) sections R and S, with the exception of 94). In total, 613 of the 732 NAF Rev. 2 sub-classes (four digits + one letter) are tracked via turnover indices.

The sectoral coverage of the associated turnover and volume indices – defined on the basis of the French Classification of Activities (*Nomenclature d'activités française* – NAF Rév. 2 2008) – is as follows:

- For industry and construction: the activities belonging to sections B, C, D, E and F for both total sales and export sales;
- For trade: the activities belonging to section G;
- For services: the activities belonging to sections H, I, J, L, M, N, R and S, with the exception of 94 (activities of membership organisations)¹⁰.

Sections A (agriculture, forestry and fishing), K (financial and insurance activities), O (public administration and defence; compulsory social security), Q (human health and social work activities), T (activities of households as employers; undifferentiated goods- and services-producing activities of households for own use) and U (activities of extraterritorial organisations and bodies) are therefore excluded.

The “industry as a whole” coverage published includes sections B, C, D and E. The export turnover indices are based on the total extra-EU export turnover declared by companies and the intra-community deliveries used to calculate turnover for intra-EU exports.

2.2.3 Geographical coverage

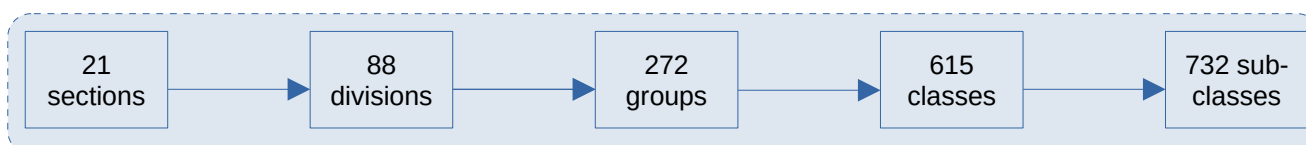
The theoretical geographical coverage includes the whole of France, with the exception of French Guiana and Mayotte, where companies are not subject to VAT.

2.2.4 Statistical coverage

As a result of certain specific features of the main source used for turnover indices (VAT), the statistical coverage is not fully exhaustive in terms of theoretical coverage. Indeed, for practical reasons, only the monthly VAT declarations (which represent an overwhelming share of total turnover) are used. Activity coverage thus appears very high (see 2.3.1.1).

2.2.5 Classification used

The current version of the classification comprises five nested levels:



¹⁰ This activity is not tracked.

Gross turnover indices (for industry, trade and services) and volume indices for trade are calculated up to the sub-class level (four digits + one letter) of the [French Classification of Activities \(NAF\)](#), which is derived from the European NACE Rev. 2 classification. Volume indices for services and SA-WDA indices are calculated up to the class level (four digits) of the NAF.

2.2.6 Temporal coverage

Value indices have been published since January 1999.

Volume indices have been published for trade since January 2005 and for services since March 2005.

Consistency over time is guaranteed through the use of stable methods. In the event of methodological changes, or when rebasing occurs, past indices are subject to backcasting to ensure their comparability over time.

2.2.7 Sectoral calculation logic

Several concepts can be envisaged for breaking down turnover or production by areas of activity within the classification: the sectoral approach, by branch of activity or by kind-of-activity unit.

A sector groups together legal units (LUs) that have the same main activity (with regard to the classification of the economic activity in question). One LU may perform several economic activities simultaneously. Its main activity (APE code) determines its sector of activity, with each of its secondary activities corresponding to a branch of activity.

The activity of a sector is therefore not completely homogeneous and includes secondary production or services that would fall under other items within the classification than that of the sector in question.

At European level, the reference concept for the compilation of short-term statistics is the kind-of-activity unit (KAU), which is a subdivision of the LU. It includes all of the offices, production facilities, etc. belonging to a LU, which contribute to the performance of a specific economic activity. It is similar to the concept of economic branch used by the French national accounts. For example, a kind-of-activity unit could be a combination of all parts of a metal production LU that also produce copper within that same LU. There could also be another KAU that includes the parts that produce aluminium.

At present, turnover indices (and the associated volume indicators) are calculated based on the APE of the legal units (LUs): this follows a sector-based logic rather than a branch-based logic. This decision is based in particular on the source used, namely VAT declarations which do not list turnover separately for each branch for a given LU (see the trade-offs referred to in 2.2.1). The studies carried out by INSEE based on structural statistics and that allow the branch-based logic to be compared with the sector-based logic show that, for calculating changes rather than levels, the sector-based approach offers a good approximation of the KAU-based approach (see 9.2). In particular, for many highly fragmented sectors, such as food and beverage service activities (NAF division 56), the results are almost identical in terms of their development. Overall, this sectoral approach proves to be a good compromise between precision, collection costs and burden on legal units, whereas the production of turnover indicators by KAU would otherwise require the

introduction of a specific survey of trade and service LUs, thereby increasing the response burden of LUs.

Other short-term indicators produced by INSEE are based on different breakdown logics, thanks in particular to the flexibility afforded by survey data. These include, for example, the industrial production index, broken down by branch of activity (therefore similar to or even finer than the concept of KAU), or producer price indices, broken down by product.

However, the sector-based approach has one disadvantage in that the turnover indices are sensitive to any changes in the main activity (APE) of the LUs. In order to neutralise their impact, such changes to the APE of LUs are controlled for by considering that, from date T on which the APE changed from sector X to sector Y for a given LU E, E contributes to sector X – for the purpose of the measurement of the percent change of the index from one period to the next one – until date T-1, after which – i.e. from date T onwards – it contributes in evolution to sector Y (see 3.4).

2.2.8 Reference 100 in 2015 indices

The reference period corresponds to the period in which the average of the indices is set at 100 by convention. Since the March 2018 release, the turnover indices and associated indicators have been disseminated using reference 100 in 2015 (rather than 100 in 2010 as used previously). This index reference year also corresponds to the year in which the main weights were calculated (see 2.2.9). The next base, due to be published in 2024, will use reference 100 in 2021.

2.2.9 Weights

In order to calculate the indices at all levels of the classification, starting from the finest level, weights are used to aggregate them. Each level is then obtained by aggregating the indices of the level immediately below (see the formulas in Section 4.3).

The turnover indices are Laspeyres indices with fixed 2015 weights over the recent period (from 2013). The shift to base to 2015 also included an innovation with the consideration of a double set of weights (2010 and 2015), allowing for their deformation between 2010 and 2015 to be taken into account, rather than using constant weights over the entire period.¹¹

Previously, until 2018, the aggregation of indices based on elementary indices took place on the basis of fixed weights representative of the reference year (2010 at that time).

At present, for the period ranging from 1999 to 2012, aggregation is performed based on the lower-level series of the base 2010 classification, using weights calculated on the basis of 2010 data. For the period from 2013 to the present, it is based on weights calculated on the basis of 2015 data. The full series is then obtained by chaining the two sub-series using a chain-linking coefficient computed on the basis of 2013 data. The coefficient is the ratio of the 2013 average for the aggregated index calculated using lower-level base 2015 series with 2015 weight to the 2013 average for the aggregated index calculated using lower-level base 2010 series with 2010 weight.

This change was made in response to a suggestion from Eurostat aimed at improving the robustness of indicators over the long term and will be extended to the next base change (which will therefore

¹¹ With the transition to base 2021, a third set of weights (2020) will be added.

include three sets of weights), bringing us closer to the concept of chain-linked indices, which allow the gradual deformation of the structure of the economy to be taken into account.

The European Regulation on short-term statistics specifies, for each short-term indicator, the preferred weighting variable to be used for the aggregation of elementary indices. Turnover is preferred for the turnover indices and the volume of sales index for trade, while value added is the preferred option for the index of services production (as is the case for the industrial production index).

The calculation of the weightings is primarily (up to level A 129 of the classification of activities) based on data from the national accounts (with output sold by branch of activity at base prices acting as a proxy for turnover or value added at base prices, see Box 2 for a definition of this concept). At finer classification levels, weights are also estimated based on turnover data from the French Structural Business Statistics (SBS) [11], on the basis of which the data from the national accounts are broken down.

Box 1: Why use value-added (VA) weights for the index of services production?

VA is used as a weighting variable in response to a recommendation by Eurostat for the aggregation of production indices. This recommendation implies a particular measure of changes in activity.

The first option is to construct Laspeyres indices of sales using total turnover weights. These are the simplest indices and appear to be consistent with the standard representation in terms of the value of “baskets” of services rendered. However, this would have the disadvantage of including the production of intermediate goods or services several times in the calculations.

Like industrial production, which produces both intermediate and final goods, service output as a whole is made up of sub-parts appearing at different stages along the value chain. As a result, some upstream services (such as interview and consulting services) are implicitly included in the turnover generated by the provision of the downstream services, which would result in their economic importance to services as a whole being overweighted.

The concept of value added can be used to overcome this difficulty. Value added is one of the balances in the production account. It is equal to the value of production minus intermediate consumption (i.e. the upstream services used as an input).

This was not Eurostat’s preferred method for the measurement of trade activity by volume, as the concept of value added in trade is difficult to understand, which is why the concept of sales volume is preferred for trade.

2.2.10 Deflators for calculating volume indices

For services and trade, volume indices (ISP and VSI) are calculated by dividing the turnover indices by deflators (see 4.1.2). These deflators are selected or adapted to reflect the trends in the base price (i.e. in terms of the producer or seller price, see Box 2), with a view to ensuring consistency with the concepts of activity defined in 2.1.

In the majority of cases, these deflators correspond to a price index or, in some cases, to a combination of price indices (see the examples in 4.1.2) :

- Consumer Price Indices (CPIs) for retail trade;
- A combination of CPIs and industrial producer price indices (IPPI [10]) for wholesale trade;
- Service producer price indices (SPPIs) and CPIs for services.

For some sectors, other indices are used as proxies for price indices due to the non-availability of dedicated price indices (such as basic monthly wage indices for research and development activities).

Where CPIs are used, they undergo treatment to neutralise any changes associated with taxes.

Box 2: base price and market price

The base price is defined as the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable. It excludes any transport charges invoiced separately. It represents the point of view of the seller (i.e. what they actually receive). Industrial producer price indices and service producer price indices follow this concept.

The market price or purchase price is the amount actually paid by the purchaser for each unit of a good or service purchased. It includes taxes, with VAT only being applied to its non-deductible part, and product subsidies are deducted. This is the concept followed by consumer price indices.

When it comes to establishing activity indicators in terms of volume and thereby describing the supply side of the economy, it is the base price that is relevant (see 2.1). When CPIs are used, they are therefore adjusted to reflect changes to the base price, in particular by neutralising changes in VAT rates.

Box 3: challenges in times of high inflation

Volume indices are particularly useful in times of high inflation, as they make it possible to measure actual activity or consumption (outside of the effects linked to price changes). In periods of low or steady inflation, the profiles of the changes in value and volume are very similar. Conversely, the signals may be “divergent” in the event of high inflation with, for example, declines in actual activity (such as a decline in the number of litres of fuel consumed), even if sales are increasing in terms of value.

However, since the volume indices described in this document are established as a ratio of value and price indices (deflators), it is essential that they are well synchronised. While every effort is made to ensure that this is the case (measurements of both value indices and prices are based on average observations over the month), localised desynchronisation cannot be ruled out, though this does not cast doubt on the trend. By way of an example, in the food retail sector, where consumption is very responsive to price increases on certain products (e.g. with more purchases

being made during part of the month in anticipation of price increases, followed by a decline in purchases when prices rise), measuring in terms of volume risks underestimating the actual consumption over the month. Another problem is the use of quarterly prices in some service sectors. In this case, the price indices are not yet known for certain months' publications, which can bring about a localised phase shift, which we seek to limit through the use of intermediate indices (see 4.1.2.2).

Lastly, as explained above, in certain sectors, there are no price indices that can be used to approximate the exact coverage measured by the turnover indices in terms of value. In this case, proxies are used. For these sectors, the approximation, which is negligible in periods of normal inflation, may not be quite as good in periods of highly atypical price trends.

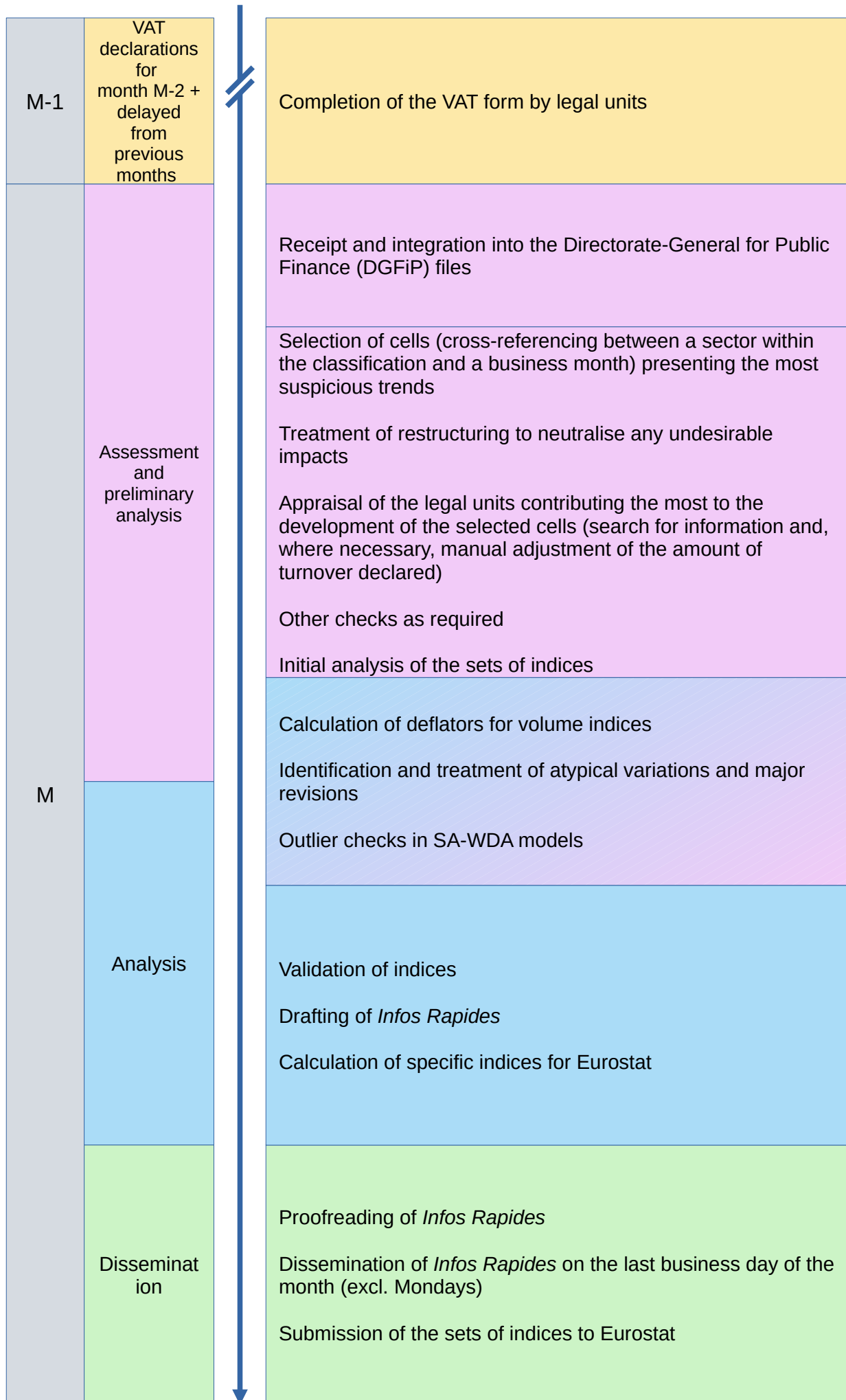
2.2.11 Dissemination schedule

Turnover indices are published on the last business day of each month, unless this falls on a Monday, and relate to the business month "m-2". Dissemination therefore takes place on d+60, in accordance with the European EBS Regulation. As regards the retail trade index (G47), an early calculation concerning business month "m-1" is carried out and integrated into the monthly publication of the volume of sales index for trade (see 5).

Turnover indices are generally published earlier in December for organisational reasons.

A project is underway at INSEE to reduce publication times by 10 days for the trade and services indices; industry is already covered earlier, on d+35, by the IPI.

Figure 1: chronology of a monthly campaign during month M relating to month M-2



2.3 Data collection

2.3.1 Sources

2.3.1.1 Monthly VAT declarations

Turnover indices are primarily based on the monthly value-added tax (VAT) declarations submitted by companies (in the sense of legal units – LUs): under the terms of the agreement between INSEE and the DGFIP regarding the recurring transmission of tax data, at the beginning of each month, the DGFIP transmits the VAT declarations received from companies during the previous month to INSEE.

The use of this administrative source provides near-exhaustive information regarding the turnover of companies without the need for a survey of those companies, thereby limiting the burden on them.

However, the use of an administrative source involves some additional treatments, since it is not specifically designed to meet the needs of Official Statistics, unlike a survey, which can be designed natively to meet a strict protocol and achieve adequate coverage. There are certain specificities that therefore make some company declarations difficult to use to calculate the turnover index and to track activity (where other taxable transactions are present, for example, see 3.5.3). This is especially true of derived production indices (in the services sector).

There are several different VAT declaration systems (see below). In particular, depending on the amount of their turnover, some companies may make their declarations less often than monthly (e.g. annually or quarterly). In addition, below a certain threshold of turnover or VAT due, companies are not required to make such declarations.

The coverage for the calculation of indices is therefore now limited to monthly declarations for reasons of simplicity. This approximation of coverage appears to be acceptable, in so far as the coverage of these monthly declarations is generally very high, which limits the associated risks of coverage bias. In 2019, the overall coverage rate (proportion of turnover declared monthly compared with total turnover for all declarations, including those not submitted monthly) across the sectors covered by turnover indices was 97.0%. That figure is 97.6% for trade, 97.8% for industry, and 95.0% for services (see 9.3).

Any changes to the form appearing in January of year N are taken into account and integrated into the various calculation formulas where necessary. Statistical breaks may be observed following significant changes to the form, which may lead to changes to the calculation formulas in particular, as well as to specific treatments aimed at neutralising statistical breaks (see 3.1).

2.3.1.2 Other sources

The sector-based calculation logic implies knowledge of the APE of the companies. This is obtained by means of matching with INSEE's business registers. These registers also make it possible to identify the creation, cessation of activity and restructuring of companies.

The calculation of volume indices also requires the use of price indices: service producer price indices (SPPIs), consumer price indices (CPIs) and industrial producer price indices (IPPIs). These prices are not all homogeneous (purchase price for CPIs compared with base price for producer price indices), meaning that specific treatment is required (neutralisation of any change to VAT rates for CPIs, for example).

To meet Eurostat's needs, export sales data by country are provided by the *Direction générale des douanes et droits indirects* (Customs Directorate General, DGDDI) and allow for the calculation of export indices for within and outside the euro area based on export turnover indices.

Lastly, early sources are used to provide initial estimates for retail trade (see 5) while various data are used as a benchmark to check or validate the quality of the data established on the basis of the VAT source: these could be annual structural data for measuring the quality of past indices or data that can be used to supplement the analysis of the indices during the monthly campaigns (IPI, registration data, etc.).

2.3.2 Legal framework

The DGFIP and INSEE signed an agreement in February 2018 concerning the regular transmission of tax data. Its objective is to establish a framework agreement that covers all of the recurring transfers of tax data, managed by the Statistical Studies on Tax Matters Section of the DGFIP.

This agreement is based in particular on the *Livre des procédures fiscales* (Tax Procedure Handbook) and its [Article L135 D](#): “Within the limits and under the conditions laid down by Law No 51-711 of 7 June 1951 on Legal Obligation, Coordination and Confidentiality in the Field of Statistics, officials of the tax, and customs and excise authorities may provide officials of the National Institute for Statistics and Economic Studies and officials of ministerial statistical offices with information useful for compiling statistics.” A new framework agreement is planned for 2023.

3 Data Processing

A general diagram showing the process for turnover indices in GSBPM format is provided in the Appendix (see 9.5).

3.1 Reading the fields in the VAT form

In order to meet the various needs in terms of calculation and dissemination, five level turnover variables are created on the basis of the VAT form: CA France (France Turnover), CA Exportation Totale (Total Export Turnover), CA Exportation UE (Intra-EU Export Turnover), CA Exportation hors UE (Extra-EU Export Turnover), CA Total (Total Turnover).

Only some of the fields in the monthly VAT form (3310) are used in calculating turnover indices.

These fields are combined using the following formulas:

$$CA_{France} = Field_{0979} + Field_{0033}^{12}$$

(pour quelques entreprises, le montant associé au code 0033 est comptabilisé dans les exportations)

$$CA_{ExportationUE} = Field_{0034} + Field_{0029} + Field_{0047}$$

$$CA_{ExportationhorsUE} = Field_{0032}$$

$$CA_{Exportationtotale} = CA_{ExportationUE} + CA_{ExportationhorsUE}$$

$$CA_{Total} = CA_{France} + CA_{Exportationtotale}$$

The various codes referred to in these formulas correspond to the fields in VAT declaration form 3310 CA3, as shown on the DGFIP website for the year 2022: <https://www.impots.gouv.fr/formulaire/3310-ca3-sd/tva-et-taxes-assimilees-regime-du-reel-normal-mini-reel>

The main page of the 2022 form is provided in the Appendix (see 9.4).

It should be noted that, although the present data make it possible to reconstruct the VAT due from companies in particular, the calculation shown above results in a figure for turnover excluding VAT, in accordance with the concepts required by Eurostat and described in 2.1.

The form may change each year, in which case, the calculation formulas are adjusted to take account of those changes. Breaks are analysed and neutralised, in particular by changing the calculation formulas.

3.2 Enrichment of company data

Each month, the turnover index repository (SIREN code database created from the SIRENE directory) is enriched by means of update flows from the SIRUS directory (a directory derived from the SIRENE business register for statistical purposes). These update flows concern the creation and cessation of activity of companies, as well as changes to their APEs. They also make it possible to identify the units falling within the scope of the turnover indices (see above).

12 The amount for field 0979 can also be obtained by combining other fields using the following formula (the numbers correspond to the codes within the VAT form, see 9.4) :

0979 = 0979 = 0207 + 0105 + 0151 + 0201 + 0100 + 0900 + 0950 - (0044 + 0056 + 0031 + 0030 + 0040) - 0981

When integrating the DGFIP data, certain units may be unknown within the turnover index repository. A query of the SIRENE directory (soon to take place via the SIRUS directory) is also carried out in order to identify it, either based on its SIREN code provided by the DGFIP or based on other characteristics (in particular, company name and address). If it is found in the SIRENE directory, it is added to the turnover index repository and the associated declaration is then taken into consideration.

3.3 Adjustment and imputation of data

Each month, declarations are missing for a small proportion of legal units (around 60,000 of the approximately 1.6 million processed each month). In the majority of cases, these legal units submit a delayed declaration during the subsequent months (around three-quarters).

For all cases of missing declarations, unless the legal unit was or is undergoing restructuring, if there is no information regarding the possible cessation of activity of the legal unit in question, the turnover figures are imputed (see the formulas below). Indeed, if this were not the case, the calculation of the indices would be biased downwards, since it would incorporate a drop in turnover when compared with the previous reference period. In the case of delayed declarations, the imputed value is replaced by the declared value once it has been received.

A “robust M/M-12 percent change” is applied to the M-12 turnover value for the company, i.e. the percentage change in the company's turnover over the last twelve months is assumed to be that observed for similar companies for which this change is known and does not take extreme values. The robust M/M-12 change is the change to the cumulative turnover of the permanent units between M and M-12 and not presenting an overly atypical change, meaning that it does not fall outside the extreme quantiles of the distribution of changes for this sector S.

More specifically, the formula for calculating the imputations is as follows:

If $VI(u, M-12, \acute{e}lue) \neq null$ and $EVOL_P_PRED_12(M, S) \neq null$
then $VI(u, M, imput\acute{e}e) = VI(u, M-12, \acute{e}lue) * EVOL_P_PRED_12(M, S)$
else if $VI(u, M-1, \acute{e}lue) \neq null$ and $EVOL_P_PRED_1(M, S) \neq null$
then $VI(u, M, imput\acute{e}e) = VI(u, M-1, \acute{e}lue) * EVOL_P_PRED_1(M, S)$

where:

- VI is the variable of interest to be imputed (CA France, CA Exportation Totale, CA Exportation UE, CA Exportation hors UE, CA Total);
- u is the legal unit;
- M is the business month;
- S is the sector of activity (NAF sub-class level)
- $\acute{e}lue$ is the last known value following any change;
- $imput\acute{e}e$ is the value replacing a missing value;
- $EVOL_P_PRED_12(M, S)$ (or $EVOL_P_PRED_1(M, S)$) is the “robust” M/M-12 (or M/M-1) change of permanent legal units belonging to sub-class S for month M.

$$EVOL_P_PRED_12(M, S) = \frac{\sum_{u \in S, u \text{ pérenne, non atypique}} VI(u, M, \acute{e}lue)}{\sum_{u \in S, u \text{ pérenne, non atypique}} VI(u, M-12, \acute{e}lue)}$$

The criteria for a legal unit to be taken into account (« pérenne, non atypique ») in the calculation of the robust change selected are as follows:

1. The legal unit falls within the scope of the turnover indices in M-12 and M;
2. The legal unit has an APE = S in M-12 and in M;
3. The legal unit is active in M-12 and in M for the purposes of VAT: $CA_{Total}(u, M-12)$ exists and is strictly positive, and $CA_{Total}(u, M)$ exists (but may be 0);
4. The legal unit has an empty 0602 code ('Amounts to be added, including as a result of advance leave') or its total turnover (CA Total) for the current month is > 0 . The 0602 code is used in particular to "predeclare" turnover in the summer in connection with reporting offsets resulting from annual leave (see 3.5.4).
5. The trends followed by the legal unit in M/M-12 fall within the [P5;P95] interval of the M/M-12 trends followed by the legal units within the sub-class. P5 and P95 are the 5th and 95th percentiles of the distribution of the M/M-12 trends of the legal units, after filtering the legal units according to all the previous criteria and following their weighting by their total turnover in M-12 (the weight is to be understood as a replication of the value of the trend associated with the legal unit a number of times equal to its total turnover: $CA_{Total}(u, M-12)$). If P5 and P95 fall between two values, the values selected shall be those that reduce the size of the interval (therefore the largest value for P5 and the smallest for P95).

3.4 Treatment of APE changes

If a sector-based logic is used to calculate indices, it is essential that companies be correctly classified according to their main activity (APE). A branch-based approach (see the concept of KAU in 2.2.7) would overcome this issue, but would be complicated to implement within this process and would be of limited statistical benefit.

A legal unit may experience changes to its APE during the course of its life, thereby bringing about a decrease in turnover in its original sector and an increase in its new sector. Such effects make no sense from the point of view of economic or statistical analysis. They are therefore neutralised when calculating the cells (see 3.5.2) for each month of the year in which the APE changed (denoted as N) by not taking into account the turnover of the legal unit in either the numerator (corresponding to the turnover for year N) or the denominator (corresponding to the turnover for year N-1) of the original sector; instead, they are taken into account in the numerator and denominator of the new sector.

The disruption caused by the change in the APE of the legal unit to the original and new sectors is therefore reduced and the turnover for N and N-1 is only taken into account once.

This method makes it possible to neutralise the breaks in series that would otherwise be associated with these changes in APE; however, two difficulties remain:

- In the event of a change to the APE of one or more large companies, the weight corresponding to the base year may result in an under or over-estimate of the impact of changes in one sector on more aggregated sectors;
- A change in APE during a highly volatile period, such as during the 2020–2021 health crisis, may lead to distortions in seasonality.

That is why such changes to APEs are systematically controlled for as soon as they start having a significant impact on the indices. Depending on the situation in question, they may be staggered so as not to degrade the quality of the indices.

3.5 Checking and adjustment of microeconomic data

3.5.1 Introduction: checks and iterations for calculating indices

This section aims to explain the remedial work performed on the data each month to ensure good quality indices, since there are some factors (unit errors in declarations, restructuring, a lack of understanding of certain aspects of the declaration by the company, etc.) that are likely to introduce breaks or biases into the indices.

One important feature of these checks and remedial work is that they are currently designed to run in tandem with the calculation of indices. In this regard, although the presentation, which is modelled on the international GSBPM description, addresses the check before the calculation of the indices (see 4), the two aspects are intimately linked. Therefore, before any checks can begin in the current process, an initial calculation of indices is performed. The indices are updated on a daily basis and therefore take account of any adjustments made to address anomalies the previous day in a convergence-based process up until the indices are published at the end of the monthly campaign. Studies are currently underway with the aim of using tools to detect anomalies in individual data with a view to supplementing this check process with a purely microeconomic layer.

3.5.2 Tools for the check: numerator, denominator, cell and selected value

Indices are calculated based on the aggregation of turnover amounts over the base year (see 4.1.1), which are extended according to a logic involving successive cells, a cell representing the turnover trend of a sector between a month M and the same month during the previous year M-12. For the cell for month M representing a given sector, one turnover amount is calculated to act as a numerator, corresponding to the turnover for month M, and another is calculated to act as a denominator, corresponding to the turnover for month M-12. The cell is therefore the finest macroeconomic data within the process and is used both to calculate the indices and to check and reconcile the data.

If a company enters the coverage during M as a result of a creation, its turnover appears in the numerator, but, by design, not in the denominator, which means that the numerator/denominator ratio takes account of the surplus activity associated with the creation of this company. Conversely, in the case of permanent units, i.e. those that exist in both M and M-12, it is necessary to ensure that their structure remains consistent between the two months. This concept of a consistent structure refers to the treatment of restructuring (see 3.6), changes in APE (see 3.4) and changes in the way in

which declarations are made (for example, a LU may declare a peak in turnover each December and then, from a certain year, start declaring that peak in June).

For each of these cases, turnover amounts neutralising any undesirable effects during the calculation of indices are calculated and integrated into the denominators of the cells for the transition year.

Example showing the use of turnover as a “denominator”: change in declaration method

Turnover peaks of a LU that usually occur in January, April, July and October shift – presumably permanently – to peaks in February, May, August and November.

Unit A	Year N-1		Year N
January	10,000	(0)	0
February	0	(10,000)	11,000
March	0	(0)	0
April	12,000	(0)	0
May	0	(12,000)	12,500
June	0	(0)	0
July	10,000	(0)	0
August	0	(10,000)	11,000
September	0	(0)	0
October	9,000	(0)	0
November	0	(9,000)	10,000
December	0	(0)	0

The turnover amounts used as “denominators” for a month m are noted in parentheses. They are only taken into account when calculating the index for month m+12 and are used in place of the turnover of the LU. The “conventional” turnover of the LU is still taken into account for the calculation of the index for month m.

This makes it possible to switch from one reporting behaviour to another without bringing about an irrelevant break in the indices, since (following documentary research) such changes are not considered to carry over into the economic activity of the legal unit in question.

Lastly, the final turnover figure taken into account when calculating the indices is referred to as the selected value (*valeur élie*). The selected value may be the initial gross value of the company if there has been no change (this covers the vast majority of cases), an imputed value (in the event of a delayed declaration) or an adjusted declaration if the value has been estimated incorrectly (see below).

3.5.3 Manual assessment of atypical VAT declarations

The indices are checked at different levels of the classification using complementary and prioritised approaches in order to control the remediation workload for INSEE, relying in particular on the concept of cells (see 3.5.2).

1. First approach (“assessment”): check of the cells (sub-class x months) presenting atypical values (M/M-12 trends) or forming part of a crossover group (level 3 positions within the NAF) x months presenting an atypical M/M-12 trend.
2. Second approach (“analysis”): analysis of the indices at the most aggregated levels – sections and divisions (1 or 2-digit NAF codes) – and check of the cells contributing the

most to the changes detected as abnormal at these highly aggregated levels (top-down approach).

For both approaches, it is the cells, i.e. the trends at the finest macroeconomic level (sub-class x month) that are ultimately checked and may lead to adjustments of microeconomic data. Checking a cell involves assessing the legal units making the most significant contribution to the trend within that cell using various tools (see below). If appropriate, the turnover of certain legal units is adjusted by an agent.

3.5.3.1 Prioritisation

For the first approach (assessment), an atypicality score is calculated for each group and sub-class covered by the turnover indices. This score is calculated for months M-24 to M inclusive. It highlights a cell if its value is atypical when compared with the cells for M-24 to M-1 inclusive, which were calculated during the previous campaign (see Box 3).

A check is then carried out on the cells (sub-class x month) with the highest scores, as well as on those making the most significant contribution to the atypicality score for their group if that score is high.

Box 4: calculation of the atypicality score

1. A priori characterisation of atypical trends in indices at group and sub-class level

For a given sector S,

- the series of cells (« maillons ») $Maillon^N(m, S) = \frac{CA_m^S}{CA_{m-12}^S}$, $m = M, \dots, M-24$ of the monthly running campaign N of the index calculation

- the series of cells $Maillon^{N-1}(m, S) = \frac{CA_m^S}{CA_{m-12}^S}$, $m = M-1, \dots, M-24$ of campaign N-1

CA_{m-12} (i.e. from the previous month).

The cell $Maillon^N(m, S)$ is atypical according to this score if it does not fall between the upper and lower thresholds [borne_inf ; borne_sup], which :

$$borne_inf = \max(0, Q_2(S) - 2 \times (Q_2(S) - Q_1(S)))$$

$$borne_sup = Q_2(S) + 2 \times (Q_3(S) - Q_2(S))$$

where Q_1, Q_2, Q_3 are the quantiles at 25, 50 et 75% of the 24-tuple $\{Maillon^{N-1}(m, S)\}_{m=M-1, \dots, M-24}$

2. Calculation of the atypicality scores allowing for the prioritisation of the checks to be carried out

If $Maillon^N(m, S) \leq \frac{borne_inf + borne_sup}{2}$ then $score(m, S) = \frac{(borne_inf - X(m, S)) \times 1000}{(borne_inf + borne_sup) / 2}$

If $Maillon^N(m, S) > \frac{borne_inf + borne_sup}{2}$ then $score(m, S) = \frac{(X(m, S) - borne_sup) \times 1000}{(borne_inf + borne_sup) / 2}$

The scores are ranked from the highest to the lowest (with negative values being smaller than positive values).

The atypicality score for a cell therefore takes positive values when its value falls outside of the upper and lower thresholds [borne_inf ; borne_sup]. Its value increases further if it extends beyond the thresholds of this interval. The denominator of the score ($([borne_inf + borne_sup] / 2)$) makes it possible to compare the scores for cells for which the trends have been very different over the previous 24 months.

3.5.3.2 Assessment of a selected cell

For any given cell, the assessment consists of an analysis of the VAT declarations of the legal units making the most significant contribution to its trend (at least the four biggest contributors). The analysis takes place based on the turnover data of the legal unit for the last three years. It relies in particular on comparing the turnover for a given month M with that of the same month during previous years. Indeed, since the majority of economic series demonstrate a high degree of seasonality, it is generally difficult to compare data with those of the previous month. Conversely, activities generally have a similar overall profile from one year to the next, which makes it possible to perform a comparison with the same month in previous years. The analysis is also based on an examination of the trend of the unit in question by looking for possible breaks in that unit, which will be assessed.

Where suspicious trends are identified, the managers use comparative sources: economic knowledge of the sector, specialist and general press, knowledge of restructuring of companies (see 3.6), in addition to using other indicators (surveys, bank card data, etc.).

The situations most frequently encountered are:

1. Obvious significant error in the declared value (outlier). In such cases, the manager adjusts the declared value, replacing it with a “predicted” value corresponding to the calculation used for the imputations (see 3.3). This value can be adjusted by the manager if it seems implausible in view of the recent history of the unit.
2. The declared value seems too low or too high, but to a lesser extent than in the previous case.

The likelihood of the declared value is then assessed by the manager in view of the past stability of the usual declarations (is this company frequently subject to adjustments?) and in view of the information found in the specialist press that may explain a sudden increase (launch of a new product, for example) or a sudden decrease (difficulties suffered by the company, for example). Lastly, the manager decides whether to accept the declared value or to adjust it (see the case of an outlier). In case of uncertainty, the declarations made by the company are analysed over the subsequent months with a view to adjusting the treatment if it appears to be unsuitable.

3. Value of zero declared when this is not normally the case.

Once again, unless a search of the literature provides a plausible explanation, the manager corrects this with a predicted value, adjusted where necessary, and monitors the company’s declarations over the following months. During the following month in particular, the company may submit a “double declaration” (declaration covering two months), which will

then need to be broken down over the two months (using the breakdown between the same two months during the previous year, for example), overwriting the predicted value originally used where necessary. The case of double declarations may extend to multiple declarations (covering more than two consecutive months).

The cases listed above may concern the total turnover figure of the legal unit in question or one or more of the following components: Turnover taxable in France, turnover for intra-EU exports, turnover for extra-EU exports, turnover for “other non-taxable transactions” (ONTTs). The latter component is the most difficult to assess, since it can incorporate a range of concepts that may or may not need to be taken into account when calculating the turnover indices (see Box 4).

Box 5: extract from the notes to form CA3, describing the content of ONTTs

Indicate other transactions making up your turnover:

- Tax-suspended (Article 277 A and 298 of the French General Tax Code) or tax-exempt (Article 275 of the French General Tax Code) deliveries and services.
- Transactions carried out within the scope of transfers of full or partial ownership of goods exempt from VAT in application of Article 257 bis of the French General Tax Code;
- Deliveries and services relating to the new industrial waste and recyclable materials referred to in Article 283-2 sexies of the French General Tax Code;
- Sales of natural gas or electricity and directly related services not intended to be consumed in France to a purchaser established and registered for VAT in France, as per the second paragraph of Article 283-2 quinquies of the French General Tax Code;
- Transfers of the greenhouse gas emission quotas and other emission reduction units referred to in Article 283-2 septies of the French General Tax Code;
- Sales of the electronic communications services referred to in Article 283-2 octies of the French General Tax Code;
- Construction work, including repair, cleaning, maintenance and demolition work carried out in relation to a property, as referred to in Article 283-2 nonies of the French General Tax Code;
- Sales of telecommunications, radio broadcast and television services, as well as sales of services performed electronically for people not subject to tax domiciled or habitually resident in the EU, that are declared in the Member State in which they are consumed via the Mini One Stop Shop scheme;
- Other non-taxable transactions (tax-exempt business, non-taxable fraction of transactions for which VAT is calculated based on the margin, services rendered to a customer established abroad – even if they are taxed in that country).

It is sometimes the case, particularly for certain specific activities, that the majority of the turnover declared by a company falls under ONTTs. However, this component can be highly volatile, as it covers complex aspects and sometimes includes elements that should not have been recorded as turnover by the company. In particular, in some cases, extreme ONTT values are seen over a few isolated months. These peaks can be removed by the manager based on information gathered from other sources. The manager can observe whether the company has previously declared peaks of this type in the past and can compare the turnover declared on the VAT form with that declared in tax

returns submitted in previous years in order to assist their decision (benchmarking of data, at the microeconomic or macroeconomic level, see 4.4.3).

As regards the turnover under ONTTs, certain types of adjustments are particularly common:

1. Sometimes, a company declares its turnover under ONTTs on a non-monthly basis (peaks at quarterly, half-yearly or annual intervals). Even where these peaks appear very regular (for example, peaks in January, April, July and October), it is sometimes the case that these peaks shift from one month to the next. The peak can therefore arrive a month early or a month late, which can disrupt the indices and in particular the SA-WDA treatments. If these historical peaks are sufficiently regular, the manager then ensures that the peaks remain as well aligned as possible, either by correcting for the absence of an expected peak by applying a predicted value, or by shifting a peak that has occurred at an unexpected time.
2. A special case for the previous example: if the shift in months becomes established over time (e.g. peaks that previously occurred in January, April, July and October shift across to February, May, August and November and this second declarative profile repeats itself over the subsequent years). This “change in declaration method” is therefore “supported” through the use of denominators (see 3.5.2), which allows future declarations to remain unchanged without disrupting the indices.

Lastly, it is possible that during restructuring, each of the units involved (the transferor and the beneficiary) will simultaneously report a peak in ONTTs corresponding to the value of the net assets celled to the restructuring (or in some cases to the amount of the merger bonus, or to the amount of the transfer). In such cases, the amount of ONTTs does not reflect the business activity (turnover) of the company, but a transaction involving assets or liabilities, which is therefore neutralised.

Adjustments are also made when it is clear that the VAT declaration has been incorrectly completed by the legal unit, which is often the case at the start of the year when the declaration form (330CA3) changes and the instructions for filling it in change accordingly.

Another example is when legal units declare grant amounts in fields intended for their turnover. As grants are not included in the measurement performed when calculating the turnover indices, these amounts are adjusted as soon as they are identified.

Beyond these normal treatments, it is sometimes necessary to temporarily adapt the priorities and methods used to check and reconcile the microeconomic data. This was the case, for example, at the start of the health crisis, where it was necessary to find ways to differentiate between a plausible delay in submitting the declaration or the closure of the unit when companies failed to respond (see Box 5).

Box 6: specific features of treatments during lockdowns

During the first few months of the health crisis, the assessment of individual data became complicated due to the difficulty in comparing the data with those of previous months. VAT data

gave rise to many manual reviews by INSEE managers. On the one hand, the automatic imputations had to be adapted. On the other hand, the additional information, including the regulatory constraints or available specific comparative sources (the *Déclaration sociale nominative* (Nominative Social Declaration, DSN), for example) were used to distinguish between true zero turnover and non-responses. Lastly, the seasonal adjustment also required specific treatment: integrating outliers related to the health crisis without taking precautions would have led to undesirable distortion of seasonal coefficients, thereby reducing the quality of future SA-WDA indices and underestimating the magnitude of the shock (see 4.2).

3.5.4 Treatment of reporting shifts for paid leave

When the accountant is on paid leave, the company may find it impossible to fully complete its monthly VAT declaration. An administrative tolerance¹³ allows the company to fill in the CA3 for business month M as a minimum. The situation is rectified by the accountant upon their return from leave through the sending of a CA3 declaration concerning business month M+1, but also combining all of the tax elements for months M and M+1 (known as a “double month” declaration).

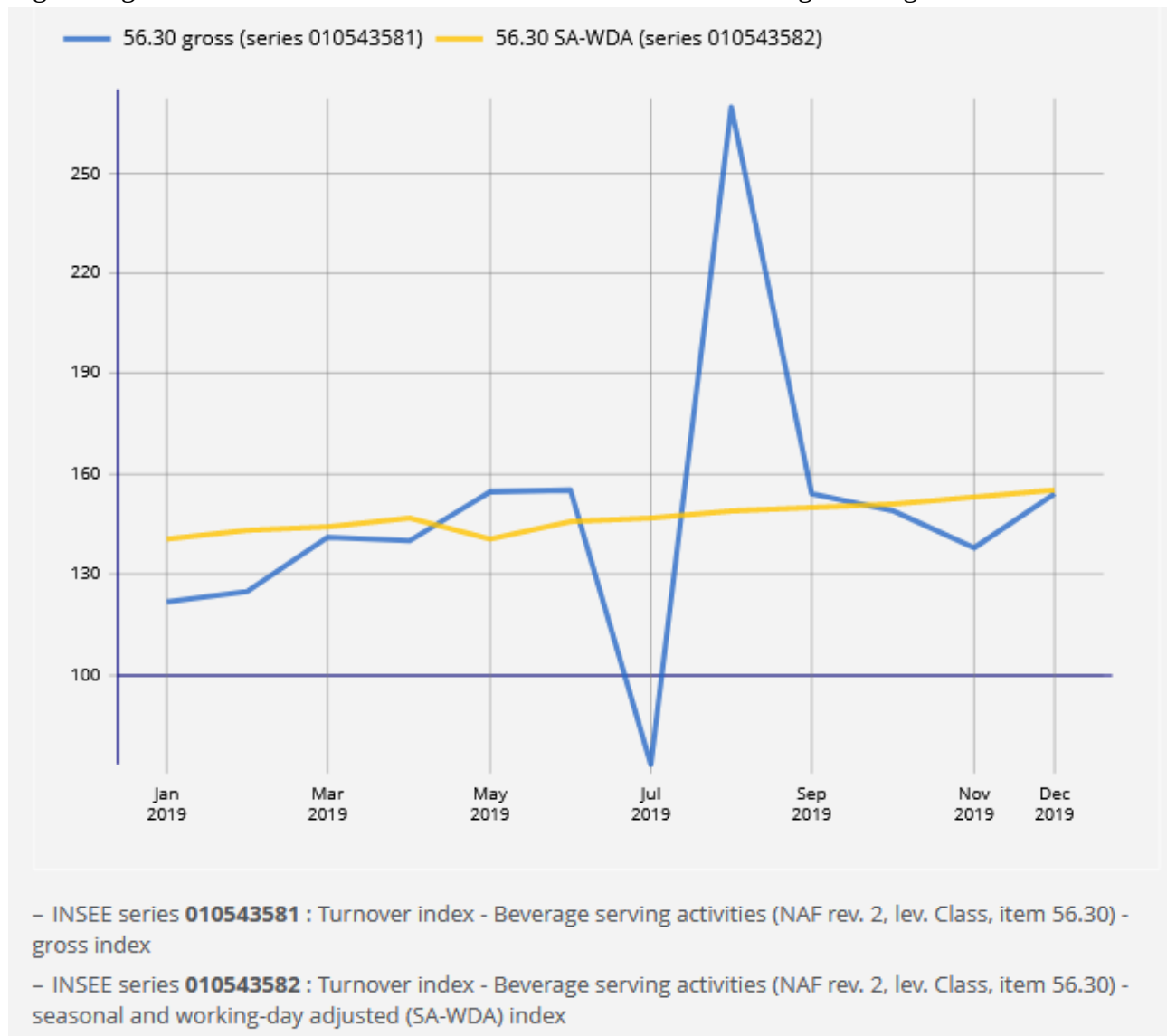
In fact, this phenomenon is particularly common during business month M = July, when the accountants of around one third of declaring companies are on leave (as described above), amounting to around 420,000 legal units. For the remaining business months, this phenomenon is significantly less common and no automatic treatment is currently applied.

This provision is likely to significantly distort the measurement of economic activity produced on the basis of VAT declarations:

- The phenomenon of paid leave generates gross indices that are inconsistent due to their being undervalued in July and overvalued in August. Nevertheless, with “constant reporting behaviour” from one year to the next, this effect is neutralised by the SA-WDA treatment (see below), in other words, in this case, the gross indices are deformed, but not the SA-WDA indices (see the example of the series of indices for 56.30 (Beverage serving activities) shown in Figure 2).
- However, when large LUs change their reporting behaviour relative to this period of paid leave, this could also bring about a shock in the SA-WDA indices, which does not result from real economic fluctuation, but rather from a statistical artefact associated with an administrative provision. These undesirable effects are neutralised through the application of the “treatment of paid leave” management rules described below. We consider that a LU changes its behaviour with regard to paid leave in month M if “paid leave is present in month M but not in M-12” or indeed “paid leave is present in M-12, but not in M”. Paid leave is deemed not to be present within a LU if it declares its turnover for the month of July. Conversely, paid leave is deemed to be present if it does not declare its turnover.

13 <https://www.impots.gouv.fr/professionnel/questions/comment-declarer-ma-tva-en-periode-de-conges-payees>

Figure 2: gross index and SA-WDA index for NAF 56.30 – “Beverage serving activities”



The “treatment of paid leave”, as implemented today, is intended to neutralise the problematic effects linked to changes in the behaviour of a particular unit. However, it does not correct for the incorrect distribution of the turnover of a unit between July and August, for example, provided that distribution is consistent from one year to the next¹⁴. It is based on the following principles:

- Scenario 1: for a LU in which *paid leave is deemed not to be present* in M (July in year N, $N \geq 2013$) and *paid leave is deemed to be present* in M-12, adjustment of the LU’s turnover for M and M+1 so as to re-establish the paid leave phenomenon in M and re-establish the “usual” declarative profile of the unit.
- Scenario 2: for a LU in which *paid leave is deemed to be present* in M (July of year N, $N \geq 2013$) and *paid leave is deemed not to be present* in M-12, adjustment of the LU’s turnover for M and M+1 so as to cancel out the paid leave phenomenon in M and re-establish the “usual” declarative profile of the unit.

¹⁴ In other words, the deformation of the profile for the gross series is tolerated, but the relevance of the SA-WDA series is ensured.

This treatment has been carried out three times a year since 2013, during the July, August and September campaigns (but still with regard to the reported months of July and August) and aims to reproduce the same declarative profile from one year to the next:

- During the July campaign, initial identification of the LUs to be adjusted and adjustment thereof.
- During the August campaign, refinement of the identification of LUs to be adjusted (better information this time since data are available for two summer months) and adjustment, taking account of any double declaration in August.
- During the September campaign, the August treatment is repeated to take account of any late declarations.

The treatment of paid leave is performed for around 15,000 units each year: in other words, of the 420,000 legal units making use of this reporting facility, only a small proportion requires adjustment due to a change in reporting behaviour from one year to the next. The other units are not adjusted, either because their reporting behaviour has not changed (declaration of a double month in August of both year N-1 and year N), or because they are too small and it is considered that changes in reporting behaviour are too difficult to identify in this case. The treatment is based on relatively complex deterministic rules in order to take account of a range of scenarios (see the details in 9.6). A treatment project focused on improving all units (rather than expanding the reporting behaviour of just those units whose reporting behaviour changes) is underway.

3.6 Treatment of restructuring

Where a company absorbs another company or when a company is split into several units or even if there is a change in the distribution of turnover between the various legal units forming a group, the indices calculated by sector of activity can be heavily impacted if the legal units affected by the restructuring do not all share the same APE. However, such operations do not necessarily reflect an actual change in activity (at least in the short term), but rather a change in organisation. The most impactful restructuring activities are assessed and their undesirable impacts neutralised in a similar way to when LUs change their APE (see 3.4).

More specifically, if the LUs affected by the same restructuring activity do not all share the same APE, a “denominator” turnover is calculated for each of them (see 3.5.2) for 12 months from the time that the restructuring takes place. The “denominator” turnover calculated for a month m is used exclusively to calculate the index for month $m+12$. It then replaces the turnover for month m of the LU, which makes it possible to restrict the impact to the index for month $m+12$ without affecting the index for month m .

In the case of restructuring, the “denominator” turnover figures for a month m are calculated for each LU such that their total equals the total turnover for that month m . This allows the total turnover of the LUs to be preserved, month after month. The “denominator” turnover of a LU is calculated as a proportion of the total turnover for this month m for all LUs. The proportion used corresponds to that observed for the turnover figures for month $m+12$.

This calculation is only applied, for a given month *m*, to those LUs affected by restructuring for which the *m*+12/*m* trend is deemed to be atypical. Otherwise, the LU will not be assigned a “denominator” and its turnover for month *m* will be taken into account as normal for the calculation of the *m*+12 index.

Example of a legal unit A transferring part of its business to a newly created legal unit B

Situation observed, gross turnover of LU A (transferor) and LU B (beneficiary).

Unit A (transferor)	Year N-1	Year N	Unit B (beneficiary)	Year N-1	Year N
January	10,000	10,000	January	-	-
February	9,000	9,000	February	-	-
March	11,000	10,000	March	-	-
April	10,000	12,000	April	-	-
May	8,000	9,000	May	-	-
June	12,000	10,000	June	-	-
July	10,000	5,000	July	-	5,000
August	10,000	6,000	August	-	4,000
September	10,000	4,000	September	-	4,000
October	12,000	5,000	October	-	5,000
November	9,000	8,000	November	-	4,000
December	7,000	6,800	December	-	6,800

After treatment of the restructuring for the index calculations. The turnovers used as “denominators” are noted in parentheses. The “denominator” turnovers for the months from January N to June N have not yet been calculated. The calculation will take place once the turnover for these months in year N+1 is known.

Unit A (transferor)	Year N-1	Year N	Unit B (beneficiary)	Year N-1	Year N
January	10,000	10,000	(?) January	-	- (?)
February	9,000	9,000	(?) February	-	- (?)
March	11,000	10,000	(?) March	-	- (?)
April	10,000	12,000	(?) April	-	- (?)
May	8,000	9,000	(?) May	-	- (?)
June	12,000	10,000	(?) June	-	- (?)
July	10,000	(5,000)	5,000	- (5,000)	5,000
August	10,000	(6,000)	6,000	- (4,000)	4,000
September	10,000	(5,000)	4,000	- (5,000)	4,000
October	12,000	(6,000)	5,000	- (6,000)	5,000
November	9,000	(6,000)	8,000	- (3,000)	4,000
December	10,000	(5,000)	5,000	- (5,000)	5,000

Details of the calculation of denominators for November in this example:

The total turnover of LUs A and B for November N-1 is 9,000 (9,000 for LU A + 0 for LU B).

The total of the denominators for this month, for LUs A and B, must therefore be 9,000.

In year N, LU A has a turnover of 8,000 and LU B has a turnover of 4,000. This proportion is applied to the calculation of denominators, giving a “denominator” turnover of 6,000 for LU A and 3,000 for LU B.

4 Calculation of indices

4.1 Elementary indices

4.1.1 Gross value indices

The gross value turnover indices are first calculated at the finest level of the French Classification of Activities, i.e. at the sub-class level of NAF Rev. 2. At this level, the index for month m is calculated by applying the change in the turnover between months $m-12$ and m to the index for month $m-12$.

For a given sector S and month M for which the turnover amounts $CA_m^{2015}, m=1..12$ are known for the base year, the indices for the base year can be calculated, followed by the indices for the following periods in a recursive manner:

$$\text{For the base year, } I(m, S) = 100 \times \frac{CA_m(\text{legal units} \in S)}{\frac{1}{12} \times \sum_{m=1}^{12} CA_m(\text{legal units} \in S)}$$

$$I(m, S) = I(m-12, S) \times \text{Cell}(m, S) \quad \text{where} \quad \text{Cell}(m, S) = \frac{CA_m^S}{CA_{m-12}^S} \quad \text{corresponds to the turnover}$$

trend with constant structure.

The demography of companies (creations, cessations of activity, entries and exits from the coverage, change in business sector) is constantly taken into consideration to accurately reflect the economic reality. Restructuring activities likely to affect the sectoral outline of the VAT declarations are subject to specific treatment (see 3.6). Overall,

$$\text{Cell}(m, S) = \frac{CA_m^{\text{pérennes}(m, S)} + CA_m^{\text{entrées secteur}(m, S)} + CA_m^{\text{entrées champ}(m, S)} + CA_M^{\text{créées}(m, S)}}{CA_{m-12}^{\text{pérennes}(m, S)} + CA_{m-12}^{\text{entrées secteur}(m, S)} + CA_{m-12}^{\text{entrées champ}(m, S)} + CA_{m-12}^{\text{cessées}(m, S)}}$$

Once the value indices have been established at the finest level of the classification, the indices for the higher levels of the classification are calculated by means of aggregation (see 4.3).

The base and reference for the turnover indices are changed every five years (with the exception of the next base, which will use 2021 as the reference year due to the particularities of 2020). The indices currently being published use 2015 as their base and reference year. They therefore currently have an average of 100 in 2015 (compared with 100 in 2010 previously).

4.1.2 Gross volume indices

The gross indices of services production and volume of sales indices for trade are calculated at the finest level (class for services and sub-class for trade) and defined as the ratio between the value turnover index and a deflator (in the majority of cases, a price index or a combination of price indices) specific to each of the sectors considered.

One difficulty posed by this approach is the difference in coverage between the turnover indices used for the numerator and the price indices: the former are, as explained above, sector-based indices (see 2.2.7). They therefore potentially cover secondary activities beyond the main activity of the companies. In addition, the main activity may be associated with the sale of various products or services. Conversely, price indices generally refer to a target product or service, regardless of whether they are consumer price indices or producer price indices. In order to make the fields as compatible as possible, it is sometimes necessary to calculate specific composite price indices that aggregate various elementary price indices, particularly for trade. In all cases, this difference in concept remains a sticking point, particularly when prices change in a highly heterogeneous manner. Another difficulty concerns differences in frequency (quarterly for certain prices for services) or the possibility of localised desynchronisation in periods of highly volatile prices (see Box 3).

Once the volume indices have been established at the finest level of the classification, the indices for the higher levels of the classification are calculated by means of aggregation (see 4.3). Volume indices have been calculated since 2005, taking account of the availability of source data for prices.

4.1.2.1 Calculation of the elementary volume indices for services

In the services sector, the deflators used for the majority (around two-thirds) of the sectors are service producer price indices (SPPIs, see [8]). These indices are produced on a quarterly basis (available at T+60 days) and must therefore be converted to monthly in order to deflate the turnover indices on a monthly basis. In addition, on certain dates, the quarterly price indices are not yet available and it is therefore necessary to calculate an estimate pending the actual production of the price index.

For certain sectors for which there is no producer price index (particularly in household services), a deflator is created based on series of consumer price indices (CPIs) corresponding to the services in question. However, CPIs are measured with all taxes included. To align them with a concept of base price suitable for calculating volume indices, it is therefore necessary to adjust the latter to take account of the effect of changes in VAT rates.

Lastly, when the deflator used is a composite of different CPIs, the aggregation of the latter is based on the weights of the basket of goods and services calculated for the aggregation of the CPIs (see Box 6 for some examples of deflators chosen).

By way of an illustration, in order to calculate turnover indices for August 2022 (published in late October), we only have SPPIs up to Q2-2022, with quarterly prices able to be converted to monthly until June. For series based on SPPIs, it is therefore necessary to extrapolate prices until June. Conversely, for series based on a CPI (or a combination of CPIs), the prices for July and August are already known.

Quarterly prices are converted to monthly:

- Using the Chow-Lin method [2] if a significant CPI (or another monthly price index) is available for the class in question;
- Otherwise, using the Denton-Cholette [1] method.

Extrapolations are performed:

- Using the Chow-Lin method for sectors with a CPI;
- Otherwise, using ARIMA models.

Box 7: examples of deflators chosen for the services sector

Where possible (see 2.2.10), the preferred deflators are producer price indices. Therefore, under “Computer programming activities” (class 62.01 of the French Classification of Activities), the French service producer price index for all markets (BtoAll) of CPF 62.01 is used. However, this is a quarterly index, which means it needs to be converted to monthly (and the final points need to be extrapolated). As no suitable monthly underlying index has been identified, the conversion to monthly is performed by means of the Denton-Cholette method.

For car and light motor vehicle rental activities, again, a producer price index is available: this is the French service producer price index for all markets (BtoAll) – CPF 77.11 – Renting and leasing of cars and light motor vehicles (1). Nevertheless, for this branch of activity, a possible candidate for an underlying index to convert this producer price index to a monthly index is the “private vehicle rental” consumer price index (2). Index (1) is then converted to monthly by means of the Chow-Lin method, using index (2) as the underlying index.

Lastly, for the “Repair of footwear and leather goods” sector (NAF class 95.23), there is no producer price index. In the absence of such an index, it is the “Repair and hire of footwear” consumer price index that is used. This index is monthly, so it is not necessary to convert it. However, this index does need to be adjusted to take account of variations in VAT rates in order to align it with the concept of base price.

4.1.2.2 Calculation of the elementary volume indices for trade

In the fields of retail trade and trade and repair of motor vehicles and motorcycles, the price indices used are obtained by aggregating the household consumer price indices (CPIs) to ensure that they are representative of the sector in question. The aggregation weights correspond to the weights of these indices within the consumer price index.

CPIs are measured with all taxes included. To align them with a concept of base price suitable for calculating volume of sales indices, the latter are adjusted to take account of the effect of changes in VAT rates.

In the field of wholesale trade, the agricultural means of production purchasing price indices (IPAMPAs), the agricultural producer price indices (IPPAPs), the French industrial producer price indices for the French market (IPPIs) and consumer price indices are used as appropriate. The elementary price index is a weighted average of the various indices representing the products making up the sales within the sector. The weights are calculated using data from the French SBS survey (see Box 7 for some examples of the deflators chosen).

Box 8: examples of deflators chosen for trade

Sub-class 46.13Z “Agents involved in the sale of timber and building materials” covers the sale of many products. It has not been possible to identify a single deflator (such as a producer price index or a consumer price index) that correctly represents sales within this sector. The deflator used to calculate the volume of sales index for this sub-class is a composite index calculated specifically for this purpose. In this case, it is a weighted average of four French industrial producer price indices for the French market for CPF 23.5 (Cement, lime and plaster), 16.10 (Shaped wood), 16.21 (Process panels) and 16.23 (Other woodwork and framing pieces). The identification of deflators and the calculation of the associated weights in order to obtain the composite index is based on the *enquête sectorielle annuelle* (Annual sectoral survey, ESA) for trade, which breaks down the sales within a sector by product for a given year.

For sub-class 47.11A (Retail sale of frozen products), a composite index is obtained based on five consumer price indices representative of the products sold in the context of this type of trade. The associated weights are calculated based on those used to aggregate the CPIs.

Lastly, for sub-class 47.11F, which includes the sale of many different products, a suitable consumer price index is already available: this is the Retail Price Index – Base 2015 – All households – Metropolitan France - Retail.

All of these indices are monthly, so, unlike some of the deflators used for services, it is not necessary to convert them.

In the latter two examples, it is necessary to adjust the price indices for variations in VAT rates in order to align them with the concept of base price.

4.1.3 Export and domestic market indices

Value-based export and domestic market turnover indices are also calculated by only taking account of the export (or domestic market) turnover of the companies identified by means of VAT declarations (see 3.1). These indices are only disseminated for industry, up to level A38. They are available as gross indices and as SA-WDA indices.

In addition, in order to meet Eurostat needs, the export indices are broken down into indices for exports within the euro area (intra-EU) and exports outside of the euro area (extra-EU). These indices are calculated based on total export indices and export rates within the euro area. These rates are derived from data provided by the *Direction générale des douanes et droits indirects* (Customs Directorate General, DGDDI) concerning the amounts of exports to each country.

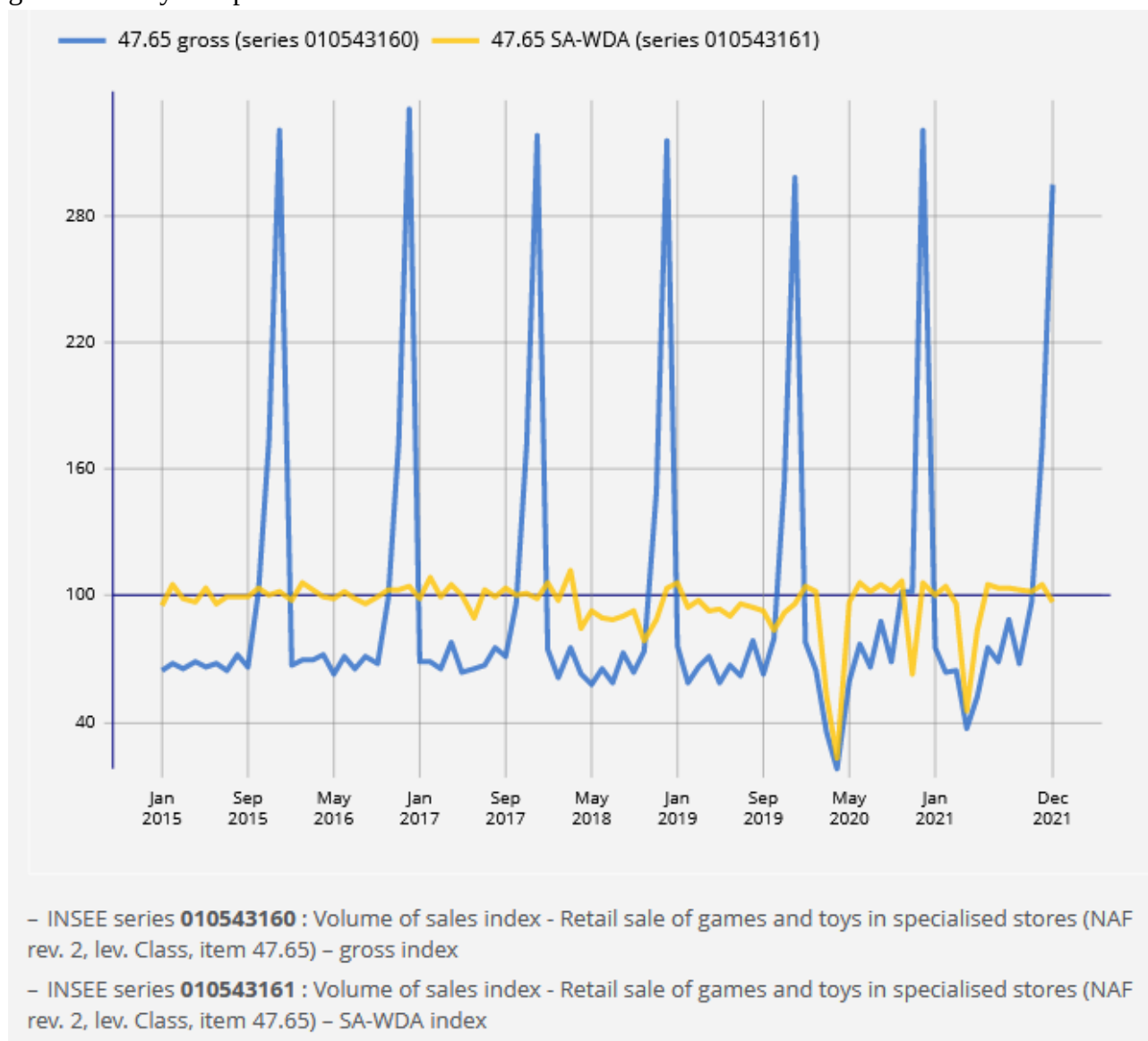
4.2 SA-WDA and WDA indices (value and volume-based)

Like many economic indicators, turnover indices and volume-based derived indices present a marked seasonal profile (see the example below concerning the volume of sales index for the retail sale of games and toys in specialised stores – NAF 47.65). In addition to the main economic

reasons, this is also due to the source of the data, particularly in the summer months. This seasonality makes it difficult to interpret variations in the gross series from one month to the next. In addition, the type of seasonality involved may differ significantly depending on the branch of activity in question: for example, some tourism-related activities involve generally high activity over the summer months, whereas the opposite is true in industry-related sectors, where activity is generally lower in summer. Such heterogeneous seasonality further complicates the analysis.

To analyse cyclical changes in the indices presented in this manual, it is therefore necessary to adjust the series for seasonal (SA) and working-day effects (WDA), in the same way as for many other economic series produced by INSEE. The methods used are updated regularly.

Figure 3: example of series with marked seasonality, the volume of sales index for the retail sale of games and toys in specialised stores – NAF 47.65



Indices adjusted for seasonal variations and calendar effects are then calculated based on the gross indices (SA-WDA and WDA only). The annual average of the SA-WDA indices may differ slightly

from that of the gross indices, in particular because it takes account of variations in the annual composition of working days from one year to the next: leap years, position of public holidays in the week, etc.

Indirect seasonal adjustment¹⁵: is conducted at a detailed level (at class level), and the SA-WDA and WDA aggregates are then calculated directly from these series using the aggregation method presented below.

Seasonal adjustment of the indices is performed by means of the X13-ARIMA method using the JDemetra+ [4] software offered by Eurostat with the use of specific WDA regressors (see below). It is based on good practices recommended by Eurostat (see [6] and [7]). The X13-ARIMA method is based around two main modules.

A first module (“RegARIMA”) allows for a pre-adjustment of the series: detection of outliers in the series, adjustment for “working-day” effects, extension of the series to the edges and provision of diagnostics. The estimation of seasonal coefficients is improved, since the gross series is not overly disrupted by cyclical fluctuations.

Four types of outlier can be detected and are then taken into account by adding regressors in a RegARIMA model:

- Additive outliers are disruptions that occur in a given month and that cannot be attributed to seasonality. An example is a strike that can be assumed not to have any impact on production in the following months;
- Transitory changes: an incident was significant enough to affect the level of production in the following months (e.g. a flood);
- Level shifts: for example, the opening of a new plant or a major economic development such as the 2020 health crisis;
- Seasonal outliers: these allow for a sudden change in seasonality with a lasting impact to be taken into account, such as a change in the method of accounting for production.

For working-day adjustments (assuming such adjustment is necessary), the module uses regressors that reproduce the structure of the calendar (through the structure of months in terms of non-holiday trading days). To take into account the specificities of the national calendar (national holidays, public holidays), INSEE creates its own variables and then incorporates them into JDemetra+. The regressors are centred by removing the long-term averages for each month, allowing the seasonal component of the calendar to be removed. Lastly, an automatic choice procedure is applied between different combinations of possible regressors.

After detecting any effects, the X13-ARIMA pre-adjustment module estimates them using a RegARIMA model to “linearise” the series and extend it to the edges for seasonal adjustment purposes.

In a second step, a second module (X11) performs the actual seasonal adjustment by iterative smoothing of moving averages and breaks down the linearised series in the first part into orthogonal components: the trend cycle, seasonality and the irregular component.

Outliers (one-off outliers in the form of additive outliers, temporary changes, level shifts and seasonal outliers) are fixed in the past and automatically detected over the last 12 months

¹⁵ Conversely, “direct” seasonal adjustment involves the application of the selected seasonal adjustment algorithm to each level of aggregation. In this case, series trends may be inconsistent between the upper and lower levels.

(LastOutliers option). The critical value for detecting outliers, the filtering length and the model/filter to select depend on the series: it is sometimes necessary to make manual changes in order to improve the quality of seasonal adjustment. In addition, outliers can be added or modified manually: this was the case in particular for the neutralisation of certain specific points linked to the 2020–2021 health crisis (lockdowns, for example), which would have caused unjustified distortion of past seasonal coefficients. Seasonal adjustment may use an additive or multiplicative breakdown as appropriate. The seasonal adjustment models are reviewed annually¹⁶ and the parameters are re-estimated on a monthly basis.

Seasonally adjusted data have been revised monthly from 2012 onwards. For the seasonal adjustment of indices for the recent past, models are now estimated using a reduced sub-period (from 2005 onwards), as recommended by Eurostat, with a view to increasing the robustness of the seasonal adjustment. Pre-2012 data are fixed in terms of trends, as per Eurostat’s recommendations to not revise SA-WDA over too long a period.

4.3 Calculation of aggregated indices

Aggregated indices are calculated as Laspeyres price indices (see Box 9), starting from the classification level immediately below, with a system of double weights (see 2.2.9). There are therefore two implicit aggregation trees, the first associated with a 2010 weighting system (and corresponding to the weights of the former base 2010) and a second associated with the 2015 weighting system.

Box 9: Laspeyres price index

A Laspeyres price index is a tool for measuring changes within a group of series between two periods, assuming a constant structure (of prices or quantities, as applicable).

In its most generic form, a Laspeyres price index of quantities at date t, relating to date 0, and relative to k sectors s_1, \dots, s_k is expressed according to the formula:

$$I_S^{t,0} = \frac{\sum_{i=1}^k p_{s_i}^0 q_{s_i}^t}{\sum_{i=1}^k p_{s_i}^0 q_{s_i}^0}$$

Noting that $q_{s_i}^0$ and $q_{s_i}^t$ are the quantities sold by sector s_i on dates 0 and t and $p_{s_i}^0$ is the average price applied by sector s_i on date 0 (reference).

The above expression can be rewritten as a linear combination of change sub-indices:

$$I_S^{t,0} = \sum_{j=1}^k \frac{p_{s_j}^0 q_{s_j}^0}{\sum_{i=1}^k p_{s_i}^0 q_{s_i}^0} \times \frac{p_{s_j}^t q_{s_j}^t}{p_{s_j}^0 q_{s_j}^0} = \sum_{j=1}^k w_j \times I_j^{t,0}, \text{ where } w_j \text{ represents the weight (in terms of turnover) of}$$

sector s_j across all S of the k sectors s_1, \dots, s_k and $I_j^{t,0}$ is the change index for that same sector.

16 We do, however, give ourselves permission to seek a certain stability.

For a given aggregation tree¹⁷, for any aggregated sector S (parent node) comprised of k sub-sectors s_1, \dots, s_k (child nodes), the aggregated index for sector S for business month m ($m \in [M-24, M]$), is the weighted average of the indices for sub-sectors s_1, \dots, s_k (see Box 8). This method is used for all types of indices: value or volume-based, gross, SA-WDA or WDA, see below.

$$I(m, S) = \sum_{i=1}^k w_{s_i} \times I(m, s_i)$$

$w_{s_i} = \frac{V_i}{\sum_{i=1}^k V_i}$ represents the share of sales in sub-sector s_i within aggregated sector S during the

base year.

The V_i are taken from the national accounts and structural business statistics (ESANE).

For the index of services production, they are based on the value added of the national accounts rather than on total sales (see 2.2.9).

The indices calculated based on the 2015 tree are used from 2013 and extended back into the past using the indices calculated based on the 2010 tree. More specifically,

$$I^{[2013+]}(m, S) = \sum_{i=1}^k w_{s_i}^{2015} \times I^{Base\ 2015}(m, s_i)$$

$$I^{[1999-2012]}(m, S) = \left(\sum_{i=1}^k w_{s_i}^{2010} \times I^{Base\ 2010}(m, s_i) \right) \times C(S)$$

Where $C(S)$ is the correlation coefficient between the base 2010 indices and the base 2015 indices for sector S, calculated as the ratio between the 2013 average of the index of aggregated sector S obtained based on its base 2015 child indices with their 2015 weights and the same average calculated using the base 2010 child indices with their 2010 weights.

$$C(S) = \frac{\frac{12}{m=1} Mean\ I^{Base\ 2015}(2013, m, S)}{\frac{12}{m=1} Mean\ I^{Base\ 2010}(2013, m, S)}$$

4.4 Validating the results

4.4.1 Analysing the changes

The results are validated starting from the microeconomic level, prioritising the assessment of LUs, sub-class by sub-class, as described in 3.5.3.

This approach is supplemented with a top-down analysis through the identification of atypical changes to the indices, whether gross, SA-WDA, value-based or volume-based.

The analysis starts from the most aggregated level before moving down one level, prioritising the analysis of the sub-index that has contributed the most to the change in the higher-level index; this process is repeated until the finest level is reached, where the LUs contributing the most to the

¹⁷ Deux arbres d'agrégation liés aux pondérations 2010 et 2015.

suspicious change are assessed. It also relies on documentary research and comparisons with other sources (see 4.4.3).

This analysis may also result in an adjustment to the turnover amounts for certain LUs that were not identified as being anomalous during the first stage. Overall, in any given month, the turnover of approximately 150 LUs is adjusted manually by means of the two cumulative approaches.

Lastly, additional attention is paid to the SA-WDA series during the examination of the quality of the models (JDemetra+ diagnosis of the quality of seasonal adjustment, appearance of outliers, etc.).

4.4.2 Analysing the revisions

All revisions are taken into account (routine revisions, major revisions, unscheduled revisions). Nevertheless, the methodology implemented aims to limit the scale of such revisions, which are included among the quality indicators monitored as part of the index production process (see 7).

In the case of raw data, routine revisions are primarily carried out as a result of late responses. Company declarations are not always available in full at the time of the initial publication of the index. The integration of late responses leads to the revision of the raw data of the values. Beyond routine revisions, the assessment of the previous month's microeconomic data may also lead to the detection of anomalies during previous months.

Some revisions are also performed as a result of the update of the SA-WDA coefficients each month (since 2012; the trends from further in the past are fixed, see 4.2). All SA-WDA models are also subject to an annual review that may lead to changes aimed at improving their quality. Such updates may also modify all of the SA-WDA series.

4.4.3 Comparison with other sources

The associated turnover and volume index data are regularly compared with reference data, which allows the quality of the indices to be analysed a posteriori with a view to identifying potential problems with the data, and may, where appropriate, give rise to revisions or adaptations of the process (see 7.2.3). Some very early sources can also be used directly for the campaign concerning the previous month. This is the case for new infra-monthly sources used to make early estimates with regard to retail trade (see 5), new vehicle registration data, electricity consumption data, etc. Lastly, comparisons may also be made of microeconomic data as part of the data control process, by comparing the sum of VAT returns for a given year for a particular company with the results shown in its tax returns (see 3.5.3.2)

5 Early estimates in retail trade

5.1.1 Expectations

Beyond the indices described in the previous sections, which are required within a maximum of 60 days of the end of the month, the European EBS Regulation also requires the provision of early indices at +30 days (value and volume-based) for retail trade and three main sub-aggregates (see Table 2). Due to the non-availability of VAT data for this period, these indices are based on data sources and a methodology that differs from that previously mentioned.

Table 2: early retail trade indices requested by Eurostat at +30 days (value and volume-based)

Aggregate	Name	Content
All retail trade (except for motor vehicles)	G47	Division 47
Retail trade excluding fuels	G47_X_G473	Division 47 excluding group 473
Retail trade of food	G47_FOOD	Class 4711 + group 472
Fuel	G473	Group 473
Trade of non-food items excluding fuel	G47_NFOOD_X_G473	Class 4719 (department stores) and groups 474 to 479

More generally, the need for early economic information is becoming more pressing and the work being carried out is aimed at further reducing the turnaround time for the publication of these early indicators or expanding their coverage to include certain service sectors.

5.1.2 Data used

In the past, the early estimate of retail trade turnover indices was based on the Emagsa survey¹⁸ (in particular for the retail trade of food, but also for other sectors) and the retail trade survey conducted by Banque de France (both the food and non-food part).

Since 2022, and following on from a trial conducted from 2020 onwards, two new data sources have been used for the purpose of compiling these early indicators: scanner data of large-scale food retailers (5.1.2.1) and CB bank card payment data (5.1.2.2). The use of these new sources had two primary objectives: to remove the need for the Emagsa survey (thereby reducing the associated response costs for companies) and to improve the efficiency of early estimates in retail trade, from the point of view of both quality and time.

These new data also made it possible to significantly speed up economic diagnoses during the 2020–2021 health crisis. Work is also still underway in association with public and private-sector partners to identify promising new data (see 7.2.3).

5.1.2.1 Scanner data

Scanner data are data gathered by major retailers, largely selling food, when consumers pass through the checkout to pay for their purchases. Information regarding the prices charged each day and on the quantities of each product sold is then centralised by certain retailers. INSEE receives those data daily from supermarkets and hypermarkets. This is purely in the form of aggregated

¹⁸ <https://www.insee.fr/en/metadonnees/source/serie/s1222>

information regarding prices and quantities by product, point of sale and day of sale. Initially trialled and used to calculate the consumer price index, their use by INSEE has been extended to the production of activity indicators¹⁹. These data are available at a very early stage (almost exhaustive just a few days after the end of the month) and are accurate. However, they only provide very patchy coverage of fuel purchases made at stations belonging to large-scale food retailers and must therefore be supplemented in this respect by other sources. In addition to calculating a global sales index for large-scale food retailers, scanner data also allow for the production of indices for each product at level A129 of the aggregated national accounts classification. They enrich early estimation models of retail trade activity.

The linking of each product (described in the scanner data by a label) to the correct element within the classification at level A129 takes place based on the *fastText* model²⁰. This is a neural network that has been optimised to be trained using minimal computer resources and to adapt to a large volume of data. Learning and test sets were created based, on the one hand, on a repository of products provided by a panellist for its own classification needs and, on the other hand, on the manual labelling of products that were poorly represented within the repository.

5.1.2.2 CB bank card data

Aggregated and anonymised data concerning transactions completed using a CB bank card used to measure the monitoring of economic activity and household consumption are provided under an agreement with the *Groupement des cartes bancaires CB* (CB Bank card Group)²¹ and formatted and adapted by INSEE for the purposes of their use in economic analysis work (cyclical business indicators, monitoring of tourism, economic outlook reports, etc.).

When a transaction is made using a CB bank card, various data are exchanged between the merchant, the merchant's bank and the card issuer, in particular the SIRET number of the CB merchant, the amount and the time stamp. Since March 2020, as part of an agreement entered into with the *Groupement des Cartes Bancaires CB* in the context of the COVID health crisis, INSEE has been granted daily access to anonymised and aggregated amounts covering a representative sample of payment transactions made by CB bank card, aggregated by:

- Merchant category code (MCC), a business classification specific to electronic banking;
- Payment method and technology: in-person with PIN entry, contactless and remote payment (primarily online);
- Department (i.e. location) for in-person payments.

These data have gradually been enriched and are now also used directly within the NAF classification, within certain time periods. These data are not only early, but also provide a wealth of information. However, they must be used with caution for the purposes of performing economic analyses due in particular to the fact that they only offer partial coverage of economic activity and introduce biases linked to changes in behaviour or regulations that must then be neutralised [3].

19 [Decree of 13 April 2017 making the electronic transmission of data for official statistical purposes mandatory](#), amended by the [Decree of 5 July 2021](#).

20 <https://github.com/facebookresearch/fastText>.

21 The *Groupement des Cartes Bancaires CB* is a groupement d'intérêt économique (economic interest group, EIG) created in 1984 by the major credit institutions in France. It defines the terms and conditions under which the CB bank card payment scheme operates.
<https://www.cartes-bancaires.com>

5.1.3 Methodology and linking with turnover indices

The early estimate for retail trade aims to predict the reference data (series calculated based on the VAT source) from advance indicators available earlier (scanner data from large-scale food retailers, CB data). From a methodological point of view, as is the case for the quarterly accounts, it is based on the use of simple econometric models that compare over the past the target (VAT) data with the early indicators available (scanner data, CB data): in other words, the econometric equation converts the early data (scanner data, CB data) to align them with the definition and the coverage of the target series (for example the turnover index for food retail trade). For example, the VAT data used as standard to calculate turnover indices also include certain secondary activities (wholesale trade, intermediation), which are not included in the scanner data or CB data. In addition, there may also be differences in seasonality, while peculiarities within a particular source may result in local volatility not present within other sources.

With a view to limiting the risks and avoiding issues associated with the collinearity of explanatory variables (such as between scanner data and CB data with similar coverage), concurrent equations are estimated on the basis of each set and the final estimate is the result of applying an aggregation rule for these estimates, which overweights the best-performing models. Table 3 shows the form the models used for each aggregate take.

Table 3: models and indicators used for early estimates

Aggregate	G47_FOOD	G47_NFOOD_X_G473	G473
Modèle 1	CB data concerning food shops	CB data concerning the entire coverage of non-food trade (excluding fuels)	CB data concerning the sale of fuels
Modèle 2	Scanner data index combined with the fuel indicator	Balance reconstituted from the BdF survey concerning the coverage of non-food retail trade + scanner data indices by product (non-food part)	Data concerning the supply of fuels
Modèle 3	Food balance from the BdF survey on retail trade ²²		

6 Dissemination of indices

6.1 Dissemination schedule and embargo

Indices are published on INSEE's website, 60 days after the end of the business month:

- For industry and construction, value indices are disseminated at levels 1 to 5 of the classification for the gross indices and up to level 4 for the SA-WDA indices;
- For services, indices are disseminated at levels 1 to 5 of the classification for the gross value indices and up to level 4 for the SA-WDA value indices and the volume indices (gross and SA-WDA);

²² <https://www.banque-france.fr/en/monthly-survey-retail-trade>

- For trade, indices are disseminated at levels 1 to 5 of the classification for the gross indices (in terms of both value and volume) and up to level 4 for the SA-WDA indices (in terms of both value and volume).

Each publication is accompanied by an *Informations Rapides* on insee.fr. The trade and services indices are published online at 08:30 and the industry and construction indices are published online at 12:00.

The turnover indices are also disseminated by Eurostat within the European Classification (NACE) with the same embargo times.

The dissemination calendar for the main economic outlook indicators is published four months in advance on insee.fr²³.

6.2 Application of statistical confidentiality

The main rules concerning the turnover indices are as follows: data may not be disseminated if they are based on the compilation of data from fewer than three companies or if one company accounts for more than 85% of the turnover of the field covered by the series (dominance rule and percentage rule).

Statistical confidentiality is ensured each year thanks to Tau-Argus (software designed to protect statistical tables, [Tau-Argus software](#)) and confidential indices are not disseminated.

6.3 Supply of series available on insee.fr

Internet users can find all of the available statistical data on INSEE's website, free of charge, together with the information needed for its correct interpretation.

The results are provided in the indices and time series category under the heading "Services" on insee.fr. The data can be downloaded in xlsx or csv format. They can also be retrieved by means of an online service, available on the [api.insee.fr](#) portal and meeting the SDMX standard.

The links to the index series are as follows:

- Industry and construction, value-based: <https://www.insee.fr/en/statistiques/series/109939789>
- Trade, value-based: <https://www.insee.fr/en/statistiques/series/109939800>
- Trade, volume-based: <https://www.insee.fr/en/statistiques/series/109939810>
- Services, value-based: <https://www.insee.fr/en/statistiques/series/109940299>
- Services, volume-based: <https://www.insee.fr/en/statistiques/series/109940548>

6.4 Sending of series to Eurostat

Series are sent to Eurostat in SDMX format on the same day as they are disseminated nationally.

²³ <https://www.insee.fr/en/information/1405540?debut=0>

Specific series are sent to Eurostat in addition to those disseminated on [insee.fr](https://www.insee.fr) (WDA series, main industrial groupings²⁴, series differentiating between intra-EU turnover and extra-EU turnover).

6.5 Publication of Infos Rapides

The dissemination of indices is accompanied by the publication of “Infos Rapides” describing recent key developments in the various sectors (in terms of value for industry and construction and in terms of volume for trade and services).

This collection presents the latest indices and the most recent results of INSEE’s economic short-term indicators. A notification appears on the [insee.fr](https://www.insee.fr) homepage as soon as they are made available online (under the heading “Latest economic indicators”).

6.6 Dissemination aimed at researchers via the CASD

Gross data relating to VAT declarations are made available to researchers by the DGFIP via the Secure Data Access Centre (CASD), subject to the agreement of the Statistical Confidentiality Committee.

6.7 External communication

Each of the publications is systematically announced by INSEE on Twitter²⁵.

6.8 Use in studies by the Official Statistics system

In addition to the monthly publication of *Informations Rapides*, the associated turnover and volume indices are used in many INSEE publications, both implicitly (as an input for analyses and estimates, for example in the economic outlook reports or in the publication of the quarterly accounts) and explicitly. Some examples are provided below:

- Trade in 2021, <https://www.insee.fr/en/statistiques/6467885>
- Tourism in France – Monitoring the impacts of the COVID-19 health crisis, <https://www.insee.fr/en/statistiques/4625624?sommaire=4625628#titre-bloc-5>

24 MIGs

25 <https://twitter.com/InseeFr/>

7 Assessment of the quality of the process

7.1 General quality assurance framework at INSEE

Since 2005, the European Statistics Code of Practice²⁶ has acted as the benchmark for assessing the quality of production of the national statistical institutes. European peer reviews are periodically arranged to ensure that the principles of this reference are duly applied and to ensure that each institute is involved in a continuous improvement process. In this regard, INSEE has adopted a process-based approach. A range of tools has been created and pooled within the Official Statistical Service (SSP) with a view to describing the statistical production processes, analysing their strengths and weaknesses, evaluating their inherent risks, examining their documentation (metadata) and evaluating specific steps (analysis of user needs, validation of data, etc.). The diagnostics resulting from these quality-based approaches lead to the establishment of action plans that are regularly monitored within the scope of process reviews. In addition, INSEE regularly conducts satisfaction surveys concerning the indicators and data it produces. The results of these surveys are available on insee.fr.

7.2 Assessment of the quality of the turnover index process

7.2.1 Summary

The process of establishing turnover indices and the associated volume indices were the subject of a quality initiative in 2022. In addition to a precise description of the process, this initiative suggests that Eurostat's requirements are being met, that the process as a whole is effective and that the indices produced are of good quality. The analysis of strengths and weaknesses with regard to the data validation criteria highlighted the robustness of the turnover index process controls. Strengths lie in particular in the internal and temporal consistency criteria (see 7.2.2 and 7.2.3) and in the limitation of the burden on companies (reuse of administrative data without any additional burden for companies). Identified weaknesses and /or areas for improvement concern the provision of adequate resources given the complexity of the process, improvements to the documentation and a broadening of exchanges with users.

7.2.2 Review of index revisions

Revisions are made to the indices on the basis of both revisions to the raw data (finalised 24 months after their initial dissemination) and updates to the SA-WDA coefficients (see 4.4.2).

However, the aim is to keep such revisions to a minimum, as illustrated in Table 4. The bias (average of the revisions) and the absolute average of the revisions remain small compared with the scale of the fluctuations in the series during the period under review, which was heavily impacted by the health crisis and which experienced fluctuations in turnover from one month to the next that were sometimes huge.

²⁶ <https://www.insee.fr/en/information/4140105>

Table 4: revisions to the most recent monthly publication of the manufacturing industry turnover index, the volume of sales index for trade and the index of services production – 2021–2022 period.

	Average of the revisions	Absolute average of the revisions	Standard error of the changes within the series during the 2021–2022 period
Manufacturing industry turnover index	-0.02	0.38	3.02
VSI	0.12	0.16	1.60
ISP	0.11	0.20	2.08

7.2.3 Comparison with other sources

When validating the results (see 4.4) or performing retrospective analyses to judge their quality, the turnover indices may be compared with other data sources. These take several forms:

- Industrial production index (to analyse the turnover part within the industrial sector);
- Data taken from within the coverage of structural business statistics (annual data from the “ESANE” system, see 3.5.3) which include the entirety of the coverage of the turnover indices and are available between two and three years after the end of the year under review; the results are also published at a very fine level (NAF sub-class);
- The results of the econometric models used by the quarterly accounts to establish quarterly estimates of the various economic variables of the System of National Accounts; these models establish relationships between the series within the annual accounts and certain short-term indicators, such as turnover indices; the significance of the indicators²⁷ within these relationships and the precision obtained are a posteriori indicators of the quality of the short-term indicators;
- Other data produced by Official Statistics (series from the *Service des données et études statistiques* (Data and Statistical Studies Service, SDES) (Ministry for the Ecological Transition) concerning the number of passenger-kilometre registrations, energy data, etc.);
- Private data (bank card data, scanner data, see 5).

In addition, some users (INSEE’s national accountants, statisticians working within ministries) provide regular feedback regarding turnover indices in an attempt to understand the differences observed when compared with the other data sources that they use.

7.2.4 Meetings with users

The *Infos Rapides* pertaining to turnover indices were the subject of a readership survey in 2022. Internal users at INSEE (national accountants, for example) appeared to be satisfied with the quality and availability of the indices. However, these findings are to be taken with a pinch of salt, given the small number of responses received to this readership survey.

An annual consultation takes place with the professional federations of the industrial, construction, trade and services sectors. Consideration is being given to means of expanding discussions with the users of these statistics.

²⁷ For example, the turnover index for the food and beverage service activities sector is used to measure household consumption during this activity.

8 References

References

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- 12 Méthodologie des comptes trimestriels, Insee méthodes n° 126, mai 2012, <https://www.insee.fr/fr/information/2571301>

9 Appendices

9.1 Data required by Eurostat (source: EBS statistics manual)

9.1.1 Production indicators

Table 6: short-term business statistics on production (volume)

Variables	<ul style="list-style-type: none"> Production (volume)
Statistical unit	KAU
Measurement unit	Indices: unadjusted, calendar adjusted and seasonally adjusted
Periodicity	<p>Monthly, with the following exceptions:</p> <ul style="list-style-type: none"> NACE Section F for small countries as defined in Annex IV.A.2 of the EBS GIA Regulation: quarterly (monthly optional)
Reference period	<p>Month, with the following exceptions:</p> <ul style="list-style-type: none"> NACE Section F for small countries as defined in Annex IV.A.2 of the EBS GIA Regulation: quarter (month optional)
Statistical population	Market activities of NACE Sections B, C, D (excl. 35.3), F, H, I, J, L, M (excl. 70.1, 72 and 75) and N
Breakdowns	<p>Breakdown by activity</p> <p><i>For all countries:</i></p> <ul style="list-style-type: none"> MIGs of NACE Sections B, C and D (excl. 35.3) as defined in Annex IIA of the EBS GIA Regulation (MIG energy excl. 35.3 and E); Aggregates of NACE Sections: <ul style="list-style-type: none"> B+C+D (excl. 35.3); H+I+J+L+M (excl. 70.1, 72 and 75)+N; NACE Sections: <ul style="list-style-type: none"> B, C, D (excl. 35.3), F, H, I, J, L, M (excl. 70.1, 72 and 75) and N; NACE divisions of Sections: <ul style="list-style-type: none"> H, I, J, L, M (excl. 70.1, 72 and 75) and N; <p><i>For medium-sized and large countries:</i></p> <ul style="list-style-type: none"> In addition NACE divisions of Sections B, C, D and F; <p><i>For large countries:</i></p> <ul style="list-style-type: none"> In addition NACE groups and classes of Section C (representing at least 90 % of value added of Section C). <p>The additional breakdowns required for medium-sized and large countries are optional for small countries; the additional breakdowns for large countries are optional for medium-sized countries.</p> <p>Transitional arrangements for NACE Section F for the reference periods before January 2024.</p>
Use of approximations and quality requirements	For activities in NACE Sections H to M (excl. K, 70.1, 72 and 75) and N, the enterprise may be used instead of kind-of-activity units for the reference periods before 2021 and from January 2021 to December 2023 in base year 2015.
Data transmission deadline	<p>t+1 month+10 days for NACE Sections B, C, D (excl. 35.3).</p> <p><i>For NACE Section F:</i></p> <ul style="list-style-type: none"> for medium-sized and large countries: t+1 month+15 days; for small countries: t+2 months. <p>t+2 months for NACE Sections H, I, J, L, M (excl. 70.1, 72, 75) and N.</p> <p>Transitional arrangements for inclusion of NACE aggregate for: NACE Sections H+I+J+L+M (excl. 70.1, 72 and 75)+N; NACE sections and divisions of Sections H to M (excl. K, 70.1, 72 and 75) and N; NACE divisions of Section F.</p>
First reference period	<p>January 2000 for the required NACE Sections B to D (excl. 35.3), except for:</p> <ul style="list-style-type: none"> Spain (NACE groups and classes) January 2002; Austria (NACE Division 09) January 2005. <p>January 2005 for NACE Division 33.</p> <p>First quarter 2000 (or month 2005) for small countries the required NACE Section F and January 2005 for large and medium-sized countries the requirements of NACE Section F.</p> <p>January 2021</p> <ul style="list-style-type: none"> for the aggregate of NACE Sections H+I+J+L+M (excl. 70.1, 72 and 75)+N; for NACE sections and divisions of Sections H to M (excl. K, 70.1, 72 and 75) and N;

9.1.2 Volume of sales for trade

Table 7: short-term business statistics on volume of sales

Variables	<ul style="list-style-type: none"> Volume of sales
Statistical unit	KAU
Measurement unit	Indices: unadjusted, calendar adjusted and seasonally adjusted
Periodicity	Monthly
Reference period	Month
Statistical population	Market activities of NACE Section G
Breakdowns	<p>Breakdown by activity</p> <p>For all countries:</p> <ul style="list-style-type: none"> NACE Section G; NACE divisions of Section G; NACE Division 47 (excl. 47.3); Aggregate of NACE Class 47.11+ Group 47.2; Aggregate of NACE Class 47.19+Groups 47.4+47.5+47.6+47.7+47.8+47.9; NACE Group 47.3; <p>For medium-sized and large countries:</p> <ul style="list-style-type: none"> In addition, NACE groups of Section G, NACE Classes 47.11, 47.19 and 47.91. <p>The additional breakdowns required for medium-sized and large countries are optional for small countries.</p>
Use of approximations and quality requirements	For activities in NACE Section G, the enterprise may be used instead of kind-of-activity units for the reference periods before 2021 and from January 2021 to December 2023 in base year 2015.
Data transmission deadline	<p>t+2 months for monthly data for:</p> <ul style="list-style-type: none"> NACE Section G; NACE Divisions 45 and 46; NACE Groups 45.1, 45.2, 45.3, 45.4, 46.1, 46.2, 46.3, 46.4, 46.5, 46.6, 46.7, 46.9, 47.1, 47.2, 47.4, 47.5, 47.6, 47.7, 47.8 and 47.9; NACE Classes 47.11, 47.19 and 47.91. <p>t+1 month for monthly data for NACE:</p> <ul style="list-style-type: none"> NACE Division 47; NACE Division 47 (excl. 47.3); Aggregate of NACE Class 47.11+Group 47.2; Aggregate of NACE Class 47.19+ Groups 47.4+47.5+47.6+47.7+47.8+47.9; NACE Group 47.3.
First reference period	<p>January 2000, except for:</p> <ul style="list-style-type: none"> NACE Section G, NACE divisions and groups of Divisions 45 and 46, NACE groups of Division 47 (except 47.2 and 47.3) that are to be provided as of January 2021.

9.1.3 Turnover indices

Table 8: short-term business statistics on net turnover (value)

Variables	<ul style="list-style-type: none"> • Net turnover (value) • Domestic net turnover (value) • Non-domestic net turnover (value) • Non-domestic net turnover (value) (euro area) (optional for non-euro area countries) • Non-domestic net turnover (value) (non-euro area) (optional for non-euro area countries)
Statistical unit	KAU
Measurement unit	Indices: unadjusted and calendar adjusted for all activities as well as seasonally adjusted for NACE Sections G, H, I, J, L, M (excl. 70.1, 72 and 75) and N
Periodicity	Monthly
Reference period	Month
Statistical population	<p>For the variable net turnover (value): NACE Sections B, C, G, H, I, J, L, M (excl. 70.1, 72 and 75) and N.</p> <p>For the variables domestic net turnover (value), non-domestic net turnover (value), non-domestic net turnover (value) (euro area) and non-domestic net turnover (value) (non-euro area): NACE Sections B and C.</p>
Breakdowns	<p>Breakdown by activity For the variable net turnover (value) <i>For all countries:</i></p> <ul style="list-style-type: none"> • MIGs of NACE Sections B and C as defined in Annex II.A of the EBS GIA Regulation (MIG energy excl. D and E); • Aggregates of NACE Sections: <ul style="list-style-type: none"> ◦ B+C; H+I+J+L+M (excl. 70.1, 72 and 75)+N; • NACE Sections: <ul style="list-style-type: none"> ◦ B, C, G, H, I, J, L, M (excl. 70.1, 72 and 75) and N; • NACE divisions of Sections: <ul style="list-style-type: none"> ◦ G, H, I, J, L, M (excl. 70.1, 72 and 75) and N; • NACE Division 47 (excl. 47.3); • NACE Group 47.3; • Aggregate of NACE Class 47.11+Group 47.2; • Aggregate of NACE Class 47.19+Groups 47.4+47.5+47.6+47.7+47.8+47.9. <p><i>For medium-sized and large countries:</i> In addition, NACE divisions of Sections B and C, NACE groups of Section G, NACE Classes 47.11, 47.19 and 47.91.</p> <p>For the variables domestic net turnover (value), non-domestic net turnover (value), non-domestic net turnover (value) (euro area) and non-domestic net turnover (value) (non-euro area) <i>For all countries:</i></p> <ul style="list-style-type: none"> • MIGs of NACE Sections B and C as defined in Annex II.A of the EBS GIA Regulation (MIG energy excl. D and E); • Aggregates of NACE Sections B+C; • NACE Sections B and C; <p><i>For medium-sized and large countries:</i> In addition, NACE divisions of Sections B and C. The additional breakdowns required for medium-sized and large countries are optional for small countries.</p>
Use of approximations and quality requirements	<p>For activities in NACE Sections G, H to M (excl. K, 70.1, 72 and 75) and N, the enterprise may be used instead of kind-of-activity units for the reference periods before 2021 and from January 2021 to December 2023 in base year 2015.</p> <p>t+2 months for:</p> <ul style="list-style-type: none"> • MIGs of NACE Sections B and C as defined in Annex II.A of the EBS GIA Regulation (MIG energy excl. D and E); • Aggregates of NACE Sections: <ul style="list-style-type: none"> ◦ B+C; H+I+J+L+M (excl. 70.1, 72 and 75)+N;

<p>Use of approximations and quality requirements</p>	<ul style="list-style-type: none"> • NACE Sections: <ul style="list-style-type: none"> ◦ B, C, G, H, I, J, L, M (excl. 70.1, 72 and 75) and N; • NACE divisions of Sections: <ul style="list-style-type: none"> ◦ B, C, H, I, J, L, M (excl. 70.1, 72 and 75) and N; • NACE Divisions 45 and 46; • NACE Groups 45.1, 45.2, 45.3, 45.4, 46.1, 46.2, 46.3, 46.4, 46.5, 46.6, 46.7, 46.9, 47.1, 47.2, 47.4, 47.5, 47.6, 47.7, 47.8 and 47.9; • NACE Classes 47.11, 47.19 and 47.91. <p>Transitional arrangements for inclusion of aggregate of NACE Sections H+I+J+L+M (excl. 70.1, 72 and 75)+N; NACE sections and divisions of Sections H to M (excl. K, 70.1, 72 and 75) and N.</p> <p>t+1 month for:</p> <ul style="list-style-type: none"> • NACE Division 47 <ul style="list-style-type: none"> ◦ NACE Division 47 (excl. 47.3); ◦ Aggregate of NACE Class 47.11+Group 47.2; ◦ Aggregate of NACE Class 47.19+Groups 47.4+47.5+47.6+47.7+47.8+47.9; ◦ NACE Group 47.3.
<p>First reference period</p>	<p>January 2000 for the required NACE aggregates, NACE sections and divisions of Sections B and C, except for:</p> <ul style="list-style-type: none"> • Spain: January 2002; • Austria: January 2005 for NACE 09. <p>January 2000:</p> <ul style="list-style-type: none"> • for NACE Division 47, NACE Division 47 (excl. 47.3); aggregate of NACE Class 47.11+Group 47.2; aggregate of NACE Class 47.19+Groups 47.4+47.5+47.6+47.7+47.8+47.9; for NACE Groups 47.2 and 47.3; and for NACE Classes 47.11, 47.19 and 47.91. <p>January 2005 for the requirements of the variables non-domestic net turnover (value) (euro area) and non-domestic net turnover (value) (non-euro area).</p> <p>January 2021:</p> <ul style="list-style-type: none"> • for aggregate of NACE Sections H+I+J+L+M (excl. 70.1, 72 and 75)+N; for NACE Sections G, H to M (excl. K, 70.1, 72 and 75) and N; for NACE Divisions 45, 46 and NACE divisions of Sections H to M (excl. K, 70.1, 72 and 75) and N; for NACE groups of Divisions 45, 46 and 47 (except 47.2 and 47.3). <p>For the Member States of the euro area, the variables non-domestic net turnover (value) (euro area) and non-domestic net turnover (value) (non-euro area) are required from the beginning of the year of entry into the euro area.</p>

9.2 Weights of multi-activity legal units within the turnover of the trade and services sectors in 2018

The following table shows the following for each division “D” of the NAF:

- Column 2 shows the weight of the multi-activity legal units that list this sector D as their main activity (APE), but that also have secondary activities (or secondary kind-of-activity units – KAUs) in other divisions of the NAF; under the current methodology, turnover indices rely on a sector-based logic with these secondary activities therefore being included under the activity in sector D (see 2.2.7);
- Column 3 shows the weight of the secondary activities (secondary KAUs) concerning branch of activity D, but belonging to legal units for which the APE does not fall under sector D.

By way of an example, a legal unit may have retail trade as its main activity, while also having secondary KAUs in wholesale trade. Within the turnover indices, the entire activity of this unit will be accounted for within the sector under which the main activity of that unit falls in order to estimate the change to the index within that sector.

The table illustrates the fact that, in trade and services, and in the vast majority of cases, the approximation of the KAU (required by Eurostat) by sectors of activity appears satisfactory, in so far as secondary activities remain very limited (regardless of whether they are activities that are not accounted for due to their belonging to a unit in another sector, or secondary activities “erroneously” accounted for within this sector when they should have been accounted for elsewhere). Lastly, in the case of industry, the reference indicator used to monitor changes in activity is the industrial production index (see 1.4), which is established on the basis of branch-based data and therefore separates out the various KAUs.

Example: in 2018, in retail trade (division 47), 0.7% of legal units (in terms of share of turnover) include secondary activities that do not fall under retail trade, even though their main activity is in retail trade. In addition, there are secondary activities that do fall under retail trade and that are not accounted for in this sector as they are performed by legal units belonging to other sectors (such as wholesale trade), representing 0.3% of the total for retail trade. These two figures are small and are not likely to reduce the quality of the indicators calculated during the change.

Sector of activity (NAF division)	Weight (in terms of share of turnover) of the multi-activity legal units by division (as a %)	Weight of the KAUs integrated into legal units belonging to other divisions (as a %)
45-Wholesale and retail trade and repair of motor vehicles and motorcycles	0	0
46-Wholesale trade, except of motor vehicles and motorcycles	7.9	2
47-Retail trade, except of motor vehicles and motorcycles	0.7	0.3
49-Land transport and transport via pipelines	18.1	0.5

50-Water transport	79.1	26.5
51-Air transport	0	0
52-Warehousing and support activities for transportation	0.2	0.1
53-Postal and courier activities	0	0
55-Accommodation	3.6	0.9
56-Food and beverage service activities	0.6	0
58-Publishing activities	1.6	0
59-Motion picture, video and television programme production, sound recording and music publishing activities	2.5	0.1
60-Programming and broadcasting activities	0	0
61-Telecommunications	15.4	0
62-Computer programming, consultancy and related activities	12.4	3.8
63-Information service activities	1.7	0
68-Real estate activities	0.1	0
69-Legal and accounting activities	0	0
70-Activities of head offices; management consultancy activities	11.6	9.1
71-Architectural and engineering activities; technical testing and analysis	0.5	0.4
72-Scientific research and development	0	0
73-Advertising and market research	0	0
74-Other professional, scientific and technical activities	0	0
75-Veterinary activities	0	0
77-Rental and leasing activities	7	0.7
78-Employment activities	0	0
79-Travel agency, tour operator reservation service and related activities	0	0
80-Security and investigation activities	0	0
81-Services to buildings and landscape activities	3.9	0
82-Office administrative, office support and other business support activities	0.7	0
90-Creative, arts and entertainment activities	0	0
91-Libraries, archives, museums and other cultural activities	0	0
92-Gambling and betting activities	0	0
93-Sports activities and amusement and recreation activities	0	0
94-Activities of membership organisations	0	0
95-Repair of computers and personal and household goods	15.9	7.3
96-Other personal service activities	0	0

9.3 2019 coverage rate by division

		Coverage rate 2019	Proportion of quarterly declarations not covered	Proportion of annual declarations and others not covered	2019 weight in industry and construction (1)
		<i>as a %</i>	<i>as a %</i>	<i>as a %</i>	<i>as a %</i>
	Total for the INDUSTRY AND CONSTRUCTION sector	97.8	1.2	0.9	100.0
05	Mining of coal and lignite	100.0	0.0	0.0	0.0
06	Extraction of crude petroleum and natural gas	95.5	4.5	0.0	0.0
07	Mining of metal ores	100.0	0.0	0.0	0.0
08	Other mining and quarrying	99.0	0.8	0.2	0.5
09	Mining support service activities	99.4	0.5	0.1	0.0
10	Manufacture of food products	96.5	1.2	2.3	10.4
11	Manufacture of beverages	99.2	0.6	0.2	2.2
12	Manufacture of tobacco products	100.0	0.0	0.0	0.1
13	Manufacture of textiles	99.4	0.3	0.3	0.5
14	Manufacture of wearing apparel	98.6	0.6	0.7	0.4
15	Manufacture of leather and related products	99.6	0.2	0.2	0.5
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	98.3	0.9	0.8	0.8
17	Manufacture of paper and paper products	100.0	0.0	0.0	1.2
18	Printing and reproduction of recorded media	98.0	0.7	1.3	0.5
19	Manufacture of coke and refined petroleum products	100.0	0.0	0.0	2.5

20	Manufacture of chemicals and chemical products		96.7	3.3	0.0	4.8
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations		99.9	0.1	0.0	2.3
22	Manufacture of rubber and plastic products		99.9	0.1	0.0	2.5
23	Manufacture of other non-metallic mineral products		99.5	0.4	0.2	1.9
24	Manufacture of basic metals		99.6	0.4	0.0	1.9
25	Manufacture of fabricated metal products, except machinery and equipment		99.4	0.3	0.3	3.8
26	Manufacture of computer, electronic and optical products		99.5	0.4	0.1	2.2
27	Manufacture of electrical equipment		99.7	0.2	0.0	1.8
28	Manufacture of machinery and equipment n.e.c.		99.5	0.4	0.1	3.3
29	Manufacture of motor vehicles, trailers and semi-trailers		100.0	0.0	0.0	10.8
30	Manufacture of other transport equipment		100.0	0.0	0.0	6.9
31	Manufacture of furniture		97.2	0.9	1.9	0.5
32	Other manufacturing		97.6	1.5	0.9	0.9
33	Repair and installation of machinery and equipment		98.5	0.8	0.7	2.5
35	Electricity, gas, steam and air conditioning supply		98.9	0.9	0.3	10.8
36	Water collection, treatment and supply		95.8	4.2	0.1	0.8
37	Sewerage		96.7	2.4	0.9	0.2

38	Waste collection, treatment and disposal activities; materials recovery		98.1	1.5	0.4	1.5
39	Remediation activities and other waste management services		98.6	0.8	0.6	0.1
41	Construction of buildings		96.8	2.4	0.8	5.7
42	Civil engineering		99.3	0.6	0.1	2.7
43	Specialised construction activities		91.8	4.2	4.1	12.4

(1) The 2019 weight in industry and construction is the ratio between the turnover covered by the division in question and the total turnover covered across the entire industry and construction sector in 2019 (VAT data).

		Coverage rate 2019	Proportion of quarterly declarations not covered	Proportion of annual declarations and others not covered	2019 weight in trade (1)
		as a %	as a %	as a %	as a %
G	Total for the TRADE sector	97.6	1.5	0.9	100.0
45	Wholesale and retail trade and repair of motor vehicles and motorcycles	98.9	0.5	0.6	13.7
46	Wholesale trade, except of motor vehicles and motorcycles	97.8	1.8	0.4	57.4
47	Retail trade, except of motor vehicles and motorcycles	96.6	1.3	2.1	28.9

(1) The 2019 weight in trade is the ratio between the turnover covered by the division in question and the total turnover covered across the entire trade sector in 2019 (VAT data).

		Coverage rate 2019	Proportion of quarterly declarations not covered	Proportion of annual declarations and others not covered	2019 weight in services (1)
		as a %	as a %	as a %	as a %
	Total for the SERVICES sector	95.0	2.5	2.5	100.0
49	Land transport and transport via pipelines	95.7	1.1	3.2	7.7
50	Water transport	97.5	2.4	0.1	1.8
51	Air transport	97.8	2.1	0.0	2.0

52	Warehousing and support activities for transportation		99.0	0.9	0.2	7.7
53	Postal and courier activities		99.7	0.2	0.1	1.4
55	Accommodation		92.8	4.3	2.9	2.6
56	Food and beverage service activities		89.4	2.6	8.0	6.5
58	Publishing activities		98.2	1.0	0.8	2.8
59	Motion picture, video and television programme production, sound recording and music publishing activities		94.6	3.3	2.1	1.3
60	Programming and broadcasting activities		99.0	1.0	0.0	1.0
61	Telecommunications		99.3	0.5	0.1	5.3
62	Computer programming, consultancy and related activities		97.0	1.4	1.6	6.8
63	Information service activities		97.4	1.5	1.1	1.0
68	Real estate activities		87.3	7.2	5.5	9.1
69	Legal and accounting activities		96.9	0.9	2.2	4.1
70	Activities of head offices; management consultancy activities		95.3	2.5	2.2	8.9
71	Architectural and engineering activities; technical testing and analysis		97.1	1.4	1.4	6.2
72	Scientific research and development		96.6	2.9	0.4	1.0
73	Advertising and market research		98.2	1.0	0.8	2.3
74	Other professional, scientific and technical activities		90.6	3.6	5.8	1.1
75	Veterinary activities		97.5	1.2	1.3	0.3
77	Rental and leasing activities		92.9	5.7	1.4	3.9
78	Employment activities		99.3	0.5	0.2	3.4
79	Travel agency, tour operator reservation service and related activities		88.2	9.8	2.0	0.8
80	Security and investigation activities		97.1	1.0	1.9	0.8

81	Services to buildings and landscape activities		94.3	2.2	3.6	2.1
82	Office administrative, office support and other business support activities		95.6	3.0	1.4	3.7
90	Creative, arts and entertainment activities		80.3	11.7	8.0	0.9
91	Libraries, archives, museums and other cultural activities		91.6	6.4	2.0	0.1
92	Gambling and betting activities		99.2	0.5	0.3	0.5
93	Sports activities and amusement and recreation activities		92.1	3.9	4.0	1.1
95	Repair of computers and personal and household goods		93.9	1.5	4.7	0.5
96	Other personal service activities		89.5	2.6	7.9	1.2

(1) The 2019 weight in services is the ratio between the turnover covered by the division in question and the total turnover covered across the entire services sector in 2019 (VAT data, excluding non-commercial activities and other activities that are not covered).

9.4 VAT form

The main page of the monthly VAT declaration form for 2022 is the following:

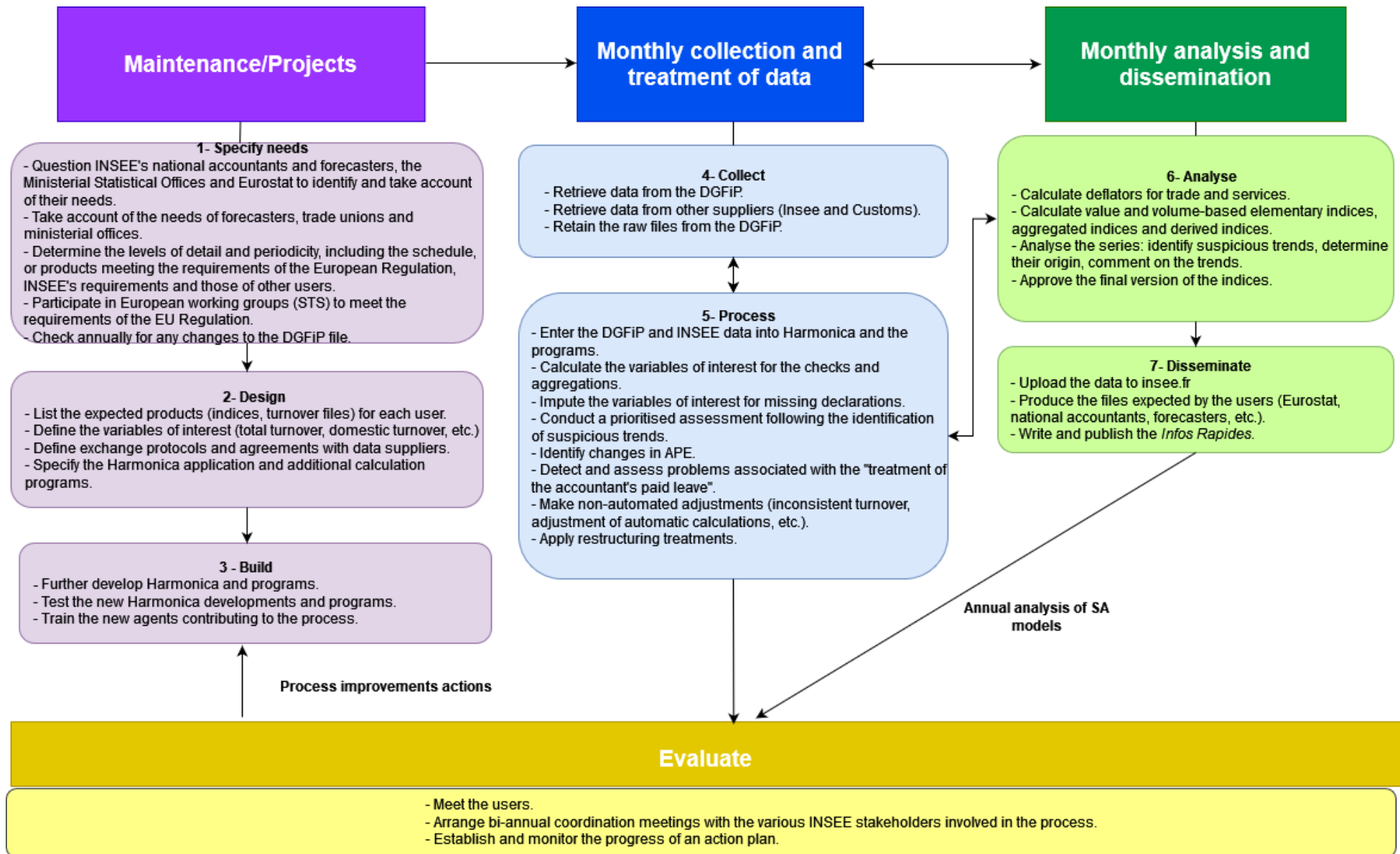
A MONTANT DES OPÉRATIONS RÉALISÉES			
OPÉRATIONS TAXÉES (HT)		OPÉRATIONS NON TAXÉES	
A1	Ventes, prestations de services	0979	.....
A2	Autres opérations imposables	0981	.....
A3	Achats de prestations de services intracommunautaires (article 263-2 du code général des Impôts)	0044	.....
A4	Importations (autres que les produits pétroliers)	0056	.....
A5	Sorties de régime fiscal suspensif (autres que les produits pétroliers)	0051	.....
B1	Mises à la consommation de produits pétroliers	0048	.....
B2	Acquisitions intracommunautaires	0031	.....
B3	Livraisons d'électricité, de gaz naturel, de chaleur ou de froid imposables en France	0030	.....
B4	Achats de biens ou de prestations de services réalisés auprès d'un assujéti non établi en France (article 263-1 du code général des Impôts)	0040	.....
B5	Régularisations (Important : cf. notice)	0036	.....
E1	Exportations hors UE	0032	.....
E2	Autres opérations non imposables	0033	.....
E3	Ventes à distance taxables dans un autre État membre au profit des personnes non assujéties	0047	.....
E4	Importations (autres que les produits pétroliers)	0052	.....
E5	Sorties de régime fiscal suspensif (autres que les produits pétroliers)	0053	.....
E6	Importations placées sous régime fiscal suspensif (autres que les produits pétroliers)	0054	.....
F1	Acquisitions intracommunautaires	0055	.....
F2	Livraisons intracommunautaires à destination d'une personne assujétie	0034	.....
F3	Livraisons d'électricité, de gaz naturel, de chaleur ou de froid non imposables en France	0029	.....
F4	Mises à la consommation de produits pétroliers	0049	.....
F5	Importations de produits pétroliers placées sous régime fiscal suspensif	0050	.....
F6	Achats en franchise	0037	.....
F7	Ventes de biens ou prestations de services réalisées par un assujéti non établi en France (article 263-1 du code général des Impôts)	0043	.....
F8	Régularisations (Important : cf. notice)	0039	.....
B DÉCOMPTÉ DE LA TVA À PAYER			
TVA BRUTE		Base hors taxe	Taxe due
Opérations réalisées en France métropolitaine			
08	Taux normal 20 %	0207	.....
09	Taux réduit 5,5 %	0105	.....
9B	Taux réduit 10 %	0151	.....
Opérations réalisées dans les DOM			
10	Taux normal 8,5 %	0201	.....
11	Taux réduit 2,1 %	0100	.....
Opérations imposables à un autre taux (France métropolitaine ou DOM)			
13	Anciens taux	0900	.....
14	Opérations imposables à un taux particulier (décompte effectué sur annexe 3310 A)	0950	.....
Produits pétroliers			
P1	Taux normal 20 %	0208	.....
P2	Taux réduit 13 %	0152	.....
Importations			
I1	Taux normal 20 %	0210	.....
I2	Taux réduit 10 %	0211	.....
I3	Taux réduit 8,5 %	0212	.....
I4	Taux réduit 5,5 %	0213	.....
I5	Taux réduit 2,1 %	0214	.....
I6	Taux réduit 1,05 %	0215	.....
15	TVA antérieurement déduite à reverser (dont TVA sur les produits pétroliers)		0600
	(dont TVA sur les produits importés hors produits pétroliers)		
5B	Sommes à ajouter, y compris acompte congés (exprimées en euro)		0602
16	Total de la TVA brute due (lignes 08 à 5B)		
17	Dont TVA sur acquisitions intracommunautaires	0035	.....
18	Dont TVA sur opérations à destination de Monaco	0038	.....
La ligne 11 ne concerne que les DOM. Les autres opérations relevant du taux de 2,1 % sont déclarées sur l'annexe 3310 A-SD.			

Here is a traduction of the different fields of the VAT form:

French	English
MONTANT DES OPÉRATIONS RÉALISÉES	AMOUNTS FOR TRANSACTIONS PERFORMED
OPÉRATIONS TAXÉES (HT.)	TRANSACTIONS SUBJECT TO TAX (EXCLUDING TAX)
Ventes, prestations de services	Sales, services
Autres opérations imposables	Other taxable transactions
Achats de prestations de services intracommunautaires (article 283-2 du code général des impôts)	Purchases of intra-Community services (Article 283-2 of the French General Tax Code)
Importations (autres que les produits pétroliers)	Imports (other than petroleum products)
Sorties de régime fiscal suspensif (autres que les produits pétroliers)	Removal of suspensive tax arrangements (other than for petroleum products)
Mises à la consommation de produits pétroliers	Release of petroleum products for consumption
Acquisitions intracommunautaires	Intra-Community acquisitions
Livraisons d'électricité, de gaz naturel, de chaleur ou de froid imposables en France.	Taxable electricity, natural gas, heat or cold deliveries in France.
Achats de biens ou de prestations de services réalisés auprès d'un assujetti non établi en France (article 283-1 du code général des Impôts)	Purchases of goods or services from a taxable person not established in France (Article 283-1 of the French General Tax Code)
Régularisations (Important : cf. notice)	Adjustments (important: see note)
OPÉRATIONS NON TAXÉES	TRANSACTIONS NOT SUBJECT TO TAX
Exportations hors UE	Exports outside the EU
Autres opérations non imposables	Other non-taxable transactions
Ventes à distance taxables dans un autre État membre a profit des personnes non assujetties	Taxable remote sales in another Member State benefiting persons not subject to taxation
Importations placées sous régime fiscal suspensif (autres que les produits pétroliers)	Imports subject to suspensive tax arrangements (other than petroleum products)
Importations placées sous régime fiscal suspensif (autres que les produits pétroliers)	Imports subject to suspensive tax arrangements (other than petroleum products)
Acquisitions intracommunautaires à destinations d'une personne assujettie	Intra-Community acquisitions intended for a taxable person
Livraisons d'électricité, de gaz naturel, de chaleur ou de froid non imposables en France	Non-taxable electricity, natural gas, heat or cold deliveries in France
Mises à la consommation de produits pétroliers	Release of petroleum products for consumption
Importations de produits pétroliers placées sous régime fiscal suspensif	Imports of petroleum products subject to suspensive tax arrangements
Achats en franchise	Deductible purchases
Vertes de biens ou prestations de services	Sales of goods or services by a taxable

réalisées par un assujetti non établi en France (article 283-1 du code général des impôts)	person not established in France (Article 283-1 of the French General Tax Code)
Régularisations (important : cf. notice)	Adjustments (important: see note)
DÉCOMPTE DE LA TVA À PAYER	BREAKDOWN OF THE VAT PAYABLE
TVA BRUTE	GROSS VAT
Base hors taxe	Base excluding tax
Taxe due	Tax due
Opérations réalisées en France métropolitaine	Transactions performed in metropolitan France
Taux normal 20%	Normal rate 20%
Taux réduit 5.5%	Reduced rate 5.5%
Taux réduit 10%	Reduced rate 10%
Opérations réalisées dans les DOM	Transactions performed in the overseas departments
Taux normal 8.5%	Normal rate 8.5%
Taux réduit 2.1%	Reduced rate 2.1%
Opérations Imposables à un taux particulier (décompte effectué sur annexe 3310 A)	Transactions taxable at a specific rate (breakdown provided in Appendix 3310 A)
Produits Pétroliers	Petroleum products
Taux normal 20%	Normal rate 20%
Taux réduit 13%	Reduced rate 13%
Importations	Imports
Taux normal 20%	Normal rate 20%
Taux réduit 8.5%	Reduced rate 8.5%
Taux réduit 5.5%	Reduced rate 5.5%
Taux réduit 2.1%	Reduced rate 2.1%
Taux réduit 1.05%	Reduced rate 1.05%
TVA antérieurement déduite à reverser (dont TVA sur les produits pétroliers.....) (dont TVA sur les produits Importés hors produits pétroliers.....)	VAT previously deducted to be remitted (of which VAT on petroleum products, etc.) (of which VAT on imported products, excluding petroleum products, etc.)
Somme à ajouter, y compris acompte congés (exprimées en euro)	Sum to be added, including advance leave (expressed in euros)
La ligne 11 ne concerne que les DOM.	Line 11 applies only to the overseas departments.
Les autres opérations relevant du taux de 2.1% sont déclarées sur l'annexe 3310 A-SD.	Other transactions at the rate of 2.1% are declared in Appendix 3310 A-SD.
Total de la TVA brute due lignes 08 à 5B	Total gross VAT due for lines 08 to 5B
Dont TVA sur acquisitions intracommunautaires	Of which VAT on intra-Community acquisitions
Dont TVA sur opérations à destination de Monaco	Of which VAT on transactions destined for Monaco

9.5 General diagram showing the turnover index process



9.6 Details regarding the treatment of paid leave

All amounts in the above examples are given in thousands of euros. The treatment applied in July is marked in red in the tables and that applied in August is marked in blue.

The selected turnover is the turnover used to calculate the indices, after any adjustments.

The gross turnover is the turnover declared by the LU, before any adjustments.

As is the case with other treatments, the atypical profiles associated with the health crisis could have led to unwanted behaviour as regards this treatment, necessitating a large number of manual treatments.

Paid leave is deemed not to be present within a LU if it declares its turnover for the month of July. Conversely, paid leave is deemed to be present if it does not declare its turnover.

1. Treatment of paid leave during the July campaign:

1.1 Treatment of LUs in which paid leave is not present in m but is present in m-12 (scenario 1)

Identification of LUs to be adjusted:

1. The gross turnover for July N must be > 0 (criterion for LUs in which paid leave is not present in m).
2. The selected turnover for July N-1 must be zero and the selected turnover for August N-1 must be > 0 (criterion for LUs in which paid leave is present in m-12).
3. The turnover for June N-1 must be > 0 (criterion for the existence of a LU in the past, to avoid considering paid leave to be present within a LU in m-12 when it was only created in August N-1).
4. The LU has a total turnover for July N or August N-1 that is strictly in excess of €1,000,000 (it is not realistic to reliably detect paid leave beneath this threshold).
5. The LU is not undergoing restructuring.

Example of a LU in this case.

	2021	2022	
	Selected turnover	Gross turnover	After treatment of paid leave
July	0	1,200	0
August	900		

1.2 Treatment of LUs in which paid leave is present in m but is not present in m-12 (scenario 2)

Identification of LUs to be adjusted:

1. The gross turnover for July N is 0 (criterion for LUs in which paid leave is present in m).
2. The selected turnover for July N-1 is > 0 and the selected turnover for August N-1 is > 0 (criterion for LUs in which paid leave is not present in m-12 and m-11).
3. The LU has a total turnover for July + August N-1 that is strictly in excess of €1,000,000 (it is not realistic to reliably detect paid leave beneath this threshold).
4. The LU is not undergoing restructuring.

	2021	2022	
	Selected turnover	Gross turnover	After treatment of paid leave
July	600	0	Imputed value
August	650		

	2021	2022	
	Selected turnover	Gross turnover	After treatment of paid leave
July	400	0	0 (no treatment of paid leave since the €1M threshold was not met in July + August 2021)
August	500		

2. Treatment of paid leave during the August campaign, repeated during the September campaign:

2.1 Treatment of LUs in which paid leave is not present in m but is present in m-12 (scenario 1)

Identification of LUs to be adjusted:

1. The gross turnover for July N must be > 0 (criterion for LUs in which paid leave is not present in m).
2. The selected turnover for July N-1 must be zero and the selected turnover for August N-1 must be > 0 (criterion for LUs in which paid leave is present in m-12).
3. The turnover for June N-1 must be > 0 (criterion for the existence of a LU in the past, to avoid considering paid leave to be present within a LU in m-12 when it was only created in August N-1).
4. The LU has a total turnover for July N or August N-1 that is strictly in excess of €1,000,000 (it is not realistic to reliably detect paid leave beneath this threshold).
5. The LU is not undergoing restructuring.

The type of adjustment to be applied depends on a condition that checks that the application of a double month does not degrade the total turnover trends between m-12 and m on the one hand, and between m-11 and m+1 on the other hand. This condition (C1) is as follows: the gross turnover for July N must be > 0 and the gross turnover for August N must be strictly below the selected turnover for August N-1.

If no declaration has been made regarding the turnover for August N, an imputed value is calculated for August N. The absence of a declaration is not treated in the same way as a declaration of 0 (following scenario).

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign

July	0	1,200	0	0
August	900	NULL		Imputed value

If the gross turnover for August N = 0, the July treatment is cancelled.

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	0	1200	0	1,200 (new selected turnover declared for July)
August	900	0		0

If the gross turnover for August N > 0 and the condition (C1) has not been verified, the July treatment is cancelled.

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	0	1,100	0	1,100
August	1,000	2,000		2,000 (no treatment of paid leave as the gross turnover for July N must be > 0 and the gross turnover for August N must be strictly below the selected turnover for August N-1)

If the gross turnover for August N > 0 and the condition (C1) is met, July is set to zero if this has not already been done, and the total for the two months is entered in August.

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	0	1,200	0	0
August	900	300		1,500

2.2 Treatment of LUs in which paid leave is present in m but is not present in m-12 (scenario 2)

Identification of LUs to be adjusted:

1. The gross turnover for July N is 0 (criterion for LUs in which paid leave is present in m).
2. The selected turnover for July N-1 is > 0 and the selected turnover for August N-1 is > 0 (criterion for LUs in which paid leave is not present in m-12 and m-11).
3. The LU has a total turnover for July + August N-1 or for August N that is strictly in excess of €1,000,000 (it is not realistic to reliably detect paid leave beneath this threshold).
4. The LU is not undergoing restructuring.

The type of adjustment to be applied depends on a condition that checks whether m+1 can be considered a double month.

This condition (C2) is as follows: Selected turnover for July N-1 > 0 and gross turnover for August N > selected turnover for August N-1 + half of the selected turnover for July N-1.

This condition is understood as “the turnover for August N is sufficiently high to consider it to be a double month, made up of the turnover for July and August N”. The “sufficiently high” criterion is achieved as soon as the turnover for August N exceeds the turnover for August N-1 plus half of the turnover for July N-1.

If no declaration has been made regarding the turnover for August N, an imputed value is calculated for August N. The absence of a declaration is not treated in the same way as a declaration of 0 (following scenario).

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	600	0	Imputed value	Imputed value retained
August	650	NULL		Imputed value

If the gross turnover for August N = 0, the July treatment is cancelled.

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	600	0	Imputed value	0
August	650	0		0 (no treatment of paid leave)

If the gross turnover for August N > 0 and (C2) is not met, the treatment of paid leave potentially performed in July is cancelled.

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	600	0	Imputed value	0
August	650	150		150 (no treatment of paid leave as the gross turnover for August N must be > the selected turnover for August N-1 + half of the selected turnover for July N-1)

If the gross turnover for August N > 0 and (C2) is met, the turnover for August is broken down according to the proportions of the previous year.

	2021	2022		
	Selected	G	After treatment of paid leave during the July campaign	After treatment of paid leave during the August campaign
July	600	0	Imputed value	552
August	650	1,250		598