

Methodological annex n°2: The adjustment of structural business statistics at the source in 2020 benchmark revision

To construct the accounts of non-financial corporations (NFCs), national accounting relies on a set of source data that constitutes the raw material. This data must be transformed through a series of "adjustments" (scope additions, conceptual corrections, alignment with external data, etc.) to arrive at the estimation of national accounting operations. This process is known as the "transition to accounts."

Among the source data, the main ones come from the Esane system (Elaboration of annual business statistics), which includes corporate tax returns and sectoral surveys of companies. During the 2020 benchmark, the accounts of non-financial corporations were realigned in level with business statistics data (Esane).

1. Why did the national accounting data diverge from the business statistics data ?

During the transition to the 2005 benchmark revision, the Esane system was used for the first time by national accountants. The Esane system combines administrative fiscal and social data with survey data from a sample of companies that are asked about their activities through a specific questionnaire. This system aims to reduce the statistical burden on companies while providing a better assessment of their activities. The originality, but also the complexity, of this system lies in the simultaneous exploitation of administrative sources and statistical surveys.

The primary objective of structural business statistics is to provide the most accurate possible description, each year, of the situation of companies, without producing long series. On the contrary, national accounting aims to provide the best possible evolution of macroeconomic aggregates and does not incorporate methodological or source modifications into its current estimates that would cause breaks in series and thus an erroneous measure of changes. Such modifications are only introduced on the occasion of a benchmark revision. Thus, discrepancies between the two data sources can appear during the base period.

During the 2020 benchmark revision, as well as the 2010 change, national accounts were realigned with Esane levels for the base years, whereas the 2014 benchmark did not implement such a realignment and chose to extend the levels from the 2010 benchmark revision.

2. How to evaluate the revision of structural business data in 2019?

Business statistics data were used at level to estimate the base years 2009 and 2010 of the 2010 benchmark, as well as to estimate the year 2011. However, since the final account of 2012, due to significant changes in the scope and methods of Esane, Esane data have no longer been used directly at level in the transition to the accounts of NFCs.

For the needs of national accounts, Esane provides an evolution of structural business statistics by neutralizing methodological changes. Specifically, for an account of year (N), Esane provides national accounts with data on years (N-1) and (N) constructed according to the same methodology, that of year N.

Thus, the data for year (N-1) according to the "method" of year (N) are potentially different from the data for year (N-1) according to the "method" of year (N-1). In other words, Esane data for year (N-1) are revised and aligned with Esane data for year (N). By the time the account for year (N) is produced, the account for year (N-1) is already a final account in national accounting and can no longer be revised: revisions of Esane data for year (N-1) for the estimation of the account for year (N-1) cannot be incorporated into the accounts.

To determine the final account for year N, the level evolution between the data of year (N-1) according to the "method" of year (N) and the data of year (N) according to the "method" of year (N) is added to the final account of year (N-1):

$$DEF(N)_{base\ 2014} = DEF(N-1)_{base\ 2014} + (N)méthode(N) - (N-1)méthode(N)$$

Each year, the difference between the final version of the 2014 benchmark revision and the level of Esane data is given by:

$$\Delta(N)_{base\ 2014} = DEF(N)_{base\ 2014} - (N)méthode(N)$$

We can write the increase in the difference from one year to the next:

$$\Delta(N)_{base\ 2014} - \Delta(N-1)_{base\ 2014} = (N-1)méthode(N-1) - (N-1)méthode(N)$$

By applying the previous formula recursively, the final account for 2019 in the 2014 benchmark revision can be written in terms of the last account aligned with the business statistics level, which is the 2011 account:

$$DEF(2019)_{base\ 2014} - (2019)méthode(2019) = \sum_{n=2011}^{2018} (n)méthode(n) - (n)méthode(n+1)$$

In the 2020 benchmark, the final account is realigned to the level of the 2019 Esane data according to the 2019 method:

$$DEF(2019)_{base\ 2020} = (2019)méthode(2019)$$

Thus, the difference between the two benchmarks for the year 2019 is written as follows:

$$DEF(2019)_{base\ 2020} - DEF(2019)_{base\ 2014} = \sum_{n=2011}^{2018} (n)méthode(n+1) - (n)méthode(n)$$

To explain the difference between the 2019 account in the 2020 benchmark revision and the 2019 account in the 2014 benchmark revision, it is necessary to trace the successive revisions of business statistics from 2011 to 2019.

Additionally, starting with the 2020 benchmark revision, the aggregated Esane data (by sector of activity) are not calculated in the same way as in the 2014 benchmark revision. For various reasons [1], a simple sum aggregation method of individual data is now used instead of the composite estimators that were used previously [2].

3. What is the impact of the adjustment of Esane levels on gross value added and employee compensation?

The gross value added of non-financial corporations and individual enterprises was revised downward by €43.5 billion in 2019. The adjustment of Esane levels explains about a quarter of this revision (€-11.1 billion). Four main effects can be distinguished in this revision:

- The revisions of Esane data on gross value added are particularly significant in 2011 and 2012 (€-7.8 billion), reflecting the initial culmination of the Esane project initiated in 2008 and neutralized in the national accounts.
- The method of imputing individual enterprises was improved to exclude legal units absent from tax files for several years. In the 2014 benchmark, the trends were biased upward, leading to a revision of €-5.4 billion
- The integration of French subsidiaries of foreign legal units into the Esane scope in 2016 (whose level shock was not accounted for during the 2014 benchmark due to the evolving method) led to a revision of €+2.8 billion.
- The change in the calculation of aggregates (simple sum of individual data instead of composite estimators) explains a revision of €-2.6 billion.

The primary objective of the Esane system is to produce structural business statistics, which provide an annual snapshot of the population of businesses within the productive system. Although the need to measure distortions and evolutions of the productive fabric is also relevant for business statistics, and discussions are ongoing in this regard, the evolving method is maintained for the 2020 benchmark revision to avoid any break in series in the national accounts. In the next benchmark, it will again be necessary to realign the levels with Esane data, but the greater stability of the Esane system observed in recent years suggests that this realignment will be of lesser magnitude.

4. Links

Reference	Link
[1]	Refer to the methodological warning at the time of the publication of the results « Caractéristiques comptables, financières et d'emploi des entreprises en 2021 » : https://www.insee.fr/fr/statistiques/7651349?sommaire=7651565#avertissement-methodo3
[2]	For more details on the calculation of composite estimators refer to Jean-Marc Béguin et Olivier Haag, « Méthodologie de la statistique annuelle d'entreprises. Description du système 'Esane' », <i>Insee Méthodes</i> , 2017 : https://www.insee.fr/fr/information/3056089