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**HOW FRENCH QUARTERLY NATIONAL ACCOUNTS
BY INSTITUTIONAL SECTOR ARE PRODUCED**

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Introduction

The French quarterly national accounts (QNA) are designed to provide, four times a year, a comprehensive set of macroeconomic information that is consistent with past annual accounts and relatively detailed. The information is seasonally and working-days adjusted in order to highlight significant cyclical movements. French QNA compute both transactions on products and distributive transactions and ensure their consistency.

The explanation of the economic dynamic requires macroeconomic statistics on the economic behaviour and the interrelationships of individual institutional sectors within the economy, which is hidden in data compiled at the level of the whole economy. Quarterly accounts by institutional sectors allow economists and forecasters to better understand the economical movements.

The quarterly estimation of accounts by institutional sectors raises specific issues. First, only few direct quarterly data about institutional sectors are available. Second, the choice of the time of recording of distributive transactions is particularly difficult, especially on a quarterly frequency. We will describe in this paper the way French QNA face these difficulties and ensure consistency between the treatment of all sectors.

The first part provides a general presentation of French quarterly national accounts. It describes how French QNA ensure consistency between quarterly and annual accounts, how they adjust their data for seasonal and working-days factors, which time of recording they have chosen.

In the second part, this paper focuses on the estimation of transactions on products and their breakdown into sectors, especially as regards households consumption, gross fixed capital formation and value added.

In the last part, we describe how French QNA compute the distributive transactions by institutional sectors, which allows an estimation of households disposable income and savings.

1 General presentation of French quarterly national accounts

1.1 Cooperation between annual and quarterly accounts

Annual national accounts (ANA) and quarterly national accounts (QNA) are estimated in the same department but by different people. A transversal unit is responsible for both quarterly and annual accounts of the rest of the world because the sources are nearly the same in this sector. The QNA unit is composed of thirteen people. Two of them work on output, three on household consumption, two on taxes and gross fixed capital formation (GFCF), two on employment, wages and salaries and social transfers. There are one responsible for the Input/Output table, and one for the accounts by institutional sector.

There is of course a strong cooperation between annual and quarterly accountants. The quarterly accounts are consistent with the data of past annual accounts. They share the same conceptual framework in compliance with the national accounting system (ESA 95). The quarterly data fit the past annual accounts until the semi-definitive accounts (year Y-2) and until the provisional accounts (year Y-1) for general government, the financial corporations, and the non-profit institutions serving households: the sum of quarterly series are equal to the annual series. Indeed, the annual accounts, which are released at the end of April, provide a first estimation of previous year accounts (Y-1), entitled “provisional”, a second version of the year Y-2, entitled “semi-definitive”, and a definitive version of year Y-3.

Each year QNA fit the semi-definitive and definitive annual and they compute the provisional account. They integrate the provisional General government accounts estimated by the annual accounts and the provisional financial corporations accounts computed by the annual accounts and Banque de France. Indeed, Banque de France uses financial corporations accounts to make its estimations and transmits them to INSEE a few months after the end of the quarter. The data are very partial and are therefore revised one year later.

For the other transactions, they are hardly reliable annual data. Indeed, the annual main source about products and non-financial corporations, the Intermediate System of Enterprises¹

¹ The Intermediate System of Enterprises is a macroeconomic information system on non-financial corporations accounts, based on a system of accounts derived from the national accounts, but with concepts close

is available one-and-an-half year after the end of the year of reference. Hence, the use of business accounts for provisional annual national account is excluded. Therefore, French accountants have to use quarterly indicators.

1.2 Quarterly publications

French QNA estimate quarterly a complete set of accounts, gross, seasonally adjusted, working-days and seasonal-adjusted, at current prices. The Input-Output Table is estimated at 1995 prices and at level 40. The Supply-Uses Table at 1995 prices is supplied in a breakdown in 40 products. Production and generation of income accounts are provided in a breakdown in 16 industries and for non-financial corporations (NFC), financial corporations (FC), general government (GG), non-incorporated enterprises (NIE), households (HH), non-profit institutions serving households (NPISH) and the rest of the world (RoW). In the other accounts by institutional sector, NIE and households are not distinguished.

The accounts for each quarter are released in three publications. The first, entitled “advance estimate” (“Estimation précoce”), is released 42 or 43 days after the end of the quarter and gives an estimation of the quarterly growth of GDP at 1995 prices, working-day-seasonal-adjusted. The second, entitled “preliminary figures” (“Premiers résultats”), is issued 50 days after the end of the quarter. It provides an early estimate of transactions in products (trade, output, final consumption, gross fixed capital formation, changes in inventories) working-day-seasonal-adjusted. The last publication, called “detailed figures” (“Résultats détaillés”), is released 90 days after the end of the quarter - except in the fourth quarter when it is published at the same time as the provisional annual account, at the end of April - and provides full information on transactions on products, and on household and enterprise accounts, working-day-seasonal-adjusted. QNA do not publish financial corporations accounts because they have hardly quarterly data about this sector. Short term data about

to the French GAAPs (General Accounting Admitted Practices). It relies on data collected by the tax administration about 2.5 millions of enterprises and enterprises surveys conducted by INSEE or statistical offices of Ministries.

The SIE participates in the estimates of sales of non-financial market industries. It is one of the sources for enterprises' GFCF and it is used through sales of industries in the estimate of output of commodities. In the income approach, it plays the prominent role for two institutional sectors: NFC and households.

general government transactions are available since recently and are difficult to use, that is the reason why QNA do not release the quarterly accounts of this institutional sector yet.

The publications are available on the following websites:

http://www.insee.fr/en/indicateur/cnat_trim/cnat_trim.htm. in English

http://www.insee.fr/fr/indicateur/cnat_trim/cnat_trim.htm. in a more comprehensive form in French.

1.3 Methodology

1.3.1 Temporal disaggregation

The French quarterly national accounts are based on sub-annual indicators. Each account series is linked to a quarterly series. For example, the indicator of the household consumption in cars is the vehicle registrations. As a rule, owing to differences in definition and coverage, the quarterly indicator does give neither the same value nor the same growth rate as the account series. Taking the indicator as the starting point, the quarterly accounts are calculated in several stages, the most important being calibration and fitting. Calibration consists in converting the quarterly indicators into quarterly account series. Fitting is the process of linking up the calibrated quarterly account series to the annual accounts through various adjustments.

1.3.1.1 Calibrating

Calibration is an econometric regression used to convert an indicator figure into a quarterly account figure. We assume the existence of an econometric relationship between the annual account series and the annualised indicator chosen. Estimated on annual data, we can prove that the relation remains valid for the quarterly data.

Let y be a year, q a quarter, A the annual value of the account series, I the annual value of the indicator adopted.

We begin with seeking a relation of the type:

$$A_y = \alpha + \beta I_y + \varepsilon_y, \text{ where } \varepsilon \text{ stands for the random}$$

If the random is a white noise, the coefficients are estimated with the ordinary least squares. If it is autoregressive, they are estimated by the quasi generalised least squares and we model the random as follows:

$$\varepsilon_y = \rho\varepsilon_{y-1} + u_y, \text{ where } u \text{ is a white noise.}$$

This formula can also be written:

$$A_y - \rho A_{y-1} = (1 - \rho)\alpha + \beta(I_y - \rho I_{y-1}) + u_y$$

If the random is not stationary, we make an estimation in difference, that means:

$$\Delta A_y = \delta + \beta\Delta I_y + u_y, \text{ where } \varepsilon_y = \varepsilon_{y-1} + u_y \text{ and } u \text{ is a white noise.}$$

It can be written as follows:

$$A_y = \alpha + \beta I_y + \delta T_y + \varepsilon_y, \text{ where } T \text{ is time,}$$

From the estimated values $\hat{\alpha}$, $\hat{\beta}$ (and $\hat{\delta}$), we build a quarterly account series using the formula:

$$\hat{A}_{y,q} = \frac{\hat{\alpha}}{4} + \hat{\beta} I_{y,q}$$

or, if the relationship is estimated in difference:

$$\hat{A}_{y,q} = \frac{\hat{\alpha}}{4} + \hat{\beta} I_{y,q} + \hat{\delta} T_{y,q}, \text{ where } \sum_q T_{y,q} = T_y$$

1.3.1.2 Fitting

The calibrated quarterly account calculated above does not exactly fit the annual account. We have:

$$\varepsilon_y = A_y - \hat{A}_y, \text{ when } A_y \text{ is known}$$

To obtain a fit between the annual account and the quarterly account, we must distribute the annual residual ε among all the quarters as evenly as possible. For each quarter, QNA

calculate a quarterly “fit”, such that the sum of squares of the first differences is minimal. For the years Y-1 and Y, QNA do not fit the annual account, the random has to be forecasted :

If the random is a white noise, $\hat{\varepsilon}_y = 0$ when A_y is unknown

If the random is autocorrelated, $\hat{\varepsilon}_y = \hat{\rho}\hat{\varepsilon}_{y-1}$ when A_y is unknown

If the random is a random walk $\hat{\varepsilon}_y = \hat{\varepsilon}_{y-1}$ when A_y is unknown.

Finally, $A_{y,q} = \frac{\hat{\alpha}}{4} + \hat{\beta}I_{y,q} + \hat{\varepsilon}_{y,q}$ or $A_{y,q} = \frac{\hat{\alpha}}{4} + \hat{\beta}I_{y,q} + \hat{\delta}T_{t,q} + \hat{\varepsilon}_{y,q}$

1.3.1.3 Smoothing

When we miss quarterly data about an account aggregate, we use annual targets. We compute quarterly aggregates such that the sum of squares of the first differences is minimal. We call this procedure “smoothing”.

1.3.2 Working-day and seasonal adjustment

The indicators are adjusted for working days through econometric method and seasonal factors (WD) through the software X11-ARIMA. Then, the coefficients calculated on the annual data by calibrating and fitting are applied on the raw, seasonally-adjusted and working-day-seasonally-adjusted indicators. This way, raw, seasonally-adjusted and working-day-seasonally-adjusted account aggregates are produced.

The working day factors are calculated once in the year. First, we make a seasonal correction of the working days, with ordinary least squares on the dummies of the months or quarters. Then we regress the row indicator on the seasonally-adjusted working days, obtaining in this way the working days factors. Finally, we compute the seasonal factors from working-day-adjusted indicators. We choose our models once in the year and we compute each quarter the coefficients as soon as they are available for the whole quarter using X11-ARIMA.

We apply the seasonal adjustment factors first. We distribute the annual discrepancy between raw and seasonal data among the quarter by smoothing. The same ‘rest of fit’ is added to the seasonally-adjusted data and to the working-day-and-seasonally-adjusted data. As we use linear relationship between indicators and accounts series, the annualised gross and

seasonally-adjusted accounts series are equal. Nevertheless the annualised working-day-seasonally-adjusted data can be different because there is annual working-day effect.

1.3.3 Time of recording

For each transaction, there are three possible times of recording: the full accrual, the liability to pay or the payment. For example, if a household has some work carried out by an enterprise, the transaction can be recorded either in the period during which the work is done (full accrual), or when the household receives the bill (liability to pay or accrual) or when it pays (cash basis). We want both household and enterprise accounting to be consistent; hence, we have to choose one time of recording.

French national accounts have to record the transactions on an accrual basis, that means when the liability to pay accrues. This requirement raises practical problems, especially when compiling quarterly accounts. Indeed, the three times of recording are more often the same in a year than in a quarter. Furthermore, many transactions have an annual meaning and not a quarterly one. It is for instance the case of income tax in France.

French QNA compilation is based on two considerations: the time of recording depends on the mechanism of payment and the choice of the time of recording has to be independent of the seasonal adjustment.

1.3.3.1 Raw data

The problems raised by the choice of the time of recording is especially accurate for general government transactions. We can identify three ways of paying a tax or a social transfer:

- deduction or payment at source
- several payments and one settlement
- one payment in the year.

The value added tax (VAT) belongs to the first category. The consumer pays to the enterprise VAT at the time of the purchase and the enterprise pays it to general government about one month after. The debt is due and paid one month after the full accrual. French QNA records this transaction on the full accrual basis (the consumption) which coincides with the liability to pay of the consumer. We dispose of the taxes received by general government. The

amounts are shifted backwards a month to be consistent with household consumption. We use the same rule for social contributions.

We use the same rule for social contributions.

In France, households income tax belongs to the second group. It is paid in the year Y and it is based on the income of the year Y-1 and on the marital status of the year Y. Parliament votes the State Budget in autumn of the year Y-1 and can modify the tax rate. In March of the year Y, households fill in their tax form, providing information on the income of year Y-1, it includes their marital status during the year Y-1. They have the choice between a monthly payment (estimated on tax due the previous year, that means on the income of year Y-2) with settlement in November (eventually in December) of the year Y and a thrice-yearly payment based on estimated tax due for the previous year and a settlement in September of the year Y included in the third payment.

French NA record the income tax paid by the households on an accrual basis, that means when the households are liable to pay. This has three advantages. It allows a consistency between NA and the Budget. NA do not anticipate households information, so they estimate the income households can arbitrate. QNA can use data on a cash basis. In order to correct the cash data, they forecast the tax relief for the year and smooth it.

Local taxes are often paid once a year. The full accrual is not clearly defined. For example, the tax paid on residence depends on the residence you have at the beginning of the year but also depends on the marital status and the income. Thus, this kind of transactions are recorded on an accrual basis once the year. In this way, they also not anticipate households and general government information and have direct data.

In brief, if a transaction is clearly linked to an economic full accrual event, it is recorded on a full accrual basis. If not, it is recorded when the liability to pay is known. This ensures consistency between NA and institutional sectors' behaviour, between annual and quarterly accounts and it allows QNA to use direct data. Raw data are therefore erratic because they reflect both legislative specificities and changes in legislation.

1.3.3.2 Seasonally-adjusted data

Raw data can be broken down in an economic trend, a seasonal factor and an irregular term. The institutional timetable belongs to the seasonal factor, and the changes in legislation

to the irregular component. Hence, every political decision (dealing with taxes, subsidies, social contributions or benefits) is recorded, both in raw and seasonally-adjusted data, from the moment the agents are aware of it. The seasonally-adjusted data correct the effect of regular institutional specificities.

It is quite easy to deal with a social contribution of which the rate is known. In this case, we build a series at constant legislation by dividing by the contribution rate. We correct the series from seasonality and obtain the seasonally-adjusted data by multiplying by the contribution rate.

It is more difficult for income taxes because of the way they are levied and of the frequent changes in legislation. At the beginning of each year, we estimate, thanks to tax administration, the amount of what will be paid in the year and the impact of the new decisions. We distribute them between the quarters according to the seasonality of the tax and the timetable of the new measures. Those estimations are of course modified during the year. We correct from seasonal factors the cash data corrected by this estimation until the end of the year in order to have a good estimation of the economic trend, which is the trend of the basis. The seasonally-adjusted series is the sum of this series and the impacts of new decisions we estimated.

2 Transactions on products

2.1 Sources

Before computing the input/output table, imports, exports, GFCF, Household consumption, and general government consumption are estimated for each product in terms of value, volume and price. Output and changes in inventories are only computed for some products.

Output indicators are estimated from industrial production index, agricultural and transport statistics, turnover index from VAT forms filed for the payment of VAT, industrial producer price index and business surveys on prices.

For the external trade, we use customs statistics, balance of payments, and unit value index.

2.1.1 Final consumption

2.1.1.1 Household expenditure

For household consumption expenditure, our sources are retail-trade surveys of Banque de France (which covers 24% of the household consumption expenditure), trade-organization statistics (9%), turnover index (13%), and consumer price indices, national health-insurance fund (4%). 38% of household consumption expenditure are smoothed. The sum of the consumptions by product is equal to the household expenditure made in France. We correct it by the difference between consumption of non-residents in France and the consumption of residents in the rest of the world quarterly given by the balance of payment. Thus, we have resident household consumption expenditure.

2.1.1.2 General government individual expenditure

General government individual consumption in market health (18%) is deduced from national health-insurance fund' refunds, the consumption in real estate services (3%) from rent allowances. General government individual consumption in non-market health and education (67%) is estimated by an expenditure approach. The sum of general government expenditure is used as indicator of this consumption. Public hospitals expenditure are our indicators of the non-market health individual consumption. The rest (12%) is smoothed.

2.1.1.3 General government collective expenditure

Administrative output is computed by an expenditure approach. This industry includes public administration and defence, compulsory social security, activities of membership organizations and extra-territorial organizations and bodies. This is mostly a non-market industry. Therefore, its net operating surplus is null, and the value added is consequently equal to the sum of wages and salaries, social contributions, taxes on production, consumption of fixed capital and subsidies. Those are estimated from General government expenditure given by Public Accounting. Output is equal to the sum of value added and intermediate consumption. It is either an household actual consumption (14%) or general government collective expenditure (86%). Household consumption of administrative services is smoothed, GG collective expenditure is obtained as a remainder. GG collective expenditure in research and development is smoothed.

2.1.2 Gross capital formation

2.1.2.1 GFCF

We only have indicators broken down by product and not by institutional sector. Our indicators are the following: vehicle registrations (9%), turnover index (VAT) in wholesale trade and services (30%), new housing starts, statistics from construction and public-works trade (41%). The rest (21%) is smoothed. We deduct from these indicators GFCF by product and by institutional sector. Each sector' GFCF in each product is estimated with an indicator. This indicator can be the same for two sectors. The calibrating and fitting procedure makes the breakdown by sector.

2.1.2.2 Changes in inventories

We have indicators about this item only for construction. The products changes in inventories of some products are obtained by smoothing. The other items will be estimated by balancing.

2.1.2.3 Acquisitions less disposals of valuables

We have no quarterly data about this item. It is smoothed.

2.2 Input-Output Table (IOT) and Supply-Use Table (SUT) in volume terms

We compute the GDP by using balances for 40 products. For each product, we have:

Output + Imports = Intermediate uses + Final consumption + GFCF

+ Changes in inventories + Exports

At the beginning, we miss intermediate uses, output for some products, changes in inventories for others. The accounts of some products (social work, transport and goods except electricity, gas and water supply) are estimated using an output approach. In this case, the changes in inventories are obtained as a balance. The accounts for other products are calculated using an expenditure approach. The output is in this case computed by balancing. There is one exception: general administration is computed by an income approach (see above).

The intermediate consumptions are computed in three steps. They are deduced from output of the corresponding industry assuming that the intermediate consumption coefficients evolve regularly. We can identify four kinds of products in the compilation of the Input/Output Table:

- products whose output has a good indicator (social work, transport and goods except electricity, gas and water supply). Their accounts are estimated by an output approach. (group 1)
- products whose a first estimate of the output is made before the compilation of the IOT (electricity, gas and water supply, trade, financial intermediation, business activities, hotels and restaurants). This estimate is used to compute the intermediate consumption of the corresponding industries. Finally, their output are estimated by an expenditure approach. (group 2)
- products that have no output estimation (construction, real estate and renting, research and development, education and health, community, social and personal service activities). Their accounts are estimated by an expenditure approach. (group 3)
- products whose accounts are known before the Input/output table is computed: SIFIM and administration. (group 4)

First, we deduce the intermediate uses of products of the two first groups in each product. Then, we obtain an estimation of the output of group 3 using the use/resources balances of

these products. Second, we estimate the intermediate of these branches from these outputs. We obtain a second estimation of the outputs of the industries of group 2 by balancing. Third, we do a second estimation of the intermediate consumptions of group 2 industries. Then, we obtain by balancing on the one hand a last estimation of the output of group 2 and 3, and on the other hand, the estimation of the changes in inventories of industries of group 1.

At the end of this procedure, we have a complete IOT and a use/resources balance of each product.

2.3 Input-Output Table in value terms

Taking the IOT in volume terms, we compute a simplified Supply-Use Table at current prices: we do not break down the intermediate consumption of an industry into products.

We first estimate an indicator of the price of the intermediate uses in each product by a first estimation of the intermediate uses in the products by balancing. We obtain an indicator of the intermediates uses in each products by multiplying the volume by the estimated price. We obtain the intermediates uses at current prices for 40 products by calibrating and fitting. In this way, we have a new estimation of the price of the intermediate use of each product.

For each industry, the indicator of its intermediate consumption is the sum of the intermediate consumption in each product at 1995 prices multiplied by the prices of the intermediate uses.

We balance the discrepancy between the sum of the intermediate consumptions by products and the intermediate consumptions by industry on the intermediate consumption of business activities.

For each product, we get a use/resources balance by balancing either on changes in inventories either on output.

2.3.1 VAT

Thanks to tax sources, we can compute the VAT received by general government and the rest of the world. On the other hand, we deduct a “theoretical” VAT for each product from the final uses applying the VAT rates. The observed VAT and the theoretical VAT are different. The discrepancy is distributed according to the weight of the VAT of the product so that the

sum of the resources remains the same. Thus, VAT estimation has no impact on GDP estimation.

2.4 From Input-Output Table to Quarterly Sectors Accounts (QSA)

2.4.1 Production account by sector

A production account is calculated for the main sectors (Non-Financial Corporation, Financial Corporation, General government, private Households, Unincorporated Enterprises, NPISH, Rest of the World). They are mainly deduced from the Input/Output table at value terms, which is broken down into 40 industries. Value added and intermediate consumptions are therefore available for each industry.

Some industries' value added has a market and a non market parts. In this case, we estimate separately both parts. The non-market part of these industries is computed by the factors costs for general government, private households and NPISH. We obtain the market part by subtraction.

For each sector, the indicator of the market value added is the sum of the VA from specific industries weighted by fixed coefficients given by 1995 structure. For example, financial corporations value added is estimated thanks to financial industry value added. In order to ensure consistency between the Input/output table and the production accounts, non-financial corporations value added is obtained by balancing.

We deduct the intermediate consumptions by sectors from the intermediate consumption by industry the same way. The production of each sector is the sum of its value added and its intermediate consumption.

2.4.2 Other items

Some other transactions on products appear in sectors accounts.

As we have seen before, the breakdown into sectors of final consumption and GFCF is lead before computing the IOT.

As already explained, *changes in inventories* are obtained either by balancing (for almost all goods), or thanks to indicators (for construction) or by smoothing. Thus, we have the changes in inventories for the whole economy. The changes in inventories of the general

government and of the households are smoothed. Non financial corporations' changes in inventories are obtained by balancing.

Social transfers in kind are equal to general government and NPISH individual consumption, which is smoothed. Our indicator for social benefits in kind is the sum of individual consumption expenditure of GG of specific industries weighted by fixed coefficients coming from 1995 structure. For example, the social benefits in kind are a weighted sum of GG individual consumption of medicine and market health services. We balance on the non-market transfers of goods and services.

IOT gives the *VAT* paid by the whole economy. It is distributed among GG and the Rest of the World (the European Union) thanks to their respective rate.

Therefore, there is perfect consistency between GDP estimation and QSA about good and services.

3 Distributive transactions

3.1 Sources

3.1.1 General government

French QNA have a good coverage for taxes and social transfers.

3.1.1.1 Taxes

The information available is: monthly records of central-government revenue collection (Directorate of Public Accounting), central accounting department of social-security funds (ACOSS) for taxes earmarked for social security and from the Directorate of Public Accounting about local taxes. Thus, we reach a very high coverage for almost all taxes (100% for VAT, 90% for taxes on production, 94% for income taxes, 100% for the other current taxes and capital taxes). The situation is less satisfactory for the taxes on products other than VAT. For each industry, the taxes and duties on imports other than VAT are obtained by calibrating and fitting on the imports. For the other products taxes, we have a direct estimation for 44% of the total and an indirect approach, using the corresponding output as indicator for 49%. The rest is smoothed.

3.1.1.2 Social contributions and social benefits

We also have a good coverage rate for social contribution received by general government. Our main sources are the following: ACOSS (contributions to general social-security fund), statistics from national health-insurance, old-age-pension, and family-benefits funds, UNEDIC (unemployment contributions and benefits), other social-protection agencies. The imputed social contributions received by general government are obtained thanks to the following formula:

$d622 = d122 = d623 - \text{deductions} - \text{compensations}$, where $d622$ is private funded social benefits, $d122$ employers' social contribution and $d623$ the unfounded employee social benefits.

The unfounded employee social benefits are estimated with civil servants pensions. The deductions (civil servants' actual social contributions) are also given by the Directorate of the Public Accounting. The monetary compensations are smoothed.

In order to record the social contribution on an accrual basis, the amounts are shifted backwards a month to be consistent with the wages and salaries.

We have the same sources for the social security benefits in cash as for the contributions.

We have many sources about social assistance benefits in cash.

3.1.1.3 Expenditure

Since September 2003, the public accounting system provides data about the expenditure of central government, local authorities and hospitals: wages and salaries, actual social contributions, intermediate consumption, interests on a accrual basis, market output and other on-market output. The data are exhaustive about the state, regions, and departments. The others are issued from studies. They are only available since 1998 and remain erratic. Consequently, they are difficult to correct for seasonal factors. That is the reason why we are still unable to release a general government account.

We have no direct information about the taxes paid by general government. The taxes on production are calibrated on the kind of taxes general government pays. The other taxes are smoothed.

3.1.2 Rest of the world

We only use quarterly data from the Balance of Payment on wages and salaries, social contributions, and benefits. They are strongly revised. The rest (properties income, other transfers and d4,d7,d9) is smoothed.

3.1.3 NPISH

We have no quarterly data about this sector. Therefore, its transaction are smoothed.

3.1.4 Employment and wage rate

A Survey on Labour Activity and Employment Status (ACEMO) provides quarterly employment, wage rates and part time rate for each activity sector (except agriculture and mostly non-market services like education, health, social work and public). Mostly thanks to this source, the Ministry of Labour and INSEE compute employment and wage rate for each activity sector. These sources have some drawbacks: they are by sectors and not by industry, they only deal with enterprises of more than 10 employees and the wage rates do not include bonuses and overtime wages. Direct information from social insurance schemes is available

for a short time. Therefore, we use it to compute the whole market wages. The discrepancy between the first estimate and the second one is distributed according to the weight of each industry.

3.1.5 Annual targets

We miss data about subsidies, property income, current transfers other than taxes and social transfers (D7 in the SEC), and capital transfers other than capital taxes. Therefore, we use annual targets, given by the Forecasting Department of the Finance Ministry and obtain quarterly aggregates by smoothing. Consumption of fixed capital and acquisitions less disposals of non-financial non-products are judgmentally forecasted and smoothed.

The annual sources for these forecasted items are the following:

	Sources	New data available for the...		
		Provisional ANA	“semi-definitive” ANA	Definitive ANA
K1	Compiled by INSEE	Y	Y	Y
NP1, NP2	Compiled by INSEE			
D39	Public accounting/SIE	Y	Y	
D41	Banque de France	Y	Y	
D42	Banque de France/SIE		Y	Y
D43	Balance of Payment	Y	Y	
D44	Insurers professional organisations	Y	Y	
D6113	Social schemes	Y		
D71	Insurers professional organisations of insurers	Y	Y	
D72	Insurers professional organisations of insurers	Y	Y	
D73	Forecasting office/Public accounting	Y	Y	
D74, D75	Public accounting	Y	Y	
D92, D99	Public accounting, balance of Payment	Y	Y	

3.2 Computing

3.2.1 General methodology

French QNA calculate the generation, distribution use of income and capital accounts for each sector. The compilation is made transaction by transaction in order to ensure consistency. QNA mainly use two procedures of balancing. When we have an estimate for all

cells, for example for social contributions, we distribute the discrepancy between what is received and what is paid according to the weight of each item. For other transactions, like interests, the biggest item is obtained by balancing.

Quarterly data on distributive transaction are available about general government and the rest of the world. Quarterly data on employment and salaries are also available about the whole market economy. NPISH' accounts are smoothed. We miss quarterly data about households and enterprises. Their accounts are therefore obtained by balancing. We have the choice between several ways to distinguish between these sectors, that will be explained in the following part.

3.2.2 Compensations of employees

3.2.2.1 Wages and salaries

In order to obtain the wages and salaries by industry, we first compute a part-time corrected employment. Then we multiply it by the wage rate of the concerned industry. After calibrating and fitting, we obtain the wages by market industry. Wages of other industries are mainly given by the wages paid by the general government. After correction by what is paid and received by the rest of the world, we obtain the wages and salaries received by the households.

We deduct the wages by institutional sector from the wages by industry. For instance, we compute financial corporations wages and salaries using the wages and salaries paid by the financial industry. We obtain similarly the wages and salaries paid by the non-incorporated enterprises. The wages paid by the households are smoothed. Then, we balance on the wages and salaries paid by the non-financial corporation.

3.2.2.2 Social contributions

For the social contribution paid by the employers, we have two ways of computing the whole amount of contributions paid. On the one side, the contributions received by General government are available. On the other side, QNA deduce the theoretical contributions from the wages and salaries paid by industry. The discrepancy is distributed according to the weight of each industry.

Then, we use the same method as for wages and salaries to deduct the social contributions by sectors from the social contributions by industry.

Employers imputed social contributions paid by non-financial and non-financial corporations are deducted from the wages and salaries. Adding the imputed social contributions of the general government and of the rest of the world, we obtain what households receive in the generation of income accounts and pay in the revenue accounts.

3.2.3 Other items

3.2.3.1 Taxes

The whole amount of taxes paid by resident sectors is given by tax sources and balance of payment. When the coverage rate does not reach 100 percents, we use calibrating and fitting to correct our sources in order to obtain what the general government and the rest of the world receive and what the rest of the world pays. Then, we usually estimate the taxes paid by each resident sector from an indicator built according to the nature of the tax and we balance on the biggest item. For example, our indicator of the taxes on production paid by financial corporations is the sum of all kind of taxes that financial corporations paid. Hence, our indicator is higher than our account series.

For the taxes on income, the computation is made separately for households and corporations because both sectors do not pay the same taxes on income. General government's revenue is the sum of both. It is more difficult to distinguish what financial and non financial corporations pay, for example profits tax. In this case, we apply fixed quotas to distribute it between both sectors.

3.2.3.2 Property incomes

The only quarterly data we have about property income are the interests paid by General government. Interests paid and received are smoothed for all sectors except the interests received by financial corporations which are obtained by balancing.

3.2.3.3 Social benefits paid by non financial corporation

We have no information about private founded social benefits. These are mainly paid by private insurance in order to complete GG refunds. Therefore, they are estimated from sickness social benefits.

Conclusion

French quarterly accounts by institutional sector are consistent, complete and are quickly available. On product transactions, their main sources are production index, turnover index, new housing starts, retail trade surveys and custom statistics. On distributive transactions, the sources are data from the public accounting system, social schemes, balance of payment and a survey on employment and salaries.

When we miss data about the breakdown between sectors, we use the past breakdown to extrapolate the current one. French quarterly accounts register the transaction on an accrual basis and distinguish the treatment of seasonality from the choice of the time of recording.

French QNA want to improve their estimation of wages, changes in inventories and of the breakdown between institutional sectors for transactions on products using more comprehensive sources. The Banque de France will shortly release quarterly financial accounts. It could allow us to have a best estimation of the accounts of the financial corporations, of interests and dividends.

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