

Consumption Indicators for the territorial distribution of the Value Added Tax (VAT)

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1. Introduction

The purpose of this document is to develop a methodology for the development of territorial consumer indexes which up till now have been instrumental in the application of Law 21/2001 *on Fiscal and Administrative Measures of the new financing system for Autonomous Communities and Cities with a Statute of Autonomy*, indexes which the National Statistics Institute must certify each year for down payments and liquidations of this transferred tax.

The procedure developed in this methodological document uses to the maximum extent all current and structural data contained in the Spanish statistics base, which are homogeneous at a regional scale, and also coherent with regionalisation criteria described in SEC-95 and its annexed *manuals*.

Finally, and for future purposes, the calculation methodology improvement presented hereunder shall be intimately linked to the existence of a greater number of statistical information sources, with the prevailing fact that they have to be homogeneous at a regional scale. To this regard, availability of source and destination tables for all Autonomous Communities, coherent at methodological and numerical levels with each other and with national tables, would create the ideal scenario for the development of this exercise.

2. Value Added Tax (VAT) regional distribution indicator.

2.1. FOREWORD

The VAT is a tax on goods and services levied on final buyers, whose collection mechanics implies that at every manufacturing and distribution stage, the difference between the accrued and deductible VAT is transferred to the Treasury Public. In other words, although it is the final consumer who wholly supports the tax, Treasury Public payments are undertaken by manufacturers in stages or phases. Therefore, the liquid collection is yielded by consumption at each Autonomous Community, what in statistical terms is called internal consumption, that is, the consumption registered in a territory both by residents and non-residents in said territory.

Consumption as taxation object in the Value Added Tax, can be defined as the amount of a Theoretical Base comprised by the delivery and performance of all services subject to a non-deductible VAT. In aggregate terms, it is comprised by the following accounting operations:

- a) Household final consumption expenditure
- b) Intermediate Consumption, Social Transfers in Kind purchased on the market and Gross Fixed-Capital Formation of Public Administrations



- c) Intermediate Consumption and Gross Fixed-Capital Formation of the NPISH.
- d) The Intermediate Consumption and Gross fixed-capital formation of exempt market activities¹
- e) Gross Formation of Capital in newly constructed dwellings.

The strategy followed for obtaining the final indicator has consisted in the elaboration of indicators for VAT regional distribution, corresponding to each of the aforementioned operations, in order to subsequently weight them using the information provided by the last available Destination Table of Spain's National Accounts. Future weighing updates will be undertaken by incorporating the information of the last table available at each moment.

The methodology followed to elaborate these indicators is detailed hereunder, as well as the updating procedure followed for subsequent years.

2.2. REGIONAL VAT DISTRIBUTION INDICATOR CORRESPONDING TO HOUSEHOLD FINAL CONSUMPTION EXPENDITURE

This Section presents the methodology used for estimating the VAT performance distribution indicator at each region due to the expenditure in final consumption of its households.

As already mentioned in the introduction, household final consumption internal expenditure (carried out in the economic territory of the region both by resident and non-resident households) is included among the components of the Theoretical Base. In case of a single tax rate, once a decision is made regarding a VAT distribution linked to household final consumption expenditure would be enough to distribute total collection based on the percentage represented by each region's internal consumption against total consumption. However, provided that there are several applicable tax rates, and exempt goods and services, it will be necessary to have internal consumption rates per Autonomous Community with a sufficient break down level (depending on the rate they are subjected to) as to weight them on a different rate base. That is, it will be necessary to estimate household final consumption expenditure subjected to 4, 7 and 16 percent, in order to apply the corresponding rates and therefore obtain the theoretical quotas accrued on each region.

Spanish regional accounts 2000 Base publishes the variable *Domestic final household consumption expenditure*, in other words, the expenditure in final consumption made by households in the economic territory of a region. In order to estimate said variable with a sufficient breakdown level for the set objective (12 expenditure functions²), several statistical sources have been used, taking into account the required coherence between regional estimates and those corresponding to Spanish national accounts, Base 2000.

Internal household final consumption expense for one Autonomous Community can be estimated following two different procedures: Either directly estimating internal

¹ These activities are regulated by article 20 of Law 37/1992. Due to their importance, it is worth noticing, among others, financial brokerage and insurance, education, health and social services related activities.

² The 12 expenditure functions established by the COICOP classification have been estimated.

final household consumption expenditure, or, based on the final consumption expenditure of households residing therein. Adoption of either estimation procedure depends on the statistical sources used. In case of deciding upon final consumption of resident households, the process is the following:

- Final consumption expenditure in said Community by each non resident household (either national or from the rest of the world) is added
- Final consumption expenditure of resident households, outside the Autonomous Community (either in the national territory or in the rest of the world) is deducted

In a synthetic way:

Internal FCE of a Autonomous Community =

= FCE of resident households in the AC +

+ FCE of non-resident households in the AC (from the rest of the World)

+ FCE internal flow balance (between AC household and households in the remaining AC)

The following table summarizes the main statistical sources used for estimating both resident and internal final expenditure consumption for the different Autonomous Community at the level of the 12 expenditure functions employed in that environment:

Resident and internal final household consumption expenditure		
	Expenditure function	Statistical sources
1	Food and non alcoholic beverages	Household budget continuous survey (HBCS) and Food Consumption Panel of the Ministry of Agriculture, Fishing and Food, employer's data (ANFABRA, FENIL, ANEABE)

Resident and internal final household consumption expenditure		
	Expenditure function	Statistical sources
2	Alcoholic beverages, tobacco and narcotics	HBCS, Food Consumption Panel of the Ministry of Agriculture, Fishing and Food, tax on alcoholic beverages and products derived (AEAT), Beer taxes (AEAT) and Statistics of the Commission for the Tobacco Market (including the Canary islands).
3	Clothing and shoes	HBCS. Data from associations and employer's (CITYC, FICE)
4	Housing, water, electricity, gas and other fuels	Rental production estimates in the frame of Spanish National and Regional Accounts, HBCS, Statistics on gas, electricity and other fuels by the Ministry of Industry and Energy. Data from Associations (AEAS, CORES, AOP, UNESA)
5	Furniture, household equipment and current conservation costs for the dwelling	HBCS, estimates on the production of domestic service in the frame of National and Regional Spanish accounts. Data from employers (AIDIMA, FAMO, ANFEL). Cetelem Data Bank
6	Health	HBCS, statistical data from the INSALUD and the Business Association of Pharmaceutical Laboratories, data from associations (ICEA)
7	Transport	HBCS, license plate registration statistics from the DGT, Annual Services Survey, Movilia, data from Associations (ICEA, ANFAC, FACONAUTO, ANESDOR, CORES, AOP, UNESPA, Toll Motorway Operating Associations, ANIEL, SEDISI)
8	Communications	HBCS, Annual services survey, Postal Service, data from the TMC
9	Leisure, performances and culture	HBCS, Statistics from the ONLAE, the National National Gambling Commission, ONCE and autonomic lotteries, data from associations (ANIEL, AFYVE, COMUSICA, AEFJ, FEPEX, AMVAC, ICAA, FUINCA, OJD), Hotel Occupancy Survey, Non-hotel Holiday Accommodation Occupancy statistics, Familitur
10	Education	HBCS, student body statistics of the Ministry of Education, Private education financing and expenditure survey, University Coordination Board statistics

Resident and internal final household consumption expenditure		
	Expenditure function	Statistical sources
11	Hotels, cafés and restaurants	HBCS, Annual services survey, APS, Hotel Occupancy Survey, Familitur, EGATUR, FRONTUR, data from associations (FEADRS, Spanish Federation of Restaurants and Café Bars)
12	Other goods and services	HBCS, Retail Trade Survey, data from associations (ICEA, UNESPA)

Transition of final consumption expenditure from resident to internal.	
Transaction	Statistical sources
Final consumption expenditure of non-residents in Spain, in the domestic economic territory.	Hotel Occupancy Survey, Non-hotel Holiday Accommodation Occupancy statistics, FRONTUR
Final consumption expenditure of Spaniards in the rest of the world	HBCS, Familitur, Movilia
Expenditure residents in Spain, outside their Autonomous Community ¹	HBCS, Familitur, Hotel Occupancy Survey, Movilia

Calculation of the average weighted rate of VAT, applicable to internal final consumption expenditure in Spain, it is calculated within the scope of the Decision on Own Resources of European Communities (Third Resource) and is transferred to the European Commission by the General Budgetary Directorate of the Ministry of Economy. Each year, a document is prepared in said unit, called *Determination of the Uniform Taxable Amount of the value added tax*, contained in said calculation.

In first place, for the performance of this calculation, final consumption expenditure distribution is estimated at purchasing prices, taking into account the tax rates levied on the products (normal, reduced, super-reduced, exempt), by expenditure function and for each year, using national expenditure weights for each of tax rate.

Based on the application of this national distribution to each Autonomous Community's final consumption expenditure estimates, the amount of theoretical VAT corresponding to said operation is obtained.

The two calculation stages are:

In the first stage, internal final consumption expenditure levied with each tax rate on each expenditure function is calculated:

Stage 1

¹ Measures between inflow and outflow balance at each Autonomous Community

For each Autonomous Community.	FCE	% national				FCE per tax rate			
		4%	7%	16%	0%	4%	7%	16%	0%
f Function	G	t4(f)	t7(f)	t16(f)	t0(f)	G*t4(f)	G*t7(f)	G*t16(f)	G*t0(f)

Once the expenditure is calculated, levied with each tax rate (valued at purchasing values), the VAT corresponding to each expenditure is calculated:

Stage 2

For each Autonomous Community.	FCE	FCE per tax rate				Levied VAT				TOTAL
		4%	7%	16%	0%	4%	7%	16%	0%	
Function f	G	G*t4(f)	G*t7(f)	G*t16(f)	G*t0(f)	VAT4(f) = $\frac{G*t4(f)}{1.04}$	VAT7(f) = $\frac{G*t7(f)}{1.07}$	VAT16(f) = $\frac{G*t16(f)}{1.16}$	0	VAT4(f) + VAT7(f) + VAT16(f)

The total VAT levied for each function will be

$$VAT(f) = VAT4(f) + VAT7(f) + VAT16(f)$$

Repeating the calculation for all expenditure functions, the total theoretical VAT associated to the each Autonomous Community's internal final consumption expenditure corresponding to a certain year will be obtained.

$$VAT = VAT(1) + \dots + VAT(10)$$

The resulting average weighted rate will be calculated dividing the resulting theoretical VAT by the final consumption expenditure (not exempt), net from said VAT¹.

Percentage structure for the whole of Spain based on said theoretical collection for each Community would be the indicator for the distribution of VAT collection due to household final consumption expenditure.

¹ It must be reminded that final consumption expenditure is valued at purchasing prices.

2.3. REGIONAL VAT DISTRIBUTION INDICATOR CORRESPONDING TO INTERMEDIATE CONSUMPTION, SOCIAL TRANSFERS IN KIND PURCHASED ON THE MARKET AND GROSS FIXED-CAPITAL FORMATION OF PUBLIC ADMINISTRATIONS.

This Section presents the methodology used on the regional distribution of Public Administration expenditure headings:

- Intermediate consumption
- Corporate transfers in kind related with expenditure in products supplied to households by market manufacturers.
- Gross formation of fixed capital

The distribution has been made based on a double approach: on one hand, the functional distribution of Public Administrations expenditure has been considered, carried out in accordance with the functional classification of United Nations expenditure, and on another, the institutional participation of each of the sub-sectors integrating the Public Administration sector in the mentioned expenditure heading. The objective is to determine the regional distribution of the expenditure of Public Administrations mentioned in the previous section, distributed on a function basis and specifically for the sub-sector managing them.

The functional classification of public expenditure in the United Nations structures the administrative activity in 10 functions.

COFOG Classification:

01. Public Administrations General Services
02. Defence
03. Public security, law and order activities
04. Economic Affairs
05. Environmental protection
06. Housing and community services
07. Health
08. Recreational activities, culture and religion
09. Education
10. Social protection

Likewise, as regards institutional in, as distinction is made between four sub-sectors in the institutional Public Administration sector (S.13) in compliance with the rules of sectorial delimitation contained in SEC-95:

- S.. 1311. Central Government
- S.. 1312. Autonomous Communities
- S.. 1313. Local Corporations
- S.. 1314. Social Security Administrations



The publication prepared by the GSAI *Public Administrations Accounts* includes information on the expenditure of each of the sub-sectors specified in the COFOG expenditure function. Regionalisation of expenditure at each sub-sector is not calculated taking into account the same criteria, and is detailed hereunder:

Central Government

For the regionalisation of Central Administration expenditures data from public accounts are taken into account as a base, structured by budgetary programs and articles.

Regarding these public account data, the national account methodology is applied.¹ in order to associate each budgetary heading

- to the corresponding operation in terms of national accounts and
- to the functional COFOG group applicable to said expenditure

A large portion of the expenditure programs, articles... carried out by the central administration, has the autonomous community code were the expenditure is carried out encoded, ..., said code is the one that is used to distribute territorially the expenditure in the scope of the consumption indicator.

On the other hand, those expenses which, due to their nature, are not territorially encoded, have been regionalized using indicators of universal nature (city, value added).

Autonomous Communities

For this public administration sub-sector, a functional distribution of expenditure headings is available for each of the Autonomous Communities (payments by each territory), in other words, it has not been necessary to resort to budgetary data, as all variables covered in the study are already regionally distributed.

Local Corporations

As in the previous case, payments of local corporations of every autonomous community are available, therefore, a similar exercise to that of the autonomous community sector has been conducted.

Social Security

In this sub-sector, the starting situation varies depending on the consideration given to centrally managed services with a social nature or services managed by Autonomous Communities. In the first case, the procedure is similar to the one described for the Central Administration, that is, data derived from public accounts are taken as the starting base, both in what regards to economic classification of the expenditure as its classification on a **program basis**, appointing each expenditure to the corresponding operations in terms of national accounts and associated COFOG functional groups.

On the other hand, in an analogue way to the aforementioned for the autonomous community sub-sector, in the case of social services managed by autonomous communities, the regional distribution of national accounts headings classified in different COFOG functions is available.

¹ Intermediary system for passing from budgetary accounts to national accounts

2.4. REGIONAL VAT DISTRIBUTION INDICATOR CORRESPONDING TO INTERMEDIATE CONSUMPTION AND GROSS CAPITAL FORMATION OF EXEMPT BRANCHES¹.

In this Section, the methodology used in the compilation of a distribution structure on an Autonomous Community basis of the VAT paid and not deducted by exempt sectors. In other words, the aim is to quantify current or investment acquisitions on which the VAT is levied, and, in compliance with regulation specifications, the tax is not deductible as a consequence of carrying out exempt operations.

VAT exempt activities are regulated, mainly, in Articles 20 and 140 of the Law 37/1992.

These activities mainly correspond to:

- Health services
- Services in the scope of public activities (postal , stamping of government paper, lotteries, cultural, social)
- Services rendered by entities with a social focus
- Insurance operations
- Common financial operations
- Technical extensions
- Delivery of recovery materials
- Professional services of plastic artists, writers
- Education
- House rentals. Other real estate exemptions
- Investment gold deliveries

The sectorisation employed in the analysis aggregates all activities in 10 sectors, among which *Finance and Insurance Institutions, Education, Health* and, to a lesser extent, *Real Estate Services* are considered as typical. In the rest of the sectors, the conduction of exempt activities is less clear.

Variable quantification: current acquisitions or intermediate and investment consumption or gross capital formation, is carried out based on tax information available from the statements submitted by companies engaged in this kind of activities. Specifically, the data contained in the annual summary VAT statement (forms 390 and 392) and in the annual deductions on employee work of the Income Tax (form 190).

However, it has to be taken into account that entrepreneurs carrying out, in an exclusively manner, exempt operations not subject to deductions, the regulations relieve them from the obligation of presenting VAT statements, therefore, in such cases it is necessary to calculate estimates, both of current and investments acquisitions.

Therefore, the analysis collective is integrated by:

¹ Except Public Administration and NPISH



- People presenting VAT statements of exempt sectors.
- People presenting statements on deductions on personal work in exempt sectors.

In both Cases, with the exception of the Public Administration.

Regarding the integration of both sources, the following collectives are distinguished:

- People presenting VAT statements without employees (collective 1)
- People presenting VAT statements with employees (collective 2)
- People not presenting VAT statements with employees (collective 3)

The information available for the analysis in each collective is the following:

Collective 1: information regarding the amount of borne and non-deductible payments is available. In this case, the territorialisation criteria shall be filer's tax address, as they don't have employees.

Collective 2: information on non-deductible borne VAT payments is also available. The territorialisation criteria considered as appropriate is the territorial distribution of satisfied compensations in accordance with paid employee's household location.

Collective 3: Information on the territorialisation of compensations is available in an employee household basis. It is necessary to estimate intermediate consumptions and investments performed by this collective, as well as non-deducted borne VAT payments as a result of its activity being exempt without a right to enjoy deductions.

Persons registered in Canarias, Ceuta or Melilla should be excluded from this collective, as they are not VAT filers due to their territory and not to their exempt activity. The same argument requires eliminating from the analysis, those whose household is in País Vasco or Navarra, which also file VAT in a special regime for those territories.

Estimation of non-deducted borne VAT payments for the conduction of exempt activities.

For units included in groups 1 and 2 there is information available on the annual VAT form, and, therefore, on the quantification of intermediate consumption subject to a non deductible VAT (CCTSD) and also recognizes the investment bearing a non deductible VAT (CITSD).

Provided that for the units comprising this collective, the intermediate VAT type levied on intermediate consumption (TCI) and on investments (TCC), non deductible borne payments *will be obtained on an exempt sector intermediate consumption basis*. (CSND CI_{SE}) and *for investments* (CSND $FBCF_{SE}$):

$$CSND\ CI_{SE} = CCTSD * TCC$$

$$CSND\ FBCF_{SE} = CITSD * TCI$$



However, for units included in collective 3¹ there is only information available regarding compensation on a employee household basis, and therefore, said *payments* cannot be calculated directly.

Therefore, on a first stage, total sales for the units in this collective are estimated on the basis of the *sales/compensation* ratio for units of collective 2.

Once total sales are known, intermediate consumption and investment figures subject to non-deductible VAT are estimated, through *ratios* obtained from the individual behaviour of each sector and activity, using data from collective 1 and 2 for such purpose.

Finally, calculation of non-deductible payments on intermediate consumption and investment on exempt sectors is obtained from the direct application of the aforementioned formulas.

2.5. REGIONAL VAT DISTRIBUTION INDICATOR, CORRESPONDING TO GROSS CAPITAL FORMATION IN NEWLY CONSTRUCTED DWELLINGS.

This heading contains the procedure followed to elaborate a structure on an Autonomous Community basis referred to the application of the *paid* VAT as a consequence of the purchase of newly constructed dwellings.

The main sources of information for obtaining the distribution indicator are provided by the Ministry of Development and the Ministry of Housing, which provide monthly data on:

- Number of dwelling *finished* on a protection regime basis: On one hand, regarding public promotions and special regime, which support a 4% VAT rate, and on another, the rest of dwellings, with a 7% VAT rate.
- Average house area .
- Average price of the square meter on an Autonomous Community basis.

The method proposed to evaluate the structure referred to the transfer of the *paid* VAT as a consequence of the purchase of newly constructed dwellings, on an Autonomous Community basis, using dwelling average area, the number of finished dwellings and the average price for a square meter.

Taking into account this information, the total expenditure will be calculated as:

$$\text{Total expenditure} = \text{average area} * \text{number of dwellings} * \text{Cost of m}^2$$

and finally, the theoretical VAT associated to this operation will be:

¹ Only units included in construction activities and real estate services, financial institutions, insurance companies, education and health are included.

Theoretical VAT = total expenditure * type VAT (4% or 7%)

2.6. FINAL CONSUMPTION INDICATOR

Once the consumption indexes corresponding to each of the operations on which the VAT is levied, the resulting final indicator will be obtained by compounding all of them, using as weighting structure, the one resulting of the last destination table available for the Spanish economy.

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