

INSTITUTO NACIONAL DE ESTADISTICA



Business Confidence Indicators

General Methodology

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Introduction

The survey on which the Business Confidence Indicators are based is the first opinion poll conducted by the INE.

The purpose of this survey is to ascertain, at a given moment, the view of those in charge of establishments regarding their situation.

Units from which desired base information is obtained is establishments.

The BCI survey collects opinions from establishment administrators regarding the performance of their business in the last quarter, and regarding their expectations for the next quarter.

The Business Confidence Indicators will produce three indicators each quarter, both on a national level and by Autonomous Community, in the latter case, data will be available from 2013.

Its methodology is based on the Japanese TANKAN index, in other words, there is no weighting or elevation since each respondent "has one vote".

It is conducted in response to the need for a Harmonised Business Confidence Indicator (on a national level and by Autonomous Community) in partnership with Autonomous Communities, the Ministry of Industry and the Higher Council of Chambers of Commerce (CSCC).

The Business Confidence Indicators (BCI) drafted by the INE may have significant dissemination, based on the fact that they reach similar indicators such as the Japanese TANKAN (whose methodology is followed in the case of Spain) and the German IFO.

Scopes

TERRITORIAL

The units of analysis are establishments in the national territory.

POPULATION

The scope of study includes almost all of the activities in the CNAE, industry, energy, construction, services, etc., with some exceptions, specifically the population scope of the survey is comprised of all those establishments whose main activity is included in the sections of CNAE-2009: B to N (inclusive, except division 70), R (only divisions 92 and 93) and S (only divisions 95 and 96).

DIMENSION

Size of the establishments: all sizes, including establishments without employees.

The geographical scope is the whole national territory.

The sample is representative, both on a national level, and by Autonomous Community, and is comprised of some 8,000 establishments.

The opinions on which the Business Confidence Indicators are based began to be collected for the first quarter of 2012.

Definition of variables

Given the characteristics of the variables collected in this survey, the informants must be managers of the establishments, given that they are the persons with a global perspective of the functioning of the business, and of the evolution of the variables for which information is requested.

Question on which the indicators are based:

1. ¿Cómo valoraría la marcha del negocio en su establecimiento?

	<u>Favorable</u>	<u>Normal</u>	<u>Desfavorable</u>
1. En el trimestre que está acabando _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Para el trimestre que va a comenzar _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This is a question regarding the functioning of the establishment, both in the last quarter (situation) and in the coming quarter (expectations).

Of the BCI, three items of data are published quarterly. By Autonomous Community they will be published from the year 2013.

EXPECTATIONS

Harmonised expectation indicator: this includes the difference or balance between the percentages of favourable and unfavourable responses regarding the coming quarter. These can fluctuate between -100 (all of the respondents have negative expectations regarding the coming quarter) and +100 (all of the respondents are optimistic in their expectations).

PROFESSIONAL

Harmonised situation indicator: this is the difference or balance between the percentages of favourable and unfavourable responses regarding the last quarter.

The interpretation of the two above indicators is direct:

If the Expectations figure is positive, the optimists exceed the pessimists with regard to how the business will perform the coming quarter.

If the Situation figure is positive, in the valuation for the last quarter, there are more favourable opinions regarding how the business performed.

HBCI

Harmonised Business Confidence Index: this has been built using a conveniently standardised geometric average between the Situation and the Expectations.

Specifically, Business Confidence is defined as the average between the Situation and Expectations.

A geometric average is used, and specifically:

$$\text{Business Confidence} = \sqrt{(\text{Situation}+200) \times (\text{Expectations}+200)} - 200$$

Business Confidence may, therefore, fluctuate between extremes of -100 and +100 and an index, whose base is the first quarter of 2013, is calculated from it.

Calculation of indicators.

The proposal is made from the analysis carried out on different methodologies of similar indicators and of work carried out both in the framework of the INE Business Confidence Indicator Work Group – Autonomous Communities, and in partnership with the Study service of the Higher Council of Chambers of Commerce (CSCC).

Methodological summary

BASIC QUESTION ON WHICH THE INDICATORS ARE BASED

This is a question regarding the performance of the establishment, both in the last quarter (situation) and in the coming quarter (expectations).

USE OF RESPONSES FOR CALCULATION OF THE INDICATORS

Balances of each variable (difference between % of positive and negative responses).

WEIGHTING AND ELEVATION OF THE OPINIONS OF EACH UNIT SURVEYED

No weighting or elevation. Each respondent votes once, irrespective of its size.

This methodology, used for example in the Japanese TANKAN index (as it is usually known), is justified in detail later, from different points of view and including empirical checks.

TANKAN comes from TANKI KEIZAI KANSOKU CHOUSHA (Economic short-term companies survey).

MOVING AWAY FROM THE SEASONAL NATURE OF PREVIOUSLY OBTAINED BALANCES

Not, in principle, immune to subsequent studies where sufficient data is available.

Respondent units are asked to reply, leaving out seasonal factors (in a similar manner to how it is usually done with many of these indices), including, in corresponding questions, the request responded to, "bearing in mind the time of year we are in".

INDICATOR CALCULATION SYSTEM

The following indicators are published from the question regarding performance of business in the establishment:

Harmonised situation indicator: Situation balance (difference between the % of positive and negative responses). This is abbreviated as "Situation".

Harmonised expectation indicator: Balance of expectations (difference between the % of positive and negative responses). This is abbreviated as "Situation".

Harmonised Business Confidence Index (HBCI): Geometric average of the situation balance and expectations, suitably standardising the results.

Details of the calculation for each quarter would be specifically as follows:

$$\text{Business confidence} = \sqrt{(\text{Situation} + 200) \times (\text{Expectations} + 200)} - 200$$

Confidence may, therefore, fluctuate between the extremes of -100 and +100.

The Indicator is calculated using as a case the first quarter of 2013.

$$\text{HBCI} = \frac{\text{Business Confidence} + 200}{\text{Business Confidence in the 1st quarter of 2013} + 200} \times 100$$

INTEGRATION WITH THE AUTONOMOUS COMMUNITY SAMPLES

The INE Business Confidence Indicator Work Group – Autonomous Communities has agreed the following:

Not to weight responses by establishments considering simulations presented, following the TANKAN methodology. This methodology is assessed by its advantages when integrating state and Autonomous Community samples, it avoids calibrating samples and its simplicity allows for a greater organisation and speed in disseminating results.

The OCECAs who wish to participate in the **(harmonised) HBCI** should send representative samples to the INE. The INE has volunteered to provide OCECAs that so wish a theoretical increase in the sample, necessary for obtaining representative results by sector and dimension in their territory.

The overall sample for drafting the **HBCI** will have a correction factor with the purpose of maintaining the representation of each Autonomous Community in the state as a whole. In the case of establishments being duplicated, one of the two records will be deleted.

In what follows, we assume that specific OCECA has a representative sample regarding which information has been gathered on business performance in the establishment.

The INE, in turn, has a representative sample for the region of said OCECA.

In all of the following, it is assumed that both samples are representative for the same group of activities.

In the OCECA sample, there are effectively collected **c** units.

In the INE there are **t** units effectively collected for establishments in the corresponding region.

In terms of TANKAN, we would say that the corresponding Autonomous Community **“votes” t** and that vote must be observed when the OCECA sample is integrated into the overall sample.

When integrating both samples, there will be a total of **t+c** units for that region.

In order to observe the number of votes allotted to that region (that is, t), each $t+c$ unit in the integrated sample will have a correction factor calculated in a straightforward manner by way of $t/(t+c)$.

Put another way, calibration is being brought in, using the “number of votes” in each Autonomous Community in the state sample as an external variable, in other words, the representation of each Autonomous Community in the state as a whole.

This correction factor acts several times over when tabulating results, since in all operations performed by the INE, the $t+c$ units of the integrated sample would be used.

Obviously, when obtaining results and tabulations exclusively for that specific Autonomous Community, it is not necessary to consider it, since it is constant for all establishments in that region in the integrated sample.

The procedure described allows that integration of samples to be developed gradually for the different Autonomous Communities concerned.

Overall coherence of the procedure is achieved also bearing in mind that the INE will only disseminate the **HBCI** by Autonomous Communities with no subsequent breakdown (either by sector or by size of the establishment).

Data by Autonomous Community would be published from 2013, thereby allowing time for OCECAs interested in this integration to be able to develop the necessary procedures.

Therefore, there will be a single “**Harmonised Business Confidence Indicator**” figure for each Autonomous Community.

This indicator may coexist with other non-harmonised OCECA indicators, in order to, for example, preserve historical series.

In all of the above, it can be seen that the opportunity criteria have been taken as a reference. Therefore, what is proposed is a simple indicator design that has been agreed upon with the others involved (OCECAs and CSCC) so that their own objectives are observed.

Furthermore the newness of this operation is checked, both methodologically, and in terms of the underlying model for working in partnership with Autonomous Communities and with agents such as the CSCC.

SECTORISATION

The population scope of the Harmonised Business Confidence Indicator would be comprised of all those establishments whose main activity is included in the following sections of CNAE-2009: B to N (inclusive, except division 70), R (only divisions 92 and 93) and S (only divisions 95 and 96).

Sample data

REPRESENTATION

The sample is representative by Autonomous Community and on a state level.

ROTATION

The total sample is divided into five rotation groups, so that in the first quarter of each year, the oldest group is replaced, meaning a 20 percent renewal of the sample. Units with more than 1000 workers, and those belonging to strata so small that their sample size needs to coincide with that of the population are not renewed, and except for ceasing, they must remain continually in the sample.

Sample sizes

National Total: **7694**

Autonomous Communities:

01. Andalucía	637
02. Aragón	368
03. Asturias, Principado de	350
04. Balears, Illes	363
05. Canarias	394
06. Cantabria	346
07. Castilla y León	408
08. Castilla - La Mancha	382
09. Cataluña	839
10. Comunitat Valenciana	505
11. Extremadura	350
12. Galicia	424
13. Madrid, Comunidad de	867
14. Murcia, Región de	370
15. Navarra, Comunidad Foral de	355
16. País Vasco	414
17. Rioja, La	317

Sectors:

S1.Industry	1,272
S2.Construction	1,023
S3.Trade	1,565
S4.Transport and Accommodation	1,067
S5.Other Services	2,767

Size brackets:

E1. (Fewer than 10)	3,678
E2. (10 to 49)	1,753
E3. (50 to 199)	1,147
E4. (200 to 999)	853
E5. (1000 and over)	263

Note: The National Total includes establishments in the sample corresponding to Ceuta and Melilla.

Questionnaire

The Spanish version of the current questionnaire is as follows:

Importante: Para las siguientes preguntas, responda, por favor, teniendo en cuenta la época del año en que nos encontramos.					
1. ¿Cómo valoraría la marcha del negocio en su establecimiento?					
	Favorable		Normal		Desfavorable
1. En el trimestre que está acabando _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
2. Para el trimestre que va a comenzar _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
2. En el trimestre que está acabando, en comparación con el trimestre anterior, ¿qué tendencia han seguido las siguientes variables en su establecimiento?					
	Aumentó		Se mantuvo estable		Disminuyó
1. Facturación (volumen de negocios) _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
2. Empleo (personal contratado) _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
3. Inversión _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
4. Nivel de precios _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
5. Exportaciones _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/> No realiza exportaciones
3. Para el trimestre que va a comenzar, en comparación con el que finaliza, ¿qué tendencia cree que seguirán las siguientes variables en su establecimiento?					
	Aumentará		Se mantendrá estable		Disminuirá
1. Facturación (volumen de negocios) _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
2. Empleo (personal contratado) _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
3. Inversión _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
4. Nivel de precios _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
5. Exportaciones _____	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/> No realiza exportaciones
4. ¿Qué factores cree Vd. que limitan la actividad de su establecimiento o la marcha de su negocio? (Señale todas las opciones que considere más relevantes)					
1. Debilidad de la demanda _____					<input type="checkbox"/>
2. Escasez de mano de obra adecuada _____					<input type="checkbox"/>
3. Insuficiencia de equipamiento _____					<input type="checkbox"/>
4. Dificultades financieras _____					<input type="checkbox"/>
5. Aumento de la competencia _____					<input type="checkbox"/>
6. Otras causas _____					<input type="checkbox"/>

Business Confidence Indicators: Justifications regarding use of the TANKAN methodology

INTRODUCTION

The newness of using said methodology (there is no weighting or elevation, since the opinion of each respondent counts as one vote, irrespective of size) results in having to give a special section over to it, showing the different reasons justifying its use (although one might go as far as to say “require” rather than justify).

There are three types of reason:

Justification relating to coordination between the different agents involved (perhaps we should call them operatives).

Justification based on simulations carried out using the data currently gathered by different units (which we may call empirical).

Justification based on a detailed analysis of the sample structure, together with the appropriate numerical checks (which we may call technical, or directly theoretical).

OPERATIONAL JUSTIFICATION

In actual fact, it is not thought possible for another methodology to exist, that enables virtually immediate integration of OCECA samples into that of the INE, also bearing in mind the wide diversity of methodologies used in regional statistics institutes.

EMPIRICAL JUSTIFICATIONS

Different units have presented detailed simulations carried out on the balances obtained in the various questions in the operation questionnaires currently carried out.

In order to describe in a little more detail the simulations carried out, the general suggestion regarding these is included below.

GENERAL DESCRIPTION

Notations and clarifications:

t_i is the number of workers in establishment i , taken from the directory. t

$t_i + 1$ is usually considered in all simulations, in order to be able to deal with the case of freelancers.

t_i is the elevation factor of establishment i .

r_i is the response to one of the specific subjective questions considered in the analysis and its values may be +1; 0; -1 (increase, stability or decrease, respectively).

In the case of the INE, sample strata are defined by crossing Autonomous Communities (17), Activity sectors (5) and Size brackets (5). For each of those strata there is (all taken from the directory):

- Number of units (establishments) from the stratum in the directory.
- Number of units (establishments) from the stratum in the sample.
- Total number of employees from the stratum in the directory (Job T).
- Total number of employees from the stratum in the sample (Job M).

The elevation factor of establishment i is calculated as quotient $JobT/JobM$ corresponding to the sample stratum for the establishment.

All establishments in the same sample stratum have the same elevation factor.

CALCULATIONS PERFORMED

The objective is to calculate (in a group of breakdowns) the balance in each of the questions analysed, regarding as such the difference between the percentage of positive and negative responses, calculating that balance according to the different procedures and for the periods for which data is available.

Below, we look at a specific question and a specific breakdown, that is, that i is an index that represents the group of establishments from which there is a response in the specific breakdown analysed.

Despite the fact that other possible simulations to carry out (of a logarithmic nature, basically) have been analysed exhaustively, it has been estimated that the only one really worth checking is the one that led to verify whether the TANKAN index method is a suitable numerical approximation of the more "natural" estimate (elevating and weighting by number of workers), whereby the calculation procedures for the percentages to compare are as follows:

- Procedure "f and t" (1 vote per worker and elevating):

$$\frac{\sum f_i t_i r_i}{\sum f_i t_i} \times 100$$

The denominator coincides with the total number of employees according to the directory in the breakdown considered.

- Procedure “neither **f** nor **t**” (Tankan) (1 vote per establishment and without elevating):

$$\frac{\sum r_i}{\sum 1} \times 100 = \frac{\sum r_i}{n} \times 100$$

Where **n** is the total number of establishments that have responded, belonging to the breakdown considered.

- Verification to be carried out:

Verification is limited to checking the equality of the following:

$$\frac{\sum f_i t_j r_j}{\sum f_i t_j} = \frac{\sum r_j}{n}$$

If the validity of TANKAN is accepted, the previous similarity is fundamental, since it would then not be strictly correct to say that the TANKAN methodology entails not using elevation factors (which may be awkward to justify if a representative sample is being used), but that for these opinion polls, and this type of sample, numerical calculation is simplified in such a way that it is not necessary to include either the elevation factors, or the weighting by size.

All of which is due, obviously, to the fact that the size variable is a stratification one.

Lastly, it is necessary to clarify that, compared with other calculations (sampling errors, for example), the previous equality should simply be used “the other way around” (that is, from right to left), in order for elevation factors allowing those other calculations to reappear.

Simulations carried out

Different simulations have been carried out, both by OCECAs and by the INE.

Simulations carried out by OCECAs have consisted of calculating balances (in one case, the indices directly) that would be obtained dependent on two criteria: the one for the Autonomous Community (generally with weighting and elevation) and the TANKAN (without weighting or elevation).

From the graphical representation of the performance of the variables, it can be seen that their trend is the same, whether weighted or not, and this does not detract from their significance.

The Workgroup considered that empirical checks carried out more than adequately supported the use of TANKAN methodology.

The INE has carried out similar simulations, but only relating to several quarters, and as with previous cases, the justification they provide for using TANKAN is considered more than sufficient.

Technical and theoretical justifications:

This section is fundamental since, until now, the simulation carried out have made it possible to ensure the validity of the TANKAN methodology *in specific opinion polls and in some specific periods*, whereby it could not be clearly stated that the same would be occur in other periods or in another type of survey (always opinion polls).

The following analysis demonstrates that said validity *stems from the sample*, in other words, it is not dependent on specific responses obtained in a particular period.

This enables us to place trust in the procedure regarding the future. It is included in full in the following section.

Direct argument regarding the sample. Measuring the difference.

The purpose is to present a methodological approximation of the differences between balances calculated by the two methodologies subject to debate. The correct hypothesis that this difference is irrelevant (working document "**Justification**") resulted in a commitment for it to be studied and evaluated by the components of the Autonomous Communities Work Group with a wealth of experience in compiling these indicators, whereas the INE could only ascertain this for data already collected for the first two quarters . The good, encouraging results obtained force us to develop theoretical aspects that vouch for, and confirm the results obtained. Always on the two lines of work defined; the empirical check and theoretical development, marking the strategies to follow in order to obtain a methodology on which there is widespread consensus.

We know that, included in the composition of the indicator, are the balances calculated for each opinion asked for, which we define as a difference between positive and negative opinion. These balances are the focus of our study. The questions forming part of the index as well as its calculation formula (geometric average, moving away from its seasonal nature, etc.) is dealt with in another section.

We will concentrate on calculating the balances and the two methodologies that have been put forward.

We will note each question regarding opinion (employment, investment, production etc.) with *r* (response) and take the values **1** if favourable, positive or it increased or will increase, **0** for a same or no change in opinion response, and **-1** as the value for a negative opinion, or where one's opinion has gone down or will go down.

The sample has been designed to guarantee estimates at an Autonomous Community and national level by Activity Sector (5 sectors) and by establish-

ment size (5 sizes). Notation in the subindices is: **r** = region; **s** = sector and **j** = size and **k** for each establishment.

Definitions

BALANCE.

We define balance **s** as the difference between positive and negative responses in a specific scope or set of questions. We have:

$S_k = r_k$, for a specific establishment, its opinion response **r** takes the values 1, 0, -1.

$S_a = \sum_{ak} r_{ak}$ This is the total balance of all the opinion responses for scope **a** that goes through set $\{r, s, j\}$, which is the maximum for sample selection. Although it has now been established that the estimate is only valid for **r** (region) **s** (sector) **j** (size).

ELEVATION FACTORS

From the CCD framework of the survey they are defined as:

E is employment **N** is the number of establishments in the population.

e is employment, and **n** the number of establishments in the sample.

$f_{rsj} = \frac{E_{rsj}}{e_{rsj}}$ Is the elevation factor by employment

$l_{rsj} = \frac{N_{rsj}}{n_{rsj}}$ Is the elevation factor by number of establishments

It makes no difference to our study whether one elevation factor or the other is used in the methodology, where the factor is used for elevating the results. Obviously, the elevation factor is constant within each sample stratum, in other words if **k** is the index that goes through scope **rsj** (sample stratum), then the elevation factor for establishment **k** is f_{rsj} which we can denote by means of

$f_{rsjk} = f_{rsj}$. Which we can express $f_{rsjk} = \frac{E_{rsj}}{e_{rsj}}$ as when **k** goes through scope **rsj**

Sample design

The sample is stratified according to the number of workers in the establishment considering the following strata: **Autonomous Communities; Activity sector** and **Establishment size**. The sample size is $n=7688$ units.

Autonomous Community establishments have been included in the design due to the weight they carry within the population group.

Methodologies

a) Elevated and weighted balance (SFT)

We define **SFT** as the balance as so much per one where each response is weighted by the number of workers that the establishment has in directory e_{rsjk} and elevated by elevation factor f_{rsjk} . We make the calculation on the total for sample n .

$$STF = \frac{\sum_{rsjk} f_{rsjk} * e_{rsjk} * r_{rsjk}}{\sum_{rsjk} f_{rsjk} * e_{rsjk}} = \frac{\sum_{rsjk}^{17,5,5,n_{rsj}} f_{rsj} * e_{rsjk} * r_{rsjk}}{\sum_{rsj} \frac{E_{rsj}}{e_{rsj}} \sum_k^{n_{rsj}} e_{rsjk}} = \sum_{rsjk}^{17,5,5,n_{rsj}} \frac{E_{rsj}}{e_{rsj}} * \frac{e_{rsjk}}{E} * r_{rsjk}$$

b) Unelevated and unweighted balance (STK, Takan method).

STK or Takan (used in Japan), defined as the simple unweighted and unelevated balance, is the proportion of the balance of responses sobre el número de respuestas totales. The denominator is the total number of units in sample n that have answered.

c) Measuring the difference.

We calculate the difference between both balances **STF-STK** for the total for sample n . This value provides the difference in **measurement**.

$$STF - STK = \sum_{rsjk}^{17,5,5,n_{rsj}} \left(\frac{E_{rsj}}{e_{rsj}} * \frac{e_{rsjk}}{E} - \frac{1}{n} \right) * r_{rsjk} = \sum_{rsjk}^{17,5,5,n_{rsj}} dif_{rsjk} * r_{rsjk}$$

Where each response r is affected by the factor in the parentheses that we define as **dif**, which depends exclusively on the survey framework (CCD) data on the date of its creation or most recent update. The difference between both calculation methods is close to zero if **dif** is zero or close to zero for each k .

$$STK = \frac{\sum_{rsjk}^{17,5,5,n_{rsj}} r_{rsjk}}{\sum_{rsjk}^{17,5,5,n_{rsj}} 1} = \frac{\sum_{rsjk}^{17,5,5,n_{rsj}} r_{rsjk}}{n} = \sum_{rsjk}^{17,5,5,n_{rsj}} \frac{1}{n} * r_{rsjk}$$

We can infer from the sample selection mechanism itself that **dif** is close to zero. Each time the sample is set up, there is associated with it a **dif_{r,sjk}** coefficient that we have calculated for each unit. Regardless of the analyses that may be carried out on **dif** such as distribution, we study its main features on two provisos:

They have also been calculated for the territorial stratification criteria and results will be presented in the annex.

[1] For the **total number of sample units** (7,687 establishments) **dif** is close to zero.

Variable de análisis: dif: Diferencias entre ponderado-elevado y Tankan					
N	Suma	Media	Dev tip	Mínimo	Máximo
7.687	0,1912	0	0,0002	-0,0001	0,0025

The sum is theoretically zero, since it is the difference in weightings.

The hypothesis that the difference between both methods is zero and that, therefore, the two balance calculation methods give the same aggregate balance is borne out. The simplicity of the Tankan method as compared with the SFT means that it has to be considered.

d) Simulations.

Simulations are the calculation of balances by both methods and the difference between them for each specific quarter by using the effective sample. They are calculated with real sample data, and are the empirical approximation of the calculation of the difference in the three survey quarters. In this case m is the effective sample size for each quarter, to which the sum and not n size of the theoretical sample, which we have used for calculating the measurement of the differences, extends. The difference factor dif_m depends on the effective response, therefore the simulations regarding the responses obtained in each quarter r_{rsjk} are carried out. The difference is expressed as:

$$(STF - STK)_m = \sum_{rsjk}^{17,5,5,m_{rsj}} \left(\frac{E_{rsj}}{e_{rsj}} * \frac{e_{rsjk}}{T} - \frac{1}{m} \right) * r_{rsjk} = \sum_{rsjk}^{17,5,5,m_{rsj}} dif_{rsjk} * r_{rsjk}$$

That it depends on m and where T is the total number of workers calculated over m , that is:

When m is closer to n T will be closer to E . Factor dif_m depends on the size of response m in each survey in the simulations.

$$T = \sum_{rsjk}^{17,5,5,m_{rsj}} \frac{E_{rsj}}{e_{rsj}} * e_{rsjk}$$

This expression is the calculation of employment T depending on the effective response m .

The simulations have been calculated for the three main variables researched in the survey, and which comprise the general index in the majority of statistics in progressed: **Turnover, Employment and Investment**, for both the concepts of **situation** and those of **expectations**. The following table contains these calculations where we observe that the difference fluctuates between -0.015 and +0.019 for both groups studied; total number of units included with self-employed workers and establishments excluding self-employed workers, as well as for all variables.

The theoretical approaches for section A) are confirmed for the three quarters. Even taking into account that the response rate, in other words the difference between m and n , as a percentage, has been 65%, 72% and 70% for each quarter, respectively.

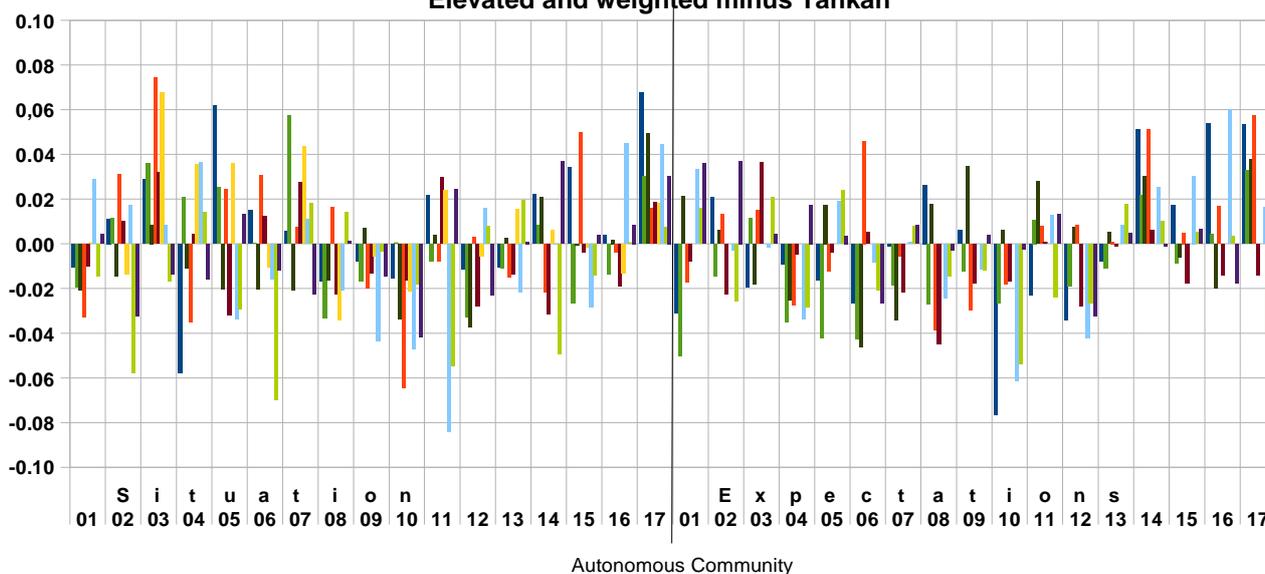
Differences in balance between elevated/weighted by employment and unelevated/unweighted (Tankan)
Total number of sample units including self-employed workers

Balances	Situation			Expectations		
	Turnover	Employment	Investment	Turnover	Employment	Investment
First quarter of 2011						
Elevated/weighted	-0.1241	-0.1335	-0.1443	-0.2692	-0.1851	-0.2131
Without	-0.1543	-0.1347	-0.1634	-0.2848	-0.1724	-0.2167
Difference	0.0303	0.0012	0.0191	0.0156	-0.0127	0.0036
Second quarter of 2011						
Elevated/weighted	-0.3103	-0.1493	-0.1859	-0.0374	-0.0879	-0.1394
Without	-0.3207	-0.1421	-0.1940	-0.0480	-0.0827	-0.1410
Difference	0.0103	-0.0073	0.0081	0.0105	-0.0052	0.0015
Third quarter of 2011						
Elevated/weighted	-0.1612	-0.0919	-0.1419	-0.1485	-0.1188	-0.1752
Without	-0.1631	-0.0848	-0.1474	-0.1481	-0.1108	-0.1674
Difference	0.0020	-0.0071	0.0055	-0.0004	-0.0080	-0.0077

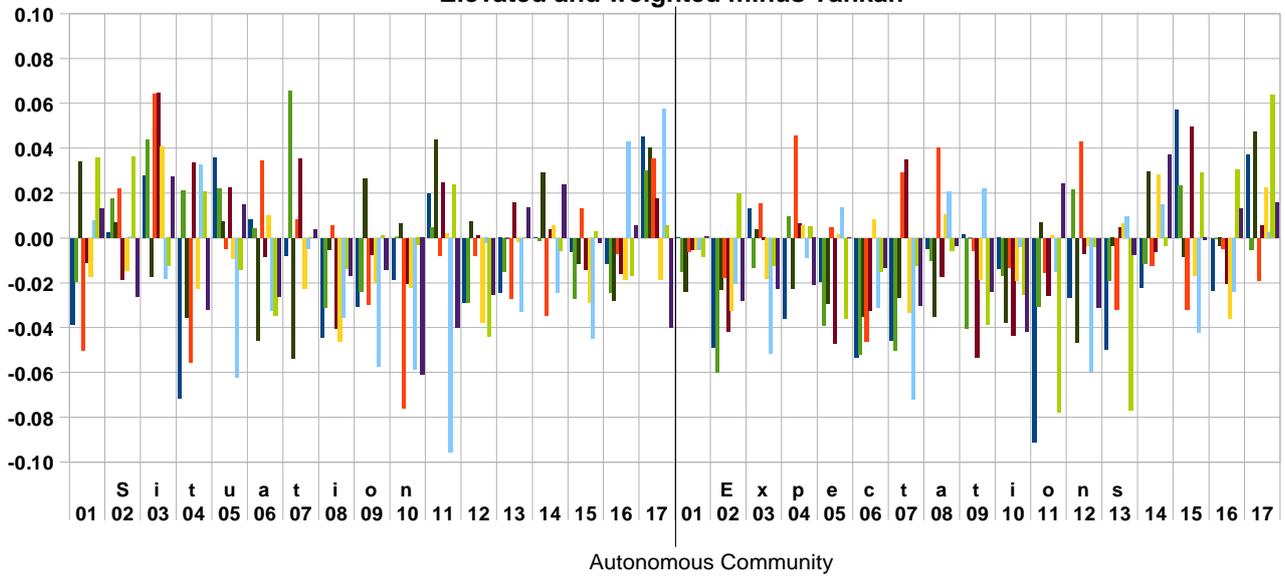
The following graphs display the differences in balance calculated by both methods by Autonomous Community for the data for the first three quarters. For the total number of units included, those of establishments with self-employed workers and for the group of establishments excluding self-employed workers and for the variables collected in the study (Turnover, Employment and Investment).

Each Autonomous Community ranking includes the nine corresponding values, the three variables and the three quarters. Differentiating the concept of Situation (left) and Expectations (right).

Differences by Autonomous Community
Total number of sample units including self-employed workers
Elevated and weighted minus Tankan



Differences by Autonomous Community
United with wage earners excluding self-employed workers
Elevated and weighted minus Takan



Collection and treatment of the information

COLLECTION

The periodicity of the survey is quarterly, with a collection of approximately 3 weeks, starting the 15th of the last day of each quarter.

The survey on which the Business Confidence Indicators are based, due to the simplicity of the questionnaire, the short data collection period and the immediate nature of their publication, leads to the online collection method being adequate for survey purposes.

TREATMENT

Single processing of the information received in the adequate file.

The department promoting the survey takes care of information treatment phases, and creation of final data files.

Publication of results

Publication will be during the first few calendar days of each quarter.

Therefore, at the beginning of each calendar quarter, both the **situation** relative to last quarter, and the **expectations** of next quarter would be published, along with the **Harmonised Business Confidence Indicator**.

The dissemination calendar set for 2012 (in which only data on a national level will be disseminated) is as follows:

Tuesday 10 April

Tuesday 10 July

Tuesday 9 October

For 2013, where data will already be disseminated by Autonomous Community and the Autonomous Community samples desired may be integrated, an effort should be made to coordinate drafting of a joint dissemination calendar among all those involved in the project, always in line with that agreed with OCECAs and CSCC, in the sense of attempting to disseminate the results during the first few days of the corresponding quarter.

This publication will be available on the National Statistics Institute website.