Producing organisation: INSEE

- Read the “Informations Rapides” related to this indicator.

Warning

Past indices have been stopped, but, as for any rebasing, INSEE systematically proposes a “corresponding series” in front of each “stopped series”, with following rules:

- Before rebasing, i.e. until September 2014 included, the “stopped series” is directly accessible and is authoritative;
- After rebasing, i.e. since October 2014 included, stopped series can be extended this way: the “corresponding series” has to be multiplied by the connecting coefficient, then the obtained product rounded with one decimal.

Introduction

The “BT” building indices are production cost indices of different activities in the construction sector: group “41.2 - Construction of residential and non-residential buildings” and most branches of division “43 - Specialised construction activities”. These indices are mainly used for contract escalation. From 1975 to 2013, these indices were published and calculated by the department of economy, evaluation, and integration of sustainable development in the Ministry of Ecology, Sustainable Development and Energy. In 2014, these tasks were transferred to INSEE, temporarily keeping the same general methodology, weightings and reference year. In the same way as for all short-term indicators produced by INSEE, a change of base - which updates all methodological aspects - takes place every 5 years. Thus, from January 2015 onwards, the building indices are published in base year 2010, with indices of October 2014 as first definitive indices available in base 2010 only. In order to use the new indices (in base 2010) in existing contracts that make reference to the old indices, which were stopped in September 2014, users can refer to the correspondance table (Note methodologique-Correspondance entre les nouveaux et les anciens index BT-pdf) that contains connecting coefficients for each index.

Goals

These indices allow businesses, local authorities and public organisations to escalate contracts. Businesses and local authorities can use these official indices for construction work bids, by selecting the activity that is closest to the subject of their bid. These “indices” consist of parametric formulae representing changes in costs for different inputs, as recommended in the “Prices in public procurement” guide (pdf, in French only) published by the legal department of the Ministry of Economy and Finances in April 2013 (version 1.1). However, other better adapted parametric formulae are also permissible, as well as using the “equipment” (structural or finishing works), “miscellaneous costs” and “transport” headings published under “various indices in the construction industry”.

Legal basis

Decree N° 2014-114 of February 7, 2014 and the circular of May 16, 2014 relative to “BT” building indices, civil engineering indices (TP) and various construction indices transferred the responsibility of these indices from the Ministry of Ecology, Sustainable Development and Energy to INSEE.

Scope and list of BT indices

Even though the BT indices were not originally coordinated with the NAF 2008, they are calculated by branches of the group 41.2 and division 43, and their articulation with the official classification NAF 2008 can be summed up as follows:

NAF / CPF 2008, rev. 2	Building index	
41.20	BT01	(construction of new buildings) all trades works
43 (part)	BT50	All trades maintenance (in second-hand buildings)
43.12A (part)	BT02	Earthworks
43.21A	BT47	Electricity
43.22A	BT38	Sanitary plumbing (including apparatus)
43.22B	BT40	Central heating (excluding electrical heating)
	BT41	Ventilation and air conditioning
43.29B (part)	BT48	Elevators
43.31Z	BT08	Plaster and prefabricated plaster
43.32A	BT18a	Interior joinery
	BT19b	Exterior joinery
	BT26	Plastic bay closing works including PVC window
	BT51	PVC joinery
	BT54	Wood framework
43.32B	BT27	Aluminum bay window closing works
	BT28	Ferrous metals bay closing works
	BT42	Joinery of steel and locksmiths
	BT43	Aluminum alloy joinery
43.33Z	BT09	Ceramic coatings and tiles
	BT14	Coatings in cut natural stone plate and similar products
	BT10	Plastic coatings
	BT11	Synthetic textile coatings
	BT12	Natural textile coatings
43.34Z	BT45	Glazing works - Mirror works
	BT46	Painting, wall hanging, wall coverings
43.91A	BT16b	Wood frame
43.91B	BT30	Schist slates roofing
	BT32	Baked clay tiles roofing

	BT33	Concrete tiles roofing
	BT34	Zinc and metal roofing (except copper)
	BT35	Asphalt shingles roofing
43.99A	BT49	Ribbed sheet steel roofing and cladding with waterproofing membrane
	BT52	Exterior waterproofing coatings
	BT53	Waterproofing works
25.11Z + 43.99B	BT07	Framework and metal frames
43.99C	BT03	Masonry and concrete pipes (except frame, reinforced concrete, tiling, coatings and plastering)
	BT06	Framework, reinforced concrete structures

Technical characteristics

Methodology

The “BT” building indices are costs indices, which are derived from 6 line-items in an analytical accounting process similar to the “KLEMS” approach used by economists in relation to productivity (where *K = capital* for “assets”, *L = labour, E = energy, M = materials, S = services* for “miscellaneous costs”, here the *T was added for T= transport*).
The articulation between the items in the indices and the lines in the general accounting plan are as follows, considering that the item “transport” has been given priority over all the other items, subcontracting has been removed from production, the heading “miscellaneous costs” has been capped, and only costs that can be linked to a specific construction site are assumed to be taken into account:

Items	**General financial accounting**	
K Capital	605	Purchase of capital assets, equipment and work
	606 \ 6061	Purchases not stored (small items)
	612 \ partial	Leasing excluding transport equipment
	6131 \ partial	Equipment hire excluding transport equipment
	615 \ partial	Maintenance and repairs excluding transport equipment
	68 \ partial	Depreciation and amortisation of fixed assets excluding transport equipment
L Labour	604	Purchases of services
	621	Temporary staff
	6311	Payroll tax
	64	Personnel expenses
E Energy	60221 \ partial	Combustibles excluding fuels
	6061	Non-stockable supplies (water, energy, electricity)
M Materials	601	Stored purchases
	602 \ 60221	Other supplies
	609	Rebates and allowances on purchases
S Services	61	External services minus 611 “general subcontracting”, minus 612 “leasing”, minus 6131 “Equipment hire”, minus 615 “maintenance and repairs”, minus 6163 “transport insurance”

	622	Remuneration of intermediaries and professional fees
	623	Advertising, public relations
	625	Travel and entertaining
	626	Postal and telecommunication charges
	68 \ partial	Depreciation and amortisation of fixed assets
T Transport	60221 \ partial	Fuel
	Part du 612	Leasing transport equipment
	Part du 6135	Hire of trucks without drivers
	Part du 6155	Maintenance and repair of transport equipment
	6163	Transport insurance
	624	Transport of goods and employee transport
	68 \ partial	Depreciation and amortisation of transport equipment

The weighting of each item in each index is determined by the account analysis of the involved businesses (or the involved construction works).
Similarly, each item is broken up into basic indices (of cost or price) derived from public statistics, with a weighting.
The weightings of the items and basic indices are normally fixed for the duration of the base. However, considering the adopted calculation formula, the modification of these parameters throughout the duration of the base would only affect the changes starting from a certain date.

Aggregation and reference

The BT indices base 2010 are Laspeyres-chained indices in reference year 2010. The items are obtained by the aggregation of the elementary indices:

$$P(t) = P(t-1) * \frac{\sum_j weights(j,p) * J(t)}{\sum_j weights(j,p) * J(t-1)}$$

where p is the item, j the elementary index.

Then the indexes are obtained by the aggregation of the items:

$$I_i(t) = I_i(t-1) * \frac{\sum_p weights(p,i) * P(t)}{\sum_p weights(p,i) * P(t-1)}$$

where i is the index, p the item.

Weightings

The table below gives the weightings by “KLEMST” item for each bulding index: the different indices, and the weightings by index for the BT01 (the BT01 index is the weighted mean of all the other BT indexes ; the coefficients are in the left column of the table):

Weightings (in %)

Weightings of base 2010 Building indices by items

Weighting in BT01	Weighting in BT50	Building index		Item						Total
				K Capital	L Labour	E Energy	M Materials	S Services	T Transport	
		BT01	(construction of new buildings) all trades works	5.9	44.9	1.0	36.5	9.3	2.4	100.0
2.3	2.3	BT02	Earthworks	27.0	25.0	15.0	13.0	15.0	5.0	100.0
21.0	3.6	BT03	Masonry and concrete pipes (except frame, reinforced concrete, tiling, coatings and plastering)	6.0	52.0	1.0	28.0	10.0	3.0	100.0
21.0	3.6	BT06	Framework, reinforced concrete structures	11.0	46.0	1.0	33.0	7.0	2.0	100.0
0.7	1.2	BT07	Framework and metal frames	6.0	40.0	2.0	43.0	7.0	2.0	100.0
7.5	1.0	BT08	Plaster and prefabricated plaster	3.0	53.0	1.0	30.0	11.0	2.0	100.0
1.4	0.4	BT09	Ceramic coatings and tiles	3.0	52.0	1.0	32.0	9.0	3.0	100.0
1.4	0.4	BT10	Plastic coatings	4.0	30.0		56.0	7.0	3.0	100.0
1.4	0.4	BT11	Synthetic textile coatings	4.0	24.0		63.0	7.0	2.0	100.0
1.4	0.4	BT12	Natural textile coatings	5.0	16.0		68.0	8.0	3.0	100.0
1.4	0.4	BT14	Coatings in cut natural stone plate and similar products	1.0	45.0		40.0	10.0	4.0	100.0
5.6	1.6	BT16b	Wood frame	7.0	38.0	1.0	40.0	11.0	3.0	100.0
0.5	3.1	BT18a	Interior joinery	7.0	44.0	1.0	35.0	12.0	1.0	100.0
0.5	3.1	BT19b	Exterior joinery	7.0	37.0	2.0	37.0	15.0	2.0	100.0
0.5	3.1	BT26	Plastic bay closing works including PVC window	3.0	41.0		47.0	7.0	2.0	100.0
2.2	1.0	BT27	Aluminum bay window closing works	4.0	38.0		48.0	8.0	2.0	100.0
2.2	1.0	BT28	Ferrous metals bay closing	4.0	43.0		43.0	8.0	2.0	100.0

			works							
0.6	1.0	BT30	Schist slates roofing	4.0	49.0		38.0	6.0	3.0	100.0
0.6	1.0	BT32	Baked clay tiles roofing	4.0	49.0		38.0	6.0	3.0	100.0
0.6	1.0	BT33	Concrete tiles roofing	4.0	49.0		38.0	6.0	3.0	100.0
0.6	1.0	BT34	Zinc and metal roofing (except copper)	4.0	49.0		38.0	6.0	3.0	100.0
0.6	1.0	BT35	Asphalt shingles roofing	4.0	49.0		38.0	6.0	3.0	100.0
3.0	8.9	BT38	Sanitary plumbing (including apparatus)	3.0	50.0	1.0	40.0	5.0	1.0	100.0
0.7	4.7	BT40	Central heating (excluding electrical heating)	3.0	46.0		41.0	8.0	2.0	100.0
0.7	4.7	BT41	Ventilation and air conditioning	3.0	41.0		46.0	8.0	2.0	100.0
2.2	1.0	BT42	Joinery of steel and locksmiths	3.0	45.0	2.0	44.0	3.0	3.0	100.0
2.2	1.0	BT43	Aluminum alloy joinery	5.0	42.0		43.0	7.0	3.0	100.0
0.2	6.3	BT45	Glazing works - Mirror works	4.0	37.0		45.0	10.0	4.0	100.0
0.2	6.3	BT46	Painting, wall hanging, wall coverings	3.0	58.0		27.0	12.0		100.0
		BT47	Electricity	2.0	41.0		42.0	13.0	2.0	100.0
0.7	4.7	BT48	Elevators	3.0	60.0		25.0	10.0	2.0	100.0
0.4	1.0	BT49	Ribbed sheet steel roofing and cladding with waterproofing membrane	5.0	35.0	3.0	41.0	12.0	4.0	100.0
		BT50	All trades maintenance (in second-hand buildings	4.1	58.7	0.8	24.6	9.7	2.1	100.0
0.5	3.1	BT51	PVC joinery	2.0	27.0		62.0	7.0	2.0	100.0
0.4	1.0	BT52	Exterior waterproofing coatings	3.0	54.0	3.0	34.0	3.0	3.0	100.0

0.4	1.0	BT53	Waterproofing works	1.0	36.0	1.0	51.0	10.0	1.0	100.0
0.5	3.1	BT54	Wood framework	6.0	36.0	2.0	44.0	10.0	2.0	100.0

As it was not possible to directly determine the costs of the BT01 and BT50 “all trades” indices, their weightings were estimated as a weighted mean of the specialized indices. The weightings used for that purpose (presented in the first two columns of the above table) are sourced from ESANE by sub-class of activity, using the information from the ESA survey in the construction sector on the relative part of the works in the construction of new buildings (for the BT01) and second-hand buildings (for the BT50). The weighting by specialised index is derived from this weighting by sub-class of activity and according to the articulation table (see above) between sub-classes of activity and BT indices (but there is no source available on the relative weighting of an index in a subclass of activity). However, as maintenance works are more intensive in the use of labour and less so in the use of materials, and as the specialised indices are estimated from the construction of new buildings, a transfer of 15 points was done between the “Materials” and “Labour” items for the BT50 index derived from the weighted mean of the specialized indices.

1. **The “Materials” item** is estimated following two different methods. For the BT01, BT02, BT03, BT06, BT07 and BT50 indices, it is estimated from the equipment item of building structural works indices (MATBTGO) which are part of the Various indices for Construction. For the other BT indices, it is estimated from the equipment item of building finishing works indices (MATBTSO) which are also part of the Various indices for Construction.
   See pdf file: Note methodologique-Poste materiel des index BT et TP base 2010.
2. **The “Labour” item** is made of the hourly labour cost index in the construction sector, produced by INSEE, with a lag of 3 months.
3. **The “Energy” item** is made of the consumer price index for diesel oil.
4. The definition of **the “Materials” item** is specific to each index. The table below gives the weightings of the different elementary indices in the “Materials” item for each index.
   See pdf file: Note methodologique-Structure du poste materiaux des index BT base2010.
5. **The “Services”** item is the “Miscellaneous costs” (FD) index from the Various indices for Construction.
   See pdf file: Note methodologique-Composition index frais divers des index BT et TP.
6. **The “Transport”** item is the “Road transport item of Buildings indices” (TRBT) index from the Various indices for Construction.

Sources of information

- The item “wages and charges” is generally made up from the hourly labour cost index in the construction sector, produced by INSEE, with a lag of 3 months.
- The elementary indices for the other items are made up for the most part from

producer price indices, and in particular the Producer price indices of French industry for the French market (base 2010) - Purchaser's price for contract escalation, produced by INSEE.

- All the other indices are derived from public statistics.

Statistical units

There is no specific survey for the BT indices ; they use existing public statistics, and especially the OPISE survey, to make up the elementary indices. Conceptually, the unit observed in relation to costs is a branch, or a sub-branch, of activity in French construction companies.

Frequency of the operation

Monthly.

Dissemination

The BT indices are disseminated around the 15th of the third month following the month under review (m+75), on the Macro-economic database (BDM) website page, under the topic Prices and price indices, heading “Producer price or cost indices and import price indices”, sub-headings “Construction” then “Building (BT) indices”. They are also published in the *Journal Officiel*.

Rules for connection between the old and the new “BT” building indices

Producer cost indices for construction of October 2014, which have been published on 15th of January 2015, have shifted at same time to base 2010. Past “BT” building indices have then be stopped, but, as for any rebasing, INSEE systematically proposes a “corresponding series” in front of each “stopped series”, with following rules:

- Before rebasing, i.e. until September 2014 included, the “stopped series” is directly accessible and is authoritative;
- After rebasing, i.e. since October 2014 included, stopped series can be extended this way:
  the “corresponding series” has to be multiplied by the connecting coefficient, then the obtained product rounded with one decimal.

As Direction des Affaires Juridiques des ministères économiques et financiers, reminds it in a questions and answers (pdf, in French only) dedicated to this rebasing of Producer cost indices for construction:

Il n'est pas nécessaire de rédiger un avenant pour prolonger une ancienne série par une série correspondante (nouvelle) et un coefficient de raccordement publiés par l'Insee quand la série correspondante est unique : l'information du comptable suffit. En revanche, quand plusieurs séries correspondantes sont proposées, le choix de la série correspondante doit faire l'objet d'un avenant, sauf si en raison de l'objet même du marché, l'index nouveau

s'impose à l'évidence et dans la mesure où le libellé de l'index (notamment son numéro de référence BTxx ou TPxx) n'est pas substantiellement modifié. Si l'objet du marché justifie l'utilisation de plus d'un index dans la nouvelle série par rapport à la série ancienne, un avenant est également nécessaire.

More details, see: Note methodologique-Correspondance entre les nouveaux et les anciens index BT (pdf).