

Rebasing the Input Price Index of building costs of new dwellings, 2005= 100

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Explanation of symbols

.	= data not available
*	= provisional figure
x	= publication prohibited (confidential figure)
–	= nil or less than half of unit concerned
–	= (between two figures) inclusive
0 (0,0)	= less than half of unit concerned
blank	= not applicable
2007–2008	= 2007 to 2008 inclusive
2007/2008	= average of 2007 up to and including 2008
2007/'08	= crop year, financial year, school year etc. beginning in 2007 and ending in 2008
2005/'06–2007/'08	= crop year, financial year, etc. 2005/'06 to 2007/'08 inclusive

Due to rounding, some totals may not correspond with the sum of the separate figures.

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1. Foreword

Statistics Netherlands calculates the monthly input index of building costs for new dwellings in order to monitor changes in the price level of new dwellings in the Netherlands. From January 2009 onwards the input index is published with 2005 as the new base year. The new series will be calculated ex post from January 2005 onwards. Changes in the weights due to price developments and stricter regulations resulted in differences between the development of the old (2000=100) and the new (2005=100) indices. Also the new product classification may cause differences between the indices. This paper deals with the changes made in the rebasing process and the differences between the index series based on 2000=100 and the index series with base year 2005. The second section briefly describes how the input index was calculated on the basis 2000=100. Next, the changes made in the base shift to 2005=100 are discussed, as well as the effect on the input index numbers. Finally there is advice on how to link the old and new series.

2. Input index for building costs of new dwellings

An input price index is calculated on the basis of the price changes in the various cost components of the final product – in this case a new dwelling. The main cost components in the construction of a new dwelling are wages and materials. Other cost components such as energy and transport are not taken into account because their influence on the final cost price is relatively modest. Land costs are also not included in the index. This means that the input index has a wage and a materials component. In the old setup these components were calculated as follows.

2.1 *The wage component*

The wage component represents the cost development of wages in the building industry. The wage index is based on the development of the statistics on contractual wage costs 'Contractuele Loonkosten' (CLK,) in construction. This is a monthly statistic representing the wage costs as established in the collective wage negotiations (CAO). The CLK statistics use a wage cost concept that fits well with the concept of an input price index, because the employer share of the wage costs are included and because quality changes such as changes in personnel structure do not play a role.

2.2 *The materials component*

The materials component represents the price changes in certain product groups used to build a dwelling. Calculation is based on cost reviews of a total of 8 construction projects of representative dwellings. Each project represents one of four dwelling types (apartments owner-occupied or rented, and houses owner-occupied or rented). Measuring the price changes requires information about the building materials and about the cost ratios (prices and quantities) of the materials. This leads to a weighting scheme with weights per product group. We calculate a weighted index for the materials component per reference project with the weighting scheme and producer price indices (PPI) belonging to the product groups. Next, the project prices indices are weighted to one materials index. The weights derive from the statistic on newly completed dwellings.

2.3 *Total*

The materials and wage components are averaged with weights into a single input index. The ratio of the two components is derived from the production statistics of the construction industry 1999, price updated to 2000.

In the publication we provide not only the input index total but also the separate indices of the materials and wage components.

3. Changes in the input index

Three changes were introduced with the rebasing of the input index. These are discussed below. The last change – updating the weighting scheme – is standard practice in a rebasing.

3.1 New product classification

The price information of the materials components are derived from the producer price indices (PPI). As of 2009 these statistics are rebased to 2005=100. The figures are also calculated according to the new product classification Prodcom 2008 and new weighting scheme. The new Prodcom classification has linked materials resulting in different product groups and different price components. Also, calculating the PPI is carried out at a higher aggregation level. This can cause price changes in less homogeneous product groups.

3.2 New statistical code

The old price indices were based on the price developments of domestic production or imports. The choice between the two depends on the main value of the produced/imported products. Material prices of the material consumed in the Netherlands form the starting point of the new series. The figures are composed of domestically produced and imported products.

3.3 New weighting

There are three areas in the input index where weights were adjusted. The first one is the ratios of the materials used which leads to a new weighting scheme for the materials component. The second is that the ratio between the wage and the materials component is recalculated. The third is that the weights per type of dwellings are adjusted.

At Statistics Netherlands we made a weighting scheme for base year 2000 on the basis of cost reviews of a total of 8 construction projects carried out in the year 2000. Each project represents one of four dwelling types (owner-occupied or rented apartments, and owner-occupied or rented houses), divided across three regions in the Netherlands (West, Central-South, and North-East). For the Central-South region we only observed newly completed dwellings for the buyers market and for the North-East region only the newly completed dwellings for rent. This is because it is assumed that rental homes in North-East are representative for those in Central-South and the houses for sale in Central-South for those in North-East.

Table 1
Ratio labour- and materials component per region and type of dwelling

	Wage	Material
	%	
Region North-East ¹⁾ and Central-South ²⁾		
single-family dwelling		
rented	36.7	63.3
owner-occupied	36.4	63.6
apartment		
rented	34.9	65.1
owner-occupied	38.2	61.8
Region West ³⁾		
single-family dwelling		
rented	38.9	61.1
owner-occupied	38.7	61.3
apartment		
rented	35.8	64.2
owner-occupied	35.3	64.7

¹⁾ Region North-East: Groningen, Friesland, Drenthe, Overijssel en Flevoland.

²⁾ Region Central-South: Gelderland, Utrecht, Noord-Brabant en Limburg.

³⁾ Region West: Noord-Holland, Zuid-Holland en Zeeland.

On inquiry it turned out that these projects are still representative for the dwellings built in 2008 provided that the projects meet current legislation. That's why the projects are adapted to the current building regulations laid down in the *Bouwbesluit* and materials used. The prices are also updated to the price level of 2008. These alterations meant changes in the ratios between the materials which led to a weighting scheme per product group (see appendix). We will discuss the consequences of these changes for the input index in the next paragraph.

The ratio of the wage and materials components is determined in terms of the project estimate. In these detailed estimates the labour costs are reported separately whereas the factor labour could be calculated (see table 1).

The ratios of the 8 reference projects are also adjusted. The share of these projects is calculated based on the number of new dwellings finished in 2008 per region, type of dwelling and kind of ownership for which a reference project is chosen, and that are reported to the Statistics Netherlands (for the statistics on newly completed dwellings). These shares are shown in table 2.

Table 2
Share type of dwelling per region

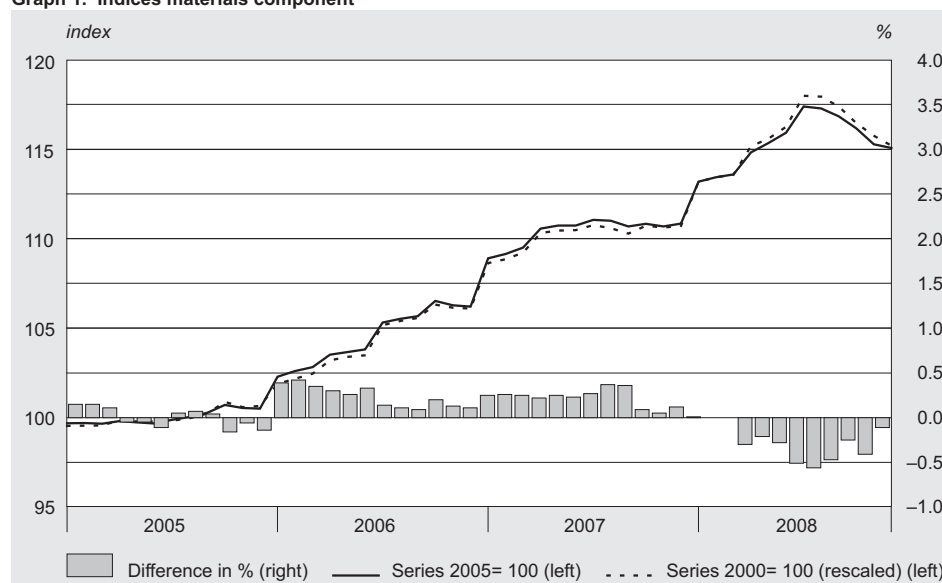
Region	Rented house		Owner-occupied house		Total
	single-family	apartment	single-family	apartment	
	%				
Netherlands	10.2	19.9	50.8	19.1	100.0
North-East	2.7	3.8	11.8	2.7	21.0
Central-South	4.1	7.4	20.8	7.2	39.5
West	3.4	8.8	18.1	9.3	39.5

N.B. Detailed items in tables do not necessarily add to totals due to rounding.

4. Results

The changes mentioned in section 3 lead to differences between the input price index based on 2005= 100 and the old base year 2000. In this section we explain the differences, starting with the results for the materials component. Then we will look at the total input index. The old series based on 2000= 100 are all rescaled in such a way that 2005= 100.

Graph 1. Indices materials component



4.1 Materials component

Graph 1 shows the price index of the materials component on the old and new basis. Also the differences in terms of percentage between the old and new index are represented.

The price index of the materials component on the old basis starts virtually the same as the new index based on 2005= 100. The two series start to diverge in 2006, where the index with the new base is slightly higher than the old index until 2008 and is then somewhat lower. The differences between the two indices never exceed 0.6 percent.

The main explanation for the difference is the updated materials package, new product classification and new statistic code. Because some materials are combined in a new Prodcod the price developments differ so that the material index changes as a result. On average the difference between the old and new indices over the period 2005–2008 is 0.1 percent.

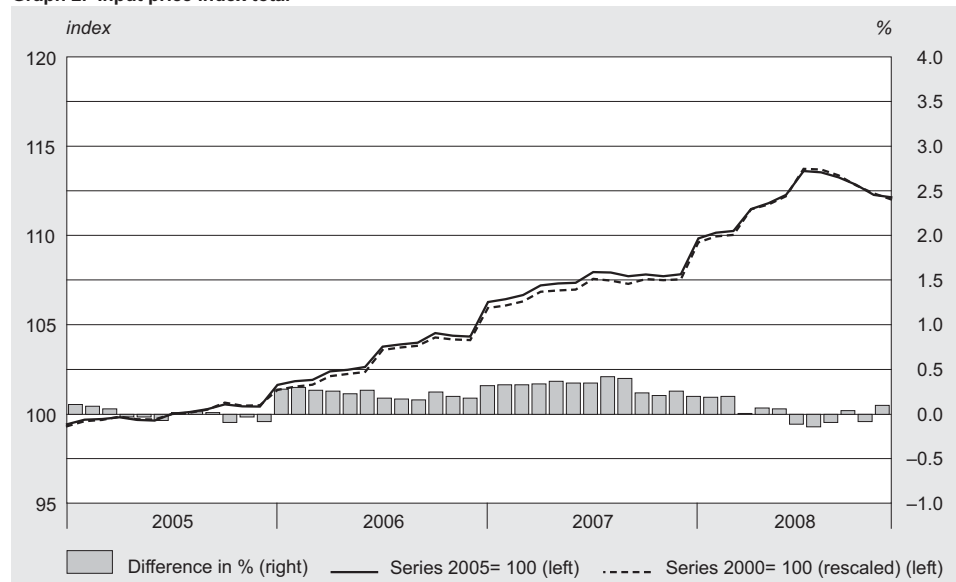
4.2 Wage component

Like the old base 2000 the new index 2005= 100 is based on the contractual wage costs. Therefore this component remains unchanged. The series are only rescaled to 2005= 100.

4.3 Total

Graph 2 shows the old and the new series of the total input price index total. In the first year (2005) this new index also stayed close to the old index. After 2005, with the exception of the second half of 2008, the new index was higher than the old one. Because the wage component remained unchanged the differences can be explained by the adjusted weights of materials and wage of the individual projects and the new weights of the projects themselves. The maximum difference between the two indices also averages 0.1 percent.

Graph 2. Input price index total



4.4 Switching from reference year 2000= 100 to 2005= 100

At the same time as the publication of the new figure for December 2008 the figures for the series 2000= 100 were revised one last time based on the most recent producer price indices and the wage rates. After this, the old series is declared definitive and more recent figures can only be found in the series 2005= 100.

Users have several options to use the results of the input price index of new dwellings for indexation purposes. Statistics Netherlands has the following advice:

- The calculation of price changes in a period starting in or after January 2000 and ending no later than December 2008 is based on the series 2000= 100.
- The calculation of price changes over a period starting in or after January 2005 and ending after January 2009 is based on the series 2005= 100.
- The calculation of price changes over a period starting between January 2000 and January 2005 and ending after December 2008 is based on the series 2000= 100 and linked to the series 2005= 100. The linking should occur in the last definitive month of the series 2000= 100, i.e. December 2008.

Two basic assumptions form the basis for this advice, namely that the price developments are calculated within one published series as much as possible, and adjustments ex post are avoided as much as possible.

For questions please contact the infoservice of Statistics Netherlands.

The new price indices based on 2005= 100 can be found in table Input index new dwellings at StatLine (CBS-site: [home>StatLine CBS databank>theme>prices>Producer prices>construction](#)).

Appendix

Weighting scheme of the material Input Price Index New Dwellings, 2005=100

Prodcom	Description	Weighting
16231110	Windows and their frames of wood	12.9
23611200	Prefabricated structural components	12.7
16231900	Builders' joinery and carpentry, of wood, n.e.c.	8.9
25110000	Metal structures and parts of structures	6.0
23320000	Bricks, tiles and construction products, in baked clay	5.6
25210000	Central heating radiators and boilers.	4.4
2361X000	Sand-lime brick	3.7
23630000	Ready-mixed concrete	3.7
23420000	Ceramic sanitary fixtures	2.8
23120000	Glass	2.5
16231150	Doors and their frames and thresholds, of wood	2.5
25120000	Doors and windows of metal	2.4
31020000	Kitchen furniture	2.3
23640000	Mortars	2.1
24106210	Hot rolled concrete reinforcing bars	2.1
23140000	Glass fibres	1.7
16100000	Wood, sawn and planed	1.6
28220000	Lifts	1.6
25720000	Locks and hinges	1.6
20301000	Paints, varnishes and similar coatings	1.5
22212157	Rigid tubes, pipes and hoses of polymers of vinyl chloride	1.4
23310000	Ceramic tiles and flags	1.4
27330000	Wiring devices	1.4
2399X000	Non-metallic mineral products	1.3
23620000	Plaster products for construction purposes	1.2
16210000	Veneer sheets and wood-based panels	1.0
2825X000	Ventilator and en heat exchanger	1.0
24442000	Semi-finished products of copper or copper alloys	0.8
20520000	Glues	0.8
22214000	Other plates, sheets, film, foil and strip, of plastics	0.8
25930000	Wire products, chain and springs	0.8
25940000	Fasteners and screw machine products	0.7
23700000	Cut, shaped and finished stone	0.7
24422000	Semi-finished products of aluminium or aluminium alloys	0.6
8121190	Construction sands	0.3
27120000	Electricity distribution and control apparatus	0.3
23611150	Products of cement, concrete or artificial stone	0.3
20302X00	Other paint	0.3
22290000	Other plastic products	0.2
31010000	Office and shop furniture	0.2
23520000	Lime and plaster	0.2
2223X000	Windows and their frames of plastic	0.2
22210000	Plastic profiles	0.2
22213000	Plastic plates	0.1
24430000	Products of lead, zinc and tin	0.1
1623X000	Prefabricated structural components of wood	0.1
25992000	Other articles of base metal	0.1
2611X000	Solar collector	0.1
22190000	Rubber products	0.1
27521000	Water heater	0.1
13990000	Other textiles n.e.c.	0.1
23650000	Fibre cement	0.1
24340000	Cold drawn wire	0.1