

Rebasing the input index of the building costs of new dwellings

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Explanation of symbols

.	= data not available
*	= provisional figure
x	= publication prohibited (confidential figure)
—	= nil
—	= (between two figures) inclusive
0 (0,0)	= less than half of unit employed
a blank	= category not applicable
2004–2005	= 2004 to 2005 inclusive
2004/2005	= average for the years 2004 up to and including 2005
2004/'05	= crop year, financial year, school year etc., beginning in 2004 and terminating in 2005
1994/'95–2004/'05	= book year etc., 1994/'95 up to and including 2004/'05

Detailed items in tables do not necessarily add to totals because of rounding.
Revised figures are not marked as such.

Foreword

Statistics Netherlands calculates the monthly Input index of building costs for new dwellings to monitor developments in the price level of new dwellings in the Netherlands. Starting with the figures on January 2005, the Input index is published with 2000 as new base year. The new series will be calculated ex post from January 2000 onwards. The consequence of the rebasing is that the Input index of building costs New dwellings January 2000 through December 2004 differs from the index during the same period based on 1995=100. This paper deals with the

changes made in the rebasing and the differences between the index series based on 1995=100 and the index series with base year 2000.

The first paragraph contains a short description of how the Input index was calculated on the basis 1995=100. Next, the changes made in the rebasing to 2000=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.

Input index for building costs of new dwellings

An input price index is calculated on the basis of the price developments of 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 wage costs and materials costs. Other cost components such as energy, materials, 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.

The wage component

In the wage component the price development of the factor labour is monitored with the updated wage costs index (GLK). This is a quarterly figure. The wage development in the quarter is estimated by using the series of collectively negotiated wages (CAO wages). This means the updated wage costs index is used in the months that the series is available. The labour price index of the months in between is estimated by linking the developments of the CAO wage series and the latest labour price index.

The materials component

The materials component shows the price development of the materials required to build a dwelling. To measure the price development both information about the building materials required and information about the cost ratios (prices and quantities) of the materials is needed. This leads to a weighting scheme with weights per product group. With the weighting scheme and producer price indices (PPI) belonging to the product groups we calculate a weighted index for the materials component.

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 statistic of the construction industry, from which material and wage costs of the construction companies mainly involved in building dwellings are known.

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

Changes in the Input index

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

New weighting

There are two areas in the input index where weights were adjusted. One was the ratios of the materials used which led to a new weighting scheme for the materials component. The other is the recalculated ratio between the wage and the materials component.

For base year 1995 the weighting scheme of the materials component was made by the Commissie Risicoregeling Woning- en Utiliteitsbouw. It was based on three types of housing: apartments, individual freestanding houses and individual terraced housing. The new weighting scheme for base year 2000 is made by Statistics Netherlands 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 (apartments owner-occupied or rented, and houses owner-occupied or rented), divided across three regions in the Netherlands (West, Central-South, and North-East). For the Central-South region we only observed newly finished houses for purchase and for the North-East region only the newly finished houses for rent. We know which construction materials were used in the projects and what the costs were by type of material. This led to a weighting scheme per product group. The new weighting scheme is included in the annex. The weighting scheme has changed slightly since 1995. For instance, the weighting scheme of 1995 had no productgroups “aluminium prefab” or “aluminium products” Groups such as “wood and wood products”, in various types and shapes, but especially prefab wood and “windows, doors and frames” have a fast rising share. Concrete, on the other hand, decreased overall substantially. We discuss the consequences of these changes for the input index in the next paragraph.

The ratio of the wage and materials component was reset on the basis of the figures from the Production statistic the construction industry. Here we looked only at companies involved mainly in the construction of housing, that is companies in which at least 70 percent of the total costs incurred for the construction of housing. We determined the costs per company as the total consumption of materials and the total labour costs. The weighting factors of materials are set at 0.62 and of wages at 0.38. Compared to 1995, this is a major shift. The weighting factor of materials was 0.56 and of wages 0.44. However, this shift is in line with the trend in construction of using more prefab materials causing a shift from labour to industry.

New wage cost index

Statistics Netherlands has been calculating a new series Contractual Wage Costs (CLK) since June 2004. This series is based on wage costs as laid down in collectively negotiated contracts (CAO). The new series uses 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 the composition of the personnel structure do not play a role. An additional advantage is that the CLK is a monthly statistic, which means that there is no need for estimates based on other statistics in between quarters. Besides this, the CLK implicitly takes changes in the personnel structure into account, which makes it less apt for incorporation in the calculation of an input price index. A rebasing provides the opportunity to improve the calculation method and therefore we decided to use this rebasing to change to the series CLK.

New name

The old name of the index – Input index for the building costs of new housing – lead to confusion about the concept of the figure. Because the index clearly reflects the price changes, we decided to give it a more adequate name. The new name is: “Input price index of new dwellings”.

Results

The changes mentioned above led to differences between the Input price index based on 2000=100 and the old base year 1995. In this paragraph we explain the differences, starting with the results for the materials component. Then we will discuss the differences in the wage component. Finally we will look at the total Input index. Here we distinguish the differences that came about by the new ratio wage/materials and, on the other hand, the influences of both components. The old series based on 1995=100 are all rescaled in such a way that 2000=100.

Materials component

Graph 1 shows the price index of the materials component on the old and new basis.

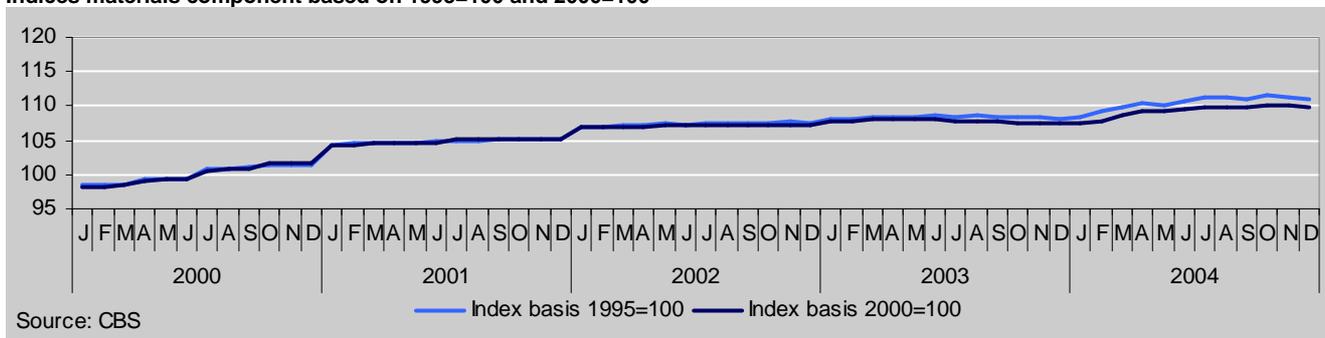
The price index of the materials component on the old basis starts virtually the same as the index based on 2000=100. The two series start to diverge in the first quarter of 2003, where the series with the old

base is slightly above the new series. The main explanation for the difference is the updated materials package. Some kinds of materials have disappeared from the new weighting scheme, and some new types were added. Closer analysis shows that the group of materials that disappeared show a slightly larger increase in total in the course of the first quarter of 2003 than the new materials added. The materials that occur in both the 1995 and the 2000 weighting schemes, on the other hand, show that the materials with an increased share of weighting have falling prices in the period after the first quarter of 2003. Because the share has increased, this decrease is weightier in the new series than in the old series.

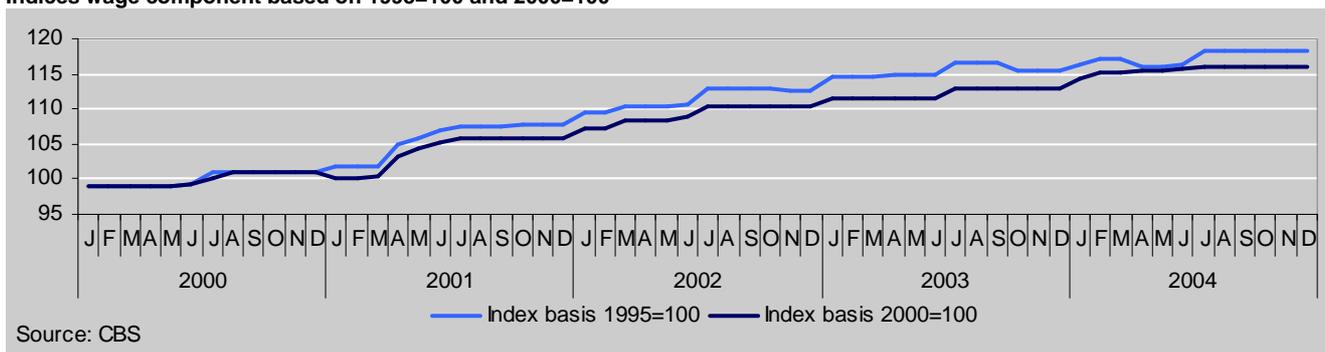
Wage component

The graph below shows the price index of the wage component in the old series 1995=100 and in the new series 2000=100.

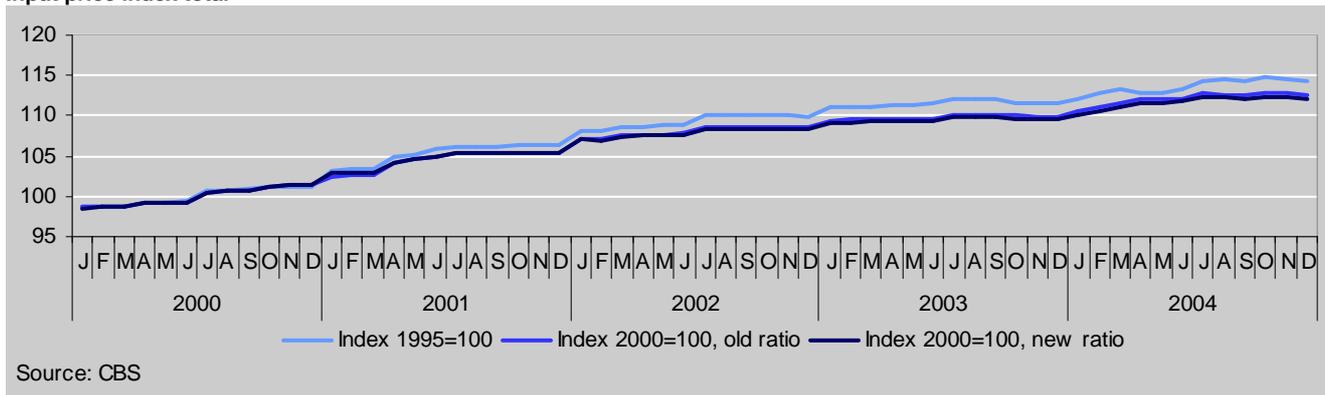
Graph 1
Indices materials component based on 1995=100 and 2000=100



Graph 2
Indices wage component based on 1995=100 and 2000=100



Graph 3
Input price index total



The new series of the wage component shows a more moderate course throughout almost the entire period than the old series. The old series is more volatile. Because the series 2000=100 is based on a totally new price index of wage costs, the difference between the old and the new series is explained by the conceptual differences between GLK and CLK. The wage concept in GLK is more wide-ranging: it includes wages plus employers' costs as well as training, recruitment and selection costs. The CLK only refers to the wages, employers' costs and incidental supplements according to CAO agreements. The GLK implicitly takes changes in personnel into account, whereas CLK keeps the same personnel structure for about a decade. Because of these conceptual differences the CLK fits the input price index better, but they also lead to changes in the course of the input price index itself.

Total

Graph 3 shows the old and the new series of the total input price index total. In the calculation of the new series we distinguish the calculations using the ratio wage/materials of 1995 and the new ratio. The line 'index 2000, old ratio' shows the course of the input price index total, where the new material and wage component is weighted together with the formula of 1995. The 'index 2000, new ratio' shows the new Input price index as it will be published as of the rebasing 2000. Here the new index series of the materials and wage components are weight with the new ratio.

The Input price index total based on the old basis is almost continuously higher than the new series. The difference in the courses of the series with the old and the new weighting is minimal. The more moderate course of the new series is mainly caused by the more moderate course of the wage component. The price index of this component rose much faster in the old series. In both years the index series of the materials component mitigates the increase of the total

figure because the course of the materials component is much lower than that of the wage component. The graph further shows that adapting the wage/material ratio barely influences the course of the total figure.

Switching from reference year 1995=100 to 2000=100

At the same time as the publication of the new figure for January 2005 the figures for the series 1995=100 are revised one last time based on the most recent producer price indices and the wage figures. After this, the old series is declared definitive and more recent figures can only be found in the series 2000=100.

When you want to use the results of the Input price index of new dwellings for indexation purposes, you have several options. There are two guidelines:

- price developments are calculated within one published series whenever possible, and
- adaptations and corrections ex post are avoided whenever possible.

Statistics Netherlands has the following advice:

- The calculation of a price development over a period starting in or after January 1995 and ending no later than December 2004 is based on the series 1995=100.
- The calculation of a price development over a period starting in or after January 2000 and ending after January 2005 is based on the series 2000=100.

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

For questions you can contact the infoservice of Statistics Netherlands.

The new price indices based on 2000=100 can be found in table [Input index new dwellings](#).

Appendix 1. Weighting scheme 2000

Prodcod Description	Weighting 2000	Prodcod Description	Weighting 2000
	‰		‰
26611200 Prefab components of concrete	131	20201000 Boards and panels	9
20301110 Windows and their frames, of wood	108	25231450 Doors, windows and frames, of plastic	9
20301300 Builders joinery and carpentry of wood	97	28121050 Aluminium doors, frames, sills	7
28112360 Other constructions of steel and iron	48	28731400 Drawing pins, etc	7
26401110 Bricks	46	25214100 Other plates cellular	6
28221200 Boilers for central-heating	43	25242000 Plastics, other	6
26631000 Fluid concrete	35	28752700 Products of metal	6
26611160 Sand-lime brick	32	27442000 Products of copper	7
26221030 Sanitary fixtures	28	27422000 Products of aluminium	5
26641000 Mortar	27	31202500 Electrical apparatus for switching electrical circuits volt ≤ 1 k	5
36131000 Kitchen furniture	26	28111030 Prefab components iron and steel	5
28221150 Radiators	27	28112370 Constructions of aluminium	4
20301150 Doors of wood	24	26701200 Products of natural stone	4
26121330 Units of glass, multiple walled	18	20302000 Prefab components of wood	3
26141000 Glass fibres	17	28731300 Products of iron, steel or copper wire	3
28630000 Locks and hinges	17	26531000 Plaster	3
26821000 Non-metallic mineral products	16	20100000 Wood sliced or chipped	2
24621000 Glues	15	14211000 Gravel and sand	2
26621090 Plaster products	15	20511450 Wood, other	1
27106010 Concrete reinforcing bars	14	25213000 Plates of plastic	1
26301000 Ceramic tiles	12	26121270 Safety glass	1
25212000 Pipes of plastic	13	31203170 Boards and other bases, for electrical services	1
20101030 Coniferouswood sliced/chipped	12	31301370 Electric conductors	1
28121030 Doors, windows and their frames, of steel	12	27432000 Products of lead, zinc or tin	1
29221600 Elevators	12	29721400 Geyser	1
26611100 Tiles, bricks and similar products of cement or concrete	12		
29230000 Cooling and ventilation equipment	11		
31202750 Sockets, plugs, etc	11		
24301000 Paints based on polymerics	11		
24302200 Paints, other	10		