REBASING NEW DWELLINGS; INPUT PRICE INDICES BUILDING COSTS, 2015=100 TO 2021=100

Summary: This document gives a description of the input price index of the building costs of dwellings. It describes the changes that were made as a result of the base shift and also contains the weighting scheme. The calculation method is not the scope of this document.

Keywords: Dwellings, rebasing, price index, input price index

Foreword

Monthly, Statistics Netherlands (CBS) calculates the series New Construction Homes; input price index of building costs. This reflects the development of the costs (wage and materials) involved in building new homes in the Netherlands. To make the results of the index series more up-to-date, a so-called basic shift is carried out once every five years. Due to the implementation of FRIBS (Framework Regulation Integrating Business Statistics) in 2021, this time the basic shift is postponed by one year to 2021=100. The next basic shift will again take place in a usual year, namely 2025=100.

Starting with the publication of January 2024, this series is published based on 2021=100. The series is calculated and published from January 2018 onwards. Due to changes in the weighting scheme, resulting from an update to a new base year, differences arise in the development of the old (2015=100) and new (2021=100) series. This article discusses these changes and the difference between the index series based on 2015=100 and the index series based on 2021=100.

The first chapter provides a brief description of how the Input Price Index was calculated 2015=100. Subsequently, the changes made during the basic shift to 2021=100 are discussed, along with their effect on the input price indices. Finally, advice is given on how to link the new series to the old series when using these input price index figures.

1. Input price 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. The wage and the materials component of the input price indices are calculated as follows.

1.1 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. This because the employers share of the wage costs is included and because quality changes such as changes in personnel structure do not play a role.

1.2 The materiaal 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 eight 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. A weighted index for the materials component per reference project is calculated with the weighting scheme and producer price indices (PPI) belonging to the product groups. Next, the

project price indices are weighted to one materials index. The weights derive from the statistic on newly completed dwellings.

1.3 Total

The ratio between the two components is derived from the analysis of eight representative reference (housing) construction projects. Subsequently, the eight project indices calculated in this way are weighted together to obtain a figure for total Netherlands. The weights used for this are derived from the Completed Housing statistics.

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

2. Overview of changes in the Input Price Index

Two changes have been made during the basic shift of the Input Price Index. These are discussed below point by point.

2.1 New weights

For the Input Price Index, there are adjustments in three areas. Firstly, the proportions of the materials used have been redefined, resulting in a new weighting scheme for the material component. Secondly, the ratio between the wage and material components has been redefined. Finally, the proportions of the different types of homes used have been adjusted.

2.1.1 Material weighting

The weighting scheme of the material component was completely renewed for the base year 2015 based on cost overviews of a total of eight new construction projects realized in 2017. Each project represents one of the four distinct types of homes (buy and rent apartments, and buy and rent single-family homes), divided over three regions of the Netherlands (West, Middle-South, and North-East).

For the basic shift to 2021=100, it was decided not to choose new reference projects but to price update the existing cost overviews. This is because there have been no significant innovations and tightened requirements between 2017 and 2021, so the existing projects are still considered representative.

The price updates were carried out using the same PPI index figures that are linked to the respective materials in the Input Price Index. For the new weighting scheme, please refer to the annex.

2.1.2 *Wage/material ratio*

The ratio between the wage and material components was also redefined during the previous basic shift based on the complete budget of the eight new construction projects. In these detailed budgets, the wage costs are separately displayed, allowing the share of the wage factor to be calculated separately. For determining the weights for the base year 2021, it was also chosen here to update the material and wage costs, and then update the proportions accordingly (see table 1).

Table 1: Ratio of wage and material components per region and housing type

Region	Housing type Component	Component	
		Wages	Material
North-East	Single-family home	46,7%	53,3%
	Apartment	52,6%	47,4%
Middle-South	Single-family home	49,8%	50,2%
	Apartment	48,6%	51,4%
West	Single-family home 1	51,5%	48,5%
	Single-family home 2	44,6%	55,4%
	Apartment 1	49,5%	50,5%
	Apartment 2	41,1%	58,9%

2.1.3 *Housing type weighting*

The weights are calculated based on the number of completed homes known to CBS in 2021 from the Completed Housing statistics. For each region and housing type for which a representative project is chosen, the share of that project is calculated from the number of completed homes known to CBS. These shares are included in table 2.

Table 2: Share type of dwelling per region

	Single-family homes	Apartments	Total
Region North-East	10,0%	7,7%	17,7%
Region Middle South	19,2%	21,7%	40,9%
Region West	13,6%	27,8%	41,4%
Netherlands	42,8%	57,2%	100%

2.2 Changes within product groups

The price information of the components in the material cost component is derived from the data of the Producer Prices Industry (PPI). Starting from 2024, this statistic has also transitioned to the new base 2021=100 including a new weighting scheme.

During the basic shift of the PPI, the weighting schemes of the various composite product groups were also updated. As a result of these new weighting schemes using more recent data on domestic production and import of building materials, it may occur that the same product group has a different price trend in the series 2015=100 than in the new series 2021=100.

2.3 New price information

The price information of the wage cost component is derived from the data of the CLK. Starting from the reporting year 2024, this statistic has transitioned to the new base 2020=100 and a new weighting scheme.

3. Results

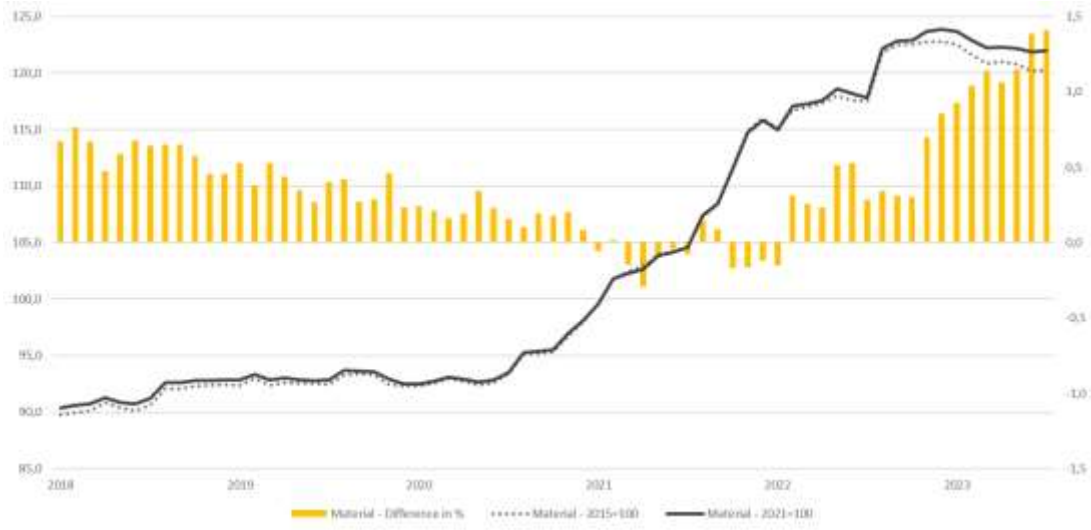
The above changes lead to differences between the Input Price Index based on 2021=100 and the old base year 2015. This paragraph explains the differences in more detail. First, the results

for the material component are discussed. Then the total Input Price Index is examined. The old series based on 2015=100 have been rescaled to 2021=100 for clarity in all cases. The wage component is not further discussed here because, apart from rescaling, it has remained unchanged.

3.1 Material component

Below graph 1 shows the price index of the material component on both the old and new bases.

Graph 1: Material component indices based on 2015=100 and 2021=100



Because the old series 2015=100 for this graph has been rescaled to 2021=100, the differences between the two series are visible. Over almost the entire period, the price index of the material component on the old basis is below the new series. This results in a difference of up to 1.4 percent. This difference has two causes. Firstly, the materials series is composed of PPI indices. A basic shift has occurred here, resulting in changes in the series. Secondly, the weighting scheme used to calculate the price indices has been adjusted (see 2.1). The differences from 2022 onwards are visibly larger. The average difference over the entire period is 0.4 percent. At the previous basic shift from 2010=100 to 2015=100, this was slightly smaller, namely 0.2 percent.

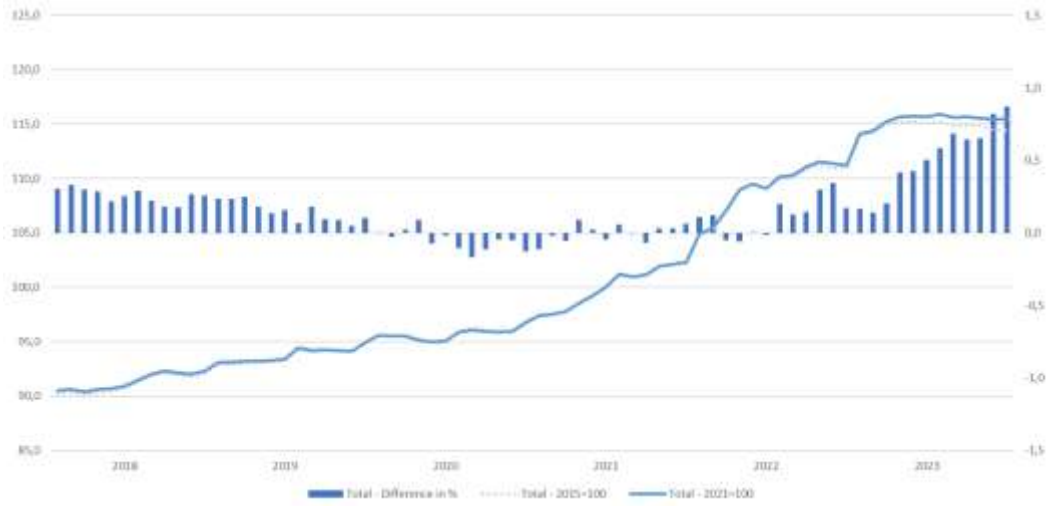
3.2 Wage component.

In the new series 2020=100, as in the old series 2015=100, the wage component uses the index figures of the Contractual Wage Costs (CLK). This series was changed from 2015=100 to 2020=100 at the beginning of 2024, but there has been no change in the course of this component. Therefore, in the new series, it is only rescaled to 2021=100.

3.3 Total

Graph 2 shows the old and new series of the total input price index. Here too, the new and old series have had a different trend over the last two years. For 2022, the differences between the two series are minimal. Since the wage component remains unchanged, this is the result of the changed material component, the adjusted proportions of wage and material in the reference projects, and the new weights of the projects among themselves. Over the entire period, the maximum difference between the two series is 0.9 percent, with an average of 0.2 percent.

Graph 2: Total Input Price Index based on 2015=100 and 2021=100



3.4 Transition from reference year 2015=100 to 2021=100

At publication of the figure for January 2024, the price index series for the old base 2015=100 is stopped. This series will not be updated anymore. Please use the new series if you need index numbers from January 2024 and onwards.

If the results of the Input Price Index of new construction homes are used for indexation, Statistics Netherlands (CBS) advises as follows:

- The calculation of a price development over a period starting in or after January 2012 and lasting until December 2023 should be based on the series 2015=100.

- The calculation of a price development over a period starting in or after January 2018 and lasting beyond December 2023 should be based on the series 2021=100.

- The calculation of a price development over a period starting in or after January 2012 and lasting beyond December 2023 should be based on the series 2015=100 and linked to the series 2021=100 in December 2023.

Two principles were used here: the price developments are calculated as much as possible within one published series. Additionally, adjustments and corrections are avoided as much as possible retroactively.

If you have any questions or encounter any issues in applying these price index figures, please contact the CBS Information Service (Infoservice@cbs.nl).

Annex: weighting scheme materials, Input Price Index building costs homes, 2021=100

Prodcom	Description	Weight (%)
23611200	Precast concrete	18,1
25120000	Metal windows and doors	7,3
25210000	Central heating, boilers and radiators	5,5
16231110	Wooden windows and frames	5
16231900	Joinery and carpentry	5
23630000	Concrete mortar	4,9
24106210	Reforcing steel	4,6
16231150	Wooden doors	4,3
22212157	Plastic pipes	3,7
23320000	Bricks and roof tiles	3,6
25110000	Steel constructions	3,2
2361X000	Sand-lime brick	3,1
23420000	Sanitary ware	2,9
23640000	Dry mortar	2,7
23620000	Gypsum products	2,6
27330000	Sockets and switches	2,5
24330000	Metalproducts, cold formed	2,4
2223X000	Plastic windows and frames	2,1
2399X000	Non-metallic mineral products	1,8
2825X000	Fans and heat exchangers	1,6
16100000	Wood, planed	1,5
28220000	Elevators	1,5
20301000	Paint	1,4
23310000	Ceramic tiles	1,3
16210000	Plates and panels of wood	1,2
23611150	Concrete products	0,8
20520000	Glue	0,7
23650000	Fiber cement boards	0,6
24442000	Products of copper(alloy)	0,5
24420000	Products of aluminum	0,4
20302X00	Other paint	0,3
27400000	Electrical lighting equipment	0,3
24422000	Other products of aluminum	0,3
263X0000	Communucation equipment	0,3
25720000	Hinges and locks	0,2
8121190	Construction sand	0,2
26510000	Measuring and regulating equipment	0,2
23700000	Products of natural stone	0,2
24107X00	Open steel profiles	0,1
22214000	Other plastic plates	0,1
23120000	Glass	0,1
31010000	Mailboxes	0,1
25992000	Works of base metal	0,1
25940000	Fasteners	0,1
23520000	Plaster	0,1