

# Method Description New Construction Homes; input price index construction costs.

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*Summary: This document describes the calculation method of the Input Price Index for new homes. The description includes the weighting scheme, formulas, and the manner in which this index is calculated. Data collection and the production process are not covered in this document.*

*Keywords: Construction industry, housing, price index, method, input price index.*

## Introduction

The Input Price Index for new homes reflects the price development of construction costs for new homes, seen from the components that make up the construction of homes. In this case, it concerns the two main cost components, namely labor costs and material costs. Both components are combined into one Input Price Index for new homes.

This document provides the method description of this Input Price Index. The first and second chapters contain a description of the labor cost component and the material cost component, respectively. The third chapter describes how both components are combined into one input price index. Finally, a brief overview of the publication of the figures is provided.

### 1. Wage Cost Component:

The Wage cost component reflects the cost development of wages in the construction industry, specifically in Civil & Utility Construction. The statistic used for this is [Contractual Wage Costs](#) (CLK). CLK is a monthly figure that reflects the development of wage costs as defined in collective wage agreements. CLK uses a wage cost concept that fits well with an Input Price Index. For example, the employer's share of wage costs is included in the calculation and quality changes such as changes in the personnel structure do not play a role.

In the calculation of the Input Price Index, only one series of CLK is used, so that the wage index  $I_i^t$  for all projects  $p$  is equal:

$$I_{ip}^t = I_i^t. \quad (1)$$

It concerns the series of contractual wage costs SBI 45 'Construction industry'. The figure is retrieved monthly from Statline rescaled to the new base year and then incorporated into the calculation.

### 2. Material Cost Component:

The material component reflects the price development of the main materials used in residential construction. The calculation of the price index is based on the budgets of eight different housing projects, which contain the costs and quantities of the required materials.

Each project represents one of the four distinct types of housing: purchase and rental apartments, and purchase and rental single-family homes. The projects with the four housing types are divided across the three regions of the Netherlands: West, Middle-South, and Northeast. In the Middle-South region, only the purchase segment is observed, and in the Northeast region, only the rental segment is observed. The table below shows the distribution of housing types across regions.

**Table 1. Number of projects per region**

	Region		
	North-East	Central-South	West
Single family houses	1	1	2
Apartments	1	1	2

The eight budgets provide an overview of the costs and quantities of all materials needed for the construction of the respective project homes. Based on this, a weighting scheme has been established for each project with a specific weight for each type of material. The type of material is linked to a product group (prodcom) of the Producer Prices Industry (PPI) statistic. Monthly per project,  $p$  the prodcom groups  $k$  with their associated PPIs  $I_k^t$  are weighted by the price shares of those materials  $w_{k_p}$  to form one material index for a project  $I_{m_p}^t$  :

$$I_{m_p}^t = \sum_{k=1}^K w_{k_p} * I_k^t \quad (2)$$

Subsequently, these material indices,  $I_{m_p}^t$ , are weighted per project based on their individual weights  $w_p$ . These weights are determined based on the CBS statistic [Voorraad woningen; gemiddeld oppervlak; woningtype, bouwjaarklasse, regio](#). (Only in Dutch) This results in a price index of the total material costs  $I_m^t$  :

$$I_m^t = \sum_{p=1}^8 w_p * I_{m_p}^t \quad (3)$$

### 3. Input Price Index for New Homes:

The total index of the input price index is calculated from the wage and material indices per project. First, based on the ratios of wage  $w_{l_p}$  and material  $w_{m_p}$  per project a total price index  $I_p^t$  per project is calculated:

$$I_p^t = (w_{l_p} * I_l^t + w_{m_p} * I_{m_p}^t) \quad (4)$$

Then these 8 partial total indices  $I_p^t$  are weighted together using a weighting factor determined based on the CBS statistic [Voorraad woningen; gemiddeld oppervlak; woningtype, bouwjaarklasse, regio](#). (Only in Dutch)  $w_p$ .

This yields the total figure Input Price Index for new homes  $I^t$  :

$$I^t = \sum_{p=1}^8 w_p * I_p^t \quad (5)$$

#### 4. Publication:

The Input Price Index for new homes is calculated monthly and is published on Statline and in the Statistical Bulletin. The indices of the material component and the wage component are also published separately.

#### 5. Schematic representation of the construction process.

Statistics Netherlands publishes various price statistics within the construction process. The diagram below shows the position of the input price index for buildings costs on new dwellings (NB input construction costs), the output price index for building costs on new dwellings (NB output prices) and the Price Index for Newly built dwellings (PNK) in the construction process.

