

How construction price indices are used in construction statistics and gross fixed capital formation

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Introduction

The Office for National Statistics (ONS) currently uses tender price construction price indices to remove the effects of price movements (deflation) from new orders in construction current price or value data. These tender prices are then converted by ONS to output price indices, which are used to deflate: (a) output in the construction industry; and (b) gross fixed capital formation (GFCF) (buildings and other structures, and dwellings). The proposed improvements to the construction price indices announced by Aecom <https://www.gov.uk/government/collections/price-and-cost-indices> will mean that following quality assurance, ONS will use the new input construction price indices to deflate new orders; and the new construction output price indices to deflate output in construction and GFCF (buildings and other structures, and dwellings).

These indices are also used outside of ONS to adjust construction contracts, by utilities regulators and by analysts.

This article provides further information on how the construction price indices are used to deflate: new orders in construction; output in the construction industry; and GFCF (buildings and other structures, and dwellings).

Background

Construction price indices are published by the Department for Business Innovation and Skills¹ (BIS). Following a tender exercise in 2013 the new contract was awarded to Aecom². Following several reviews of these statistics by the Department of Enterprise and Regulatory Reform and its successor, BIS, and in an assessment by the UK Statistics Authority³ which identified issues with the current price statistics, Aecom in partnership with BIS embarked on a programme of work to develop the methodology used to measure construction prices. More information on this work can be found in the article Improvement to the Construction Price Indices⁴.

Why deflate?

Growth in the construction industry or in GFCF can be attributed to two components. In the case of growth in construction industry, the quantity of housing built and the price that it's built at will both affect the value of work. For GFCF, the number of assets purchased and the price of these assets will impact upon growth.

¹ <https://www.gov.uk/government/organisations/department-for-business-innovation-skills>

² <http://www.aecom.com/>

³ www.statisticsauthority.gov.uk/assessment/assessment/assessment.../assessment-report-95---construction-price-and-cost-indices.pdf

⁴ <https://www.gov.uk/government/collections/price-and-cost-indices>

Over time prices will change and so will quantities and thus a rise in the value of construction work of £1 billion could be attributable to:

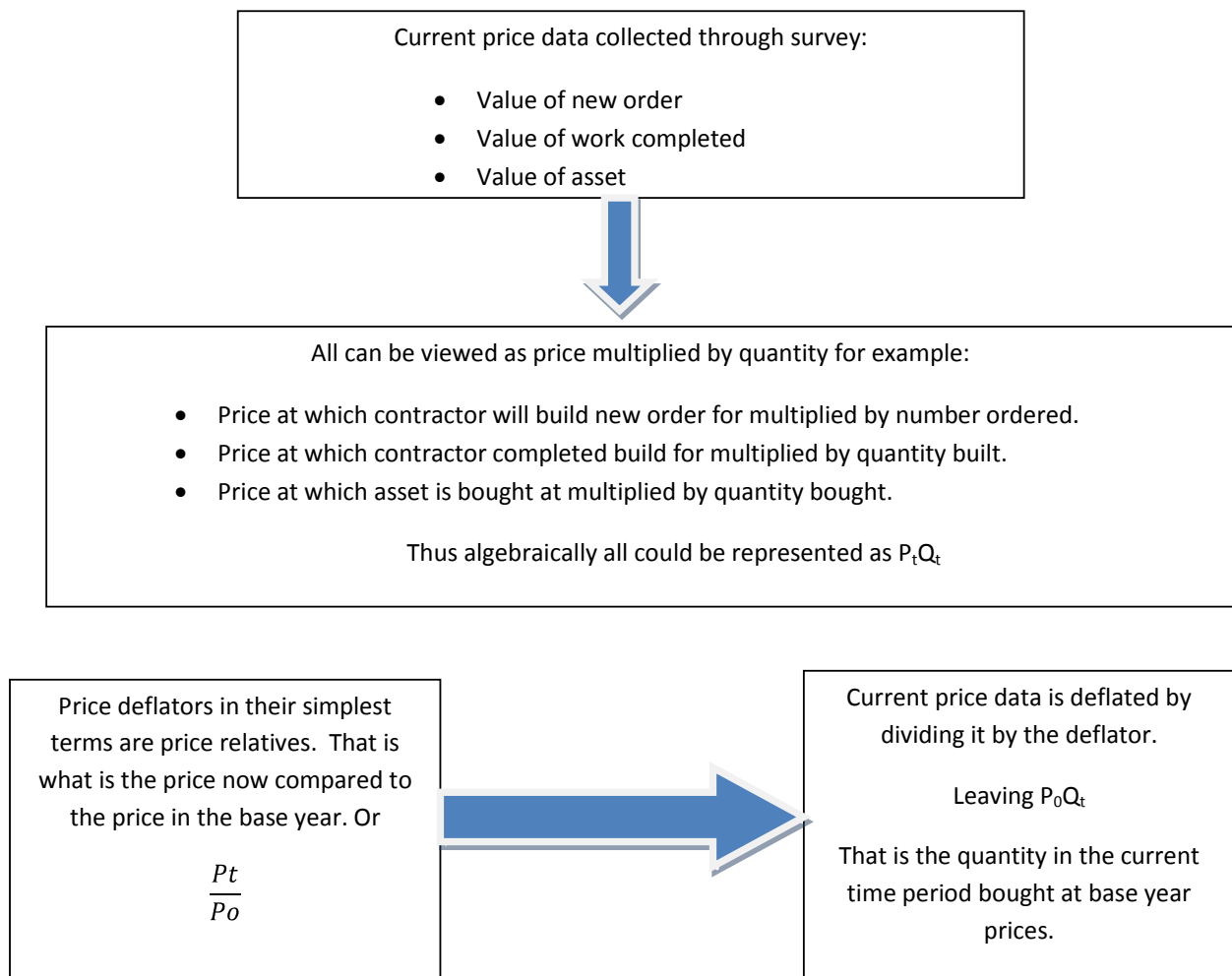
- a rise in both price and quantity;
- a rise in price with quantity remaining constant; or
- a rise in quantity with price remaining constant.

The key component of change for national accountants is a change in quantity and thus the prime task of deflation, is to remove the affects of price change so that an estimate of quantity or volume can be derived.

The process of deflation

The process of deflation is the same across the accounts as it is outside of the accounts. This is described in Figure 1, specifically in relation to construction and GFCF

Figure 1: the process of deflation



The use of construction price indices

Construction price indices are used to deflate several ONS datasets. The dataset, and variables deflated are shown in Table 1; alongside the current construction deflators used and the construction deflators that will be used following quality assurance of the Aecom construction price indices.

Table 1: Data sets and variables where construction price indices are used

Data set	Variable deflated	Current construction deflator	New construction deflator
New orders in the construction industry ⁵	Value of new construction orders by type of work	Tender Price Indices with a base year of 2005.	Input price indices with a base year of 2010.
Output in the construction industry ⁶ (Link)	Value of work completed in a given period, split into new work categories and repair and maintenance.	Output price indices that are calculated through a conversion of TPIS using lagged new orders data.	Output price indices with a base year of 2010.
Gross fixed capital formation (GFCF) ⁷ : <ul style="list-style-type: none"> • Buildings and other structures • Dwellings 	Value of asset	Output price indices that are calculated through a conversion of TPI's using lagged new orders data.	Output price indices with a base year of 2010.

Output in the construction industry and GFCF data sets are used in the compilation of the national accounts. Chained volume measures of construction output are used in the compilation of GDP when measured using the output approach. GFCF chained volume measures are used in the compilation of GDP when measured from the expenditure approach.

Other uses of construction prices

Construction price statistics are used outside of official statistics. For example:

1. The all construction output price index (COPI) is used by OFWAT⁸ to compare how much appointed water companies have spent on capital investment with what they were allowed within price limits.
2. The community infrastructure levy, England and Wales in its Community Infrastructure Levy Regulations 2010⁹ (uses the Tender Price Index in its calculation of chargeable amount in respect of a chargeable development.

⁵ <http://www.ons.gov.uk/ons/rel/construction/output-in-the-construction-industry/april-2014/index.html>

⁶ <http://www.ons.gov.uk/ons/rel/construction/output-in-the-construction-industry/april-2014/index.html>

⁷ <http://www.ons.gov.uk/ons/rel/bus-invest/business-investment/q1-2014-provisional-results/index.html>

⁸ <http://www.ofwat.gov.uk/>

⁹ <http://www.legislation.gov.uk/ukdsi/2010/9780111492390/contents>

3. The Housing (Right to Buy) (Service Charges) (Amendment) (England) Order 2010¹⁰ () uses the output price index in its calculation of inflation allowance that can be added to a landlords estimate of the service charges payable by the tenant for repairs and maintenance and major works in the initial period of a right to buy lease.
4. Construction analysts such as the Construction Products Association and their members as they allow the industry to analyse to what extent increases in activity occur from an increase in prices or from an increase in volume of work. The construction price statistics also allow analysts to determine the impacts of margins within construction industry.

Proposed timetable for moving to the new construction price indices

From November 2014, construction price indices will only be available using the improved methods. Following quality assurance, ONS anticipates using the improved construction price indices in the deflation of new orders in construction, output in the construction industry, and GFCF (buildings and other structures, and dwellings) from November 2014. At that time, the periods that the new indices will be used for will be aligned to the national accounts revision policy¹¹. It is anticipated that the new indices will be fully implemented, back to 1997, in Blue Book 2015.

In October 2014, an impact analysis on new orders in construction, output in the construction industry, and GFCF (buildings and other structures, and dwellings) will be published, outlining any impact from the new construction price indices.

¹⁰ <http://www.legislation.gov.uk/en/uksi/2010/2769/made>

¹¹ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/national-accounts/articles/2011-present/revisions-to-gdp-and-components.pdf>