Irida Consulting Limited

Report to the Irish Concrete Federation

Costs of Quarried and Concrete Materials used in New Housing

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1. Background and Executive Summary

1.1 Background

This report into the cost of concrete and quarried materials used in new house construction was commissioned in March 2018 by the Council of the Irish Concrete Federation (ICF); the representative body for businesses engaged in the supply of building materials including stone, sand, aggregate; readymix concrete; concrete blocks, precast concrete products and other concrete products such as roof tiles and paving slabs.

The purpose of this report is to provide a basis from which to inform the public and other third parties as to the costs and the impact of the industry's material costs on overall housebuilding costs. We show in this report that the concrete products and quarried materials used in building a standard three bedroomed semi-detached house currently account for just 3.2% of total build costs and that the industry's impact on overall housebuilding costs is much less than other cost factors.

1.2 Purpose of this Review

The key findings from this research are that:

1. The basic construction materials supplied by quarry operators, readymix concrete suppliers, concrete block and other product suppliers account for just 3.2% of the cost of building the most common form of new house in Ireland – the three bedroomed semi-detached house. This new house building cost excludes the cost of site purchase;

2. Including site costs, the basic construction materials account for just 2.6% of the total cost of providing a standard three-bedroom house in the Greater Dublin Area;

3. The costs of these forms of construction materials have been relatively steady since 2010.

2. Market Context

2.1 Market Developments

Ireland experienced a major property bubble over the past fifteen years that saw output of new dwellings rise from the order of 50,000 units in 2000/2001 to a peak of some 93,000 units in 2006 followed by a decline to just over 8,000 units in 2012 and 2013. CSO data suggest that output has risen since then to close to 20,000 units in 2017, though these data are based on ESB connections and are not regarded as reliable in some quarters.

Some commentators consider that the level of completions is overstated and if this is the case, completions are far short of the scale needed to cater for our growing population. Estimates of future demand range from 30,000 to 35,000 dwellings per annum (ESRI, 2017) to an average of over 16,000 dwellings annually in urban areas only (Housing Agency, 2017). An uncertainty about using these estimates to estimate future construction demand is the extent to which vacant dwellings could be used to satisfy housing demand.

It is generally agreed that the scale of recovery in Ireland's housing market that has occurred to date is not sufficient to allow the market to operate normally. There is unsatisfied demand; but supply is not coming on stream quickly enough to satisfy that demand and there appears to be a range of blockages that is stifling output.

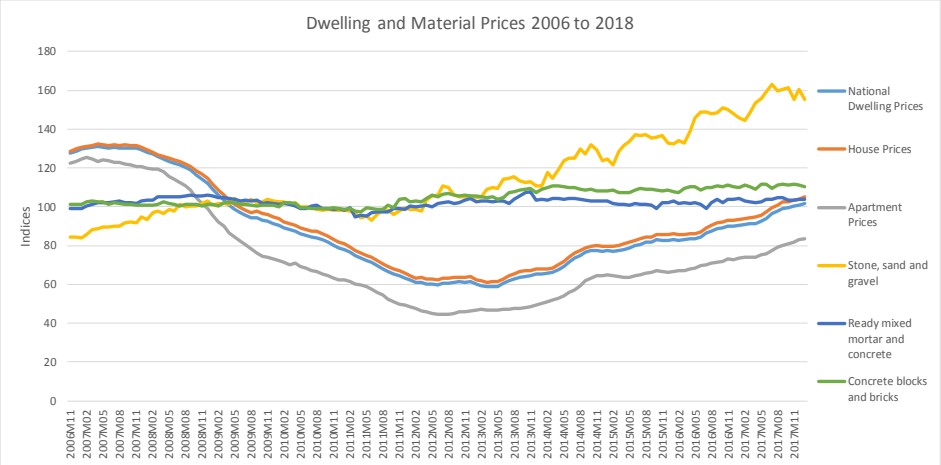
In this context, there has been much discussion in the recent past on affordability and new house construction costs.

2.2 Housebuilding Cost and Material Price Trends

The Central Statistics Office (CSO) produces a range of price information including new dwelling prices and construction materials wholesale price trends.

Data from the CSO Statbank for these price indices show the following trends in house prices and material prices from 2006 to 2018.

Chart 1: House Price and Material Costs Indices 2006 to 2018

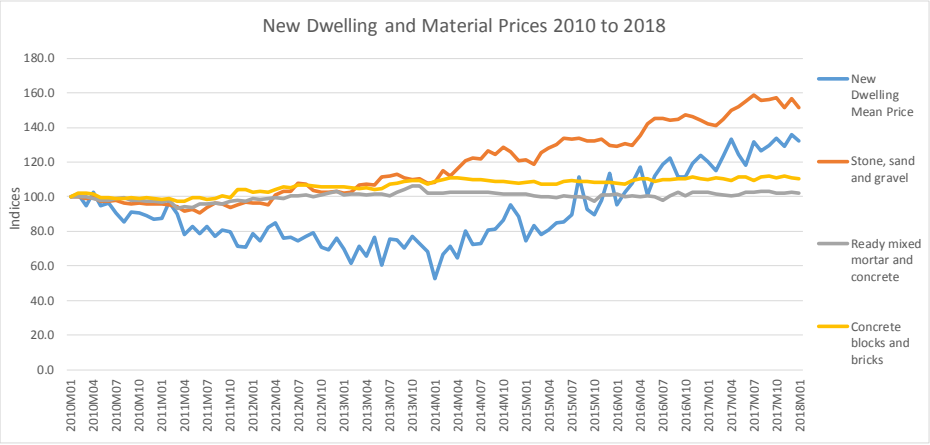


Source: CSO

House prices in Ireland peaked in 2006; declined continuously until 2013 and have recovered steadily since then. Over the same period, construction materials – which were regarded as being competitively priced in 2006 have maintained a relatively steady price level over these 12 years; with the exception of the "stone, sand and gravel" product grouping. These are low cost materials, where small increases in money terms show as a relatively high increase in percentage terms. The increase in stone prices is mainly due to additional testing, certification and audit requirements associated with changes introduced in recent years in the specification for aggregate (fill) material placed under concrete floors.

Chart 1 reflects all types of dwellings. CSO data on new house prices are available only from 2010 onwards. Charting material prices against new house prices over the period since then shows the following.

Chart 2: New House Price and Material Costs Indices 2010 to 2018



Source: CSO

These CSO data show that concrete and material prices have remained relatively steady over the years since 2010, whereas new house prices have increased steadily since early 2014. Chart 2 clearly shows that prices for concrete products are not related to the price of dwellings; and, furthermore, the consistency of concrete product prices in the face of steadily increasing demand suggests that the industry remains competitive.

3. Housebuilding and Materials' Costs

3.1 Housebuilding Costs

In May 2016, the SCSI[1] published a report on the construction costs of a 113.5 sq. m. (1,214 sq. ft.) three bedroomed semi-detached house; the most common form of dwelling built in Ireland.

The report showed the cost of providing such a standard house to the market in the Greater Dublin Area to be €330,493 including VAT and site costs. See table 1 below.

We use the term "providing" as this amount should represent what should be paid by the purchasers of such a house. The analysis was carried out by the SCSI by way of "*an extensive and detailed study of a number of live house building projects with a minimum of 30 units currently under construction in the Greater Dublin Area*."

Table 1: House Build Costs – May 2016

Element	Cost	%
Build Cost	€122,251	37.0%
Site works and site development	€28,000	8.5%
Site Cost	€57,500	17.4%
Levies	€11,750	3.6%
Professional fees; marketing; finance	€33,702	10.2%
Margin	€37,980	11.5%
VAT	€39,310	11.9%
Total	**€330,493**	**100.0%**

Source: SCSI

The build cost – i.e. all building and site development costs – come to 45.5% of total costs. Site acquisition costs are 17.4% and other costs, including professional fees, margin, marketing, finance and VAT come to 37.1%.

3.2 Concrete and Quarried Materials Costs

In 2018 the Irish Concrete Federation engaged Irida Consulting Limited to identify the cost of concrete products and quarried materials used by builders in the course of construction of new houses.

The materials comprise those used for the foundations, sub-floor fill, sand binding, floor slab, walls (assuming concrete block construction); additional

[1] Society of Chartered Surveyors Ireland

elements such as sills and lintels and roof tiles (assuming concrete tiles are used). Readymix concrete supply includes the pouring of the slab.

The Irida assessment has been made on a dwelling of similar size to that in the SCSI survey. It was assumed that the new dwelling comprised:

- A substructure of concrete foundation footings; block rising walls; stone fill under the floor and binding to SR21 specifications; outside footpaths and floor slab;
- A superstructure comprising block walls and concrete roof tiles; and
- All ancillary requirements, such as concrete sills; concrete lintels, mortar and render.

These materials provide much of the structure of a new house and the prices are inclusive of delivery to the construction site.

An analysis of these materials' costs for this new house shows the following average costs as derived from a confidential survey of material providers. The material prices are those of early-2018.

Table 2: Concrete and Quarried Materials used in new house - 2018

Element	Mean Cost
Substructure	€3,487
Structure	€4,098
Roof tiles and ancillary	€978
Total	**€8,562**

Source: Irida Consulting Analysis and Industry Survey

Table 3: Concrete and Quarried Materials Costs relative to total house costs

Concrete Products as % of:	
House build cost; i.e. excluding site cost	3.23%
Provision of complete house to purchaser	2.59%

Source: Irida Consulting Analysis and Industry Survey

This shows that while concrete materials provide much of the structure of a new house, they account for €8,562 or just 3.23% of construction cost – i.e. excluding the site acquisition costs.

Taken relative to the total cost of providing a house for purchase, which includes the site cost, the concrete materials come to 2.59% of the costs; which would be the price paid by the purchaser.

4. Conclusions

The key findings from this research are that:

1. The basic construction materials supplied by quarry operators, readymix concrete suppliers, concrete block and other product suppliers account for just 3.2% of the cost of building the most common form of new house in Ireland – the three bedroomed semi-detached house. This excludes site purchase costs;

2. The basic construction materials accounted for just 2.6% of the total cost of providing a standard three-bedroom house in the Greater Dublin Area;

3. The costs of these materials have been relatively steady since 2010.