

Report on House Building Costs and Costs of Quarried and Concrete Materials

April 2016

Context

In 2016 the ICF 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.

This report has been prepared in April 2016 (*with updated information on wholesale prices included in November 2016*) for 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 concrete products such as roof tiles and paving slabs.

The purpose of this paper is to provide a basis from which to inform third parties as to the costs and the impact of the industry's material costs on overall housebuilding costs.

We demonstrate in this paper that the concrete products and quarried materials used in building a standard three bedroomed semi-detached house currently account for less than 4% of total build costs and that the industry's impact on overall housebuilding costs has been far less than other cost factors.

Background

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. Output has risen since then to 12,666 units in 2015 and if current trends continue, completions will be less than 15,000 in 2016. This is short of the scale needed to cater for our growing population. Estimates of future construction needs - which allow for some currently unoccupied dwellings to be sold - range from 12,500 dwellings per annum (ESRI) to 16,000 dwellings annually in urban areas only (Housing Agency). The key uncertainty in these estimates is the extent to which vacant dwellings can accommodate current and future demand. The estimates shown above assume a high level of demand being met from these - which may be optimistic.

At the time of drafting this note, the recovery in Ireland's housing market has not yet been sufficient to allow the market to operate normally. There is unsatisfied demand; but supply is not coming on stream to satisfy that demand and there appears to be a range of blockages that is stifling output.

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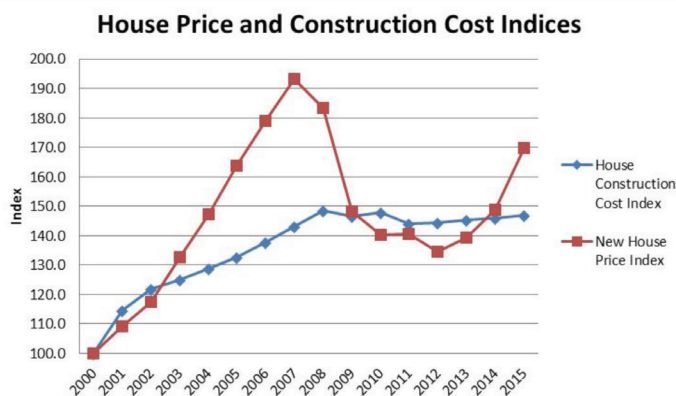
Housebuilding Cost and House Price Trends

On a monthly basis, the Central Statistics Office (CSO) publishes the House Construction Cost Index, which monitors labour costs and the cost of building materials in the construction industry. The CSO states that the Index does not include items such as overheads, profit, finance costs or land and its development. Labour costs include insurance cover and the building material costs include V.A.T. The type of dwelling covered by the index is a typical 3 bed-roomed, 2 level local authority house and the index is calculated on a national basis.

The actual index is produced by Dublin City Council on behalf of the Department of Housing, Planning, Community and Local Government (DHPCLG).

Using the CSO data for house construction costs and the data for new house prices as drawn from the DHPCLG housing statistics database; we show the trends in both over the period 2000 to 2015. The CSO/DHPCLG data show the following:

Chart 1: House Price and Construction Costs Indices 2000 to 2015 (2000=100)



Source: CSO, DHPCLG; house prices for 2015 are based on data from Q1 to Q3 of 2015.

The chart shows that house prices rose rapidly from 2000 to 2007, when the index reached 193.1, and then fell substantially when the “property bubble” burst. The recovery in prices in recent years (2013 to 2015) was seen initially in the Dublin area, and price increases in the remainder of the country did not become apparent until late 2015/early 2016. It should be noted that the “house prices” shown in this chart do not include apartments; these are solely house price changes.

The chart shows that house construction costs rose steadily up to 2008; then fell marginally and have been relatively static more recently. **The chart also shows that up to 2007, selling prices of houses rose at up to twice the rate of construction costs** and the reduction in selling prices has in effect just brought them into close alignment from 2008 onwards. In the period 2010 to 2013 the index for selling prices is lower than the index for build costs. This is not an unusual pattern when a “property bubble” bursts. A common trend in such times is for prices to fall sharply as builders/developers seek to offload completed and part completed houses and price aggressively to do so. It is normal for prices to fall significantly and then “bounce back” to what may be termed a “new normal”.

The relationship shown in the chart between the house prices and building cost indices in 2010 to 2013 might give the impression that houses were being sold at below cost levels; but the construction cost index does not include developer/builder profit and the gap between them in 2010 to 2013 is sufficiently small to suggest that sales were in fact being made at minimal profit rather than loss making.

However, there is a significant disparity between industry experience and the official data from 2012 onwards.

In 2012, the Irish Home Builders Association (IHBA) commissioned Walsh Associates – construction cost consultants and quantity surveyors – to report on the construction costs of a standard 110 sq. m. (1,189 sq. ft.) three bedroomed semi-detached house; the most common form of dwelling built in Ireland.

The property being costed was required to meet all current building regulations and all suppliers were to be assumed to meet various requirements such as tax compliance and payment of relevant labour pay rates.

The study showed the cost of construction of a standard house (excluding the land and development) to be €197,081, excluding VAT. See table 1 on next page.

This study was updated in 2014, in which it was found that the construction costs had risen to €225,961, again excluding VAT. This equates to a 14.7% increase in two years.

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Table 1: House Build Costs – 2012 and 2014

Item	Cost excl. VAT 2012	Cost excl. VAT 2014
Labour and materials for foundations, floor slab, masonry works and roof (incl. concrete roof tiles)	€28,782	€29,829
Carpentry labour and materials, incl doors and windows	€17,622	€20,831
Plumbing and electrical - labour and materials	€21,579	€27,871
Plasterwork and painting, incl tiling	€14,524	€14,524
Kitchens, wardrobes and fireplaces	€9,092	€10,910
Sub-total House Cost	€91,599	€103,965
External works - drainage, walls, paths	€11,173	€16,013
Site development works	€15,053	€15,860
Indirect costs - Health & Safety, Insurance, Homebond, scaffolding, contingency	€11,850	€14,850
Construction Total	€129,675	€150,688
Part V and financial contributions to local authority	€20,500	€22,400
Design, marketing and building finance costs	€21,200	€23,400
Profit	€25,706	€29,473
Total Cost	€197,081	€225,961

Source: IHBA

The updated 2014 IHBA report states that “the major changes in constructions costs from 2012 relate to additional insulation standards to achieve a BER A3 rating rather than a B1. There are also additional controls on the heating system to ensure greater efficiency. Low energy lights are installed. Further rain water recycling is becoming a requirement with most local authorities. Compliance with The Building Control (Amendment) Regulations 2014 involves greater supervision and management on site which has resulted in additional costs.”

The effect of these changes on building costs is shown in table 1.

The key consideration from the IHBA study however, is that its findings are quite different from the DHPCLG house building cost data, with the latter suggesting that construction costs have risen by just 2.5% between end-2011 and end-2015.

We suspect that the cause of this discrepancy is that the DHPCLG housebuilding cost index is based solely on labour

and material cost changes as reported by the CSO and does not take account of the increases in the volume of labour or materials necessitated by recent changes in the building regulations and their effect on house building costs.

The IHBA analysis did not break the cost items separately into labour and materials. However, it shows clearly that the term “building materials” covers a wide range of diverse items from the basic materials such as concrete blocks and readymix concrete to timber products such as doors and windows, to plumbing and sanitary ware; electrical items as well as built-in items such as kitchens and wardrobes.

The IHBA analysis shows that the material and labour costs associated with providing the structure of the house – i.e. foundations, floors, walls and roof – the aspect most closely related to quarried and concrete products, come to €29,829 in 2014, or 13.2% of total build cost. In addition, this element of the build cost rose by just 3.6% between 2012 and 2014, much less than the 14.7% increase in overall build cost.

Concrete and Quarried Materials Costs

The materials comprise those used for the foundations, sub-floor fill, sand binding, floor slab, walls (assuming concrete block construction); additional elements such as sills and lintels and roof tiles (assuming concrete tiles are used). Readymix concrete supply includes the pouring of the slab.

The materials included in this assessment are those that are included in the “foundations, floor slab, masonry works and roof” – the first item in the IHBA assessment shown in table previously. Standard specifications are used, such as 350 mm of Annexe E filling and a 150 mm concrete floor slab, etc.

A minor difference is that the Irida assessment was made on a dwelling of 116 sq. m. (1,254 sq. ft.) which is marginally larger than the 110.5 sq. m. house covered in the IHBA analysis. The larger size is the most commonly sized house being built now and any difference in material content or use is marginal.

The analysis of concrete product and quarried materials costs for such a new house shows the following. The material prices are those pertaining at end-2015.

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Table 2: Concrete and Quarried Materials Costs - 2015

Item	Cost excl. VAT
Substructure including foundations, rising walls, stone fill, sand blinding and ground floor concrete slab	€2,850
Above damp proof coursing blockwork and brickwork materials, incl. party wall, trowel ready mortar, cills etc.	€3,220
Roof tiles, incl. ridge tiles and provision for accessories	€2,060
Sub-total House cost	€8,130

Source: Irida Consulting Analysis and Industry Survey

The trends clearly show that quarried and concrete materials costs have consistently lagged overall building cost increases since 2000. This was despite considerable additional costs being incurred by the industry in terms of quarry registration; planning approval, product testing and health and safety. The industry has no issue with these additional requirements; but the trends shown in Chart 2 demonstrate that even with these additional compliance costs, the contribution of the quarried product and concrete materials sector to overall housebuilding cost increases was less than other factors such as labour costs.

The chart also reflects the CSO data which show that while quarried materials costs rose between 2011 and 2014, these costs have now actually reduced in 2015.

The table shows that while the total cost of the structure of a house, including both labour and materials, was 13.2% of total build cost – as described in section 3 previously – the basic material content alone accounts for just €8,130 which amounts to just 3.6% of total build cost. There has been no change in the volume of these products needed for a typical house in recent years.

In money terms, applying CSO/DHPCLG indices to the IHBA build costs; we deduce that in the period 2011 to 2015 that house construction costs have increased from €196,694 to €227,138; an increase of €30,445 over that period. The contribution of concrete and quarried products to that increase was €647; or just 2.1% of the increase.

Impact of Concrete and Quarried Materials Costs on House Building Costs

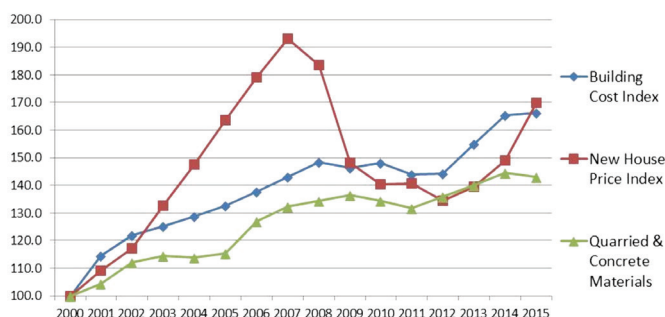
The CSO publishes cost indices for different construction materials such as readymix concrete, concrete blocks, etc.

The indices for individual materials were applied to the proportion of costs accounted for by each material and the trend examined retrospectively to 2000. The outcome is shown in Chart 2 following:

However, the price increases shown in the CSO data were not evident to industry participants in many parts of the country. The data provided by the CSO is national data based on industry surveys. However, many in the industry expressed the view that the data do not represent all parts of the country.

Note: CSO data for wholesale price changes in late 2016 show that prices for readymix concrete and concrete blocks are marginally higher than at the start of 2015; less than 1% and less than 2% respectively over a near two year period.

Chart 2: Quarried and Concrete Materials Costs, Build Costs and Selling Prices 2000 to 2015



Source: Irida Consulting Analysis using CSO data

Conclusions

The key findings from this paper are that:

1. The basic construction materials supplied by quarry operators, readymix concrete suppliers, concrete block and other product suppliers account for just 3.6% of the cost of building the most common form of new house in Ireland – the three bedroomed semi-detached house;
2. These basic construction materials accounted for just 2.1% of the overall building cost increases of new houses over the period 2011 to 2015;
3. The costs of these materials have consistently lagged other build cost items.

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