Economies of scale

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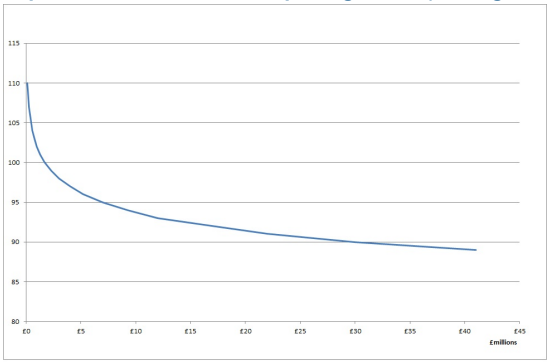
Pricing levels on building contracts tend to fall as the size of the project increases.

The latest BCIS Tender Price Study, based on project tender price indices analysed by contract sum, shows that pricing levels fall by as much as 20% between small contracts and multi-million pound schemes.

Compared to the mean value of projects in the study of £1.7million projects, pricing on small projects is 10% higher, while pricing on projects over £40million can be 10% lower.

Impact of contract value on pricing levels (Pricing level – log of project indices, BCIS Tender Price Study, Base £1.7million = 100)



Source: BCIS

The graph shows a clear relationship, with larger contracts having a lower price level than smaller contracts - as would be expected from economies of scale. In reality the project cost varies for many reasons and the relationship is not clear until a large sample of schemes is analysed.

It is not clear that the relationship continues at either end of the scale. There is an insufficient sample of large projects to tell whether larger projects continue to gain from economies of scale with ever falling price levels; maintain similar pricing levels (prices 'level out'); or whether pricing levels rise because of additional complexity. However, the indications are that the average price level of larger projects does not fall significantly beyond about £40million while the smallest projects appear to be more variable (and therefore break the homogeneous assumption underlying the analysis).

The Contract Sum study is intended to measure the effect of contract size on price level. The contract sum was chosen rather than the floor area because it is always available from the BCIS indexing process and is a better measure of the total 'volume' of building work as it includes external works, etc.

The price level of individual building projects varies widely for all sorts of reasons. The BCIS Tender Price Studies show how, on average, price levels change relative to ten variables. There are many more variables that will affect the price level of a building project and so professional judgment should always be used when applying the study results.

1. Date – when it was built
2. Location – where it was built
3. Regional trend – interaction between where and when it was built
4. Selection of contractor competitive tender, negotiated, etc.
5. Contract sum – volume of work *
6. Building function – office, factory, hospital, etc.
7. Building height – number of storeys
8. Type of work – new build, refurbishment, etc.
9. Site working space
10. Site access

* Note: the volume of work affects the cost of a building directly but it also has an effect on the price levels of the work.

The Contract Sum study is based on a least squares linear regression with the natural logarithm of the adjusted project index as the dependant variable and the logarithm (base 10) of the contract sum (adjusted to 1985 prices) as the independent variable.

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