

UK Construction Inflation 2010 to 2015

An overview of construction inflation over the
past 5 years
June 2015

Norfolk County Council

UK Construction Inflation 2010 to 2015

An overview of construction inflation over the
past 5 years

June 2015

Norfolk County Council

County Hall
Martineau Lane
Norwich
Norfolk
NR1 2DH

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description	Standard
01	07/05/15	R. Tyler / K. Horton	S. Wenham / A. Symonds	K. Horton / M. Frith	Draft v1	
02	08/06/15	K. Horton	A. Symonds	M. Frith	Draft v2 (with new section added)	
03	10/06/15	K. Horton	A. Symonds/ S. Wenham	M. Frith	Final version for Client review	

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

Chapter	Title	Page
1	Introduction	1
2	Construction Inflation	2
2.1	UK	2
2.2	East of England	3
2.3	UK Resources	4
3	Road Construction Inflation	6
3.1	UK	6
3.2	Road Construction Resources	7
4	NNDR “Project” Cost Index	9
4.1	Methodology	9
4.1.1	Index “Basket of Goods”	9
4.1.2	Index Population	10
4.2	Results	10
5	Conclusion	13
	Appendices	14
	Appendix A. NNDR Inflation Dashboard	15

1 Introduction

Franklin + Andrews were commissioned by Norfolk County Council (NCC) to provide a commentary on the inflationary movement of construction costs over the past five years and, in particular, on road construction projects.

We will report how construction inflation has moved between 2010 and 2015 for the UK, East Anglia (East of England) and road construction. We will then report how some of the key resources used on road construction projects have changed.

To support our analysis, our study has called upon data sourced from UK statistical organisations including the Office for National Statistics (ONS) and the Building Cost Information Service (BCIS).

It should be noted that when discussing different statistics in this report, we have made reference to both “Cost” and “Price” indices. To clarify, a “Cost” index reflects changes to input costs to the contractor, e.g. labour, materials and plant. A “Price” index represents the change in price to the end-user, i.e. the Client, therefore a price index will include the contractor input costs plus the associated overhead and profit margin.

2 Construction Inflation

Within the UK there are a host of indices that measure inflation across different types of construction and at various levels. Within this section, we will review how UK construction inflation has performed and also how inflation has changed within East of England between 2010 and 2015. In addition, at UK level only, we will review how resources costs have moved over the same period.

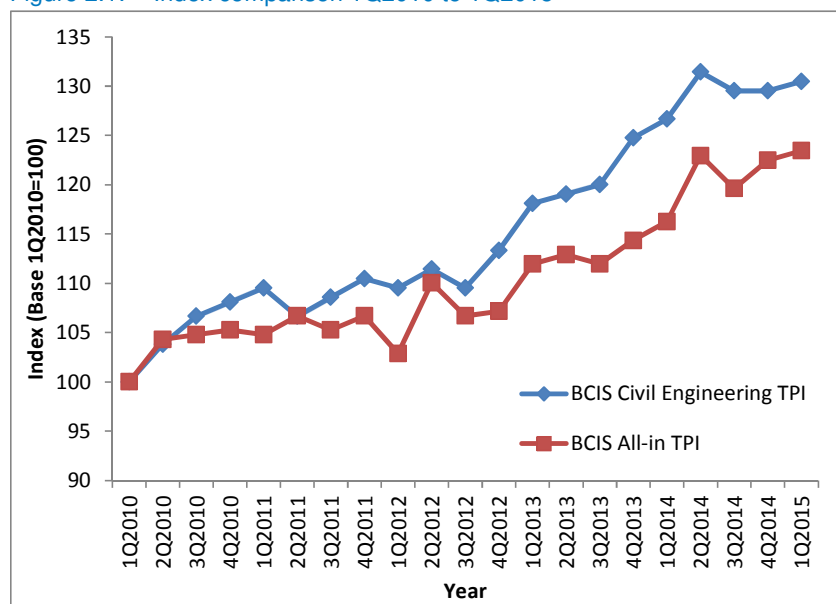
2.1 UK

For UK construction we have focused our attention on general construction and civil engineering and have therefore selected the following indices for comparison:

- For general construction we have utilised the BCIS All-in Tender Price Index (TPI) which comprises of tendered project data sourced from all types of facilities; including schools, residential and commercial offices.
- For civil engineering we have identified the BCIS Civil Engineering TPI which models changes in the prices of tendered contracts for civil engineering projects. It does however exclude specialist engineering works included in infrastructure projects.

Figure 2.1 below displays the performance of the two indices over the past five years (note; for comparison reasons, both indices have been rebased to 1Q2010 = 100).

Figure 2.1: Index comparison 1Q2010 to 1Q2015



As highlighted in figure 2.1 above, civil engineering tender prices have outstripped general construction prices throughout the analysis period.

If we consider the total inflation between the two indices from 1Q2010 to 1Q2015, the following figures have been achieved:

- BCIS All-in TPI +23.4%
- BCIS Civil Engineering TPI +30.5%

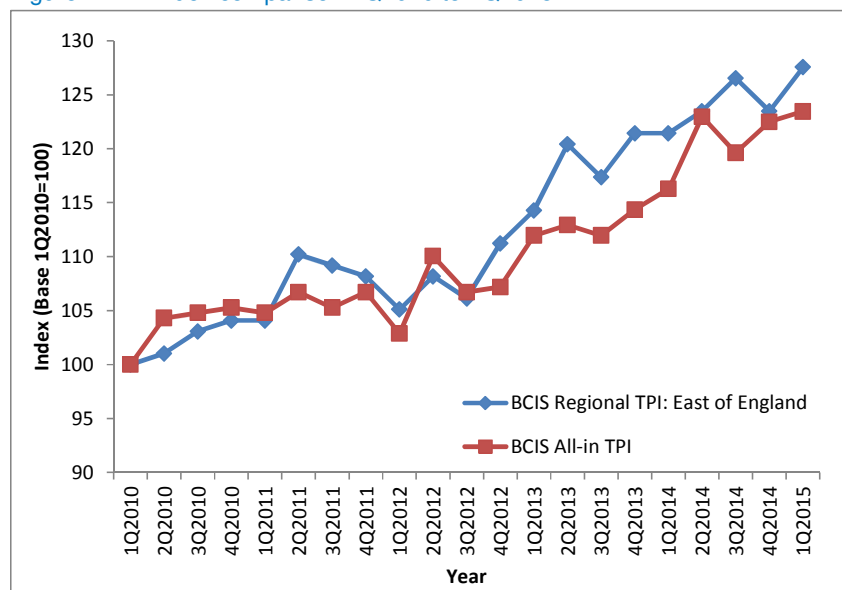
To put this into context, if you had a construction project with an estimated cost of £50 million in 1Q2010, that estimate would increase to £61.7 million (+£11.7 million) based on the All-in TPI and £65.3 million (+£15.3 million) using the Civil Engineering TPI at 1Q2015. Whilst the inflationary difference is circa 7% between the two indices, the Civil Engineering TPI has increased the total estimate cost by almost a third.

2.2 East of England

For the East of England region, we are limited as to the number of available indices to draw reference to therefore we can only focus on the BCIS Regional TPI for the East of England. The Regional TPI is a derived index that utilises project data from the BCIS National All-in TPI and, as a consequence, will only represent the general construction environment.

Figure 2.2 below displays the performance of the two indices over the past five years (note; for comparison reasons, both indices have been rebased to 1Q2010 = 100).

Figure 2.2: Index comparison 1Q2010 to 1Q2015



As highlighted in figure 2.2 above, tender prices in the East of England have marginally outperformed national tender prices throughout the analysis period.

If we consider the total inflation between the two indices from 1Q2010 to 1Q2015, the following figures would be achieved:

- BCIS All-in TPI +23.4%
- BCIS Regional TPI: East of England +27.6%

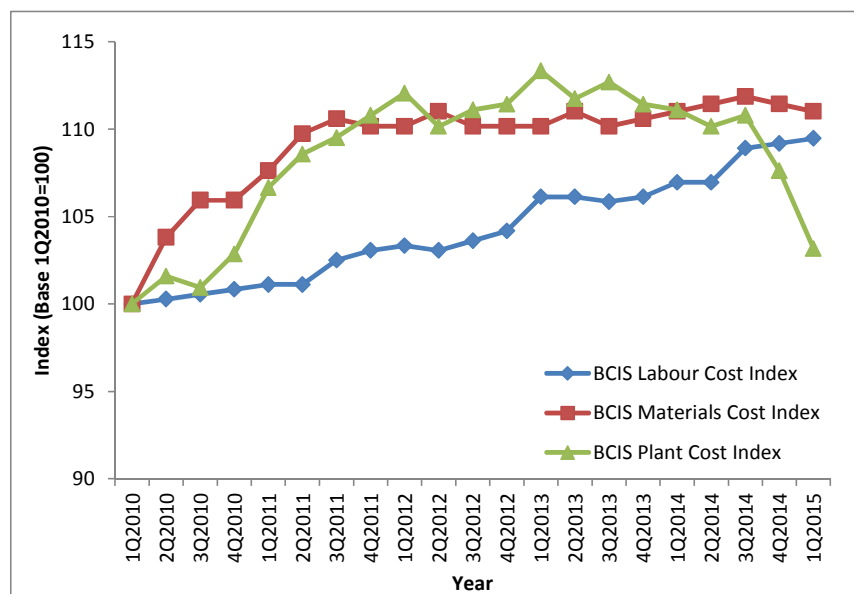
To put this into context, if you had a construction project with an estimated cost of £50 million in 1Q2010, that estimate would increase to £61.7 million (+£11.7 million) based on the All-in TPI and £63.8 million (+£13.8 million) using the East of England Regional TPI at 1Q2015. Whilst the inflationary difference is circa 4% between the indices, the Regional TPI has increased the total estimate cost by over a quarter.

2.3 UK Resources

Whilst identifying what inflation is witnessed at a high level, it is also worth understanding what price pressure could be underpinning any upward or downward trend. To support this, the analysis now focuses on inflation at resource level (i.e. labour, materials and plant) and for this we are limited to input cost indices for the UK as a whole.

For the study we have utilised the BCIS Cost Indices for Labour, Materials and Plant. Figure 2.3 below displays the performance of the three indices over the past five years.

Figure 2.3: Index comparison 1Q2010 to 1Q2015



As highlighted in figure 2.3 above, input costs have generally increased throughout the analysis period. However, other than labour costs, both material and plant costs have either stagnated or, in recent quarters, actually decreased.

If we consider the total inflation between the three indices from 1Q2010 to 1Q2015, the following figures would be achieved:

■ BCIS Labour Cost Index	+9.5%
■ BCIS Materials Cost Index	+11.0%
■ BCIS Plant Cost Index	+3.2%

If we removed the obvious impact of the recent reduction in fuel prices from the plant cost index then a figure around +11% would be recorded. That said the general increase witnessed across input costs is considerably below the results being recorded within the tender price statistics.

3 Road Construction Inflation

Within this section, we will review how UK road construction inflation has performed between 2010 and 2015. In addition, we will review how some of the key resources items used within road construction projects have moved over the same period.

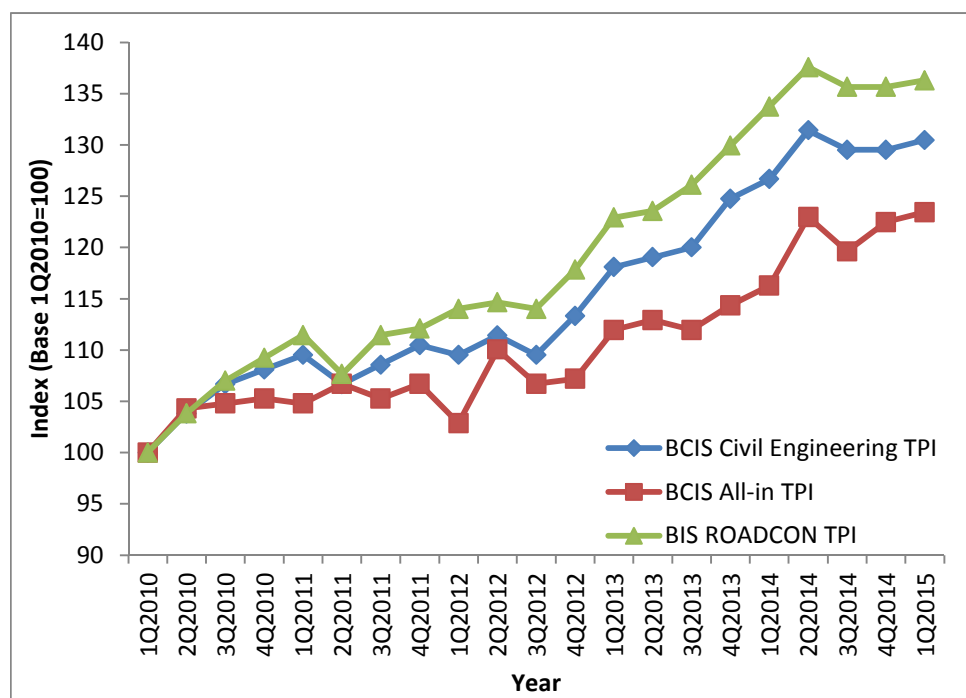
3.1 UK

For UK construction we have focused our attention on statistics that measure changes in road construction costs and have therefore selected the Department for Business, Innovation & Skills (BIS) ROADCON TPI for analysis.

The BIS ROADCON TPI (formerly known as the BIS Tender Price Index of Road Construction) measures the movement of prices in tenders for road construction contracts in England, Scotland and Wales. It includes road contracts for New Construction, Motorway Widening and Major Maintenance schemes costing over £100,000. The index is now updated and maintained by the BCIS.

Figure 3.1 below displays the performance of the ROADCON TPI against the All-in TPI and the Civil Engineering TPI over the past five years (note; for comparison reasons, the indices have been rebased to 1Q2010 = 100).

Figure 3.1: Index comparison 1Q2010 to 1Q2015



As displayed by figure 3.1 above, tender prices within the UK road construction sector have surpassed the level experienced within the general construction and civil engineering markets.

If we consider the total inflation between the three indices from 1Q2010 to 1Q2015, the following figures would be achieved:

- | | |
|------------------------------|--------|
| ■ BCIS All-in TPI | +23.4% |
| ■ BCIS Civil Engineering TPI | +30.5% |
| ■ BIS ROADCON TPI | +36.3% |

Using the same scenario referenced in section two of the report, based on a construction project with an estimated cost of £50 million in 1Q2010, that estimate in 1Q2015 would increase to:

- £61.7 million (+£11.7 million) based on the All-in TPI
- £65.3 million (+£15.3 million) using the Civil Engineering TPI
- £68.2 million (+£18.2 million) using the ROADCON TPI

As can be seen above, using the inflation adjustment for ROADCON TPI would increase the total estimate cost by over a third.

It should be noted that there is a formula available as part of the ROADCON TPI which allows the user to adjust the index to suit specific project type (e.g. new roads, motorway widening, etc.), tender/estimate value and location. Unfortunately, the limited sample for projects within the East of England means that no adjustment factors are available to enable us to adjust the headline index.

3.2 Road Construction Resources

As highlighted in section 3.1 above, road construction tender price inflation has increased significantly over the past five years.

To try to understand what resources may be driving the inflation within the sector, we have identified some of the key items used, namely:

- Labour & supervision
- Plant & road vehicles (operatives and fuel are not included)
- Aggregates
- Ready Mixed Concrete
- Plastic products
- Coated macadam & bituminous products
- DERV Fuel
- Timber
- Steel for Reinforcement

For each item above, we have sourced an input cost index from the BIS Price Adjustment Formulae Indices (PAFI) for civil engineering contracts (formerly known as BAXTER Indices). These are monthly indices that are updated and maintained by the BCIS.

Table 3.1 below displays the inflation experienced by each resource between 1Q2010 and 1Q2015.

Table 3.1: Index comparison 1Q2010 to 1Q2015

BIS Code	BIS Index Name	Inflation %
90/ 1	Labour & supervision	8.1%
90/ 2	Plant & road vehicles	6.8%
90/ 3	Aggregates	8.1%
90/ 6	Ready Mixed Concrete	17.5%
90/ 8	Plastic products	16.3%
90/ 9	Coated macadam & bituminous products	19.2%
90/ 10	DERV fuel	8.3%
90/ 12	Timber	14.2%
90/ 13	Steel for reinforcement	18.5%

Source: BCIS online [accessed 08/05/15]

Table 3.1 depicts the inflation that has occurred between two points in time (i.e. 2010 and 2015) and there have been notable increases in key materials such as steel reinforcement, tarmac and ready mixed concrete. That said, during the past five years it is worth drawing reference to a significant “spike” that occurred with both fuel and steel indices during early 2012.

If the indices for DERV fuel and steel for reinforcement were calculated between 2010 and 2012, then increases of +27% and +40% would have been recorded. Since 2012 prices materials, particularly those linked to oil prices, have been on a downward trend. It is only labour costs that have continued to rise consistently, albeit not quickly, throughout.

4 NNDR “Project” Cost Index

In order to try to understand the more localised inflation between 2010 and 2015, in this section of the report the focus is on the Norwich Northern Distributer Road (NNDR) project and the development of a bespoke index.

4.1 Methodology

To calculate the potential inflation specific to the NNDR project, we needed to understand the composition of the project, i.e. where is the money to be spent. This information would underpin the index as it would ensure any associated cost drivers are taken into account.

4.1.1 Index “Basket of Goods”

To support our analysis, we were provided with a NNDR project breakdown based on a budget estimate dated 1Q2013. Table 4.1 below depicts the project breakdown along with the percentage each section has in respect of the total cost (note, the estimated total cost excluded risk and the Contractor’s fee).

Each section of the estimate is used to develop the index “Basket of Goods”. In essence a “Basket of Goods” is a list of goods and services that are procured as part of the project, for example, within the Retail Price Index “Basket of Goods” are items such as bread, milk, iPads, etc.

Table 4.1: NNDR Budget Estimate 2013

Section	Construction heading	% of Total Cost
Roadworks		64.64
Series 200	Site Clearance	1.37
Series 300	Fencing	1.09
Series 400	Safety Fencing	1.30
Series 500	Drainage	7.94
Series 600	Earthworks	14.55
Series 700	Pavements	29.72
Series 1100	Kerbs and Paved Areas	2.04
Series 1200	Road Signs	0.14
Series 1200	Road Markings	0.25
Series 2700	Stats and Accommodation Works	1.64
Series 3000	Landscaping	2.46
Series 3000	Environmental	1.44
Series 3000	Archaeology	0.72
Provisional Sums		0.42
Structures		11.42
Prelims		23.52
Total (excluding risk and Contractor fee)		100.00

4.1.2 Index Population

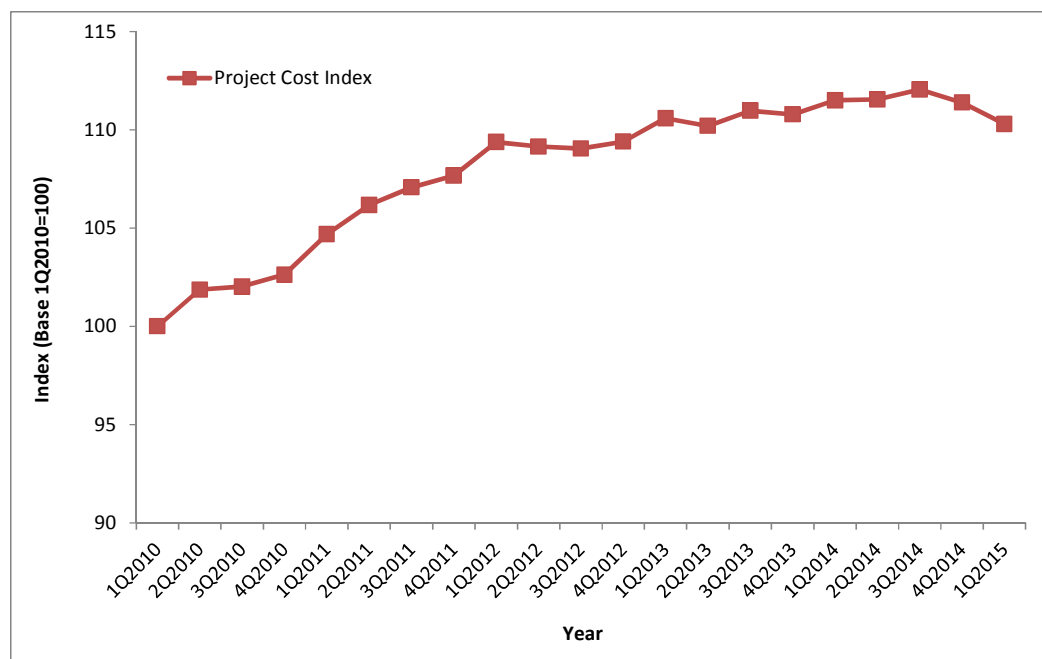
With a defined Basket of Goods in place, the next step was to populate each item with data from 2009 to 2015 (present day). In an ideal situation, the best form of cost data to use to populate the index would have been obtained by surveying the supply chain (market) for each unique section of work. In reality, this information would have been difficult to obtain given the limited time available to conduct this inflation review.

The alternative approach, and one that is widely used throughout industry, is to review each section and select a published national index that offers the most representative match to the item of work, e.g. a concrete index for a concrete item. The review focused on organisations and industry index publishers including the ONS and the BCIS. All indices that have been included within the project index are categorised as Cost Indices due mainly to level in which indices needed to be allocated.

4.2 Results

Figure 4.1 below displays the performance of the NNDR Project Cost Index over the past five years (all indices have been rebased to 1Q2010 = 100).

Figure 4.1: NNDR Project Cost Index 1Q2010 to 1Q2015



As displayed by figure 4.1 above, the NNDR “Project” Cost Index increased at a relatively stable rate from 2010 with a definite contraction over the second half of 2014. The index is heavily influenced by the

performance of oil-based products and fuel (used within the road and plant vehicles) which, as discussed in section 3.2 of this report, were affected by the decline in the price of oil.

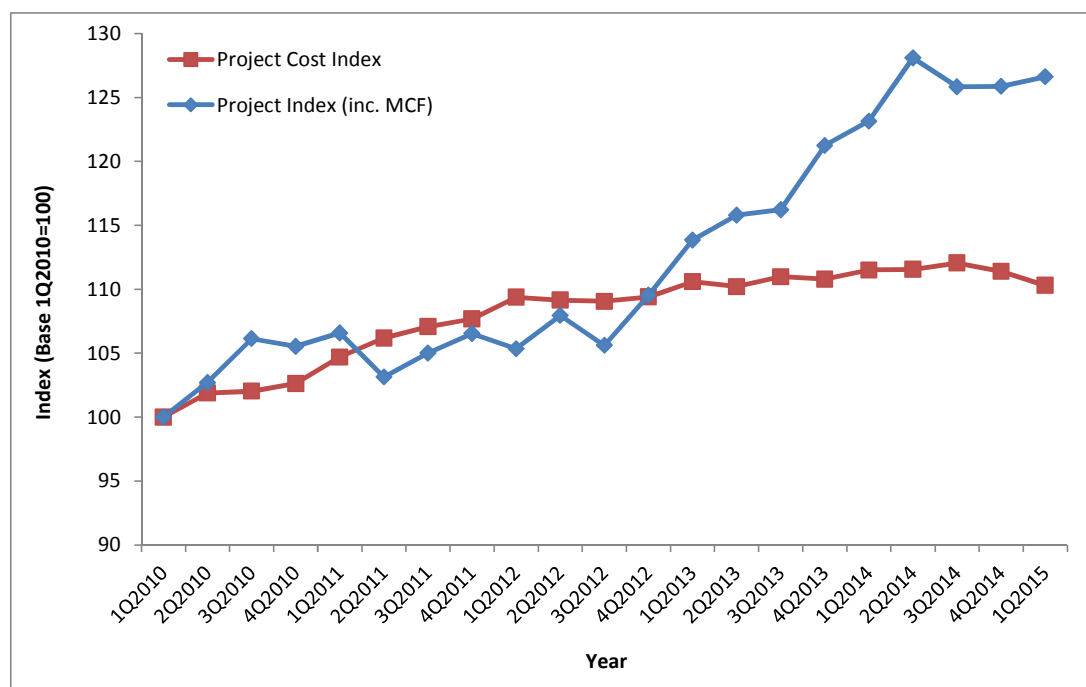
If we consider the total inflation between 1Q2010 to 1Q2015, the following figures would be achieved:

- NNDR “Project” Cost Index +10.2%

In Appendix A of the report, we have produced an NNDR Inflation Dashboard which has further details on the NNDR Project Cost Index.

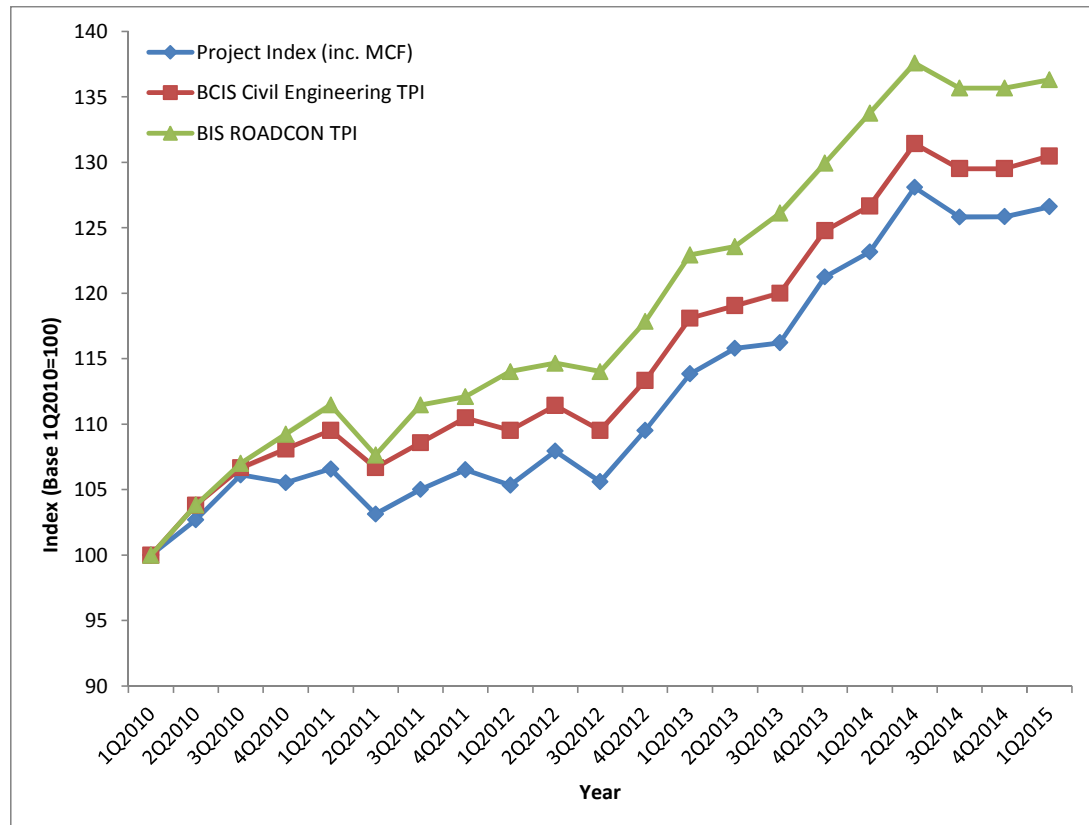
It is important to note that the index that has been developed for the NNDR project, is a “Cost” index, i.e. it reflects the input costs less the contractor’s overhead and profit. To be able to compare the index to “Price” indices that have been referenced earlier in the report then it is plausible to add a “Market Conditions Factor (MCF)”. A MCF is in essence a factor to reflect the tendering climate and is calculated by dividing a Price index by a Cost index. Figure 4.2 below highlights the significant impact that the addition of a MCF has on the NNDR Project Cost Index.

Figure 4.2: NNDR Indices – Cost versus Price



For the purpose of comparison only, we have utilised the BCIS MCF for Civil Engineering and applied this to the NNDR Project Cost Index to derive a NNDR Project Price Index. The result has been compared to the BIS Road Construction Tender Price Index in figure 4.3 below:

Figure 4.3: Index Comparison (1Q2010 to 1Q2015)



If we consider the total inflation between the three indices from 1Q2010 to 1Q2015, the following figures would be achieved:

- Derived NNDR Project Price Index +26.6%
- BCIS Civil Engineering TPI +30.5%
- BIS ROADCON TPI +36.3%

Whilst the addition of a MCF to the NNDR Cost Index has a profound impact on the overall inflation result (i.e. from 10.2% to 26.6%), the actual inflation witnessed is still notably below that recorded by, say, the BIS ROADCON TPI.

Going forward we expect a level of construction inflation that will be ahead of the general rate of inflation over the next 12 months.

5 Conclusion

Our report has identified that construction tender price inflation within the UK has increased significantly between 2010 and 2015. Within the road construction sector, tender prices have outstripped construction and civil engineering in general with inflation recorded above 36% for the analysis period.

With tender prices inflating at a significant pace, it would be logical to expect that rising input costs would be at the heart of the increase. However our analysis of resource items has suggested that inflation at resource level has been considerably below tender prices throughout the analysis period. This would therefore suggest that the bulk of differential between costs and tender prices would be as a consequence of increased overhead and margin recovery by the contractors.

The development of a bespoke NNDR Index has highlighted the inflation profile more akin to the project and the associated cost drivers. The results indicated that historically, inflation has been below that recorded by published indices, both in terms of Costs and Prices. The outlook for the next 12 months does, however, suggest that inflation for the project could be above the general rate of inflation in the UK.

It should be noted that this study provides an indicative view of the changes in construction costs and prices, rather than a definitive answer.

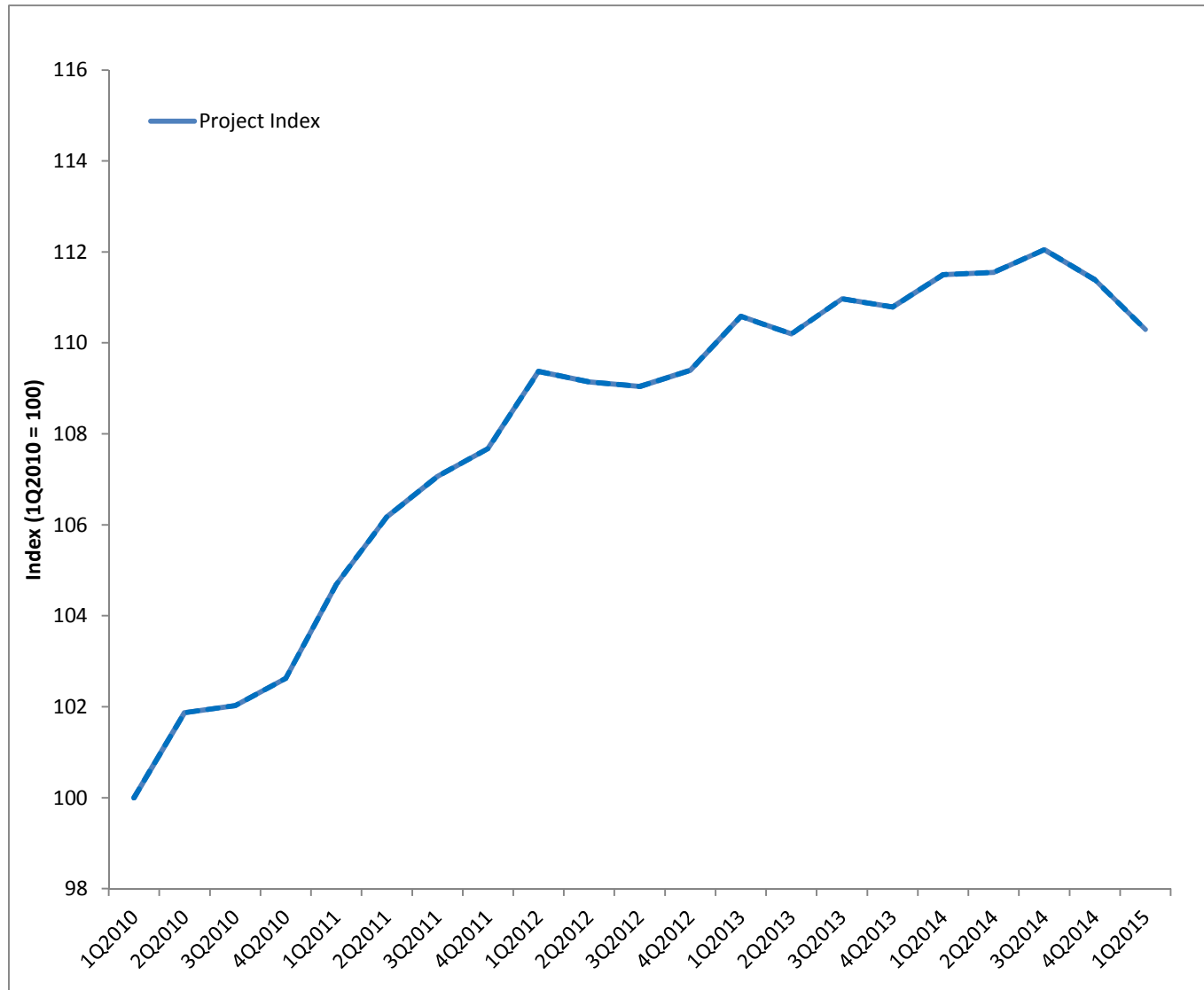
Appendices

Appendix A. NNDR Inflation Dashboard	15
--------------------------------------	----

Appendix A. NNDR Inflation Dashboard

Franklin + Andrews Inflation Dashboard

Inflation: Project Index



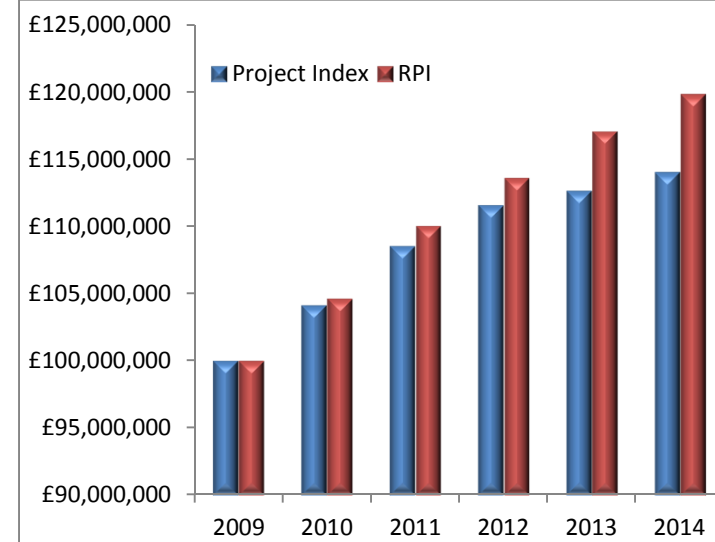
Index Values Table

	2009	2010	2011	2012	2013	2014
Project Index	100.7	104.0	108.9	111.8	113.2	114.2
All-Items Retail Price Index (RPI)	101.3	106.0	111.5	115.1	118.6	121.4

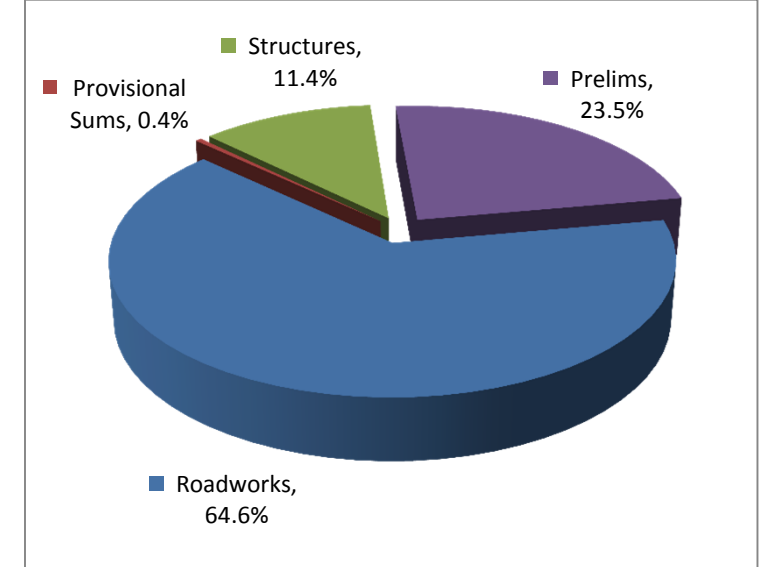
NCC - NNDR INFLATION PROFILE



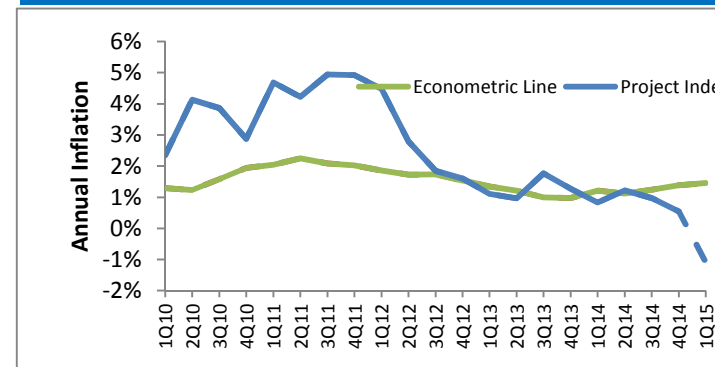
Impact on Nominal Project Cost (Base £100k in 2009)



Bespoke Index Weightings



Annual Inflation Figures (% change p.a.)



Inflation using the Project Index

Historically, between 1Q2010 and 1Q2015, the project index has inflated by 10.2%.

Inflation by Element (1Q10 to 1Q15)

