

AGGREGATES, CEMENT AND READY-MIX CONCRETE MARKET INVESTIGATION

Price increase announcement letters in aggregates

Introduction

1. In this working paper we describe the price increase announcement letters sent by the Majors (that is, Aggregate Industries, Cemex, Hanson, Lafarge and Tarmac) to their aggregates customers. These are letters sent to inform the customers of the Majors' intentions to increase the price of aggregates products in the near future. Announcements usually take place once a year (around January) but can also happen more frequently in a year (eg in April and/or in June). The letters are usually sent around one to three months before the price increase is intended to become effective.

2. The aim of our analysis is to understand whether there are patterns in the price increase announcement letters which may indicate that these letters are used as a mechanism for reaching common understanding on the level of prices in the industry or on the direction and amount by which prices should increase. In this context, this could be the case if we found that there is a degree of parallelism in the announcement dates and the magnitude of the notified price changes. We also conducted an analysis of how and whether the announced price increases are translated into higher average realized price increases.

The price adjustment mechanism

3. Lafarge Aggregates Limited and Lafarge Cement UK Limited (together Lafarge) told us that as part of its annual performance plan and budgeting process which took place between September and October each year, Lafarge forecast the inflation effects likely to impact its business over the following financial year. Lafarge said that

this was used to calculate an internal expectation of the overall price increase required to achieve the next year's financial targets and that to the extent that the current year's cost inflation had not been fully recovered, this may also be factored into the calculation. Lafarge told us that this figure was then used to formulate a price adjustment announcement which would usually be sent to customers around the middle of November for an adjustment to be implemented on 1 January. Lafarge commented that the price increases detailed in letters were aspirational only and therefore did not reflect actual prices implemented to individual customers. The adjustments announced in the letter varied for different grades of aggregates, reflective of different production costs and the fact that some grades were 'long' products.¹ According to Lafarge, although the announced adjustments were set at a particular level, it was recognized that the prices ultimately agreed would be subject to negotiation between the relevant customer and Lafarge. As a result, Lafarge said, increases implemented typically differed from those announced.

4. Lafarge added that following receipt of price adjustment letters most customers generally made contact indicating that they were not willing to accept the proposed price adjustment and that they wished to negotiate a different price with Lafarge. Lafarge said that these negotiations took place in the weeks leading up to the implementation of the price increase.
5. Lafarge said that where it faced unpredicted cost pressures, as it did in 2008 when there was a spike in energy prices (particularly oil which especially affected delivery costs and sea freight which further affected the delivered costs of seaborne coal etc), it may implement additional price adjustment processes along the same lines as above.

¹ Lafarge uses the term 'long' to describe grades of aggregates which are generally slow-moving stockpiles for which demand is significantly lower than the yield. Long products are distinguished from fast-moving or 'short' products.

6. It also told us that as part of the price adjustment process, Lafarge's internal price guides provided to its sales representatives were adjusted in line with the announcement with the intention that the adjustment was reflected in prices given for new contracts following the price adjustment implementation. The values within the price guides provided to sales representatives would then continue to be adjusted on a monthly or bi-monthly basis to reflect prices agreed with customers for individual transactions. Lafarge commented that the final agreed price might include a delayed date of application, adjustments to the product supplied, volume, rebates, discounts, promotional assistance, delivery modes, credit terms, service level, etc.
7. Hanson told us that a proposed price increase by Hanson frequently led to a price negotiation. It said that it issued general price increase notifications to its customers (by way of letters to individual customers). These were proposed by it in order to attempt to recover costs increases (eg energy costs which had risen substantially in recent years). Such letters involved the notification of an increment change to be applied to the current prices being paid by that customer.
8. Hanson added that the actual price increase implemented frequently involved the customer accepting a lower price increase, often significantly lower, than that proposed by Hanson (and in many cases, no price increase). Customers used the threat of switching to negotiate lower (or no) price increases. According to Hanson, achieved price increases were often significantly below those proposed.
9. Aggregate Industries UK Limited (Aggregate Industries) said that [⊗].
10. Tarmac Group Limited (Tarmac) told us that its price announcements were aspirational and formed a starting point for negotiations. It said that it recognized that customers would not accept purported price increases set out in the announcement

letters as standard and that it used this as an opportunity to reopen pricing discussions.

11. Cemex UK Operations Limited (Cemex) said that any new price sought in a price announcement letter was almost never achieved. It added that tough competitive conditions meant that over the course of the year there was likely to be price erosion as customers moved supplier (or threatened to switch supplier) after any price had been negotiated.

The letters

12. We received information from the Majors on the price increase announcement letters they have sent to their aggregates customers over recent years.² We have data on Lafarge's and Cemex's letters from 2006 to 2012 and for the rest of the Majors from 2007 to 2012.
13. Aggregate Industries told us that in aggregates and RMX, [§§].
14. In the letters that Aggregate Industries submitted to us, we observe that there are [§§] variations. We observe that there are no differences in the price increases for the same product [§§]. However, there can sometimes be small differences [§§] in the dates the letters were sent and the products they include.
15. The other Majors did not provide information on price letters by region. Rather the letters (as well as the price increase data they sent us as a response to the market questionnaire) refer to all customers. We do not know if this is because they do not have regional letters or because, [§§]), there are no differences in the announced prices across regions. Cemex, for example, ends each letter with a list of regional

² We also have some data from the OFT background material.

contacts that the customers can contact for further information in relation to the announced price increases.

16. The letters are usually sent around one to three months before the increase becomes effective and the price changes apply to all new orders and all outstanding orders and contracts issued before the effective date.

Dates and price increments

17. In what follows, we summarize the information we received from the Majors for announced price increases for the different aggregates products and look for potential patterns of parallelism.³ There is no exact overlap across the Majors with regard to the information they sent us. Tables 1 to 15 summarize all the information we have on the aggregates price increase announcement letters. To make comparisons meaningful across the different suppliers, we grouped the different sub-products into wider aggregates product categories. The exact products that fall under each category by supplier are described in the [annex](#).
18. Lafarge's price increases generally apply to all sales (delivered and collected). Cemex told us that it did not differentiate between delivered and ex-works prices and Aggregate Industries told us that the price increases [☒]. Hanson's price increases apply to delivered sales and Tarmac's price announcements relate to selling prices. Whenever there are cases where price rises are different for delivered and collected sales, this is noted in the tables below.

January increases

19. Tables 1 to 7 summarize the available data for the January increases from 2006 to 2012 respectively. We see that all Majors announce price increases that become

³ We restrict our analysis to primary aggregates because recycled and secondary aggregates account only for a small part of the Majors' overall sales.

effective on 1 or 2 January every year and that the announcement letters are sent approximately one to three months before the effective date.

20. The main reasons for these increases stated in the Majors' letters are rises in costs relating to energy, fuel, raw materials or regulatory issues. For example, Hanson noted in its letter for January 2007⁴ that 'This essential increase reflects the rapid cost inflation we have experienced this year and the rising regulatory and external costs facing our business'. In 2012, Lafarge wrote in its announcement letter⁵ that it was increasing its aggregate prices because 'there are continued increases in the cost of energy, mineral and haulage', while Cemex for the same year said in its letter⁶ that 'This increase is a direct result of unrecovered and ongoing cost increases within our business despite continuous efforts to reduce our cost base'. The other letters we have seen give similar explanations. We also notice that the January letter is sometimes used to notify customers in advance of the forthcoming increase in April due to the increase in the Aggregates Levy.
21. We observe that there is some parallelism in the announcement dates. Although we do not always have the exact date of all letters, we see that in general the Majors send their letters within a few days of each other. Usually all letters are sent within the space of a month or less.
22. In the cases where we have the announcement dates for all Majors (eg 2009, 2010, 2011, 2012), we can also observe some pattern in the sequence of letters sent. From 2009 to 2011 we see that Aggregate Industries sent a letter first for the January increases followed by Tarmac. In these three years, Cemex and Hanson followed them (in the same sequence in 2009 and 2010) and Lafarge was always the last to

⁴ Hanson letter of 24 October 2006.

⁵ Lafarge letter of 1 November 2011

⁶ Cemex letter of November 2011

announce. Hanson announced first in 2012 as well as in 2008 and Tarmac was the first to send a price increase announcement letter in 2007. Due to the lack of the exact dates of announcements from all Majors, it is difficult to identify whether there is any general pattern. However, it seems that it is usually Aggregate Industries and Tarmac that take the lead, ie the companies with the highest share of aggregate sales nationally (18 and 21 per cent respectively). Hanson and Cemex, with national shares 13 and 12 per cent respectively, appear sometimes to announce immediately after, while Lafarge, who has the smallest share (8 per cent), in many cases is the last to announce the price increases.⁷

23. We also see that there is a parallelism in the amounts of the announced increases. On average, the price increases every time are approximately £1.20 per tonne for fine sand, £1.30 per tonne for coarse sand, £0.65 per tonne for sub-bases, £1.30 per tonne for single size and graded aggregates, £2.50 per tonne for 60+ PSV aggregates and £3.25 per tonne for 65+ PSV aggregates. To put this into context, these increases represent an 8 per cent increase of the average price of sub-bases, 10.8 per cent increase of the average price of coarse sand and 10 per cent increase of the average price of fine sand.⁸ The maximum difference in announced increases between the Majors varies between £0.10 and £1.60 depending on the product and the year. Maximum differences over £1.00 relate to 60+ PSV and 65+ PSV aggregates.
24. For the cases where we know the exact letter dates (January 2009, January 2010, January 2011 and January 2012), as well as the cases where we know at least who was the first to send an announcement letter (January 2007, January 2008), we observe that in many cases the Majors whose announcements come after the first

⁷ 2010 Great Britain market shares based on BDS data.

⁸ Average prices for these products are calculated as the average of all Majors over years 2007–2011 from the parties' transaction data. Prices are ex-works and refer to external sales.

supplier announce the same price increases as (or slightly higher prices than) the first one. There are cases, however, where they also announce price increases which are below that of the first announcement with the exception of [☒]. In general, there is no clear picture coming out of the announcement letters. What we observe is that in many cases Aggregate Industries and Tarmac behave as the first movers and that [☒]. Also, suppliers whose announcements come after the first one sometimes follow the first mover with similar or slightly larger price increases, but at other times appear more aggressive by undercutting the price increases of the other suppliers.

TABLE 1 1 January 2006: dates and price increases

Company	Lafarge	Cemex	£ per tonne
Announcement date	27/10/2005	28/10/2005	
Increase date	1/1/2006	1/1/2006	
10mm single size CR*	☒		
Coarse sand	☒	☒	
Fills	☒	☒	
Fine sand	☒	☒	
60+ high PSV	☒	☒	
65+ high PSV		☒	
Single size and graded aggregates	☒	☒	
Sub base	☒	☒	

Source: The parties.

*Crushed rock.

TABLE 2 1 January 2007: dates and price increases

Company	Tarmac	Hanson	Cemex	Lafarge	AI
Announcement date	20/10/2006	24/10/2006	30/10/2006	1/11/2006	Nov 2006
Increase date	1/1/2007	1/1/2007	1/1/2007	1/1/2007	2/1/2007
10mm single size CR	☒	☒		☒	
Coarse sand	☒	☒	☒	☒	☒
Fills	☒	☒	☒	☒	
Fine sand	☒	☒	☒	☒	☒
60+ high PSV	☒	☒	☒	☒	
65+ high PSV	☒	☒	☒		
Single size and graded aggregates	☒	☒	☒	☒	
Sub base	☒	☒	☒	☒	☒

Source: The parties.

TABLE 3 1 January 2008: dates and price increases

Company	Hanson	Tarmac	Cemex	Lafarge	AI
Announcement date	18/10/2007	7/11/2007	19/11/2007	23/11/2007	Nov 2007
Increase date	Jan 2008	1/1/2008	1/1/2008	1/1/2008	2/1/2008
10mm single size CR		[☒]		[☒]	
Coarse sand	[☒]	[☒]	[☒]	[☒]	[☒]
Fills	[☒]	[☒]	[☒]	[☒]	
Fine sand	[☒]	[☒]	[☒]	[☒]	[☒]
60+ high PSV	[☒]	[☒]	[☒]	[☒]	
65+ high PSV	[☒]	[☒]	[☒]	[☒]	
Single size and graded aggregates	[☒]	[☒]	[☒]	[☒]	
Sub base	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

TABLE 4 1 January 2009: dates and price increases

Company	AI	Tarmac	Cemex	Hanson	Lafarge
Announcement date	27/10/2008	30/10/2008	1/11/2008	14/11/2008	17/11/2008
Increase date	1/1/2009	1/1/2009	1/1/2009	1/1/2009	1/1/2009
10mm single size CR		[☒]			[☒]
Coarse sand		[☒]	[☒]	[☒]	[☒]
Fills	[☒]	[☒]	[☒]	[☒]	[☒]
Fine sand	[☒]	[☒]	[☒]	[☒]	[☒]
60+ high PSV	[☒]	[☒]	[☒]	[☒]	[☒]
65+ high PSV	[☒]	[☒]	[☒]	[☒]	
Single size and graded aggregates	[☒]	[☒]	[☒]	[☒]	[☒]
Sub base	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

TABLE 5 1 January 2010: dates and price increases

Company	AI	Tarmac	Cemex	Hanson	Lafarge
Announcement date	22/10/2009	23/10/2009	30/10/2009	2/11/2009	20/11/2009
Increase date	1/1/2010	1/1/2010	1/1/2010	1/1/2010	1/1/2010
10mm single size CR		[☒]			[☒]
Coarse sand	[☒]	[☒]	[☒]	[☒]	[☒]
Fills	[☒]	[☒]	[☒]	[☒]	[☒]
Fine sand	[☒]	[☒]	[☒]	[☒]	[☒]
60+ high PSV	[☒]	[☒]		[☒]	[☒]
65+ high PSV	[☒]	[☒]	[☒]	[☒]	
Single size and graded aggregates	[☒]	[☒]	[☒]	[☒]	[☒]
Sub base	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

TABLE 6 1 January 2011: dates and price increases

Company	AI	Tarmac	Hanson	Cemex	Lafarge
Announcement date	27/9/2010	12/10/2010	28/10/2010	30/10/2010	25/11/2010
Increase date	1/1/2011	1/1/2011	2/1/2011	1/1/2011	1/1/2011
10mm single size CR					[☒]
Coarse sand	[☒]	[☒]	[☒]	[☒]	[☒]
Fills	[☒]	[☒]	[☒]	[☒]	[☒]
Fine sand	[☒]	[☒]	[☒]	[☒]	[☒]
60+ high PSV	[☒]	[☒]	[☒]	[☒]	[☒]
65+ high PSV	[☒]	[☒]	[☒]	[☒]	[☒]
Single size and graded aggregates	[☒]	[☒]	[☒]	[☒]	[☒]
Sub base	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

TABLE 7 1 January 2012: dates and price increases

Company	Hanson	AI	Tarmac	Cemex	Lafarge	£ per tonne
Announcement date	13/10/2011	19/10/2011	31/10/2011	1/11/2011	1/11/2011	
Increase date	2/1/2012	1/1/2012	1/1/2012	1/1/2012	1/1/2012	
10mm Single Size CR		[X]				[X]
Coarse Sand	[X]	[X]	[X]	[X]	[X]	[X]
Fills	[X]	[X]	[X]	[X]	[X]	[X]
Fine Sand	[X]	[X]	[X]	[X]	[X]	[X]
60+ High PSV	[X]	[X]	[X]			[X]
65+ High PSV	[X]	[X]	[X]			[X]
Single size and graded aggregates	[X]	[X]	[X]	[X]	[X]	[X]
Sub base	[X]	[X]	[X]	[X]	[X]	[X]

Source: The parties.

Mid-year increases

25. Tables 8 to 15 summarize all the cases we have of mid-year price increases from 2007 to 2011. The letters give ad-hoc cost changes as the rationale for these price rises.
26. For example, Hanson attributed the price changes of 1 September 2007 to 'new European driving regulations that came into effect in April [which] mean a reduction of the amount of driving hours available'.⁹ In relation to its May 2008 increases, Hanson said in the letter¹⁰ that 'over the last few months our industry has experienced another wave of cost inflation driven by the rising prices of hydrocarbon products' and that 'the rapid escalation in fuel prices has significantly increased the cost of distribution of all our products'.
27. Cemex, in its letter announcing the 1 March 2010 price rises, said that the costs 'include meeting the costs of compliance with increasing environmental regulation and the investments we are making to ensure we deliver on the challenges of the sustainable construction agenda'.¹¹

⁹ Hanson letter of 1 August 2007.

¹⁰ Hanson letter of 15 April 2008.

¹¹ Cemex letter of 30 October 2009.

28. In relation to the price increases announced for 1 July 2011, Cemex said in its letter that 'This increase is a direct result of unrecovered and ongoing cost increases within our business'.¹² Lafarge in its letter said that the reason for the increase was 'the continued increases in the cost of energy, mineral and taxes'.¹³
29. Lafarge told us that the 1 August 2008 price increase reflected an unusual increase in oil prices. It said that the price increase was also driven by a large and unexpected increase in the price of coal (a key variable cost in cement manufacture) over a short period of time, as well as sharp increases in oil and sea freight costs in the period to June 2008. It said that these input cost increases were common to producers in the Great Britain cement industry.
30. We do not have information on the other letters to allow us to understand what drives these announced price increases. In the cases where more than one supplier sends a mid-year letter, we observe some degree of parallelism. We see that in some cases the Majors send the letters within a few days of each other and the price rises are very similar (eg September 2007, August 2008, June 2010). This parallelism is particularly notable in relation to the June 2010 price increases, which were not driven by a regulatory cost increase such as the Aggregates Levy that is common across all suppliers. Yet we observe that all the majors announced similar price increases in the same period of time. Hanson, in its announcement letter,¹⁴ said that the price increase 'has been triggered by rising production costs' and Aggregate Industries, in its announcement letter,¹⁵ said that 'the tough trading conditions we are all experiencing combined with the need to meet the construction industry's increasing demands for sustainable, high quality products, "responsibly sourced" and delivered flexibly, mean that the prices for our products will increase'.

¹² Cemex letter of 2 June 2011.

¹³ Lafarge letter of 15 June 2011.

¹⁴ Hanson letter of 12 May 2010.

¹⁵ AI letter of 11 May 2010.

Aggregates Levy

31. A subset of the mid-year announcement letters relates to the Aggregates Levy. We see that most Majors usually send out a letter in April that reflects the Aggregates Levy and other taxes. In Cemex's letter for 1 April 2008 and Aggregate Industries' letter for 1 April 2009, the reason stated for the announced price changes was the increase in the Aggregates Levy. From the tables below we can see that in these two instances all the Majors announced the same price rise.

32. In April 2011, it seems that some suppliers incorporated other cost increases into the same letter in addition to a £0.10 per tonne increase which was directly attributable to the Aggregates Levy. Indeed announced price increases were more than £0.10 per tonne. Lafarge said in its letter¹⁶ that the Aggregates Levy would increase from £2 per tonne to £2.10 per tonne and that this increase would be added to all invoices other than for exempt materials. It also said that Lafarge was subject to the Carbon Reduction Commitment (CRC) tax from April 2011 onwards and that the cost of energy was ever increasing. Cemex, in its announcement letter,¹⁷ wrote that it continued to suffer increases in input costs including fuel and the newly-imposed CRC and that accordingly the price increases would be applied with effect from 1 April 2011. It also noted in this letter that the 10p per tonne increase in Aggregates Levy originally due to have been applied on 1 April 2011 had been postponed until 2012 and that levy-driven elements from the price increases were no longer applicable.¹⁸

¹⁶ Lafarge letter of March 2011.

¹⁷ Cemex letter of 25 March 2011.

¹⁸ We are in the process of consulting with parties whether or not the price increases announced in view of April 2011 and replicated in Table 14 included the Aggregates Levy.

TABLE 8 September/October 2007: dates and price increases

	£ per tonne			
Company	Lafarge	Hanson	Tarmac	
Announcement date	31/7/2007	1/8/2007	15/8/2007	
Increase date	1/9/2007	1/9/2007	1/10/2007	
All aggregates (delivered)	[☒]			
All aggregates (haulage)		[☒]		
All aggregates			[☒]	

Source: The parties.

TABLE 9 April/May 2008: dates and price increases

	£ per tonne				
Company	Lafarge	Cemex	AI	Hanson	
Announcement date	25/2/2008	4/3/2008	Mar 2008	15/4/2008	
Increase date	1/4/2008	1/4/2008	1/4/2008	5/5/2008	
All aggregates	[☒]	[☒]	[☒]	[☒]	

Source: The parties.

TABLE 10 1 June 2008: dates and price increases

	£ per tonne		
Company	Tarmac	Lafarge	
Announcement date	9/5/2008	12/5/2008	
Increase date	1/6/2008	1/6/2008	
All aggregates	[☒]	[☒]	

Source: The parties.

TABLE 11 1 August 2008: dates and price increases

	£ per tonne			
Company	Hanson	AI	Tarmac	Lafarge
Announcement date	16/6/2008	25/6/2008	Jun 2008	8/7/2008
Increase date	1/8/2008	1/8/2008	1/8/2008	1/8/2008
All aggregates	[☒]	[☒]	[☒]	[☒]

Source: The parties.

TABLE 12 1 April 2009: dates and price increases

	£ per tonne			
Company	Cemex	Hanson	AI	
Announcement date	6/3/2009	10/3/2009	24/3/2009	
Increase date	1/4/2009	1/4/2009	1/4/2009	
All aggregates	[☒]	[☒]	[☒]	

Source: The parties.

TABLE 13 June 2010: dates and price increases

	£ per tonne				
Company	Tarmac	AI	Cemex	Lafarge	Hanson
Announcement date	18/3/2010	16/4/2010	28/4/2010	1/5/2010	12/5/2010
Increase date	1/6/2010	1/6/2010	1/6/2010	1/6/2010	14/6/2010
10mm single size CR	[☒]			[☒]	
Coarse sand	[☒]	[☒]	[☒]	[☒]	[☒]
Fills	[☒]	[☒]	[☒]	[☒]	
Fine sand	[☒]	[☒]	[☒]	[☒]	[☒]
60+ high PSV	[☒]	[☒]		[☒]	[☒]
65+ high PSV	[☒]	[☒]			[☒]
Single size and graded aggregates	[☒]	[☒]	[☒]	[☒]	[☒]
Sub base	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

TABLE 14 April 2011: dates and price increases

	£ per tonne				
Company	Cemex	Lafarge	Tarmac	Hanson	AI
Announcement date	9/2/2011	1/3/2011	9/3/2011	18/3/2011	Mar 2011
Increase date	1/4/2011	1/4/2011	1/4/2011	8/4/2011	
10mm single size CR		[☒]			
All aggregates	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

[☒]

TABLE 15 June/July/August 2011: dates and price increases

	£ per tonne				
Company	Tarmac	Cemex	Lafarge	AI	Hanson
Announcement date	9/5/2011	1/5/2011	15/5/2011	24/5/2011	27/6/2011
Increase date	1/6/2011	1/7/2011	1/7/2011	1/7/2011	Aug 2011
10mm single size CR			[☒]		
Coarse sand	[☒]	[☒]	[☒]	[☒]	[☒]
Fills	[☒]	[☒]	[☒]		[☒]
Fine sand	[☒]		[☒]		[☒]
60+ high PSV	[☒]		[☒]	[☒]	[☒]
65+ high PSV	[☒]		[☒]		[☒]
Single size and graded aggregates	[☒]	[☒]	[☒]	[☒]	[☒]
Sub base	[☒]	[☒]	[☒]	[☒]	[☒]

Source: The parties.

Announced price increases—levels

33. The charts below show the cumulative announced price increases over time by product for the different suppliers. In general, the charts show that the Majors announce quite similar price increases every time for each product. Because the graphs show the cumulative increases, if the price increases were a little bit different on a particular date, the series would not be aligned in the following dates even if the

increase was exactly the same thereafter. However, in those cases, the series would be parallel to each other.

FIGURE 1

Announced price increases for coarse sand (cumulative), £/tonne



Source: CC analysis.

FIGURE 2

Announced price increases for fine sand (cumulative), £/tonne



Source: CC analysis.

FIGURE 3

Announced price increases for single size and graded aggregates (cumulative), £/tonne



Source: CC analysis.

FIGURE 4

Announced price increases for 10mm single size crushed rock (cumulative), £/tonne



Source: CC analysis.

FIGURE 5

Announced price increases for sub base (cumulative), £/tonne



Source: CC analysis.

FIGURE 6

Announced price increases for fills (cumulative), £/tonne



Source: CC analysis.

FIGURE 7

Announced price increases for 60+ high PSV (cumulative), £/tonne

[☒]

Source: CC analysis.

FIGURE 8

Announced price increases for 65+ high PSV (cumulative), £/tonne

[☒]

Source: CC analysis.

Evidence from internal documents

34. We have reviewed a number of internal documents which contain references to aggregates price increase announcement letters. The documents we have reviewed so far show that there is a high degree of transparency between the Majors with respect to these letters. In [☒].^{19,20}
35. [☒]^{21,22}
36. With respect to the August 2008 price increases, we reviewed an email from [☒]. From the data we have (Table 11), we see that indeed [☒] sent a letter after [☒] accommodating its price increases.
37. Thus we see an awareness, not only of the price increases of the other suppliers, but also of the sequence in which the letters are sent and that these increases are taken into consideration.

¹⁹ [☒]

²⁰ [☒]

²¹ [☒]

²² [☒]

Announced versus realized prices

38. We have also looked at changes in the realized prices of the various aggregates product categories and the extent to which they follow the announced price increases. Since we have quarterly data for aggregates, we calculated by product category the weighted average realized price change for all customers within each quarter based on the prices we have from the transactions data. We then compared the realized changes with the announced price increases from the letters. The aim of this analysis is to understand:
- (a) whether the Majors are able to increase prices following a price increase announcement;
 - (b) if so, to what extent; and
 - (c) whether there is any pattern in the price changes that is similar across the different suppliers.
39. The analysis is undertaken on delivered prices since the parties told us that the price increases apply to invoiced prices. Also, we focus solely on external sales to independents.²³ Data is averaged across product, customer and period.
40. In order to calculate the realized average price change, we take as a base period the quarter just before the increase was planned to become effective. For example, if price increases were announced for January 2008 (ie 2008 Q1), the base period will be the previous quarter, ie 2007 Q4. We then compare the average price in the base quarter with the average price of the quarter in which the announced increase becomes effective. Because the price changes following a price increase announcement might not show immediately (although our unit of time is the quarter), we do the same analysis comparing the base quarter with the following quarter (ie Q2 in the

²³ We have also conducted the same analysis using all external sales (ie sales to independents and Majors), but this did not show any substantially different results.

case of January increases). It is also the case sometimes that there are two announcements in adjacent quarters. To take this into account we also calculate a cumulative price increase (up to two quarters) and compare this with the realized price change to capture the fact that prices in any quarter might reflect price increases up to two quarters back. All this analysis is repeated for each of the product categories.

Aggregate Industries

41. We have transactions data for Aggregate Industries from 2008 to 2011 for each of the product categories. Tables 15 to 20 show the results from this analysis.²⁴
42. Although there is no single pattern across years and product groups, in general we observe that [§§].

TABLE 16 Coarse sand: Aggregate Industries price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[§§]							

Source: Aggregate Industries, CC calculations.

TABLE 17 Fills: Aggregate Industries price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[§§]							

Source: Aggregate Industries, CC calculations.

²⁴ We are still investigating with AI the categorization of aggregates products under the 'coarse sand' category.

TABLE 18 Fine sand: Aggregate Industries price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[§§]							

Source: Aggregate Industries, CC calculations.

TABLE 19 65+ high PSV: Aggregate Industries price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[§§]							

Source: Aggregate Industries, CC calculations.

TABLE 20 Single size and graded aggregates: Aggregate Industries price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[§§]							

Source: Aggregate Industries, CC calculations.

TABLE 21 Sub base: Aggregate Industries price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[§§]							

Source: Aggregate Industries, CC calculations.

Tarmac

43. We have transactions data for Tarmac from 2007 to 2011. Tables 21 to 26 show the results from this analysis. [§§]

44. Overall we see that Tarmac was [§§].

TABLE 22 Coarse sand: Tarmac price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
October	2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Tarmac, CC calculations.

TABNLE 23 Fills: Tarmac price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
October	2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Tarmac, CC calculations.

TABLE 24 Fine sand: Tarmac price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
October	2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
June	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
August	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
June	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
April, June	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]

Source: Tarmac, CC calculations.

TABLE 25 High PSV: Tarmac price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
October	2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
June	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
August	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
June	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
January	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]
April, June	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]		[☒]	[☒]	[☒]	[☒]

Source: Tarmac, CC calculations.

TABLE 26 Single size and graded aggregates: Tarmac price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
October	2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Tarmac, CC calculations.

TABLE 27 Sub base: Tarmac price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
October	2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]	[☒]
		[☒]	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Tarmac, CC calculations.

Cemex

45. We have transactions data for Cemex from quarter 3 of 2007 to 2011. Tables 27 to 31 show the results from the analysis. [☒]

46. We see that Cemex was [☒].

TABLE 28 Coarse sand: Cemex price announcements and realized price changes

Source: Cemex, CC calculations.

TABLE 29 Fills: Cemex price announcements and realized price changes

Source: Cemex, CC calculations.

TABLE 30 Fine sand: Cemex price announcements and realized price changes

Source: Cemex, CC calculations.

TABLE 31 High PSV: Cemex price announcements and realized price changes

Source: Cemex, CC calculations.

TABLE 32 Single size and graded aggregates: Cemex price announcements and realized price changes

Source: Cemex, CC calculations.

TABLE 33 Sub base: Cemex price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[☒]							

Source: Cemex, CC calculations.

Hanson

47. We have transactions data for Hanson from 2007 to 2011. Tables 32 to 37 show the results.²⁵ [☒]

48. We see that Hanson was [☒].

TABLE 34 Coarse sand: Hanson price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[☒]							

Source: Hanson, CC calculations.

TABLE 35 Fills: Hanson price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[☒]							

Source: Hanson, CC calculations.

TABLE 36 Fine sand: Hanson price announcements and realized price changes

Month of announced price increase	Quarter of announced price increase	Quarter of realized price increase	Announced price increase (£/tonne)	Cumulative (2 quarters) announced price increase (£/tonne)	Average realized quarterly price change (£/tonne)	Deviation from announced increase (£/tonne)	Deviation from cumulative announced increase (£/tonne)
[☒]							

Source: Hanson, CC calculations.

²⁵ Hanson told us that it had not been able to complete a full reconciliation of the aggregates transaction data and the price increase announcement data, in line with the CC's method of analysis.

TABLE 37 High PSV: Hanson price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
[§§]							

Source: Hanson, CC calculations.

TABLE 38 Single size and graded aggregates: Hanson price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
[§§]							

Source: Hanson, CC calculations.

TABLE 39 Sub base: Hanson price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
[§§]							

Source: Hanson, CC calculations.

Lafarge

49. We have transactions data for Lafarge from 2007 to 2011. Tables 40 to 46 present

the results from this analysis. [§§]

50. We see that for most products Lafarge was [§§].

TABLE 40 Coarse sand: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
	2007 Q4			[☒]	[☒]	[☒]	[☒]
January	2008 Q1	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2008 Q2			[☒]	[☒]	[☒]	[☒]
April, June	2008 Q2	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
	2008 Q3			[☒]	[☒]	[☒]	[☒]
August	2008 Q3	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
	2008 Q4			[☒]	[☒]	[☒]	[☒]
January	2009 Q1	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2009 Q2			[☒]	[☒]	[☒]	[☒]
January	2010 Q1	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2010 Q2			[☒]	[☒]	[☒]	[☒]
June	2010 Q2	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
	2010 Q3			[☒]	[☒]	[☒]	[☒]
January	2011 Q1	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2011 Q2			[☒]	[☒]	[☒]	[☒]
April	2011 Q2	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
	2011 Q3			[☒]	[☒]	[☒]	[☒]
July	2011 Q3	2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
	2011 Q4			[☒]	[☒]	[☒]	[☒]

Source: Lafarge, CC calculations.

TABLE 41 Crushed rock 10mm single size: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
	2007 Q4			[☒]	[☒]	[☒]	[☒]
January	2008 Q1	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2008 Q2			[☒]	[☒]	[☒]	[☒]
April, June	2008 Q2	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
	2008 Q3			[☒]	[☒]	[☒]	[☒]
August	2008 Q3	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
	2008 Q4			[☒]	[☒]	[☒]	[☒]
January	2009 Q1	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2009 Q2			[☒]	[☒]	[☒]	[☒]
January	2010 Q1	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2010 Q2			[☒]	[☒]	[☒]	[☒]
June	2010 Q2	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
	2010 Q3			[☒]	[☒]	[☒]	[☒]
January	2011 Q1	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
	2011 Q2			[☒]	[☒]	[☒]	[☒]
April	2011 Q2	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
	2011 Q3			[☒]	[☒]	[☒]	[☒]
July	2011 Q3	2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
	2011 Q4			[☒]	[☒]	[☒]	[☒]

Source: Lafarge, CC calculations.

TABLE 42 Fills: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3 2007 Q4	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2008 Q1	2008 Q1 2008 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
April, June	2008 Q2	2008 Q2 2008 Q3	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
August	2008 Q3	2008 Q3 2008 Q4	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2009 Q1	2009 Q1 2009 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2010 Q1	2010 Q1 2010 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
June	2010 Q2	2010 Q2 2010 Q3	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2011 Q1	2011 Q1 2011 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
April	2011 Q2	2011 Q2 2011 Q3	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
July	2011 Q3	2011 Q3 2011 Q4	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]

Source: Lafarge, CC calculations.

TABLE 43 Fine sand: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3 2007 Q4	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2008 Q1	2008 Q1 2008 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
April, June	2008 Q2	2008 Q2 2008 Q3	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
August	2008 Q3	2008 Q3 2008 Q4	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2009 Q1	2009 Q1 2009 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2010 Q1	2010 Q1 2010 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
June	2010 Q2	2010 Q2 2010 Q3	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
January	2011 Q1	2011 Q1 2011 Q2	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
April	2011 Q2	2011 Q2 2011 Q3	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]
July	2011 Q3	2011 Q3 2011 Q4	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]	[☒] [☒]

Source: Lafarge, CC calculations.

TABLE 44 60+ High PSV: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2008 Q2	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q4	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2009 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2010 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
April	2011 Q2	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
July	2011 Q3	2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q4	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Lafarge, CC calculations.

TABLE 45 Single size and graded aggregates: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2008 Q2	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q4	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2009 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2010 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
April	2011 Q2	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
July	2011 Q3	2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q4	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Lafarge, CC calculations.

TABLE 46 Sub base: Lafarge price announcements and realized price changes

<i>Month of announced price increase</i>	<i>Quarter of announced price increase</i>	<i>Quarter of realized price increase</i>	<i>Announced price increase (£/tonne)</i>	<i>Cumulative (2 quarters) announced price increase (£/tonne)</i>	<i>Average realized quarterly price change (£/tonne)</i>	<i>Deviation from announced increase (£/tonne)</i>	<i>Deviation from cumulative announced increase (£/tonne)</i>
September	2007 Q3	2007 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2007 Q4	[☒]	[☒]	[☒]	[☒]	[☒]
January	2008 Q1	2008 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
April, June	2008 Q2	2008 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
August	2008 Q3	2008 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2008 Q4	[☒]	[☒]	[☒]	[☒]	[☒]
January	2009 Q1	2009 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2009 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
January	2010 Q1	2010 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
June	2010 Q2	2010 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2010 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
January	2011 Q1	2011 Q1	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
April	2011 Q2	2011 Q2	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
July	2011 Q3	2011 Q3	[☒]	[☒]	[☒]	[☒]	[☒]
		2011 Q4	[☒]	[☒]	[☒]	[☒]	[☒]

Source: Lafarge, CC calculations.

Preliminary conclusions

51. In this working paper we have analysed the Majors' price increase announcement letters in aggregates. We looked for patterns in the sequence of letters, the announced price increases and the ability of the different Majors to realize these price increases.
52. We saw that there is a clear parallelism in the dates of the price increase announcements. Although this can be explained at a general level by the parties' annual reviews (in January) or changes in common regulatory costs (such as changes to the Aggregates Levy in April), the parallelism in the dates of the announcements is notable—for example, in the case of the price increase announcement for 1 June 2010, the timing of which was relatively unusual and which was not related to changes in the Aggregates Levy.

53. We have also seen that the announced price increases are many times quite similar across Majors for each of the product groups. Subsequent Majors accommodate in most cases the announcements of the previous Majors but sometimes also undercut them, with the exception of [§]. Although we lack some data with respect to the exact announcement dates and we cannot therefore generalize the trends we observe, we have seen that in many occasions Aggregate Industries and Tarmac are the first to announce price increases.
54. We have also compared the announced price increases with the realized price changes. We found that in almost all the cases that we analysed, the Majors were able to increase the average price following a price increase announcement, although this increase was [§] of the announced price change. There were cases though where the Majors achieved an increase that was larger [§].
55. Our analysis is limited by the following factors:
- (a) We lack some data from the price increase announcement letters, especially the letter dates.
 - (b) Our unit of time is the quarter. This means that we are missing any price changes that are taking place at a higher frequency and that the aggregation of all transactions at the quarter level might give different realized prices.
 - (c) We do not have data from the parties' transactions data that is disaggregated at a lower product level, as was the case with high PSV products and 10mm single size aggregates. Therefore, we had to calculate averages across gross product categories which might not reflect precisely the real price changes and how these compare with the announced prices. If within a category customers purchase more of one type of aggregate, then the average price would be affected by this.
 - (d) For all Majors we examined delivered prices. This means that price changes shown in the analysis could be affected by changes in transport costs. For

example, if the mix of delivery distances changes from one quarter to another, this is likely to show up as changes in average delivered prices (eg if aggregates are delivered to customers further away than before, then this might show up as changes in average prices).

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Products by supplier and source of data

<i>Product group</i>	<i>Announcement letters</i>	<i>Transactions data</i>
Aggregate Industries		
10mm single size aggregates	6mm + 10mm premium grades	N/A
Coarse sand	Concrete sand	Coarse sands - coarse, coarse sands - fine, coarse sands - mixed
Fills	Scalpings, non-specification fills, fills	Scalpings - mixed
Fine sand	Asphalt sand, bulding sand	As dug other materials - fine, as dug sand - fine, asphalt sand - fine, building sands - coarse, buildings sands - fine, building sands - mixed, mixed sands - fine, other sands - fine
60+ high PSV	High PSV (59–64 PSV), high PSV (60+)	N/A
65+ high PSV	High PSV (65 or higher)	High PSV +65 - coarse, high PSV +65 mixed
Single size and graded aggregates	Single sized and graded aggregates	Graded coarse, gravel/rounds coarse, single size coarse, single size mixed
Sub base	Sub bases	Graded - mixed
Cemex		
10mm single size aggregates	N/A	N/A
Coarse sand	Concrete sand	Coarse sand
Fills	Fill materials, scalpings, general fills, fills	Graded with fines, graded with fines - natural
Fine sand	Asphalt sand, building sand	Fine natural sand, fine sand, fine sand crushed
60+ high PSV	60+ PSV stone, high PSV, 60–65	High PSV
65+ high PSV	68+ and 65+ PSV stone, high PSV 65 & higher	High PSV
Single size and graded aggregates	Graded and single size aggregates/ products	Graded, graded crushed, graded natural, single sizes, single sizes natural
Sub base	Granular sub base, sub bases	Sub base & road base
Hanson		
10mm single size aggregates	10mm single size (generic crushed rock)	N/A
Coarse sand	Concreting sand	Blended sand - land won, blended sand - marine, sharp sand - land won, sharp sand - marine
Fills	Fill materials SG, other fill materials CR, fill materials, non-specific fill products	Gritstone scalpings, hardstone scalpings, limestone scalpings
Fine sand	Asphalt sand, building sand	Asphalt sand - land won, soft sand - land won, soft sand - marine
60+ high PSV	60–65 PSV aggregate, 60+ PSV 10mm single sized	Gritstone single size, gridstone surface dressing, hardstone screened, hardstone single size [high PSV]
65+ high PSV	High PSV 68+ PSV, 65+ PSV 10mm single sized, 65+ PSV aggregate	Gritstone single size, gridstone surface dressing, hardstone screened, hardstone single size [high PSV]
Single size and graded aggregates	Graded and single size aggregates, gravel	Gritstone surface dressing, hardstone screened, hardstone single size, hardstone surface dressing, limestone screened, limestone single size, blended gravel - land won, marine gravel, natural gravel - land won, processed gravel - land won
Sub base	Sub bases CR, sub bases SG, granular sub base CR, sub base	Gritstone sub base, gritstone type 1, hardstone type 1, limestone type 1

<i>Product group</i>	<i>Announcement letters</i>	<i>Transactions data</i>
Lafarge		
10mm single size aggregates	10mm single size CR	Clean 6–10mm (CR)
Coarse sand	Sharp sand	Sharp sand
Fills	N/A	Unprocessed fill, graded fills
Fine sand	Building sand	Soft sand
60+ high PSV	60+ PSV single size, 60–65 PSV	Cleans >10mm +60PSV, Clean 0–6mm +60PSV, Clean 6–10mm +60PSV, (specialist) high PSV
65+ high PSV	65+ PSV single size, 65+ PSV	(Specialist) high PSV
Single size and graded aggregates	Single size and graded aggregates, gravel	Clean 10–50mm (CR), Clean 6–50mm (SG), Clean 2–6mm (SG)
Sub base	Sub base	Sub base
Tarmac		
10mm single size aggregates	10mm single size CR	N/A
Coarse sand	Concrete sand	Concrete sand
Fills	Graded fill products, all general fill	Unprocessed fill, fill sand/gravel, unprocessed sand/gravel, processed fill
Fine sand	Asphalt sand, building sand	Asphalt sand, building sand
60+ high PSV	60+ PSV 10mm single size, all 60–65 PSV single size and graded products	High PSV aggregates
65+ high PSV	65+ PSV 10mm single size, all +65 PSV single size and graded products	High PSV aggregates
Single size and graded aggregates	Single size and graded aggregates/ products	Graded (40mm max), gravel
Sub base	Sub bases, all sub-base aggregates products	Roadstone sub base

Source: CC.

Note: N/A = not available.