The Anglo-Lafarge JV inquiry – Coordinated effects in cement


Julie Bon, Francesca Sala and Randal Watson
Note: views presented here are those of the authors and do not necessarily reflect the views of the Competition Commission.
Outline

- OFT/CC Merger guidelines
- Anglo/Lafarge JV - CC findings on coordinated effects in cement
- Pre-merger competition
- Mechanism for coordination
- Impact of the JV
- Implications for remedies
- Cement PCA
- **Coordinated effects** may arise when firms operating in the same market recognise that they are mutually interdependent and that they can reach a more profitable outcome if they coordinate to limit their rivalry. *OFT/CC Merger Guidelines 5.5.1*

- Coordination can be explicit or **tacit**. [...] Tacit coordination is achieved through implicit understanding between the parties, but without any formal arrangement. *OFT/CC Merger Guidelines 5.5.3*
OFT/CC Merger Guidelines – Steps in the analysis of coordinated effects

- **Is there evidence of pre-existing coordination?**
  - But finding of existing coordination is not necessary to establish an SLC based on coordinated effects
  - Coordination is not a 0/1 outcome - there are degrees of coordination (more or less successful, not necessarily continuous)

- **Is the market “susceptible” to coordination?** Are the three Airtours conditions satisfied pre- and/or post-merger?
  - Ability to reach and monitor coordination
  - Internal sustainability
  - External sustainability

- Whether or not there is (a degree of) pre-existing coordination:
  - Is there a **plausible mechanism** for coordination pre- and/or post-merger?
  - What is the **delta**? How does the merger change the conditions for coordination?
Anglo/Lafarge JV – CC findings on cement coordinated effects

- **Pre-merger:**
  - Some evidence consistent with dampened competition
  - Conditions for coordination largely met
  - Plausible mechanism for coordination, supported by internal document reviews

- **Post-merger:**
  - Merger strengthens ability and incentives to coordinate
  - Three main ways:
    - Reduction from 4 to 3 GB cement producers
    - Increase in symmetry of vertical structures, providing better alignment of ability and incentives to coordinate
    - Elimination of a possible “fringe player” (Tarmac)
Evidence suggested that competition between cement producers was not very vigorous pre-merger:

- **Relatively stable shares of cement production** in 2007 to 2011 despite:
  - Large demand shock: demand for cement fell by 36 per cent between 2007 and 2009
  - Large excess capacity (even after some plant closures/ mothballing)
  - Increase in amount of cement imported by independent suppliers
  - Changes in self-supply strategies of the Majors

- **Variable cost margins remained stable** or even increased during and following period of large demand shock (between 2007 and 2010)

- **Price concentration** results for cement consistent with either coordination or perfect competition

- But, **evidence on switching not conclusive**. Periods of high churn (eg 2009) followed by periods of low churn - some “symmetry” in gains and losses in given years
Pre-merger competition (2)

- **Internal documents** showed:
  - High awareness of competitors’ actions
  - Targeted reactions to competitors’ actions
  - Strong interdependence in strategies

- **Parallelism in price increase announcement letters** (timing and amount) - though actual prices increases less than announced increases

- Market characterised by **large degree of interaction** between the Majors through customer/supplier relationships
  - Majors buy cement from each other for their downstream RMX businesses
“Mechanisms” for coordination

- **Tacit coordination** between Lafarge, Cemex and Hanson on **shares of total production** and/or customer allocations
  - Prices paid by customer negotiated bilaterally: less likely to be a focal point
  - Tarmac more likely to be a fringe player
- Signalling of intentions to increase prices through price announcement letters
- Use of **changes in cross-sales** to signal that a deviation has been spotted; punishment through lower prices of cement to non-Major cement customers and/or RMX customers
- Fringe players (cement importers and Tarmac) behave as “**price followers**”
- Coordination aimed at high prices of cement generally (to all customers-including indirectly to downstream RMX customers)- not aimed at foreclosing independent RMX customers
The JV would lead to:

- increased concentration in UK cement production;
- increased concentration in UK RMX production; and
- a more balanced position in terms of the degree of vertical integration between the JV entity, Hanson and Cemex (compared with the present position of Lafarge in which it does not control as large a RMX business as Hanson and Cemex)
Impact of the JV – Conditions for coordination

- Compared to Lafarge at present, main impact of the JV would be:
  - **To increase information available** (fewer producers - better knowledge of downstream market conditions for cement)
  - **Better alignment of incentives** to coordinate and **ability/incentives to punish** post-JV because of increased symmetry in vertical integration
  - In particular, JV makes **punishment more credible** - Lafarge pre-JV has high exposure to the external market and therefore punishment of deviations by others (through lower cement prices to external customers) may be more costly to Lafarge
  - **Elimination of Tarmac** which produces at capacity, has expanded capacity twice in the past and has permission to expand further
  - **“Even less” symmetric cement supply**
    - But more important for coordination is symmetry in spare capacity and vertical structure
    - Symmetry in vertical structures increases after the merger

- Merger **would reinforce each of the three conditions for coordination**
Conclusions

- **Pre-merger**
  - Shortcomings in competition “consistent with a degree of pre-existing tacit coordination”
  - Three conditions for coordination are satisfied “to some extent”
  - But no conclusion on existence of coordination pre-merger

- **Post-merger**, conditions for coordination satisfied “to a greater extent”
  - Merger would make coordination more likely to emerge (if it didn’t exist pre-merger), or
  - Merger would make coordination more effective and stable (if it existed pre-merger)

- **SLC in bulk cement market on basis of coordinated effects**
  - Higher (average) prices for GB cement to all customers would result post-merger
Implications for remedies

- **SLC in cement** based on **coordinated effects** arises both from:
  - Increased concentration in cement (4->3 GB producers) and
  - Increased concentration in RMX, in particular through:
    - More information about sales of cement for RMX production
    - Greater similarity in vertically integrated structure across the majors
    - Increasing options for and flexibility of punishment

Therefore, remedies to SLC in cement need to address consolidation in both cement and RMX

Hence a substantial divestment of RMX plants was required in addition to divestment of a cement plant.
Data cover 2007-2010. Dataset of all external sales of bulk cement (CEM-I) from Lafarge “plants” (includes depots). Unit of observation: job site. (Most sales are Delivered.) Similar for Tarmac, but fewer observations – compare 800 with 4000.

Dependent variable: average annual ex-works price for each plant-job-site.

Explanatory variables: local demographics (popn., unemp., wages), distance to plant, type of customer, region-year dummies.

Quantity discounts: Order customers by annual purchases of cement from Lafarge, split into quintiles, create dummy for each quintile. Ten further dummies for the ten largest customers over the period of the data.

Competition measures: Counts of rival plants by three distance bands, calculated with respect to the job site. Split counts by identity of rival (Tarmac/Other-Majors/Independents), type of facility (Works/Rail-linked Depot/Import Terminal). (Second Lafarge plant nearby ...)

Methodology: OLS with plant-year effects, accounts for all time-varying plant-specific cost effects.
## Results – Lafarge (I)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIST (miles)</td>
<td>-0.082***</td>
<td>0.011</td>
</tr>
<tr>
<td>DIST squared/1000</td>
<td>0.19***</td>
<td>0.07</td>
</tr>
<tr>
<td>Log(POPN)</td>
<td>-1.96***</td>
<td>0.57</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; size quintile, 2007</td>
<td>-4.92***</td>
<td>1.80</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; size quintile, 2007</td>
<td>-9.23***</td>
<td>1.83</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; size quintile, 2008</td>
<td>-6.01***</td>
<td>1.53</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; size quintile, 2008</td>
<td>-10.63***</td>
<td>1.52</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; size quintile, 2009</td>
<td>2.65*</td>
<td>1.38</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; size quintile, 2009</td>
<td>-3.49**</td>
<td>1.34</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; size quintile, 2010</td>
<td>-0.76</td>
<td>1.78</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; size quintile, 2010</td>
<td>-6.77***</td>
<td>1.61</td>
</tr>
</tbody>
</table>

*OLS with plant-year effects, N=3810*
## Results – Lafarge (II)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAILDEP, BAND 1</td>
<td>0.38</td>
<td>0.73</td>
</tr>
<tr>
<td>RAILDEPBD1*Presence of Lfg IT or Plant</td>
<td>0.27</td>
<td>0.48</td>
</tr>
<tr>
<td>RAILDEP, BAND 2</td>
<td>-0.03</td>
<td>0.43</td>
</tr>
<tr>
<td>IMPORTTERM, BAND 1</td>
<td>-0.51</td>
<td>0.40</td>
</tr>
<tr>
<td>IMPORTTERM, BAND 1*Presence of Lfg IT or Plant</td>
<td>-0.04</td>
<td>0.22</td>
</tr>
<tr>
<td>IMPORTTERM, BAND 2</td>
<td>-0.43*</td>
<td>0.26</td>
</tr>
<tr>
<td>TARMACPL, BAND 1</td>
<td>-2.59</td>
<td>2.79</td>
</tr>
<tr>
<td>TARMACPL, BAND 1*Presence of Lfg IT or Plant</td>
<td>2.25</td>
<td>2.37</td>
</tr>
<tr>
<td>TARMACPL, BAND 2</td>
<td>-1.20</td>
<td>1.29</td>
</tr>
<tr>
<td>OTHMAJORPL, BAND 1</td>
<td>0.48</td>
<td>0.71</td>
</tr>
<tr>
<td>OTHMAJORPL, BAND 1*Presence of Lfg IT or Plant</td>
<td>-0.11</td>
<td>0.61</td>
</tr>
<tr>
<td>OTHMAJORPL, BAND 2</td>
<td>0.53</td>
<td>0.43</td>
</tr>
</tbody>
</table>