

Trading surplus for profit

by **Ad Ligthart & Marcia Ligthart,**
Cement Distribution Consultants,
The Netherlands

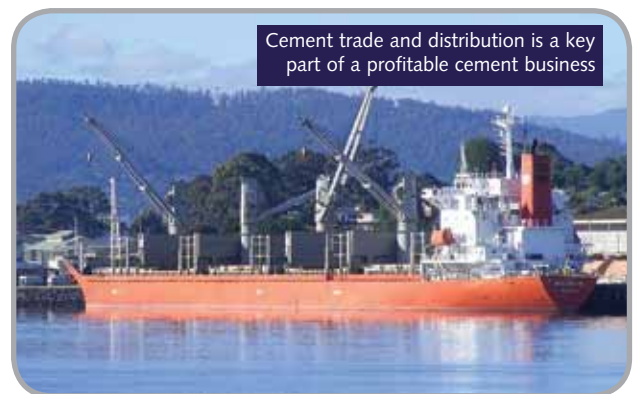
In 2013 about 206Mt of cement and clinker was either internationally traded or domestically distributed by sea. While transportation costs are high and imported cement has to compete with locally-manufactured product, this trade and distribution is generally quite profitable for the companies involved. Ad and Marcia Ligthart of Cement Distribution Consultants, authors of 'The ICR Handbook on Global Cement Trade and Distribution' explain.

Cement consumption is never constant, especially in developing nations. There are always discrepancies between production capacity and consumption. Trade and distribution, apart from the strategical aspects, function to balance surplus production capacity in one area with shortages in others. There are a number of economic mechanisms that make this work.

Maximising plant utilisation

As cement plants are highly capital intensive the basic production cost per tonne is usually less than 50 per cent of the sales price in the local market. The difference relates to the contribution to capital costs and profits. Therefore, the production cost per tonne is not fixed. It depends very much on the utilisation rate of the plant. When a cement plant

is able to sell 70 per cent of its capacity locally it has a huge incentive to sell its surplus capacity in other markets at an ex-works price that is substantially lower than that for the local market. This allows a margin to pay for the transportation cost to these other markets. The cement plant benefits in two ways. Firstly, the full difference between the ex-works price to other market and the basic production cost of this cement provides an extra contribution to capital costs and profit. Secondly, (and even more important) the utilisation rate of the plant increases and

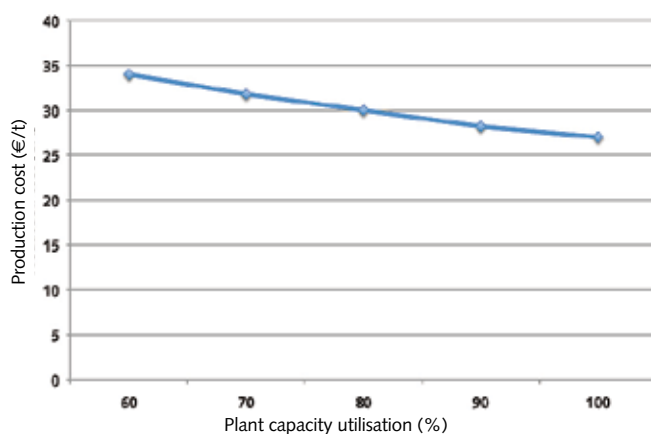


as a result, the cement production cost per tonne decreases for the full output of the plant (see Figure 1). The selling of cement to other markets, even at a strongly-reduced price to overcome the transportation cost generates a substantial extra margin because of the higher utilisation rate of the plant.

Figure 1: the economic case for trade and distribution

Assumptions

- Plant capacity: 1.5Mta
- Ex-works price – domestic: €85



Production cost (energy, labour, maintenance, raw materials) (€/t)

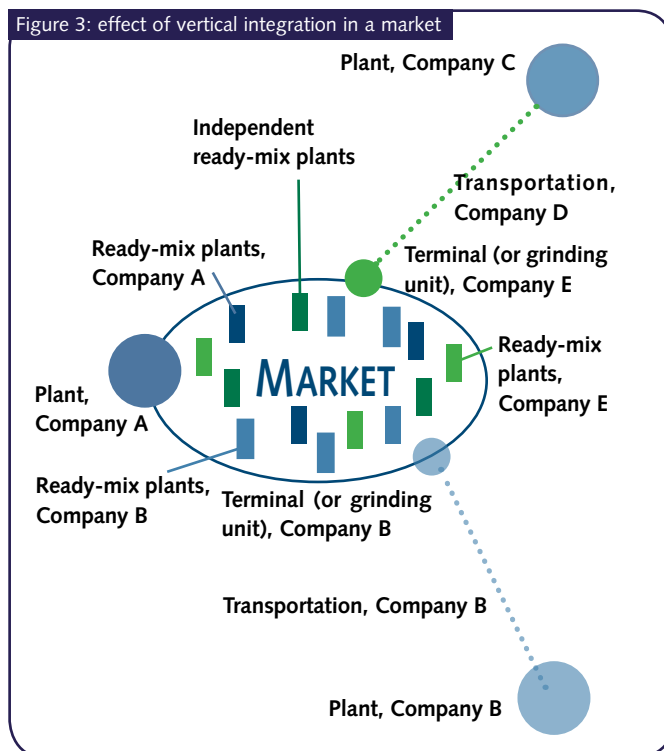
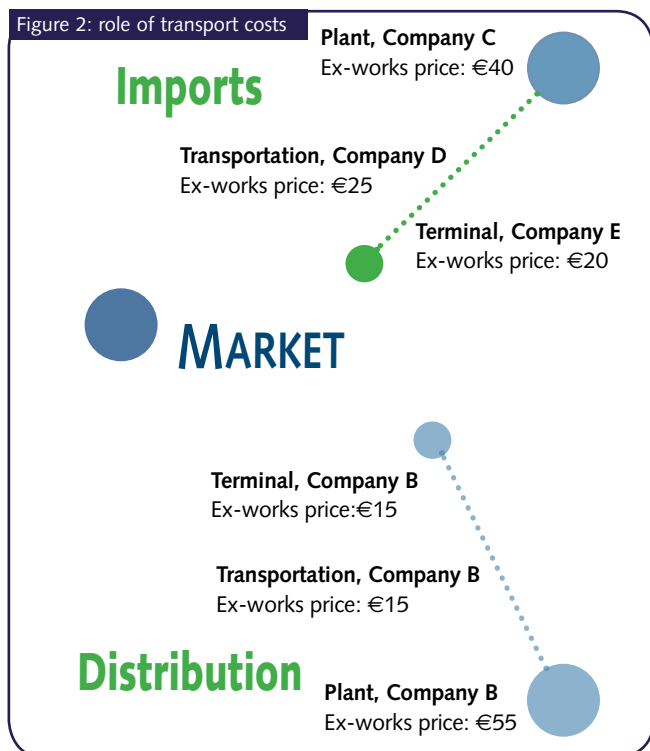
- Sales are expressed as a share (%) of total capacity.
- Ex-works price – export: €40

Example 1

Domestic sales at 70% (t)	1,050,000
Export sales at 0% (t)	0
Income domestic sales (€)	89,250,000
Income export sales (€)	0
Total income (€)	89,250,000
Production costs at 70% (€)	33,316,500
Contribution to financial costs and profit (€)	55,933,500

Example 2

Domestic sales at 70% (t)	1,050,000
Export sales at 20% (t)	300,000
Total sales at 90% (t)	1,350,000
Income domestic sales (€)	89,250,000
Income export sales (€)	12,000,000
Total income (€)	101,250,000
Production costs at 90% (€)	38,353,500
Contribution to financial costs and profit (€)	62,896,500



Transportation cost impact

The transportation cost determines the ex-works price of cement (see Figure 2). Company A is located inside its home market and has an ex-works price of €85/t. Company B also sells most of its cement in the domestic market but in addition sells its surplus in the home market of company A. It considers this as an essential part of its business and therefore provides transportation with its own ships at a cost of €15/t and has its own terminal in the market that operates at a cost of €15/t. This means that company B can charge an ex-works price of €55 to supply its cement into the domestic market of company A.

The market also has an import terminal owned by an independent ready-mix company. This terminal has a cost of €20/t and receives large vessels over a long distance at a transport cost of €25/t. This means that the independent import terminal has to find a cement supplier that is willing to supply the cement FOB for €40/t.

Therefore, the ex-works prices that company B and C can generate for their cement are dependent on the transportation cost (in combination with the terminal cost) to that market. While from Figure 2 company A appears to be in the best position, this only is the case however if it is able to sell close to its full capacity. If it is only able to sell

70 per cent of its capacity then it will be in a considerably worse position than companies B and C that sell also 70 per cent of their capacity in their domestic market but in addition can sell their surplus capacity in company A's market.

Vertical integration

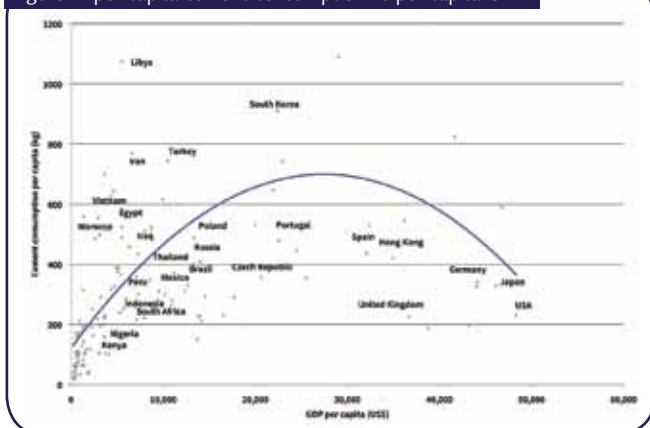
Vertical integration into the ready-mix and concrete products industry is an attractive option for cement companies as it provides a secure cement sales volume and consequently a more stable market share and sales price. This applies especially in mature markets where ready-mix and concrete products can constitute up to 90 per cent of overall cement sales. For the independent ready-mix and concrete products industry this presents a big dilemma as they now have to buy cement from their competitors and as such, do not control their own destiny. This creates a large incentive for the independents to realise their own cement imports into the market. Figure 3 shows how companies A and B have secured market share by owning ready-mix and concrete product plants. It also shows large ready-mix plant owner company E which has built its own import terminal and buys cement from company C using regular bulk carriers from company D to transport the cement. The remaining independent companies are still in a fix as they still have to buy their cement

from their competitors, but perhaps they now have more choice. Company E that imports its own cement has a difficult issue to resolve. Does it only import cement for its own plants or does it sell to others as well. Increasing the volume of cement imports will reduce the cost per tonne but also creates the possibility of a price war, as cement companies A and B will not tolerate loss of market share lightly. Cement import terminals by independents can be long-standing businesses. However, they are attractive acquisition targets. For cement company C it might be attractive to buy the terminal (sometimes in combination with all plants) of company E to secure an outlet for its surplus cement. For cement companies A and B buying the terminal means regaining market share. Many cement terminals in the world (especially in Europe and North America) have started out as independent import operations and have later been acquired by the cement industry. New independent terminals, sometimes against all odds, keep popping up.

Changing cement demand

Cement consumption in a country is related to its GDP (see Figure 4). Very poor countries have very low cement consumption. When a country develops infrastructure (roads, ports, airports, etc) will have to be realised. When a

Figure 4: per capita cement consumption vs per capita GDP



developing nation reaches a certain GDP however, (usually around US\$25,000 per capita) cement consumption per capita starts to decline. This is because industry gets replaced by services which have a lower infrastructure need. Cement consumption can change from about 100kg per capita for a very poor country to 800kg per capita at its development peak. For mature economies it drops back to about 400kg. These figures can vary per country, especially for countries where GDP is related to commodity exports, in which case the top of the curve can be much higher.

For most countries the change in cement consumption over time will not be a smooth curve but a very wobbly one. This is caused by the cement consumption acceleration factor (see Figure 5).

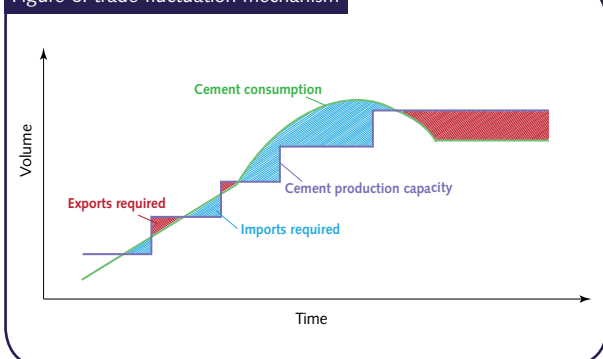
Cement consumption is much more volatile than economic growth. When there is an increase in economic growth, significant new investment is carried out and new infrastructure built and consequently cement consumption will grow very fast. For example a four per cent increase in economic growth from one to five per cent might trigger a 10 per cent growth in cement consumption from three to 13 per cent. When economic

growth stays level, the expansion in cement consumption will drop back to about the same level as the economic growth. In case of an economical downturn, however, the acceleration factor kicks in again and the drop in cement consumption will be far larger than the drop in economic growth.

The trade fluctuation mechanism

Changes in cement consumption can be fast and large. However, the construction of new cement production capacity is a slow and lengthy business. It can take 4-8 years to realise a new production line, including studies, permitting, financing and construction. When countries experience a fast and large expansion in cement demand, it is very likely that for several years consumption will outpace domestic production and require imports. When this is followed by the commissioning of new capacity, often in a significant volume as all producers tend to expand at the same to keep their market share, cement production potential will be larger than local consumption. To sell this surplus, cement companies will look for export markets. This trade fluctuation mechanism is shown in Figure 6.

Figure 6: trade fluctuation mechanism



Price maker or price follower

For cement manufacturers it is of key importance to be a price maker and not a price follower. A price maker is the company that has the lowest combination of production, transport and financial costs in its key market. As a result

it can determine the price of its cement and control its market share. A price follower does not have this advantage. It realises that it cannot win a price war and as such has to accept a certain market share. To be a price maker requires a deep understanding of cement markets and the aforementioned economic mechanisms. The key is to be able to maintain the highest-possible utilisation rate by creating trade and distribution capabilities that allow for moving surpluses in one market to shortages in another.

Being a price maker is not a permanent situation. Markets and related cement consumption change. A company that was price maker with very low production and transport costs but higher debt levels might lose its status in a steep downturn. Cement plants, terminals and ready-mix plants can change ownership and change the situation. However, companies with a clear strategy to be a price maker will do far better than companies that do not recognise this concept and make their business plans solely on general market conditions.

Trade and distribution are important methods in improving the overall contribution to financial costs and profit. They are a key element of the strategy to become a price maker. Further, essential reading is provided in 'The ICR Handbook on Global Cement Trade and Distribution'. With over 90 maps, a directory of over 1200 cement plants, grinding facilities and port terminals involved in seaborne trade and distribution as well as sections on shipping, terminals, global trade, and regional and domestic trade and distribution, this comprehensive publication provides in-depth information on this important element of the cement industry.