Global consolidation in heavy building materials

consolidate *[konsolidayt]* v/t and i*: make stronger; establish firmly; combine into one large unit; become solid : Concise Oxford Dictionary.*

Introduction

Europeans dominate building universe

The Europeans dominate the heavy building materials universe in terms of number and market capitalisation. This includes six of the world's major cement companies, the number ones players in ready mix, aggregates and glass, the number two in bricks and three of the leading gypsum companies.

Outside this arena, in the US, for example, there are only two domestic heavy building materials companies of any substance: Vulcan (with a market capitalisation of US$5.4bn) and Martin Marietta (US$2.3bn). Similarly, Latin America has one in Cemex (US$7.9bn). Asia has four in a band from US$700m to US$2bn, of which Taiheiyo and Ube Industries of Japan are the largest; the former is also one of the top seven global cement companies, often dubbed "the seven sisters". Finally, Australia boasts three: CSR (US$3.1bn); James Hardie (US$1.0bn) and Boral (US$0.8m).

Builders lack relative scale in equity markets

However, in terms of their relative position in European equity markets, the heavy building materials majors are not so significant.

The FT Eurotop 300 Index comprises the region's 300 largest companies. Nine companies are categorised under the construction and building heading in a range of €4-15bn. This is 3% of the index, by number, and 5.5% by value and this for a sector that accounts for almost 10% of European GDP, making it one of the region's largest single industries.

Heavy builders account for just 2.5% of EUROTOP 300 by value

Furthermore, only four of the nine construction and building stocks in the Eurotop 300 are heavy building materials groups: CRH, Hanson, Holcim and Lafarge. Indeed, three are contractors: Bouygues (which is also a major telecoms operator), Skanska and Vinci. Another constituent, Blue Circle, qualifies as a heavy builder and will soon form part of Lafarge (the deal awaits regulatory approval from US anti-trust authorities, while Saint Gobain – which includes heavy building materials – is a more broadly based building and distribution group.

Strictly speaking, the heavy building material sector accounts for just 1.3% of the Eurotop 300 by number and 2.5% by value.

FT Eurotop 300 – Construction and Building, market capitalisation (€bn)	
Bouygues	15.1
Blue Circle	5.4
CRH	10.2
Hanson	6.3
Holcim	6.9
Lafarge	14.0
Saint Gobain	14.7
Skanska	4.4
Vinci	4.2
Total	**81.2**

Source: Bloomberg

Underrated

Building materials has been traditionally volatile

Such is the fate of an industry, with a somewhat chequered history. Many building companies began life as family run businesses, divisions of conglomerates or even state-run entities. This determined a style of management that was often cavalier or inefficient (in some cases, both).

However, the construction and building materials industry is subject to the economic cycle. By definition, it also grows faster in developing regions and more sedately in mature economies. This has led to volatility and lumpiness of returns, which, in turn, has led to volatility and lumpiness in returns to shareholders.

The industry is not difficult to understand (everyone thinks they know something about building), but it remains unloved. It has, thus, not attracted a handsome rating, which has made issuing shares – as currency for growth - a more expensive process.

CRH has 21.5pa total return

There are, of course, exceptions. CRH, the Irish-based international building materials group has returned 21.5% a year to its shareholders since 1970. Furthermore, it has achieved this through organic growth and expansion by acquisition, funded in cash and shares. However, its historic PE is 15.0x, which compares with many food producers on 40x, IT entities (still) on 50x and support services on 25x.

Size matters

Scale, of course, is a big part of valuation, as is being transnational. Both offer a menu in economies of scale, reduced cyclicality and lower volatility of earnings. Size also brings rewards in terms of lowering a firm’s cost of capital.

Mergers and acquisitions (M&A) are the fastest route to growth and this has been embraced by a range of sectors – banking, pharmaceutical, oil and gas etc. Such a strategy brings with it a multiple of synergies and huge cost reduction benefits.

Cement: first and only global building material

Cement is now truly global; growth driven by M&A

The building sector tends to follow rather than lead and there has been an increase in M&A activity over the past 15 years – and a surge in the last two or three.

The 'revolution' has been led by cement, which has always been the most international of building materials and now is truly global.

Cement is one of the oldest building materials. It is manufactured by heating limestone and clay and, after mixing with water, sets to a hard mass. Add crushed rock or aggregates, along with the water and it becomes concrete. It is a fundamental product. As a result, demand generally grows faster in the developing world, which is thus a perfect target for the often substantial cash flows from mature, developed markets (often oligopolies).

However, cement demands a significant cost of entry, with a new plant costing cUS$200 per tonne of capacity – and a million tonnes (US$200m) being a reasonable starter. Its manufacture has also more in common with the chemicals industry and the process has become increasingly sophisticated. The largest single variable cost is energy c40%.

Cement is cheaper than chips

As a product, however, cement is also cheaper than chips, ie cement currently sells for 5–10¢/kg (potatoes cost 60¢). This means it has a spectacularly low value-to-weight ratio. It is therefore expensive to ship by road or rail but cheaper by water, either across oceans or up and down rivers. This has meant international players are able to equalise national and regional supply and demand, by water transportation. Many of the world's major cities are coastal and only a few major conurbations do not have a navigable waterway. This also allows more efficient plants to be fully loaded, thereby exploiting cheap marginal production. In 2000, 115m tonnes of cement were traded internationally, which is equivalent to annual US consumption.

Holderbank, now renamed Holcim, has been the master of international investment in cement. It manufactures in 46 countries, including Vietnam, Ecuador and the Ivory Coast. Traditionally, it was also the purest play, in that its focus was cement. It has, however, chosen to embrace full vertical integration in selected market. The group has also warned that this will increase as and where necessary.

For the industry as a whole, however, the surge internationally was a feature of the 1980–90s and shows few signs of letting up in early months of the new millennium (albeit perhaps a pause for breath).

Waves of change

Tsunami in Asia

Globalisation has come in waves. In the middle-to-late 1980s, the focus was on Latin America. At the beginning of the 1990s, it shifted to the US and in

1990–94, the prime interest was Eastern Europe. The years 1996-97 witnessed a second wave in Latin America and further investment in the newly open Eastern European republics. In the wake of the Asian crisis, in 1997–99, it was of tidal proportions and from mid-1998 through to spring 1999, virtually a deal every fortnight. Capacity was available at knock-down prices.

All the usual players were out there, including Cemex, Blue Circle, Holcim, Lafarge and Ciment Francais, as targets were picked off in the Philippines, Thailand, Malaysia and Indonesia.

Heidelberger buys Scancem and balance of CBR

German goes Nordic

The tide then shifted back to Europe. A catalyst was the decision by Skanska, the Swedish construction group, and Aker of Norway to put up for sale its stake in Scancem (90.6% of the voting shares, the balance being listed). The latter was the largest cement producer in Scandinavia (and the only one in Sweden) and a major trader; it also owned Castle Cement, the UK's number two player.

In any event, it was Heidelberger's chequebook (and €3.0bn) that saw off the competition and the deal closed in summer 1999. Indeed, the German-based cement major had been pipped at the post on one or two earlier deals – and was thus determined to prevail here. Note, too, that CRH bought Finnsementti and Lohja Rudus from of Scancem for €520m. The former is Finland's sole cement producer, while Rudus is the leader in ready mix.

Likes Brussels too

Thereafter, Heidelberger bid for the minority of CBR, the Belgium-based cement maker, that it did not already own (ie 47.5% for €1.5bn). Barely pausing for breath, the German cement major then went after Indocement, the Indonesian market leader, with some 15.8m tonnes of capacity. In April 2001, it acquired 61.7% of the company and the Indonesian government has the option to sell more shares to this new majority shareholder.

Another all-domestic deal took place in Italy in 1999. Here, the merger of Buzzi and Unicem created the eponymous number two (Buzzi-Unicem) in the Italian market with a 19% share. It's larger rival, Italcementi controls 31% of the Italian market, and shares the lead in France with a third of the market via its 64% holding in Ciment Francais.

RMC/Rugby

A break with tradition

Next, in the autumn of the same year, was RMC, the world's largest producer of ready-mix, with a bid for its UK peer, Rugby Group. The target is the UK's third largest cement operator with c20% of the market.

RMC's offer of 137.5p in cash per share valued Rugby at £924m and represented a 40% premium to the share price of Rugby prior to renewed bid speculation. In terms of valuation, this equated to 11.3x 1999 EBITDA and 8.5x in 2000F. RMC's offer represented an EV of $170 per tonne of capacity, which the group said was in line with other recent transactions in other mature markets. The offer was declared wholly unconditional in early January 2000.

Rugby's principal assets were 3m tonnes of UK cement capacity; a 97% holding in Chelm of Poland (2.5m tonnes); 55% of Adelaide Brighton, an Australian-quoted company, with 2.9m tonnes of cement and 1.1m tonnes of lime capacity. Rugby also establishes RMC's global cement division (see company profile); the group is active in cement in Germany, Poland, Croatia and US (California).

First UK full vertical integration

In the UK, this was the first major heavy-building materials business to adopt full vertical integration, thereby ending the unique separation of cement and aggregates/ready mix. The hat-trick of all three tends to be the continental European model, which the European cement companies have imported into the US and soon to the UK, ie the Lafarge/Blue Circle, which awaits regulatory consummation, albeit that RMC pre-empted such change.

Lafarge/Blue Circle – World number one

Top of the premier league

The proposed acquisition of Blue Circle should allow Lafarge to leapfrog Swiss-based Holcim (Holderbank) to become the world's largest cement company. The combined entity will possess some 166m tonnes of cement capacity.

In its own right, Blue Circle Industries (BCI) is the UK's largest producer of cement and a leading international player in cement, ready mix, concrete products and aggregates. It has some 45m tonnes of cement capacity in North America, Chile, Malaysia, Philippines and Africa.

Also it had been expanding and immediately prior to the Lafarge bid, BCI bought 76% of Alexandria Cement (Egypt) for £110.5m, including debt. It sold its 50% stake in the Danish cement company, Aalborg Portland.

During the time it was being pursued by Lafarge, BCI also concluded its acquisition of its stakes in Heracles (55%) and Halkis (46%) for £470.1m, including debt. Heracles and Halkis are Greece's number one and number three suppliers of cement, respectively.

Blue Circle blue

In February 2000 Lafarge launched a hostile bid for BCI at 420p per share; a premium of 33% and valuing BCI at £3.4bn. This was raised to 450p in April (ie £3.7bn) and failed narrowly with total acceptances of 44.52% (including 19.99% actually owned by Lafarge).

In January 2001, Lafarge increased the bid by 10% and secured agreement at 495p per share. The value of the total bid to Lafarge, including debt was £4.7bn or €7.4bn (11x 2000 EBIT). In between the two bids, BCI returned £800m to shareholders through a share buyback scheme and embarked on a ambitious operational improvement programme, set to contribute £88m in 2001 rising to £116m in 2003.

Awaiting US anti-trust approval

Lafarge has already received EU and conditional Canadian regulatory approval and now awaits the FTC's agreement in the US. In May, Lafarge agreed the sale of assets currently owned by BCI in and around North America's Great Lakes for €825m, which assist the process.

New to the US

The buyer is Votorantim, the Brazil conglomerate and, already, world number seven in cement. The assets include two cement plants (Bowmanville and St Marys in Ontario), a grinding station in Detroit, seven cement terminals on the US side of the Great Lakes, 39 ready-mix plants in Ontario and aggregates assets with 4m tonnes of annual sales.

We estimate that the assets involved will make c€120m of EBIT this year. On this basis, the sale price represents 6.9x 2001F EBIT. We feel this is not a full price, given the quality of the assets.

In April, the Canadian Competition Bureau agreed not to challenge Lafarge's acquisition of BCI. The understanding, however, was that Lafarge must dispose of these two cement plants together with various concrete, aggregates and asphalt assets in the same area. Together, Lafarge (30%) and Blue Circle (15% with St Marys) would have controlled some 45% of the Canadian cement market and both have cement works in Ontario and Quebec.

The proceeds from the proposed sale of BCI's Canadian assets will be used by Lafarge to reduce debt, in line with the projections made at the time of the recommended offer. Lafarge indicated that total BCI divestments would amount to €1.5bn, implying that a further €625m of sales still needs to be made, including property and possibly aggregates and ready-mix assets in the US. Lafarge has stated that gearing at end-2001 will total 106% but this figure is likely to be reduced to 94% by end-2002 and 81% by end-2003.

On target to close in July

Importantly, these divestments should expedite the closing of the BCI deal before 31 July; after which BCI has the right to pay an interim dividend for 2001 of up to 7p at a cost of £44m.

When Lafarge made its first offer for BCI, the group identified the potential for some €150m of synergies from the combined business. Some 35% was expected from immediate cost savings in central and regional structures, 40% from operational synergies in countries where both Lafarge and BCI operate, and 25% from cost reductions and economies in manufacturing, logistics and purchasing.

In light of the success of BCI's operational improvement programme, Lafarge has since revised its synergies forecast down to €100m. Furthermore, the group expects the deal to deliver double-digit enhancement in EPS, before goodwill in 2002 and to be EVA positive three years after completion.

Cimpor

Portuguese soap opera

The other ongoing saga in Europe is the fate of Cimpor, the largest producer of cement in Portugal, with interests in Spain, Africa and Brazil, which has all the drama of a soap opera. In autumn 2000 a joint bid from Semapa – which owns Secil, the number two in Portugal – and Holcim failed, due to government intervention. Both bidders held 10% in Cimpor – as does Lafarge (which is most probably interested in a break-up rather than in Cimpor as a whole).

Portugal's second largest builder, Teixeira Duarte, holds 17% of Cimpor and the Portuguese government holds 10.06% (including a golden share).

It's a four way tussle

Holcim and Lafarge increased their stakes to 10.13% and 10.125%, respectively. Portugal's Finance Ministry issued a statement saying it was impossible to approve these acquisitions because of the terms of the decree law issued on 30 December 2000, which set out the guidelines for the final phase of Cimpor's privatisation.

The final phase of privatisation, originally slated for mid-year, will see the government sell its remaining 10% stake in Cimpor. This will be transacted through a bidding process, which will favour proposals that satisfy a number of conditions. This includes maintaining Cimpor's headquarters in Portugal as well as its Lisbon listing.

The government has also set a minimum price of €30.4 a share (Cimpor share price is €25.4) for its 10% stake, valuing it at €410.4m. Holcim has said it will study the privatisation package. However, it is likely that Cimpor will remain in Portuguese hands through the sale of the government's stake to a consortium of local bidders led by Teixeira Duarte.

US attractions

Big, beautiful and over there

In the United States, against the backdrop of a very strong market, there were two further landmark deals. In September 1999, Dyckerhoff AG, the German number one in cement, acquired Lone Star at c$300 per tonne (and $1.2bn, in total), taking its US market share to 5%. This was something of a surprise at the time and the group managed to clinch the deal with a knock-out bid.

Dyckerhoff AG is also something of a conundrum, due to its complex shareholding. The Dyckerhoff family holds 41%, Dresdner Bank 15%, Schwenk 12%, R&V Versicherung 11% and Holcim 10%. It has been suggested in the German press that Dresdner maybe a loose holder and that Holcim would like to buy the business, albeit denied by the latter at end May.

Cemex takes greater stake in US

Finally, Cemex, the Mexican-based, international cement maker, is leader in its domestic market and in Spain, through Valenciana. The group has significant interests in the US, South East Asia, South America and Egypt. In September 2000 it bought Southdown, a US public company, (which had earlier merged with Medusa), against stiff competition. The enterprise value was cUS$3bn and the cost per tonne of capacity $225, which compares favourably with Dyckerhoff AG's $300 per tonne for Lone Star. The purchase also propelled Cemex to number two in the US cement production league table, with 11% of the market. Holcim is narrowly the leader with 13%, prior to Lafarge and Blue Circle coming together (where there may well be anti-trust divestments required).

There have also been a host of smaller deals in 1999–2000. For example, TXI Inc, the US-quoted independent with a market capitalisation of $681m, purchased Riverside Cement from Ssangyong. Titan Cement of Greece purchased Roanoke and Pennsuco from Tarmac (now part of Anglo American). Cementos Portland of Spain bought Giant Cement and CSR acquired Florida Crushed Rock. Within the Pioneer acquisition, Hanson inherited a 50% interest in North Texas Cement in a joint venture with Ash Grove. However, cement is not Hanson's business (see company profile).

Global leaders

'The seven sisters' lose a sibling

As a result of this rash of M&A, the world's cement market has concentrated in ownership. The "seven sisters" as they have been dubbed – Holderbank, Lafarge, Cemex, Heidelberger, Taiheiyo, Italcementi and Blue Circle – are now six; or almost six, because the Lafarge/Blue Circle deal is yet to close. In any event, this group of six now controls 44% of global cement capacity. This compares with 35%, two years ago and under 30% in 1990. This is a far higher percentage of assets under collective control than in almost all other industries. Furthermore, we believe that within five years the "six sisters" could have 50%.

Two pretenders

There are also two 'pretenders' at seven and eight in Votorantim and Dyckerhoff AG, respectively. The former is Brazilian based and operates in other parts of the South American continent. However, it has agreed to buy €825m worth of assets from Lafarge, in Canada and the US, as part of its anti-trust divestments ahead of final regulatory approval. Similarly, Dyckerhoff AG recently moved comfortably into the world top 10 with the purchase of Lone Star.

In the table, we show the global top 12 in cement. In 1988, they accounted for 17% of world cement capacity (which at that time was 1.2bn tonnes). In early 2001, this share has risen to 51% from a total of 1.4bn.

Global Cement Capacity (ex-China and HK) – 2000

Firm	Capacity m tonnes	Capacity Incl. Partners m tonnes	Market Share (%)
Lafarge/Blue Circle	44	166	12
Holcim	44	144	10
Cemex	15	94	7
Heidelberger	18	83	7
Taiheiyo	12	67	6
Italcementi	17	55	4
Votorantim	17	25	2
Dyckerhoff	11	25	2
Siam Cement	7	23	2
Cimpor	6	18	1
Ube Industries	12	16	1
Total			51

Source: Company Accounts, Company Presentations; International Cement Review

The future

Debt levels may constrain activity

We believe that the concentration of ownership will intensify. However, in the short term, there is a major financial constraint. The recent spate of acquisitions has left all of the main participants with high levels of gearing.

This is due to both the increased pace of consolidation in the cement industry and the higher valuations of assets being acquired.

Second, management teams are thinly spread already in integrating newly acquired businesses and there may simply be insufficient human resources. Added to this is the pressure that comes with delivering on the synergy/cost-saving forecasts made to investors at the time of purchase.

The acquisition of stakes in the few remaining independent players and smaller deals, however, will continue. This strategy effectively secures first refusal, trading synergies and a more intimate knowledge of a potential target. In return, the target benefits from access to world-class management, better technology and a generally stronger balance sheet.

Europe loves Asia

The fate of Thailand's third largest cement producer, TPI Polene, was a recent example of such actions. It polled six international cement producers about acquiring a stake as part of a capital increase. TPI Polene is operating under a restructuring plan approved by the domestic bankruptcy court (the company owes foreign and local banks almost US$1m). Holcim appears to be the front runner to buy a stake and already owns 28% of Siam City Cement, Thailand's second-largest producer.

Elsewhere, PT Semen Cibinong. Indonesia's number three cement producer, saw its shares suspended due the need for a financial restructuring (23 May 2001). Once again, Holcim is in line to take control during this period and is expected to end up with almost 75%.

Finally, in Egypt, the government's stake (47.9%) in Helwan Cement is for sale. To date, Cimpor, Lafarge and Cemex have expressed an interest. The Egyptian Cement Company (44% owned by Holcim) is also in the hunt. Helwan has a market capitalisation of US$220m.

Average gearing is 110%

In the medium term, however, we expect the pace of consolidation to increase once more. Indeed, the cash generative nature of the cement industry allows the global players to reduce debt levels relatively quickly. For example, Lafarge expects to knock some 17% off gearing in two years.

Balance sheet gearing

Firm	Gearing (%)
Lafarge/Blue Circle	106
Holcim	104
Cemex	93
Heidelberger	116
Taiheiyo	286
Italcementi	80
Votorantim	40
Dyckerhoff	123
Siam Cement	100
Cimpor	99
Ube Industries	62

Notes: as at last balance sheet date or pro forma on acquisition for 2001F

Source: Company accounts; Bloomberg

Europe – still opportunities

The European cement majors has led globalisation domestically and abroad. However, there remain a number of possibilities at home.

Of the major European markets, Italy is the most fragmented. At present, there are still 20 producers. However, the merger of Buzzi and Unicem, together with the recent arrival of both Holderbank and Lafarge, is likely to lead to further consolidation.

Total productive capacity in Italy is 55m tonnes a year from 84 plants and last year consumption was 38m (+5.1%). Imports amounted to 1.5m tonnes. Demand in 2001 is forecast by the International Cement Review (ICR) to rise 3.4%.

More local deals on the cards

Italy – cement market capacity

Company	Capacity (Mta)
Italcementi	16.5
Buzzi-Unicem	9.5
Colacem	4.9
Cementir	4.3
Cementi G Rossi	4.0
Merone (Holderbank)	3.6
Cementizillo	2.6
Sacci (Lafarge 20%)	2.0
Aldo Barbetti	1.9
Lafarge Adriasebina (Lafarge)	1.6

Source: International Cement Review

Further shake out in Spain

There are 12 companies active in the Spanish cement market, including six international groups. Three players (Italcementi, Buzzi-Unicem and Colacem) account for 55% of the market. The future is likely to see further consolidation with one or more of the six international operators likely to be involved.

Total productive capacity in Spain is 42m tonnes per annum from 39 plants and last year consumption was 37.8m (+9%). Imports were 4.9m tonnes. Demand in 2001 is forecast by the ICR to rise 1.3%.

Spain – cement market capacity

Company	Capacity (Mta)
Cia Valenciana de Cementos (Cemex)	10.4
Cementos Portland (Valderivas 55%)	9.1
Asland (Lafarge)	5.3
Hornos Ibericos Alba (Holderbank 96%)	4.0
Uniland Cementera	3.2
Financiera y Minera (Ciments Francais)	2.7
Tudela Veguin	2.3
Cementos Molins	1.6
Cementos Cosmos (Cimpor)	1.6
Lemona Industrial	1.0
Cementos Hispania (Dyckerhoff)	0.7

Source: International Cement Review

Less opportunity in Germany and France

In contrast to Italy and Spain, both the German and French cement markets are relatively consolidated. In Germany, the family controlled Schwenk partnership exerts considerable influence through its directly owned plants and its shareholdings in Heidelberger (24.9%) and Dyckerhoff (12%).

Total productive capacity is 53m tonnes per annum from 67 plants and consumption last year was 35.5m (-7.5%). Imports amounted to 3.4m tonnes. Demand in 2001 is forecast by the ICR to fall by a further 2%.

Germany – cement market capacity

Company	Capacity (Mta)
Dyckerhoff	10.6
Heidelberger	7.0
E Schwenk KG	6.9
RMC	6.3
Holcim	4.2
Lafarge	3.9
Anneliese	3.2

Source: International Cement Review

The French market (like the UK) is consolidated, with four major players controlling the manufacturing facilities. Total productive capacity is 27.2m tonnes per annum from 36 plants and consumption last year was 21m (+3.9%). Imports were 2.1m tonnes. Demand in 2001 is forecast by the ICR to rise by 2.4%.

France – cement market capacity

Company	Capacity (Mta)
Lafarge	10.0
Ciments Francais (64% Italcementi)	7.0
Vicat (Heidelberger 35%)	6.0
Ciments d'Origny (Holcim)	5.1

Source: International Cement Review

Key change has been RMC buying Rugby

In the UK, the market has been a virtual oligopoly for some time, with three players controlling 90% of the cement market. However, the identity of all three has changed since 1999. Two of the three are now owned by continental European firms (Lafarge/Blue Circle pending), while the third, Rugby, went to a domestic peer, RMC. Castle, the UK number two, was already Scandinavian owned.

It was RMC, however, which also finally broke the UK's unique separation of cement from aggregates/ready mix; to be followed closely by Lafarge, which already owns Redland, the aggregates and ready mix company.

Total productive capacity is 14.1m tonnes per annum (all the producers are shown in the table) and last year consumption was 15.5m (+2.3%). Imports were 1.7m tonnes. Demand in 2001 is forecast by the ICR to rise by 2.9%.

UK – cement market capacity

Company	Capacity (Mta)
Lafarge (Blue Circle)	6.6
Heidelberger (Castle)	3.8
RMC (Rugby)	2.9
Sean Quinn	0.5
Anglo American (Minorco/Buxton Lime)	0.3

Source: International Cement Review

Not surprisingly, given the rash of activity outlined earlier, the US market is dominated by foreigners and the Europeans, in particular.

US – cement capacity

Company	Capacity (Mta)
Holcim	12.6
(Holnan/St Lawrence)	
Cemex	11.3
(Southdown/Medusa/Kosmos)	
Lafarge Corp.	8.1
Ash Grove	6.1
(North Texas)	
Heidelberger	7.5
(Lehigh/Calaveras/Glen Falls / Texas-Lehigh/Allentown	
Blue Circle	5.8
(St Marys)	
Italcementi	4.5
(ESSROC)	
TXI Corp.	3.7
(Riverside Cement)	
Dyckerhoff	3.7
(Lone Star)	
Taiheiyo	3.5
(Onoda/California)	
Total for Top 10	**66.8**

Source: International Cement Review

Top 10 in US control 72% of cement capacity

The table above shows just cement capacity, it does not include additional grinding plants for clinker, which is effectively "raw" cement (see below) – and can be imported. Note that definitions of cement capacity can be something of a moveable feast.

In terms of the top 10, however, they account for 60%+ total US cement capacity. There are only two US-owned players in the top 10 – Ash Grove and Texas Industries Inc (TXI). This means that the global leaders, all foreign, control some 60% of production (which will rise materially when the other smaller players are included). In the 1970s, foreign ownership was less than 30%.

Lafarge to be clear number one

We have shown Lafarge and Blue Circle separately, at this time, but the combined entity would soar to number one. This is assuming that the US anti-trust authorities do not insist on divestments in the US (as in Canada). In any event, Lafarge would have pro forma 13.9m tonnes of annual cement capacity in the US, which is equivalent to 15% of total productive capacity (as defined above by the ICF).

The US is the world's second largest market in terms of cement consumption with a total 113.3m tonnes (+4.1% on 1999) by ICR (China is number one). This included imports of c28m tonnes.

Between 1995 and 2000, total US cement consumption has increased by over 30%, fed by strong economic growth and a fuel-tax funded infrastructure programme. In fact volume records have been broken every year since 1993. Prices have also soared and, last year, averaged $75-80 last year.

Imports vs new capacity

It is important to appreciate that imports of cement to the US are, for the most part, controlled by the domestic producers. They, in turn, are substantially foreign owned and/or global leaders. This is in sharp contrast to the 1980s, when imports were undertaken by third parties. This lead to severe erosion of price for both the imported cement and that locally produced.

The other dimension of the US market in 2001 is new capacity. We estimate that this amounts to some 35m tonnes over the next three years. The ICR, the industry's bible, takes a pragmatic line on this potential new capacity, suggesting there is a good chance that it will simply replace imports. We share this pragmatism (see Section on US cement). However, at best, a flat market there have been signs of weakness in cement prices in the opening months of 2001, especially in California and Texas and this must remain a risk.

Global cement demand

Growth of 3% expected this year

There was a set back in demand following the economic slowdown in Asia in the late 1990s. In 1998, for example, global cement consumption was flat at just under 1.5bn tonnes. However, in 1999, it rose 5% and by a further 3.2% last year. In 2001, the ICR forecasts global cement consumption to rise by a further 3.1% to 1.67bn tonnes.

As at the end of last year, the industry was estimated to comprise of 1470 integrated production facilities together with a further 150 separate grinding installations, with a total combined cement capacity of 1.75bn tonnes. When cement is manufactured it emerges as clinker (which look a bit like large shotgun pellets). This is called clinker, which is subsequently ground and blended with gypsum to make the final product.

In the global cement capacity number, there is an allowance for China, of 150 modern works with an estimated capacity of 200m tonnes. However, the Chinese market remains spectacularly fragmented with the total number of cement kilns said to be in excess of 13,000. However, these are a variety of shapes, sizes and age.

China is largest market

In any event, China is also the largest consumer of cement in the world at an estimated 560m tonnes in 2000 (+0.5%); this follows growth of 8.3% in 1999 and 6% in 1998. China largely escaped the negative impact of the Asian crisis, as a result of its insular economic management. In 2001, the ICR forecast is for an increase of 1.8% in consumption. The US in number two (albeit, the world's largest construction market, by value).

India pips Japan

Economic difficulties have resulted in Japan losing third place in the global cement league table to India, where consumption is estimated to have topped 100m tonnes for the first time in 2000. From 1997 until last year, India topped the cement growth table, with consumption increasing by 43.5%.

With the continued development of the Indian economy further growth is likely. The present per capita cement consumption of 98kg in India is less than half the world average of 263kg. It is also considerably lower than the levels of most developed countries where consumption rates can be 800kg per capita.

Aggregates

The great disappearing UK building materials company

Europe loves UK

The UK has witnessed its fair share of rationalisation in domestic building materials, particularly in the late 1980s and early 1990s. Landmark deals include Travis & Arnold and Sandell Perkins merging to form Travis Perkins in 1988; Redland buying Steetley in 1992; and the Bardon Group and CAMAS merger in 1997. There has also been a whole host of private deals, particularly at the heavy end.

Several product oligopolies

In many products, a very significant concentration of ownership exists. For example, cement is an oligopoly shared between three players: Blue Circle, Castle (now owned by Heidelberger) and Rugby (ie RMC), which together have some 90% of the market. Glass has been reduced from a monopoly (Pilkington) to a virtual duopoly, with Saint Gobain of France. In continental Europe, these two share the market, principally with Glaverbel (60.9% owned by Asahi of Japan) and Guardian of the US.

Similarly, plasterboard was, by the late 1990s, another product oligopoly comprising BPB, Redland and Knauf, the privately owned German group (prior to 1989, BPB had 94% of the UK market). Add Lafarge and the continental European plasterboard market was also an oligopoly (tightened further when Lafarge bought Redland). For the record, an oligopoly is “a state of limited competition, in which a market is shared by a small number of producers or sellers”, according to the Concise Oxford Dictionary.

Four control all key products

In 1998, quarry products, for example, four companies controlled 48% of aggregates, 69% of coated stone and 67% of ready mix (see below). Brick manufacture had undergone similar rationalisation. The number of domestic producers shrank from ten to five between 1989 and 1998, with the top two (Ibstock and Hanson) controlling 68% of the market versus 48% (Hanson and Steetley) in 1989.

Apart from Scancem (which was substantially Scandinavian owned) and Knauf’s green fielding in UK plasterboard, all the deals were peculiarly all domestic deals.

Lafarge was the instigator

This changed, however, in 1997 when Lafarge bid for Redland. Initially hostile, the bid was ultimately agreed in return for an 8% hike in the price to €4.2bn (up from €3.9bn). Since then, a clutch of household names in the UK building materials have been take over, principally by continental European firms – and Lafarge has come calling twice.

UK household names acquired by continental Europeans

Year	Target	Acquiror	Home	Price €Bn
1997	Redland	Lafarge	France	4.2
1998	Ibstock	CRH	Ireland	0.4
1998	Marley	Etex	Belgium	0.6
1998	English China Clays	Imerys (aka Imetal)	Belgium	1.5
1999	Tarmac	Anglo Am.	RSA	2
2000	Hepworth	Vaillant	Germany	1.1
2000	Rugby	RMC	UK	0.9
2000	Meyer International	Saint Gobain	France	1
2001	Blue Circle	Lafarge	France	7.4
Total				18.5

Source: Bloomberg

Poor acquisition record

In some cases, the targets deserved to be acquired. We would point out that Redland developed a poor acquisition record, particularly Genstar in the US and, particularly, Steetley in the UK.

Management at English China Clays, Ibstock, Marley and Hepworth had also failed to impress the equity market over a number of years, in our view. In two of these cases, it was also ill-judged acquisitions that did the damage: Ibstock buying Redland's UK bricks units; and Marley purchasing Syrocco, a plastics business in the US. In the end, however, Ibstock proved to be very popular. It was bid for initially by Wienerberger, but the Austrian group was outflanked by an opportunistic CRH. However Wienerberger bought Marley's US brick division from Etex for US$260m. Known as General Shale, it is one of the top three brickmakers in the US.

Rugby's excursions into joinery, especially in the US, were also unwise and the company should have turned itself on its head. By this we mean, sell the cement assets (it was always a minnow in this pool) for a handsome price and re-invent itself as a light-end building products company.

As for Tarmac, it was left exposed once construction was demerged. However, under the new management it most probably had a brighter future. That said, it was a particularly good fit with Anglo American's existing UK business.

Wrong place, wrong time

Meyer and Blue Circle were, pretty much, unfortunate. The former had undertaken its own domestic industry rationalisation with purchases of Harcros and Graham Group, which had bought Erith; perhaps its flaw was a lack of successful international investment.

As for Blue Circle, it was, in our view, moving forward confidently under the leadership of CEO, Rick Haythornthwaite. Indeed purchases in Greece and Eygpt showed a sure touch. However, Blue Circle had, in the past, ignored continental Europe (aside from an associate investment in Denmark). In our view, it should have bid for Scancem. This would have been both offensive – control of the Baltic plus a superb African trading arm – and defensive – it would have controlled the fate of Castle in the UK (which would have had to divested) in the UK. Castle is the number two cement producer in the UK, which was acquired by Heidelberger, along with Scancem.

So why have so many UK household names being picked off?

The key is allocation of capital

We believe poor decision making has been a feature and, particularly, in reference to acquisitions, where there were some very unwise choices. Timing/luck was also a factor. Lafarge hit Redland when it was very much out of favour and the UK building materials sector dipped, in value, around the same time in autumn 1997. A newly independent Tarmac was also caught flat-footed.

At the end of the day, it comes down to allocation of capital and, on the whole, the continental European building materials companies have been better at it than their UK peers.

There are, of course, exceptions. RMC and BPB, for example, the sole representatives of the old guard, are global and balanced. Similarly, the newly independent, Hanson has shown leadership and sure-footedness. On a smaller scale, Aggregate Industries re-invented itself in the merger of Bardon and CAMAS back in 1997 and, since, has expanded well in the US.

UK quarry products – all change

Concentrated ownership

At the heavy end of the UK building materials sector, there has been very significant action, which started with Lafarge bidding for Redland in 1997. At the time, the target held a 7-9% market share in the four key quarry products: dry stone, sand and gravel, coated stone (asphalt) and ready mix. This deal was also significant in that it sounded the death knell of the nation’s unique separation of cement from aggregates/ready mix – given Lafarge’s core cement activities. Lafarge had earlier battled with both Redland and RMC for control of quarry products company Ennemix.

Tarmac laid out by Springbox

It was a bit of a wait for the next deal, however, until Anglo American clinched a £1.2bn recommended cash offer for Tarmac in late 1999 (a 64% premium to the pre-bid speculation price). The offer price represented an exit multiple of 9.3x historic 1998 EBITDA. The predator, Anglo was already active in the UK through Minorco, which, in turn, had assembled a useful business (see table below) through Tilcon (out of BTR), Nash Rocks (privately owned) and Buxton Lime (from ICI), which included a cement plant. This means that, in reality, Minorco was the first full vertically integrated unit in the UK.

Taboo broken

RMC bid for Rugby, sensing that the game was changing. Hanson has also entered the corporate fray with a bid for Pioneer, the Australian building materials group. At the time Pioneer had 10% of the UK ready-mix market, 2% of dry stone and asphalt and 3% of sand and gravel. In any event, the recommended cash and share offer was worth £1.7bn and represented a 39% premium to Pioneer’s pre-bid talk share price. The multiple of 7.7x consensus forecast EBITDA for the year to June 2000.

It was then Lafarge's turn again. Having been widely tipped as a potential suitor for some time, Lafarge finally made a hostile bid for Blue Circle at the beginning of 2000. A year later it was to clinch agreement

UK quarry products rationalisation

A perfect case study

The UK serves as a useful case study in rationalisation at the heavy end. As with many extractive industries, the drive came from controlling a finite, scarce and valuable raw material, ie stone or aggregates, and one that does not travel far, well. There was also the added attraction of a significant stake in its downstream uses in asphalt and ready mix. Furthermore, in almost all cases, the moves were made by existing players. Combining businesses in this sector tends to generate substantial synergies and cost savings.

UK aggregates market 1998 (before recent transactions)

Company	Market share (%)
Tarmac	17
Hanson	13
RMC	10
Anglo Ind. Mining	9
Lafarge	8
Aggregate Industries	8
Foster Yeoman	4
Pioneer	3
Others	28
Total	**100**

Source: Anglo American

In 1999, Anglo American plc (with its origins in the Republic of South Africa) bid for Tarmac. Given that it was already active in the UK, the Competition and Consumer Affairs Minister set out certain undertakings so that the proposed deal could go ahead.

Rules of engagement

The undertakings required Anglo Industrial Mining to divest, to purchasers approved by the Director General of Fair Trading, such assets, sites and quarries that would reduce its market share:

- To 33% or less in aggregates and asphalt for all production areas within a 30-mile radius of an Anglo or Tarmac quarry.
- To 40% or less in ready mix for all production areas within a 10-mile radius of an Anglo or Tarmac plant (and 50% or less in those areas where there are at least four other competitors, at least one of which is not a national player).
- In respect of mortar, to 40% or less, in all production areas within a 10-mile radius of an Anglo or Tarmac plant.

Scope in aggregates

Theoretically, these guidelines would allow the three principal players (Anglo, Hanson and RMC) to share 100% of the market in aggregates and ready-mixed concrete. Previously, it was widely assumed that 25% was the ceiling in terms of market share.

In reality, of course, it would not be so simple, given the fact that aggregates is a local business and that geologically the majority of hard stone quarries are north of an imaginary line between The Wash and the Bristol Channel. It is sand and gravel that predominates in the south east of England. Hard stone is important for its performance, which is measured by a PSV (polished stone value); in layman's terms, this is 'not slippery when wet'.

Aggregate Industries in the frame?

In terms of continued rationalisation, it is a fair assumption that neither Lafarge UK quarry products (Redland) nor Foster Yeoman (the independent family controlled company) are for sale. This leaves Aggregate Industries (AI), where an 8% market share in UK aggregates is particularly valuable.

In its own right, AI has undertaken its own consolidation, being the product of a merger between Bardon Group and CAMAS in 1997. Furthermore, AI CEO, Peter Tom made his own delphic comment in the 2000 report and accounts: "In the wider building materials sector there has been further corporate activity and consolidation. We continue to explore relevant opportunities, to ensure that we take full advantage of any situation which we believe will benefit shareholders and employees."

Certainly, AI has not been afraid to step up to the plate. For example, it held lengthy talks with Tarmac before it fissured into building materials and construction (Carillion). Tarmac was then absorbed by Anglo. We also say elsewhere in this document that AI is "a compact and nimble operator", with more than half its business in the US.

Heidelberger is an outside bet

In terms of potential buyers, any of the top three could be interested. RMC may well have an anti-trust issue with ready mix, particularly in the south of England, while Anglo would be challenged in coated stone (the combined market share would be 49%). Hanson and Lafarge, in particularly, would be less constrained, in theoretical terms. An outside bet is Heidelberger Zement. It already owns Castle, the UK's number two cement maker and could well choose to adopt full vertical integration – alongside RMC and (soon) Lafarge. The German market leader certainly has the experience, provided it is committed to the UK (which may not be the case).

UK aggregates market share 2000 pro-forma (after recent transactions)

Company	Market share (%)
Anglo/Tarmac	26
Hanson/Pioneer	16
RMC	10
Lafarge	8
Aggregate Industries	8
Foster Yeoman	4
Others	28
Total	**100**

Source: Anglo American

Two-thirds of aggregates market controlled by top five players

In the case of the UK aggregates market, the recent deals (ignoring the impact of the required Anglo/Tarmac disposals) leave more than two-thirds of the market in the hands of the top five players.

In coated stone (ie asphalt), this was pretty concentrated even prior to the recent spate of deals.

UK coated stone (asphalt) market (before recent transactions)

Company	Market share (%)
Tarmac	27
Hanson	15
Aggregate Industries.	14
RMC	13
Anglo Ind. Mining	8
Lafarge	7
Foster Yeoman	5
Pioneer	2
Others	9
Total	**100**

Source: Anglo American

Asphalt controlled by three

As a result of the Anglo/Tarmac deal and Hanson's purchase of Pioneer, 79% of the UK coated market is in the hands of four players. However, the table does not reflect the Anglo/Tarmac disposals necessitated by the competition authorities.

UK coated stone (asphalt) market (after recent transactions)

Company	Market share (%)
Anglo/Tarmac	35
Hanson/Pioneer	17
Aggregate Industries	14
RMC	13
Lafarge	7
Foster Yeoman	5
Others	9
Total	**100**

Source: Anglo American

Three-quarters of ready mix times three

The combination of Hanson's ready-mix business with that of Pioneer and Anglo American's purchase of Tarmac means that three groups control three-quarters of the UK ready mix market. Herein, RMC remains the UK market leader.

UK ready-mix market1998 (before recent transactions)

Company	Market share (%)
RMC	28
Tarmac	15
Hanson	14
Pioneer	10
Lafarge	9
Anglo Ind. Mining	8
Aggregate Industries	3
Others	13
Total	**100**

Source: Anglo American

UK ready-mix market, pro forma 2000 (after recent transactions)	
Company	**Market share (%)**
RMC	28
Hanson/Pioneer	24
Anglo/Tarmac	23
Lafarge	9
Aggregate Industries	3
Others	13
Total	**100**

Source: Anglo American

Tax on aggregates in the UK – constraint or impetus?

Taxation without representation

The prospect of a tax on aggregates in the UK has been around for some time. However, the amount and implementation date has now been set, £1.60 per tonne and April 2002. This surfaced formally in the government's March 2000 Budget. While it welcomed the voluntary measures undertaken by the industry, the government said that these continued to fall short of what was necessary to match the environmental and economic effects of a tax on primary aggregates.

In essence, the tax is designed to ensure that the environmental impact of aggregates production, not already addressed by regulation, is more fully reflected in price. This is expected to encourage a shift in demand away from virgin aggregates to alternatives such as recycled materials.

The tax will apply to crushed rock, sand and gravel, including materials dredged from the territorial waters of the UK.

Recycled material is exempt

Recycled aggregates and certain secondary aggregates such as those derived from reworking old spoil heaps will be relieved. Exports of aggregates will also be relieved to protect competitiveness. Sensibly, imports will be subject to the tax when they are first sold or used in the UK. That said, raw materials for use in the production of cement, plasterboard and glass have been specifically excluded.

Tax is flawed

However, we believe the tax is flawed. Firstly, being a monetary amount it will account for anything from c15% (or more) of more valuable hard rock but c30% of lower quality products. Note that in other countries, such as Holland and Sweden, the tax is just a few cents.

Furthermore, the industry is already recycling 40m tonnes from a potential of 46-47m tonnes (ie 22% of last year's total output of c212m tonnes). This amount of recycled material has also risen dramatically in the last five years.

Downstream margins could be squeezed

In primary aggregates, we expect that the tax will be passed on to consumers. However, it may be more difficult to achieve this in downstream products, such as ready mix and concrete products. Left-over aggregates or scalpings, which are sold for very little, will be spectacularly less competitive. It is expected that they may be substituted by other materials such as china clays. This could result in a significant loss of revenue and profit. Overall, for the industry there could well be pressure on downstream margins, which could be a further incentive to squeeze industry ownership further.

Continental European quarry products – still significant opportunities

Germany and France are fragmented

The UK aggregates and ready-mix concrete markets are both concentrated. However, this contrasts markedly with the situation in Germany and France, where both markets remain fragmented.

Germany is three times the size of the UK

The German aggregates market, for example, is around three times the size of the UK, with annual production of more than 660m tonnes. However, the two leading players, Wehrhahn and RMC, control only 12% of the market between them and there are more than 2,000 suppliers.

In ready mix, RMC is market leader, with c17% of the German market. Together with Heidelberger (11%) and Dyckerhoff (10%), these three control 38% and thereafter it is wide open.

The French aggregates market is not as fragmented as Germany, with the top three players controlling 30%. However, it is still someway behind the UK in terms of concentration. Lafarge is the market leader with c15% of the market, followed by Colas and Jean Lefebvre, which both have c7%. Behind them, Ciments Francais has 6% and RMC c5%.

In ready mix, France is similar to the UK. Lafarge is the clear market leader with 23% of the market. RMC has 18%, Ciments Francais 14% and Heidelberger and Holcim with 9% each. This makes a total of 73% in the hands of five operators.

Opportunities exits in Spain and Italy

There remains significant scope for further consolidation in both French aggregates and in German aggregates and ready mix. A similarly fragmented position exists in aggregates, in particular, in Spain and Italy, the other two major European construction markets. However, we believe that deals in continental Europe are more likely to be driven by the aspirations of the major cement producers than by a desire, per se, to seek consolidation in ready mix and aggregates.

US quarry products is wide open

"There's gold in them hills"

The US is the world's largest construction market (albeit that China consumes more cement). However, the structure of its heavy building materials sector remains relatively fragmented ie it looks more like continental European than the UK. It is also significant that the US has not developed a large number of quoted building materials stocks and only Vulcan ($5.4bn) and Martin Marietta ($2.3bn) are of any size. Both these domestic groups have eschewed ownership of cement, in favour of simply aggregates plus ready mix, concrete products and asphalt.

US aggregates market share 2000

Company	Market share (%)
Vulcan Materials	8.5
Martin Marietta	6.7
Hanson	4.8
CRH	2.8
Other	77.2
Others	
Total	**100**

Source: Company Accounts and Presentations, Trade Associations

No one has more 9%

The indigenous US players have c15% of the market and there are many familiar names in the balance of the market including CRH Lafarge, RMC, Aggregate Industries (1.3%) and the like. That said, in the US – as with other markets – it is local market share that counts.

Many of the global cement companies will seek to extend their influence downstream. However, they will be competing with the two major US domestics plus CRH, Hanson and Aggregate Industries.

Vendors not always driven by price

In many cases, too, it is not always price that prevails. Target companies are often privately owned and, perhaps, family run. Here, the vendors may seek to continue working with the acquirer. CRH has made a great success of absorbing 'owner/drivers' from quarry products businesses and allowing them to flourish in a new environment. In an industry where many of the individuals know each other, it is often a personal recommendation from one to another, which can secure a new acquisition.

"The Euros are coming"

Not that US vendors are necessarily benevolent by nature. Indeed there have been instances, especially in the late 1990s, when prices paid for businesses were very full. Delighted cries of "the Europeans are coming" echoed around many quarries in the US. However, it is also the case that the Europeans have generally been more efficient at digging holes in the ground that their US counterparts (historically, energy in the US has been cheaper too). The foreigners had also experienced a greater degree of industry and sector rationalisation.

Full vertical integration, or not

Making use of aggregates to manufacture ready mix, coated stone or asphalt and concrete products is a well-worn path. However the hat-trick of cement, aggregates and ready mix tends to be the continental European model, which the European cement companies have imported into the US. In France, the asphalt market is controlled, largely, by the contractors.

UK was last to change

The UK was, until recently, the only major market, which still divided cement ownership from aggregates/ready mix. The beginning of the end came with Lafarge bidding for Redland in 1997. At the time, the target held a 7-9% market share in the four key quarry products: dry stone, sand and gravel, coated stone (asphalt) and ready mix. Given Lafarge's core cement activities, it would not be long, thereafter, before the nation's unique separation of cement from aggregates/ready mix would cease. And so it was.

However, it was actually RMC that was the first in the UK to become adopt full vertical integration, with its bid for Rugby. The group read the market well, perhaps anticipating Lafarge's bid for Blue Circle, which awaits regulatory consummation.

Global majors have embraced full vertical integration

In the global cement and quarry products industry, the majority of the players are fully integrated. There is, therefore, an economic case to be made for the practice. Indeed it provides a convenient market for cement production, as it is supplied to in-house ready mix and concrete products units. Clearly, when combined with aggregates this yields control of the two prime ingredients in ready-mix concrete.

One profit or three?

Cement manufacture is capital intensive (and more akin to chemicals than building materials) and full vertical integration is seen as a means to an end of generating a higher return. However, it is vital that the process is managed efficiently. Three satisfactory returns need to be made – from cement, aggregates and ready mix – and not just one. Herein lies the risk. However, a cement producer would highlight his marginal cost of production within a continuous production process. An aggregates/ready-mix player, however, would claim that full vertical integration breeds laziness. The price of cement also tends to be elastic, particularly relative to aggregates.

Hanson stays with aggregates and ready mix

Hanson, for example, the world's largest supplier of aggregates and number two in ready mix has chosen to focus on vertical integration in aggregates, ready mix and concrete products. It seeks to build critical mass in local or regional markets and as these develop into clusters, so the group can maximise its returns. Hanson also buys some 10m tonnes of cement worldwide every year, which provides the group with very significant bargaining power from its suppliers. Aggregate Industries, on a smaller scale, has also built niche operations on both sides of the Atlantic, without cement.

RMC, on the other hand, has taken an each way bet. It is fully vertically integrated in the Germany, California and, now, the UK. However, in the 24 other countries in which it operates, ready mix has been its prime product. Similarly, CRH is vertically integrated at home in Ireland and in Finland.

Martin Marietta and Vulcan are pure and the most profitable

Finally, it should also be noted that the two indigenous US quarry products majors, Vulcan Materials and Martin Marietta have chosen to ignore cement. And is it a coincidence that Martin Marietta leads the quoted heavy building materials sector with 23% operating margins last year (27.6% in 1999)? Vulcan was no slouch either, with 19.9% in 2000 (20.4% in 1999). Neither has really ventured outside the US to any significant degree.

Our conclusion is that aggregates in the US is a very attractive business, indeed. It is also one that will increase in value over time, given the environmental, regulatory and physical constraints on supply.