6 Conclusions

The merger situation

6.1. On 20 August 1990, the Secretary of State for Trade and Industry asked us to investigate arrangements proposed between Akzo NV (Akzo) and Valhi, Inc (Valhi) for the merger of certain of their interests. Under the reference (see Appendix 1.1), we are required to investigate and report whether arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a merger situation qualifying for investigation.

6.2. Valhi owns 66 per cent of NL Industries Inc (NL) (see the ownership structure at Appendix 2.1). NL owns 100 per cent of Rheox Inc, a subsidiary of which, Rheox International Inc (Rheox International), agreed on 6 June 1990 to purchase the United Kingdom organoclays business of Akzo Chemicals Ltd (Akzo Chemicals), a subsidiary of Akzo. Organoclays are a type of rheological additive, that is an additive which affects the rheology, or the deformation and flow properties, of the substances to which they are added (as described in paragraph 3.4). The transaction would involve the transfer of production equipment for dry process organoclays at present located in Akzo Chemicals' plant at Littleborough in Lancashire, product stocks of rheological additives from the plants both at Littleborough and at Pero, Italy, certain know-how and wet process organoclay patents, the customer list of Akzo's organoclays business, which was previously that of Perchem Ltd (Perchem), and contracts with customers relating to the Perchem business. For a period of five years from the date of completion, Akzo would not compete with the business previously carried out under the Perchem trade name. We conclude that if the acquisition were to proceed, enterprises carried on in the United Kingdom by or under the control of Akzo in the manufacture and sale of organoclays would cease to be distinct from enterprises carried on by or under the control of Valhi.

6.3. Rheox International and its subsidiaries, including Abbey Chemicals Ltd (Abbey Chemicals), are collectively referred to as Rheox. Paragraphs 2.26 to 2.30 describe Rheox's intention to acquire the United Kingdom organoclays business from Akzo Chemicals.

6.4. As well as holding a controlling interest in NL, Valhi also has a 42 per cent holding in the Baroid Corporation, of which Baroid Drilling Fluids Inc is a wholly-owned subsidiary. (The Baroid Corporation and its subsidiaries are collectively referred to as Baroid.) The remainder of the shares are held in holdings of less than 5 per cent. Baroid had eight directors when the inquiry started, four of whom (including the Chairman) were directors of NL. We have been informed that from 1 November 1990 Baroid now has six directors, three of whom (including the Chairman) are directors of NL. Of these, two were described to us as designees of Valhi. NL has seven directors, four of whom (including the Chairman) were, when the inquiry started, directors of Baroid. As from 1 November 1990, the Chairman of NL has ceased to be a Baroid director, thus leaving three Baroid directors on the NL Board. Two of these were described to us as designees of Valhi. In addition to Mr Harold Simmons (the controlling shareholder of Valhi), a fifth NL director was previously a Baroid director and a sixth serves on a Baroid Board Committee. Rheox and Baroid both argued that at an operational level the two companies were separate, but that the Valhi representatives on the Baroid Board were involved in such matters as finance and corporate plans. It is clear to us that although Valhi's shareholding does not give it a majority interest in the Baroid Corporation, it clearly has the ability materially to influence the policy of the company and in our view also has the ability to control the Baroid Corporation. Therefore we treat Baroid, in accordance with our terms of reference, as an enterprise under the control of Valhi. We note that there are a number of links and connections between the NL and Baroid Boards, which are relevant to our consideration of the public interest.

6.5. Rheological additives are used in two distinct markets-solvent-based systems and drilling muds. As regards rheological additives for solvent-based systems, the combined market share of Rheox and Akzo for organoclays would be 92 per cent (by volume) compared with 66 per cent for Rheox alone. For organics, the combined market share would be 36 per cent and for organic pastes 67 per cent (in volume terms) compared with 27 per cent and 21 per cent respectively for Rheox alone. Rheox argued that organics and organic pastes were substitutes for organoclays and there were a number of other products which were substitutable for these products, such as fumed silica, thixotropic alkyds and soya lecithin.

6.6. Using this wider definition of rheological additives for solvent-based systems gives a market share for Rheox of 32 per cent and for Akzo of 9 per cent. The degree to which these products are substitutes is discussed below but it can be seen that whichever definition is used, the proposed acquisition would increase the market share of Valhi and the combined market share would exceed 25 per cent.

6.7. The merger would also increase the market share of Valhi in volume terms for rheological additives for drilling muds, from 26 per cent (of which 8 per cent is supplied by Rheox and 18 per cent by Baroid) to 52 per cent. The weight of evidence received by us from all sources was that there are no close substitutes for organoclays for use in oil-based drilling muds. Rheox suggested that a distinction should, however, be drawn between wet process and dry process organoclays. If these sub-sectors are considered separately, Rheox and ECC are the only suppliers of wet process organoclays to the United Kingdom market; Akzo and Baroid between them supply 67 per cent of the dry process organoclay market (by volume) (see Table 3.7). The extent to which wet process and dry process organoclays may be regarded as separate markets is discussed further below, but it is clear that whether the market is considered to include both wet and dry process organoclays or whether dry process organoclays are considered as a separate market, the merger would increase the market share of Valhi and that the combined market share would exceed 25 per cent. A distinction may also be drawn between supplies for use within the same group, and supplies to the external market. Akzo's share of the latter is 73 per cent, with Baroid supplying a very small amount. Therefore the market share test would also be met on this basis.

6.8. We conclude that the market share test in section 64(1)*(a)* and (2) of the Act is satisfied. In view of the final paragraph of the reference, this finding precludes us from considering the assets test in section 64(1)*(b)* of the Act.

6.9. We have already concluded that if the acquisition were to proceed, certain enterprises carried on in the United Kingdom by or under the control of Akzo will cease to be distinct from enterprises carried on by or under the control of Valhi. We therefore conclude that arrangements are in contemplation which, if carried into effect, will result in the creation of a merger situation qualifying for investigation. We have therefore to investigate and report on whether the creation of the merger situation may be expected to operate against the public interest.

The companies involved

Valhi

6.10. Valhi is a United States holding company. The activities of its subsidiaries include the production and marketing of speciality chemicals, refined sugar beet, timber and wood products and fibreboard, and the operation of fast food franchises. The main business of its subsidiary NL is speciality chemicals, including rheological additives. NL also has a substantial interest in the Lockheed Corporation, a major US defence contractor. A subsidiary of NL, Rheox Inc, is responsible for the supply of rheological additives, and its interests outside the USA are undertaken by a subsidiary, Rheox International. Organoclays are manufactured by Abbey Chemicals in Scotland, and by Bentone Chemie GmbH (Bentone Chemie) in Germany. Rheox Ltd, a subsidiary of Rheox International, has a 70 per cent shareholding in Abbey Chemicals and the remaining 30 per cent is held by Steetley Minerals Ltd (Steetley), a subsidiary of Steetley plc. Steetley carries out the marketing of Rheox products in the United Kingdom and the Republic of Ireland.

6.11. As has already been explained in paragraph 2.9, Valhi has a 42 per cent shareholding in the Baroid Corporation, the subsidiary of which, Baroid Drilling Fluids Inc, is one of the principal suppliers of oil-based drilling mud to the United Kingdom market. It also manufactures organoclay for use in its oil-based drilling muds.

Akzo

6.12. Akzo, headquartered in the Netherlands, is a world-wide group of companies with operations in 50 countries. In 1989 it had a turnover of HFl 18,736 million (£5,394 million). Its product range includes chemical products, fibres, coatings and health care products. It has a United Kingdom subsidiary, Akzo Chemicals, which makes amines which have a wide variety of uses in road surfacing materials, personal care products and detergents; organic peroxides; and rheological additives. Akzo's rheological additives business had originated in a separate company called Perchem Ltd, which Akzo acquired in 1986. Perchem is still used as a trade name for Akzo's rheological products.

The markets affected by the merger

6.13. The products supplied by both Rheox and Akzo are organoclays, organics and organic pastes. These are all rheological additives, which are used to affect the viscosity of fluids. There are two main markets, which both companies supply: organoclays, organics and organic pastes are used in the manufacture of solvent-based paints and other coatings and, to a lesser extent, in inks, greases, adhesives, sealants and cosmetics (solvent-based systems); organoclays are also used in the manufacture of oil-based drilling fluids (known as `muds') for drilling operations in the oil and gas industries. The total value of Rheox's exports from the United Kingdom of these products is over four times as much as its United Kingdom sales, while Akzo's exports from the United Kingdom have a total value of about 70 per cent higher than its United Kingdom sales.

6.14. There are two processes by which organoclays can be made, a wet process and a dry process, as described in paragraphs 3.5 to 3.8. The dry process product costs half as much as the wet or less, but the levels of impurity in the organoclay are greater. Most of the organoclays used in oil-based muds are made by the dry process, whereas for solvent-based systems only wet process organoclays generally have the required purity.

The market for rheological additives for solvent-based systems

6.15. The United Kingdom market for rheological additives for use in solvent-based systems is larger than that for use in oil-based muds: sales of organoclays for use in solvent-based systems amounted to £5.2 million in 1989, sales of organics were £0.9 million and sales of organic pastes £0.2 million. Rheox argued that a number of substitute products were available, sales of which amounted to a further £6.4 million in 1989. Both Rheox and Akzo produce wet process organoclays. Akzo also produces a small amount of dry process organoclays. In addition, both supply organics and organic pastes.

6.16. The three types of additive supplied by both companies, that is organoclays, organics and organic pastes, are, in the technical sense, broadly substitutable for each other, although each type has somewhat different effects. Rheox argued that there were a wide range of substitutes for these products, such as thixotropic alkyds, fumed silicas, metallic soaps and surfactants, as described in paragraph 3.17. The evidence which we received from coatings manufacturers (including several major paint manufacturers) and from a number of the suppliers of these other additive products was that there was not close substitutability between these different products. The main reason given was the different characteristics of the different types of additive, which led to a need for reformulation and testing if a switch of additives was made.

6.17. There are also price differences between the different products even after allowing for different quantities required to achieve a given effect. Fumed silica (sales of which represented £4.4 million out of the £6.4 million estimated by Rheox for all the substitute products) costs on average about £3,500 per tonne as against £2,000 for organoclays, £1,900 for organics and £1,200 for organic pastes. The market does not seem, however, to be very sensitive to price. The cost of the rheological additives as a proportion of the total final product cost is typically only 1 to 2 per cent. Several of the larger paint manufacturers suggested that this lessened the immediate need to find alternative additives if there were price rises in those they were using. Moreover, we were told that there were significant costs of switching from one additive to another in terms of reformulation and testing.

6.18. From the evidence we conclude that other products such as fumed silica are not close substitutes for organoclays, organics and organic pastes for most uses, and there is also not close substitutability between these three types of product.

6.19. There are six suppliers of organoclays to the United Kingdom market, as shown in Table 3.3. For each of the past five years, Rheox's share in volume terms has been around two-thirds of the market, and Akzo's has grown from 20 to 26 per cent in 1989. The proposed acquisition would remove the only significant competitor to Rheox. The other four companies have shares of 1 to 4 per cent. In value terms, Rheox's share is somewhat higher, at 73 per cent, with Akzo's being around 20 per cent, with only 7 per cent of the market being supplied by the other four companies.

6.20. The market for organics was worth £925,000 in 1989; Rheox's market share was 27 per cent (in volume terms) and Akzo's 9 per cent. (The figures in value terms are very similar.) Cray Valley is the largest supplier, with a 51 per cent share. Other suppliers are estimated to provide a further 14 per cent. All these shares have remained broadly constant over the last five years.

6.21. In organic pastes for use as rheological additives (the smallest sector, worth £160,000) Akzo is the largest supplier with a 46 per cent share. Rheox has 21 per cent. There are a number of other suppliers of organic pastes which supply the remaining 33 per cent of the market. These other suppliers also supply the product for other uses, as described in paragraph 3.28.

The market for organoclays for oil-based drilling muds

6.22. United Kingdom sales of organoclays for oil-based muds amounted to about £2.2 million in 1989 (of which about half were in-house sales). Sales had previously grown significantly to a peak of £4.6 million in 1988, but future sales are expected to decline further, because of an expected continuing decline in demand for the oil-based muds in which they are used, to some extent caused by a shift to water-based muds. Water-based muds (which do not use organoclays) have increasingly been used in the past few years because of concern about the environmental damage caused by the dumping at sea of drilling cuttings contaminated with oil used in oil-based mud. Water-based muds can compete with oil-based muds in an increasing variety of drilling conditions, but in the most extreme operating conditions oil-based muds perform better. Shell has reduced the proportion of oil-based muds it used from well over 50 per cent to 10 per cent in the past year or so. Other drilling companies still use a higher proportion of oil-based muds, but expect to use less in future. Future demand for oil-based muds will clearly depend to a large extent on environmental controls but seems likely to fall further. The contracting parties to the Paris Commission in June 1992 will determine the conditions under which cuttings from the drilling of production wells can be discharged into the North Sea and the time limit for adopting them.

6.23. The balance of evidence is that there are no close substitutes for organoclays for oil-based drilling muds. Rheox argued that dry process products are used in oil-based muds for general application but wet process organoclays are used for quite different applications, being used in oil-based muds for special applications (such as deep drilling where high temperatures are reached). The evidence of BP, however, was that either process could be used, and it was simply a matter of relative cost effectiveness: wet process clays were much more effective and less could be used but these qualities had to be balanced against the much higher cost per barrel. The majority of drilling mud suppliers use dry process organoclays for all purposes. Dry process organoclays can therefore clearly be used even for special drilling conditions. The balance of evidence was that in certain drilling conditions, wet and dry process organoclays were substitutes, but in simple conditions, dry process organoclays had a marked cost advantage. Wet process

organoclays are from two to three times as expensive, according to the supplier. Rheox produces only wet process organoclays. Both Baroid and Akzo produce dry process organoclays.

6.24. There are six suppliers of organoclays for oil-based muds to the United Kingdom market, although one of these, Süd-Chemie AG, has only a small share of the market. Akzo and Rheox are the only two which produce in the United Kingdom. Akzo is the largest supplier, supplying about 26 per cent of the market in 1989 (a drop from 38 per cent in 1988). Baroid also supplies a significant volume of organoclays: 18 per cent of United Kingdom sales in 1989. As was noted in paragraph 3.30, however, almost all the sales of three of the suppliers, Baroid, English China Clays plc (ECC) and M-I Drilling Fluids Co (M-I), are to the drilling mud service businesses within their own corporate group, respectively Baroid Ltd, International Drilling Fluids (IDF) and M-I Great Britain Ltd (M-I(GB)). Akzo is therefore even more important as a supplier to the `free' market, accounting in 1989 for about 73 per cent of the total supply and being virtually the only supplier of dry process organoclays.

6.25. The main United Kingdom customers for these organoclays are the six drilling mud service companies which supply drilling mud (and associated engineering services) to the offshore drilling companies. Baroid is the largest of these, with 23 per cent of the United Kingdom market for supply of oil-based mud, and is also one of the largest drilling fluid companies world-wide. Milpark Drilling Fluids (Milpark) and M-I also have significant world-wide operations and each supply about 19 per cent of the United Kingdom oil-based mud market. BW Mud Ltd (BW Mud) is a smaller company operating only in the North Sea, but supplies about 23 per cent. The remaining two suppliers are IDF and Aker Drilling Fluids Ltd (Aker) (see Table 3.9). Baroid, M-I and ECC are thus producers of organoclays as well as having companies providing oil-based mud services within their corporate group. Milpark, BW Mud and Aker do not have their own in-house supplies of organoclays.

The public interest

6.26. Our main concern is the impact of the proposed merger on competition in the market for rheological additives for solvent-based systems and in the market for organoclays for oil-based muds. We also considered what benefits might arise from the merger.

(a) Competition

Rheological additives for solvent-based systems

6.27. As noted earlier, both Rheox and Akzo produce rheological additives for solvent-based systems. Rheox's sales of organoclays, organics and organic pastes amounted to £4.1 million in 1989, 65 per cent of which were to paint manufacturers. Akzo's sales of those products in 1989 were £1.2 million, about half of which were to paint manufacturers. Other uses of these products are for other coatings, inks, greases, adhesives, sealants and cosmetics.

6.28. All of Rheox's production and most of Akzo's production of additives for solvent-based systems is of wet process organoclays. The transaction would not involve the transfer of production equipment for this process, as Rheox would intend to increase the use of its plant at Livingston. We were told by Akzo that it intended to ensure that the wet process plant equipment could not be used for organoclay production. Under the agreement Akzo may not compete with the business previously carried out under the Perchem trade name for a period of five years.

6.29. In all three product sectors there are few suppliers. The combined market share of Rheox and Akzo in volume terms would be 92 per cent for organoclays, 36 per cent for organics and 67 per cent for organic pastes for use as rheological additives. Overall the effect of the acquisition would be to remove the most significant competitor to Rheox.

6.30. We have already discussed the degree of substitutability between different products and concluded on the balance of evidence submitted that other products are not close substitutes for organoclays, organics and organic pastes for most uses, and there is not close substitutability between these products. In any case, we do not consider that the possibility of customers switching to alternative products they would not otherwise choose on grounds of effectiveness, cost or convenience is an adequate restraint on the supplier of 92 per cent of a particular market.

6.31. The evidence we received was that Akzo's quoted prices have been on average 10 per cent below those of Rheox, for comparable grades. Akzo told us that it had used lower prices to try to establish itself and increase its market share.

6.32. From the financial information supplied to us (Appendices 2.3 and 2.4) it is apparent that Rheox has been making high net margins on rheological additives for solvent-based systems. Akzo's profitability has been low.

6.33. We asked customers for their views on the acquisition. Courtaulds Coatings Ltd (one of Rheox's largest customers) did not express particular concern. It was already essentially dependent on Rheox for supplies, as it had not found the products of other companies (such as Akzo and Süd-Chemie) suitable for its applications. Some smaller customers also expected to be unaffected. Other customers were, however, concerned. ICI PLC-Paints Group (ICI) said that there were grades of product which it bought from both Rheox and Akzo which were equivalent. Its purchases of organoclays were small as a proportion of total costs, but were absolutely key to certain of its products, such as primers, undercoats and some gloss finishes. ICI felt strongly that it could not switch to other materials or to other suppliers for its needs. Both ICI and other paint makers expressed concern that the acquisition would lead to considerable price rises. One considered that prices would rise by 20 per cent, and might also lead to a rationalisation of the range of products offered.

6.34. Sales of organoclays for solvent-based systems have grown steadily since 1985 with a pause in 1988, in both volume and value. There was a fall in demand for both organics and organic pastes in 1988, but since then demand has risen. Sales levels depend essentially upon sales of paints and other products in which they are used. In the longer term environmental pressures are likely to lead to some switching to water-based products, but not to the major extent seen in the markets for drilling muds. Continued modest growth in sales is projected.

6.35. We looked at possible sources of competition from new entrants, expansion by existing suppliers or an increase in imports. As regards new entrants, although in absolute terms set-up costs are fairly low (estimates range from £0.5 million on an existing site to £2 million), they are high in relation to the size of the market. The basic technology is not difficult, but quality and consistency of performance is very important to customers, as although the organoclay is not a high proportion of costs, for many purposes it is a key ingredient. Customers therefore seem reluctant to try new sources of supply. There has in fact been little recent entry into the market. Apart from Perchem itself, the only new entrant has been Bentec SA (Bentec), formed by ex-employees of Perchem. For certain uses such as cosmetics, organoclay made from hectorite is considered more suitable than other organoclays. As previously noted in paragraph 3.58, Rheox owns the world's main supplies of hectorite, which it has not previously sold to other manufacturers. This would be a barrier to any new entrant wishing to supply certain parts of the organoclay market.

6.36. There are also economies of scale. Akzo told us that a minimum efficient scale of production would require production for export as well as for the United Kingdom market (see paragraph 5.50). The need to establish a large market share in order to be able to produce at minimum efficient scale is likely to deter new entrants.

6.37. We considered whether the smaller suppliers could be expected to increase their market share and provide a greater degree of competition. Süd-Chemie, for example, is a large German chemical and mineral company which is involved in related areas of production. If Rheox did increase prices, Süd-Chemie might well try to increase sales to the United Kingdom market. At present, however, it only accounts for 3 per cent of the organoclays sold for solvent-based systems. Bentec has recently tried to increase its market share by price-cutting, but without significant success. We do not expect therefore that increased sales by smaller suppliers would be sufficient to offset the damage to competition from the removal of Akzo as the second largest supplier by the principal supplier in the market.

6.38. We considered whether increased imports from suppliers not currently in the market might be expected to provide competition to Rheox. We were told that in addition to the reluctance of customers to try new sources of supply, imports from new suppliers would be inhibited by the need to have agents with sufficient technical expertise. Moreover exchange rate risks and inventory costs would also reduce the competitiveness of imports. Rheox is the largest supplier in the European Community as well as in the United Kingdom. It estimates that it supplies about a third of the market for all rheological additives for solvent-based systems, and nearly 60 per cent of the market for organoclays, organics and organic pastes. Although there are smaller suppliers we see no reason to expect that imports would significantly constrain any attempt by Rheox to exploit an increased United Kingdom market share.

6.39. We considered also the extent to which substantial buyers had countervailing power. Some of the customers for the products are major paint companies. The cost of rheological additives is, however, low in relation to their total product costs, although it is a key ingredient. Thus they are unlikely to be very price sensitive, and would be reluctant to switch to untried new suppliers, allowing higher prices to be charged to the market as a whole. The extent of the exercise of buyer power may therefore not be great in practice.

6.40. Thus, to summarise, the acquisition will result in the largest supplier to the United Kingdom market removing its largest competitor. It was a competitor which had been pursuing a low-price strategy, although there is some doubt as to how long such a policy could be sustained as it was not earning high returns. There do not seem to be close substitutes which could be used by customers to reduce Rheox's market power, except at significant cost and inconvenience. Moreover, as the products only represent a small proportion of customer costs we consider that customers are unlikely to exert strong countervailing buyer power. There are already only a small number of suppliers. We do not expect that existing or new competitors are likely to gain market share sufficiently to offset the adverse effects on competition of the acquisition, or to provide the competitive pressure in the market which Akzo currently provides. We understand that if the acquisition did not go ahead, the Akzo organoclay business would continue in operation or be offered to another party as a going concern.

6.41. We conclude that the merger is likely to lead to a reduction in competition in the market for organoclays, organics and organic pastes for solvent-based systems. We expect that this reduction in competition will result in prices being higher than would prevail if the acquisition did not proceed.

Organoclays for oil-based muds

6.42. As noted earlier, Akzo is the largest supplier of organoclays to the United Kingdom market, and is even more important as a supplier to the `free' market. The transaction would bring Akzo's organoclays business into the Valhi group which, as we have already seen, has effective control of the largest drilling mud service company, Baroid. For the drilling mud suppliers not linked to an organoclay manufacturer, only one alternative independent source with a very small current market share would remain-Süd-Chemie.

6.43. The drilling mud service companies which are customers of Akzo have expressed concern that the price they would be charged for organoclays would be less favourable as a result, and some also expressed a reluctance to buy supplies of organoclays from a company linked to their main competitor (ie Baroid).

6.44. Rheox told us that if the merger went ahead, it would maintain the main products in the Perchem range. Its position in the market would reflect the greater quality and service that Rheox could give. It argued, however, that the oil companies to which the oil mud companies sell would be able to exert downward pressure on prices for oil mud, and this would have an effect on its constituent elements (such as organoclays).

6.45. Drilling mud service work is awarded by tender and offers must itemise the costs of all materials. The mud service companies all said that the quality of their product and personnel was important but that price competition was also vigorous. The prices of materials were sometimes the only thing to differentiate tenders on price. Even though the cost of the organoclay would usually be only about 10 per cent of the cost of the oil mud, it seems clear that any single mud service company could not easily pass on significant price increases in organoclays to the oil companies. They would therefore be keen to obtain competitive

prices from the organoclay suppliers. Nevertheless, for those mud service companies without easily available sources of independent supply other than Akzo, it is not clear how they could translate the pressure of the oil companies on them into effective pressure on Rheox if the merger went ahead.

6.46. If Rheox, following a merger, raised prices of dry process organoclays it would affect only those oil service companies without a supply of organoclays within their group. Such companies would then find themselves faced either with losing business to companies which did have a link with a supplier of organoclays, or with cutting margins. The market power of Rheox would introduce a distortion into the working of competition in the market for drilling mud services. The Valhi group could thereby gain either from the higher prices of Rheox's organoclays (in so far as oil service companies were able to retain business because of their quality of service, or because the organoclay suppliers linked to mud service companies also raised their organoclay prices); or from a growth in the drilling mud service work of Baroid; or from a combination of both these effects. The benefit to Valhi of increased profitability of Baroid would be through its 42 per cent shareholding. We note that sales of organoclays for oil-based muds by Akzo were worth £0.4 million in 1989; the sales by Baroid of oil-based muds (excluding service) were worth over £7 million.

6.47. Rheox argued that for the production of organoclays barriers to entry were low, that for dry process little technology was required, and that the processes were no longer patented. On the other hand it had not chosen to enter the market simply by setting up its own production of dry process organoclays, but by purchasing an established competitor. Other parties suggested that while the basic technology was not complex and set-up costs were low, significant expertise or research and development was required to produce an effective product which could provide high performance. There has been only one new recent entrant: Perchem itself, which was formed by some ex-employees of Abbey Chemicals. Entry barriers would not seem to be high, but there must be a doubt about whether new competitors would be likely to enter the market in view of the fact that, as explained in paragraphs 3.21 to 3.23, the market for organoclays for oil-based muds is likely to decline further, with the expected increased use of water-based drilling muds.

6.48. Over the last five years the United Kingdom market share of Süd-Chemie has fallen. Several of those we consulted suggested, however, that Süd-Chemie might be increasing its activities in the United Kingdom. There is also a possibility of increased imports, in particular from the USA, as transport costs are low, although the drilling mud service companies told us that inventory costs and exchange rate risks would inhibit use of imports to some extent.

6.49. We do not consider, however, that the possibility of increased competition from the entry of new suppliers, expansion of existing competitors, increased imports or the threat of such increased competition will be sufficient to counteract the detriment to competition which is likely to arise as a result of the merger.

6.50. We conclude that the merger is likely to result in a reduction in competition in the market for organoclays for oil-based muds. The particular adverse effects which we expect to arise are that prices will be higher for organoclays for use in oil-based drilling muds than might be expected in conditions of greater competition, and that there will be a distortion of competition between drilling mud service companies.

(b) Employment

6.51. If the merger went ahead, there would be some job losses at Littleborough and a small increase at the Livingston site, but the total number of jobs involved is likely to be slight. If the merger were not to proceed, Akzo told us that production at Littleborough would continue, with the addition of production transferred from Pero, Italy. Rheox presented an argument that the possible move of its blending plant and technical facility from Germany would increase employment in the United Kingdom by about 20, but as it said that this move was not dependent on the merger it cannot be said to be a benefit of the merger. Overall, we do not expect the merger to have any significant implications for the public interest in respect of employment.

(c) Benefits

6.52. We also considered what benefits might arise from the merger which might offset the adverse effects which we have identified. Rheox argued that one of the key aims of the merger would be to try to develop a capability in additives for water-based systems to rival the leading competitors in this field. Rheox said that it did not have any share in the market for water-based systems and that of Akzo was minimal. Nor does the merger include a transfer of employees. NL, Rheox's parent company, was the originator of organoclay technology and Rheox has a significant research and development capability. Given this, we find it difficult to expect significant benefits in this regard which Rheox could not equally achieve by applying its research and development expertise to this area.

6.53. Rheox argued that there would also be benefits from the use of the dry process by Rheox in organoclays for oil-based muds, which would enable the merged companies to develop new high-performance products. On the other hand, this technology is already, as we have seen, available within Baroid. Rheox also argued that it hoped to develop the dry process in the solvent-based systems market, in particular to offer organoclay for special coatings where it is not at present used.

6.54. Rheox also considered that the merger would result in higher technical support for customers. Rheox said that Akzo had placed less emphasis on this and therefore an element of price disparity had arisen. Rheox hoped to alter that and to make a high level of customer assistance available. Customers are, however, already able to choose Rheox if they wish as a supplier in all products other than dry process organoclays for oil-based muds. The employment effects of the merger have already been considered in paragraph 6.51. A final point Rheox made was that there would be some economies of scale and cost savings from the greater utilisation of the wet process production line at Abbey Chemicals.

6.55. We consider that there might be some benefits such as economies of scale, but it is not clear to what extent any benefits would be passed on to customers. There may also be some technical synergy from the merger. These benefits would not, however, in our view, outweigh the adverse effects on competition which we have identified.

Summary of conclusions

6.56. We have concluded that arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a merger situation qualifying for investigation (paragraph 6.9).

6.57. We have concluded that the merger is likely to result in a reduction in competition in the market for organoclays, organics and organic pastes for solvent-based systems and in the market for organoclays for oil-based muds (paragraphs 6.41 and 6.50). Although there may be some benefits, they would not outweigh the adverse effects on competition which have been identified.

6.58. We therefore conclude that the merger situation may be expected to operate against the public interest, with the particular adverse effects being that:

(a) prices will be higher than they would be in conditions of more effective competition for organoclays, organics and organic pastes for solvent-based systems;

(b) prices will be higher than they would be in conditions of more effective competition for organoclays for use in oil-based drilling muds; and

(c) there will be a distortion of competition between drilling mud service companies.

Possible remedies

6.59. In view of these findings we are required by section 72(2)*(a)* of the Act to consider as part of our investigation what action (if any) should be taken for the purpose of remedying or preventing the adverse effects that we have identified, and may include in our report recommendations as to such action.

6.60. We asked Rheox whether it considered that there would be any undertakings it, or its parent companies, could give which would safeguard the position of the drilling mud service companies without their own organoclay supply and which would restrain prices in the relevant markets. Rheox said that Valhi would be willing to ensure that Rheox and Baroid operated independently in the market and that there would be no consultation on either prices or market strategy and no exchange of sensitive market information. The terms of such an undertaking are set out in paragraph 5.29. Rheox said that it was also prepared to give an undertaking that the main products of the Perchem range would continue in existence. Rheox was also prepared to show price lists to the Office of Fair Trading and was prepared to consider an undertaking for a certain period of years not to raise prices by more than a certain percentage above rises in specified raw material costs.

6.61. We have given careful consideration to these proposals. This particular case, as has already been discussed, involves the largest supplier of rheological additives removing its largest competitor. In the market for organoclays for oil-based mud the merger would involve the removal of the principal independent supplier of organoclay. Given the market factors described earlier, we do not consider that the undertakings proposed would be sufficient to ensure that competitive conditions were adequately maintained. We therefore conclude that such undertakings would not remedy the detriments that have been identified. We considered whether any other remedies might be available to remedy or prevent the adverse effects. We concluded that none were available.

Recommendations

6.62. We therefore conclude that no effective remedies can be identified, or, therefore, recommended. Accordingly we recommend that the merger should not be permitted.

B C OWENS *(Chairman)*

A G ARMSTRONG

C A UNWIN

R YOUNG

S N BURBRIDGE *(Secretary)*

29 November 1990