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Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.
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II

(Acts whose publication is not obligatory)

COMMISSION

COMMISSION DECISION

of 18 October 1995

relating to a proceeding pursuant to Council Regulation (EEC) No 4064/89 (Case No IV/M.580 — ABB/Daimler-Benz)

(Only the German text is authentic)

(Text with EEA relevance)

(97/25/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to the EEA Agreement, and in particular Article 57 thereof,

Having regard to Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings ⁽¹⁾, as amended by the Act of Accession of Austria, Finland and Sweden, and in particular Article 8 (2) thereof,

Having regard to the Commission decision of 23 June 1995 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections of the Commission,

Having regard to the opinion of the Advisory Committee on Concentrations ⁽²⁾,

Whereas:

(1) The notification under consideration, which was made on 8 May 1995, concerns the proposed setting up, by Asea Brown Boveri AG (ABB), Zurich, and Daimler-Benz Aktiengesellschaft (Daimler-Benz), of a joint venture, ABB Daimler-Benz Transportation, to which the two parent companies wish to transfer their worldwide activities in the sphere of rail technology.

(2) By decision of 31 May 1995, the Commission has ordered the suspension of the notified concentration, pursuant to Articles 7 (2) and 18 (2) of Regulation (EEC) No 4064/89 (hereinafter called 'the Merger Regulation'), until it takes a final decision.

(3) Having examined the notification, the Commission found that the project falls within the scope of the Merger Regulation and raises serious doubts as to its compatibility with the common market. By decision of 23 June 1995, the Commission accordingly initiated proceedings pursuant to Article 6 (1) (c) of the Merger Regulation.

(4) By letter dated 2 June 1995, the Federal Republic of Germany informed the Commission, pursuant

⁽¹⁾ OJ No L 395, 30. 12. 1989, p. 1; corrigendum: OJ No L 257, 21. 9. 1990, p. 13.

⁽²⁾ OJ No C 13, 14. 1. 1997.

to Article 9 (2) of the Merger Regulation, that the concentration threatened to create or strengthen a dominant position as a result of which effective competition would be significantly impeded on seven markets within the Federal Republic of Germany, each of which was a separate geographic market within the meaning of Article 9 (7). On 7 August 1995 the Commission sent a communication pursuant to Article 18 of the Merger Regulation with a view to further elucidating the facts. On 6 September 1995 a hearing took place to which the parties to the concentration were invited. On 28 September 1995 the Works Councils of AEG Austria and Kiepe Electric, Vienna, were heard by the Commission. The Advisory Committee discussed the draft of this Decision on 4 October 1995.

I. THE PARTIES

- (5) ABB is a holding company with interests primarily in the design, development, production, manufacture and maintenance of products, plants and systems relating to electricity generation, transmission and distribution, and in industry, building technology and rail-borne transport.
- (6) Daimler-Benz is also a holding company which, through its affiliated undertakings, is active in the following fields:
 - Mercedes-Benz AG: the manufacture and distribution of cars and utility vehicles,
 - AEG AG: the manufacture and distribution of equipment and systems in the fields of automation technology, rail systems, electrical-engineering equipment and components, microelectronics and diesel engines,
 - Daimler-Benz Aerospace AG (DASA): the manufacture and distribution of equipment and systems in the fields of aerospace, defence technology, medical technology, propulsion systems, radar, radio and sensor systems and electrical energy systems,
 - Daimler-Benz InterServices (debis) AG: services relating to information systems, financing, insurance and marketing.

II. THE CONCENTRATION

- (7) The operation is a 'concentration' within the meaning of point (b) of Article 3 (1) of the Merger Regulation.

(a) *Joint control*

Daimler-Benz and ABB will jointly control the joint venture ABB Daimler-Benz

Transportation. ABB and Daimler-Benz will each have a 50 % stake in the joint venture. In line with this share ratio, the controlling rights of the two parent companies are also equal.

(b) *Full-function joint venture*

The joint venture will perform permanently all the functions of an autonomous economic entity and will not simply take over entirely or predominantly auxiliary functions for the parent companies. ABB and Daimler-Benz will transfer their worldwide rail technology activities to it. The joint venture will accordingly have sufficient capital available to be able to act independently on the market. Although it may be gathered from the notification that the joint venture will in future acquire certain electronic and mechanical components from its parent companies, this does not alter the position, given the small scale of such supplies in relation to the total turnover of the joint venture as forecast by the parties.

(c) *Absence of risk of coordination*

The joint venture does not have as its object or effect the coordination of the competitive behaviour of undertakings that remain independent of each other such as would result in a restriction of competition within the meaning of Article 85 (1) of the EC Treaty. The parent companies wish to transfer their worldwide activities in the sphere of rail technology to the joint venture. In view of the investment and resources required in the field of rail technology, it is not to be expected that the parent companies will themselves in future continue to be active on the market.

III. COMMUNITY DIMENSION

- (8) The combined aggregate worldwide turnover of Daimler-Benz and ABB amounts to more than ECU 5 billion. The combined aggregate worldwide turnover of Daimler-Benz amounts to over ECU 50 billion and that of ABB to over ECU 20 billion. Each of the two undertakings has an aggregate Community-wide turnover of more than ECU 250 million. The aggregate Community-wide turnover of Daimler-Benz amounts to over ECU 30 billion and that of ABB to over ECU 10 billion. Neither of the two undertakings concerned achieves more than two thirds of its aggregate Community-wide turnover within one and the same Member State. The concentration therefore has a 'Community dimension' within the meaning of Article 1 of the Merger Regulation.

IV. APPRAISAL PURSUANT TO ARTICLE 2 OF THE MERGER REGULATION

A. RELEVANT PRODUCT MARKETS

- (9) Basically, the product markets affected by the proposed concentration may be divided into four levels:

Level I:

Rail technology as a whole

Level II:

Distinction between 'rolling stock' and 'stationary equipment'

Level III:

Further division into product categories:

- 'rolling stock' divided into mainline trains, regional trains and local trains and systems,
- 'stationary equipment' divided into wayside systems and miscellaneous.

Level IV:

Further subdivision of these product categories into individual product groups:

- mainline trains subdivided into electrical and diesel locomotives, train sets for mainline transportation, passenger coaches and freight wagons,
- regional trains subdivided into electrical multiple units and diesel multiple units,
- local trains and systems subdivided into trams (including light rail vehicles and electrical equipment for trolley buses), underground-railway vehicles and automatic guided transportation,
- wayside systems subdivided into catenary systems, traction power supply, including dispatching and remote control, and train control and protection systems,
- miscellaneous subdivided into maintenance and refurbishment of track vehicles (without distinction as to vehicle type) and passenger information systems and ticketing.

- (10) The parties started primarily from the assumption of an overall market for rail technology.

- (11) The Federal Cartel Office, by contrast, takes the view that the rail technology sector has to be divided initially into the subsectors 'rolling stock' and 'stationary equipment'. It believes that, within the 'rolling stock' category, a distinction must then

be made between stand-alone locomotives, passenger transport vehicles without locomotives, and freight wagons. The question of whether a subdivision of locomotives into electrical and diesel locomotives is necessary was left open. The Federal Cartel Office believes that passenger transport vehicles have to be divided as between markets for mainline transport and regional and urban local transport. In mainline transport, it makes a distinction between locomotives, multiple-unit train sets and passenger carriages. The Federal Cartel Office also tends to view vehicles for regional and local transport as separate markets. In regional transport, the Federal Cartel Office is considering a distinction between electrical multiple units and diesel multiple units. In the local transport category, it distinguishes between trams, underground railway and AGTs ('people mover'). In the 'stationary equipment' category, the Federal Cartel Office considers it appropriate to draw a distinction between catenary systems and power supply on the one hand and signalling and security systems on the other.

- (12) A survey of competitors of the parties in the rail technology sphere and of German customers for the relevant products showed a tendency towards level III or IV. Whereas the great majority of larger German customers consider level IV appropriate, competitors specified both level III and level IV.

- (13) The Commission's established practice in defining the relevant product markets is to consider the functional substitutability of the relevant products in relation to a specific use from the customer's point of view. The key criteria here are the properties, prices and intended use of the products.

- (14) It is not appropriate, in the light of these criteria, to lump the entire rail technology sector into only one product market. Of course, 'rolling stock' and 'stationary equipment' must obviously be matched to one another. However, there are no grounds for arguing that both must be acquired jointly or from the same supplier, nor do the products meet identical demand-side requirements as regards their use, their properties and their price. Rather, the products differ distinctly in nature from one another. Procuring the products as an overall package is possible only if a completely new transport system is being set up. This is, in the first place, not the main business in Europe. Secondly, even if that were the case, procurement of some of

the products but not others cannot be ruled out, so that it must not necessarily be assumed that there is an autonomous market for entire systems. In its decision of 26 May 1992 (Case No IV/M.221 ABB/BREL), the Commission not only tended to divide the sphere of rail technology at least into 'rolling stock' and 'stationary equipment', but also felt that a further subdivision was worth considering. The categories 'rolling stock' and 'stationary equipment' likewise comprise very different products.

- (15) For example, the mainline trains, regional trains and local trains and systems classified as 'rolling stock' are used for rail transport over different distances with different requirements, and demand for them emanates as a rule from different customers. Thus, mainline trains are acquired by national railway companies, whereas local vehicles are purchased by municipal transport companies. Although it is conceivable that suppliers operating in one of these three spheres could also in principle, on the basis of the know-how acquired, supply products falling within the other two categories, the different technical specifications in the three areas require development costs which are initially separate, and these may from the outset represent an obstacle to supply.
- (16) Similarly, the product areas grouped together under the heading 'stationary equipment' differ widely in terms of their properties, prices and uses. All they have in common is that they form part of a rail transport system. Beyond that, the products lumped together under the heading of wayside system, namely catenary systems and traction power supply, including dispatching and remote control technology, and train control and protection systems, are in every respect intended to meet different demand requirements than the maintenance and refurbishment of rail vehicles and passenger information systems and ticketing.
- (17) A further subdivision of these product categories is also appropriate on the basis of the criteria governing the definition of the product market. Thus, from the demand viewpoint, passenger coaches and freight wagons fulfil very different requirements from locomotives and train sets for mainline transportation. The first types of products, which must be included predominantly in the mechanical-engineering branch of rail technology, do not themselves contain any traction, but are used only in combination with a locomotive. The second category of products travel under their own power. Although their purpose is, together with passenger coaches or freight wagons, to form a complete train set, passenger coaches and freight wagons can be procured separately from the acquisition of a locomotive. The reverse is true for the purchase of locomotives. Train sets for mainline transportation are complete train sets which as such may be distinguished from individual passenger coaches and locomotives. There are also substantial arguments for making a distinction between electrical and diesel locomotives, in view of the different types of traction. Whereas on non-electrified lines only diesel-powered rail vehicles may be used, there might be economic arguments militating in favour of preferring the use of electrically powered rail vehicles on electrified lines. There are also differences between trams, underground-railway vehicles and local passenger transport systems. In wayside systems, a distinction must be made between catenary systems, traction power supply and train control and protection systems, each of which serves a distinct purpose. Similarly, the refurbishment of rail vehicles and passenger information systems and ticketing fulfil different functions.
- (18) Furthermore, there are grounds for drawing a distinction between the mechanical element and the electrical element of rail vehicles. According to estimates, the electrical element accounts on average for some 55 to 60 % of value added. Only firms which have sufficient know-how in both areas can offer their own vehicle system without depending on cooperation with other firms. This creates problems for purely mechanical-engineering suppliers in particular. In order to be able to supply a locomotive or other product with electrical components, they must find a partner to work with in respect of the electrical equipment, so as to be able to supply an appropriate product to meet the demands of their customers. However, this does not lead to a subdivision into different markets because of the overwhelming preference of customers for acquiring a rail vehicle as a complete system. Rather, this aspect justifies only an appropriate weighting of the shares acquired in the overall relevant product market. This distinction is necessary for a proper analysis of the relevant product markets.
- (19) On the abovementioned product markets, a distinction must be drawn between the components supplied by subcontractors and those manufactured by the product suppliers themselves. The trend is towards a reduction in the vertical range of manufacture by rail vehicle producers, associated with an increase in the purchased supply

of components from outside companies. However, the ability to supply the components to be incorporated by the main contractor or subcontractor into the electrical or mechanical subsystem of a rail vehicle does not in itself mean that it is possible to participate on the market for the product as a system. There is, as the parties rightly point out, an increasing tendency to have a main contractor for the system as a whole, so that the ability to supply a subsystem does not necessarily go hand in hand with market participation at the level of the system suppliers. This applies particularly to the purchased supply of components. The surveys of German customers predominantly confirmed this. Only the ability to supply a total product, alone or with subcontractors, in a way that is acceptable for customers makes it possible to participate in the market for product systems. Eighty per cent of the customers asked indicated that they had awarded contracts for rail vehicles on a total system basis. Only 4 % answered in the negative. Furthermore, 92 % of customers confirmed that there was an increasing tendency for the contract to be awarded to a main contractor.

(20) In summary, it may be said that the relevant product markets must be defined in accordance with level IV as described above. This distinction also corresponds to the purchasing behaviour of customers as established by the Commission.

(21) In the light of this clear finding, considerations to do with some suppliers' flexibility in switching products cannot justify lumping the abovementioned product markets together into uniform markets. On the one hand, the ability to switch production is accessible only to those market participants who already produce a wide range of products in the rail technology sector and possess the necessary know-how for switching production. On the other hand, the size of the rail technology undertakings active in Germany and their market presence vary enormously. Only the full-line suppliers are present on all the product markets. From the standpoint of customers, other European suppliers serve only specific product markets, in which they are specialists. It is not possible for them to simply switch production; rather, they need to develop the necessary products for the appropriate market.

B. RELEVANT GEOGRAPHIC MARKETS

tendency to prefer national suppliers, include particular national product specifications (different mains voltages and frequencies, track widths and safety systems) which have in the past made it difficult for suppliers in the rail technology sphere to supply products in other Member States. This has resulted in demand-side requirements being essentially covered by domestic firms. Conversely, this purchasing policy encouraged the development of different standards by rail operators — differences which still exist today.

(23) Pursuant to Article 9 (7) of the Merger Regulation, national markets are to be taken as the geographical reference markets in particular where the conditions of competition in a Member State are sufficiently homogeneous and differ distinctly from those in neighbouring Member States. Assessment of this has to take account in particular of the nature and characteristics of the products or services concerned, of the existence of entry barriers, of consumer preferences, of appreciable differences in the undertakings' market shares between the area concerned and neighbouring areas or of substantial price differences.

(24) The Commission's investigations have confirmed that customers have in the past tended to prefer suppliers established in the same region or in the same Member State, partly because of their proximity and partly because of their familiarity with the customers' precise requirements. Although foreign suppliers are to be found on the German markets for rail technology, their market participation is still essentially based on production facilities situated in Germany. Imports into Germany are an exception, the share of the rail vehicle market currently accounted for by imports being some 2 to 5 %.

(25) Orders for rail vehicles in Germany have hitherto gone, on a direct or subcontracting basis, almost exclusively to electrical and mechanical engineering prime contractors or main suppliers which are established in Germany. As a rule, foreign firms get a look-in only through any domestic subsidiaries they may have. In the area of rail vehicles as a whole, the Commission is aware of only two cases in which a firm not established in Germany was appointed the prime contractor for the construction of rail vehicles. The two cases in point involved contracts awarded by the cities of Cologne and Saarbrücken for city railways in which the Canadian firm Bombardier, whose European head office is in Belgium, was appointed the prime contractor. However, the subcontractors for the electrical equipment for the city railways was, in the case of both contracts, the Düsseldorf-based Daimler-Benz/AEG subsidiary, Kiepe. An article in issue 6/94 of the periodical '*Der Nahverkehr*' reports that, despite the fact that

(22) The markets for rail technology have in the past been national. The reasons for this, alongside the

Bombardier was the prime contractor, the German share of the overall work was still 71 %, of which 46 % was accounted for by electrical equipment and 25 % by coachbuilding work carried out in Germany.

manufactured by them for other geographic markets. Such technical modifications are as a rule profitable only where fairly large numbers of items are involved.

- (26) A particularly significant aspect is the awarding of contracts for the electrical equipment of rail vehicles to national firms. The parties have not been able to inform the Commission of any project in which, as regards the electrical equipment of a rail vehicle, a German customer awarded a contract to a foreign firm as prime contractor or subcontractor for the electrical subsystem.
- (27) The familiarity of suppliers with customers' specific requirements, and in particular with the requirements of general product specifications in the relevant Member States, is of considerable importance.
- (28) The Commission's investigations have confirmed that at all events, in broad sections of rail technology, national or regional specifications currently still act as entry barriers for exports outside the home region. Where products are supplied for an existing system, they must match up with the existing infrastructure, for example with the mains voltage used in the relevant Member States. National rules and regulations governing safety requirements and authorization conditions may also act as a technical obstacle. Lastly, because of the traditionally national or indeed local award of contracts, there are a number of specifications which have in the past developed from the relevant suppliers' wishes and which still apply today. Although, according to the information obtained by the Commission, the resulting requirements placed on foreign suppliers can technically speaking be overcome, they do give rise to additional costs which impede market entry.
- (29) In Germany it has hitherto been the case that firms established there have been almost exclusively the ones awarded contracts. The economies of scale achievable by these suppliers make it more difficult for non-domestic firms which have not hitherto been successful to supply competitive products, and these economies of scale thus have the effect of partitioning markets. As a result, where only limited quantities are involved in the contract, market entry for undertakings which previously have not been awarded any significant contracts in Germany will make only limited economic sense if changes have to be made to products hitherto
- (30) In the 'stationary equipment' sphere too, market access for foreign firms in Germany is impeded by technical specifications. In Germany, mains voltage and frequency, for example, are based on 15 000 volts and 16 $\frac{2}{3}$ hertz, while the equivalent figures are 25 000 volts and 50 hertz in northern and eastern France, the United Kingdom, Spain (high-speed train lines) and the Nordic countries, 3 000 volts dc in Italy, Belgium and Spain (broad gauge) and 1 500 volts dc in the Netherlands and southern and western France. The awarding of contracts to foreign firms is at any rate still the exception in Germany on these markets too. Although the existing differences can be overcome technically, successful market entry is in practice made more difficult without the relevant know-how and the necessary experience with the relevant mains voltages. According to the information provided by the parties, relating to the period 1992 to 1994, the parties, Siemens and the German firm Elpro had a market share of 100 % ⁽³⁾ in Germany in the case of new orders for catenary systems and a market share of 80 % ⁽⁴⁾ in the case of traction power supply. Conversely, according to the information provided by the parties, these firms did not receive any orders during the same period in France for the two types of products. In Italy, in the period from 1992 to 1994, of these firms only ABB won orders for catenary systems, giving it a share of about 24 % ⁽⁵⁾. In the case of traction power supply, ABB's share in Italy was some 2 % ⁽⁶⁾ and that of Siemens around 5 % ⁽⁷⁾.
- (31) The current efforts to align technical conditions in rail technology throughout the Community suggest that the situation may change in the future. However, the prospects of any specific impact on the situation are at present not sufficient to warrant the assumption that there is a uniform Europe-wide market. In view of the considerable cost of changing the existing railway infrastructure, the existing infrastructure with its technical specifications will continue to exist for a long time to come. It is therefore doubtful whether the tendencies for national markets to open up and for
- ⁽³⁾ The market shares are based on information given by the parties.
- ⁽⁴⁾ See footnote 3.
- ⁽⁵⁾ See footnote 3.
- ⁽⁶⁾ See footnote 3.
- ⁽⁷⁾ See footnote 3.

- a European market to be created will, within the forecasting periods relevant for merger control purposes, reach a level that would allow any broader definition of the geographic market.
- (32) As a result of the directives on the award of public contracts, and in particular Council Directive 90/531/EEC of 17 September 1990 on public procurement, as amended by Directive 93/38/EEC, the privatization policy in certain Member States, tight public resources and the basic competitive pressure to develop an efficient rail transport system, there is today, despite the existing product specifications, at any rate a tendency towards an easing of this national pattern in the award of contracts.
- (33) Attempts are also being made by the European Communities to standardize technical specifications in the rail technology sphere and to create trans-European rail networks. Council Directive 91/440/EEC requires Member States to separate the provision of rail transport services and the management of rail infrastructure. As a result it will in future be possible for the rail infrastructure of the Member States to be opened up to the supra-regional rail transport undertakings of other Member States. In order to remove obstacles to international rail transport stemming from the existence of disparate signalling and train control systems, attempts are being made to introduce a standardized, Europe-wide automatic train control system (ETCS — European train control system) as part of the Euret transport development programme. The Commission has also presented proposals for Community guidelines on the setting up of a trans-European transport network, which the Council has approved. The Council has also called upon the Commission to take further steps to set up a trans-European network and to ensure the interoperability of national networks. All these steps are likely to contribute in future to greater standardization of rail technology products and hence remove technical barriers to market entry.
- (34) However, on the basis of the information in the Commission's possession, it is doubtful whether it can already be said that European markets exist, since demand-side behaviour is still shaped by national factors and present conditions are set to continue. For example, there is still today a tendency to opt for domestic suppliers, and this cannot be explained solely by general familiarity based on long-term customer relations and the sharing of a common language. Familiarity with the relevant specific requirements of customers is just as important.
- (35) A further factor in local transport in particular, but also in regional and mainline transport, is that customers are endeavouring to reduce their stocks of spare parts and are also tending to contract larger servicing and repair jobs out to other firms. Geographical proximity to a plant or at least to a warehouse owned by the supplier is useful in this respect.
- (36) The Commission asked the parties' competitors to assess the importance of certain parameters when it came to successfully bidding for a contract, by awarding a value between 1 (unimportant) and 5 (very important). A long-term relationship with customers scored an average of 4,1 and familiarity with customers' requirements 4,4. Both scores show that suppliers' experience with certain purchasers gained from past contracts can confer a considerable subsequent competitive advantage and hence can play an important part in the future award of contracts. Gaining access to the market is therefore a medium- to long-term process whereby producing a standard-setting product makes it possible to gradually acquire a foothold. Any future initial market successes by individual suppliers can thus have more substantial competitive effects only in the medium to long term. This analysis is borne out by the answers as to the importance of a regional or domestic presence in the production sphere. This scored an average of 4,1. Where such a presence is lacking, the importance of local or domestic partners scored 4,0.
- (37) The Commission also carried out a survey among purchasers of rail technology products in Germany to determine the importance of certain competition parameters when it came to awarding contracts. Existing business relations scored an average of 2,7, and suppliers' familiarity with the purchaser's requirements 3,6. Local/regional proximity was awarded a score of only 2,4, while costs scored 4,9 and dependability 4,6. These results show above all that purchasers attach less importance to the proximity of a supplier than suppliers do. This difference may be due *inter alia* to the fact that, owing to their interest in keeping costs down to a minimum, purchasers also consider suppliers who are further afield, although in effect they award contracts on an almost exclusively national basis. Since the cost of submitting a tender is not inconsiderable, competitors' assessment of their

prospects of being awarded a contract will colour their attitude when they make their offer. The considerable importance of the competition parameter of dependability shows, moreover, in conjunction with the assessment of the importance of suppliers' familiarity with purchasers' requirements, that suppliers who have already had dealings with a purchaser and whose products are sufficiently reliable are at an advantage. The primary aim of purchasers is to provide their customers with a transport system that works.

- (38) Undertakings not established in Germany have hitherto submitted bids in response to calls for tenders by German purchasers to only a very limited extent. The number of bids made by undertakings not established in Germany has tended to be larger in the case of calls for tenders from Deutsche Bahn AG than in that of calls for tenders from municipal transport companies. This bears out the Commission's view that, especially in the light of existing product specifications, access by foreign undertakings to the German market makes economic sense only where fairly large orders are involved. Not only may the tendency to 'buy German' be stronger on the whole among municipal undertakings, but Deutsche Bahn AG is in a much better position than municipal transport companies, owing to the larger orders it places, to encourage foreign suppliers to submit tenders.
- (39) The market situation in Germany thus differs fundamentally from that in other Member States such as France and Italy, since in such countries the market strength of German firms is substantially smaller and firms established there have high market shares. The comparison with the position in France and Italy is important since in both these Member States, as in Germany, there is a substantial domestic rail equipment industry with suppliers who could in principle be of importance in the other Member States. Taking the overall rail equipment market, Siemens, ABB, AEG and DWA attain a combined market share of about 70 % ⁽⁸⁾ in Germany. Most of the other contracts are awarded to smaller German suppliers. The share of foreign companies is small. On the other hand, the abovementioned German companies attain a market share of only about 1 % ⁽⁹⁾ in France and about 10 % ⁽¹⁰⁾ in Italy in the overall rail

equipment market. French companies, in particular GEC-Alsthom, and Bombardier satisfy the bulk of demand for rail equipment in France. The main Italian companies do not attain significant market shares in France. On the other hand, in Italy most contracts are awarded to Italian companies. Even the French company, GEC-Alsthom, has not yet been successful in Italy.

- (40) Prices can be used as an indicator to only a limited extent. Since quality is a major factor in rail technology products and since the products involved are often very heterogeneous, a comparison of prices between individual Member States is not an appropriate means of establishing satisfactory information on comparable competitive relationships.
- (41) In summary, it must be assumed that the relevant product markets in Member States having a very large, domestic rail technology industry are still national, provided that domestic rail technology industry can supply the relevant products. Especially in the case of Germany, the existence of a very large domestic rail technology industry in conjunction with the other abovementioned facts results in a considerable deterrent to competitive market entry by new suppliers. Therefore, in Germany at least, there are still at present national markets for these products, even though the changes in overall conditions could after a transitional period result in markets being opened up. In view of the existing rail infrastructure, this transition process will, however, be a lengthy one. In addition to these more general considerations, the geographical reference markets for freight wagons and passenger information systems require specific mention. In view of the minimal technology needed for the production of the former and the wider field of application of the latter, broader geographical reference markets are possible. However, it is not necessary to determine this issue, since even on the narrowest basis, namely a geographical reference market limited to Germany, the concentration will not give rise to any cause for concern. Lastly, in a global context, it could be argued that for the establishment of completely new tram and underground-railway systems, a wider geographical reference market merits consideration. But in Germany, which is the main focus for the proposed operation, there are well-developed tram and underground-railway systems and the establishment of a completely new system with no regard to the existing infrastructure is rare, particularly in comparison to the normal flow of orders generated by improvements and additions to the existing networks. Therefore, for the purposes of this decision the geographical reference market for trams and underground-railway systems must be deemed to be national.

⁽⁸⁾ See footnote 3.

⁽⁹⁾ See footnote 3.

⁽¹⁰⁾ See footnote 3.

- (42) Furthermore it cannot be considered that some potential competition in the German market arising from firms not located in Germany is such as to allow a broader geographical reference market for Germany. In any event the currently identifiable elements do not yet warrant this. The Commission will consider potential competition within its competitive assessment.
- (43) The parties' contention that, in view of the tendency towards a subsequent opening-up of markets, the relevant forecast period should be extended well beyond the usual two to three years cannot be accepted. Apart from the fact that the forecast period is used first and foremost to assess potential competition and not so much to define the geographic market, the Commission, owing to the peculiarities of rail technology, bases the competition-law analysis of the present case on a forecast period of five years. When it asked market participants to assess future developments, the Commission laid down such a five-year timescale. A further extension is out of the question here. It generally has to be borne in mind in this connection that the purpose of merger control is to prevent market-dominating structures. Too long an extension of the relevant forecast period would not only lead to greater uncertainty in the forecast itself but would also be tantamount to accepting market dominance over a considerable period. That would be at variance with the purpose of merger control, which is to safeguard competitive structures on the Community's markets. What is more, in the case of dominant positions which are accepted in the medium term, the forecasts about any opening up of markets are unreliable. It cannot be ruled out that dominant undertakings might avail themselves of their market position so as to achieve a partitioning of the markets by economic means, thereby countering the Community's attempts to open up markets.
- (44) ABB/AEG (turnover of some ECU [...] ⁽¹¹⁾ in the EEA), Siemens (turnover of some ECU [...] ⁽¹²⁾ in the EEA) and GEC-Alsthom (turnover of some ECU [...] ⁽¹³⁾ in the EEA). On specific product markets, the parties together with Siemens and GEC-Alsthom had, on a Europe-wide basis, from 1992 to 1994, market shares of well over 70 %, particularly in the case of trams, underground railways and electrical locomotives.
- (45) However, the proposed joint venture will substantially increase the level of concentration in the rail technology sector in Germany in particular. Germany is the only Member State in which the result will be a substantial addition of turnover shares by the parties. Some two-thirds of the turnover brought in to the joint venture by Daimler-Benz via AEG and some one-third of the turnover brought in by ABB are achieved in Germany (some ECU [...] ⁽¹⁴⁾ plus some ECU [...] ⁽¹⁵⁾). In Germany, the joint venture will become one of the two leading suppliers along with Siemens, while GEC-Alsthom (some ECU [...] ⁽¹⁶⁾), mainly through its subsidiary Linke-Hoffmann-Busch (LHB), is of much lesser market significance.
- (46) The parties also have high market shares in the Scandinavian area. However, these are based almost exclusively on orders awarded to ABB. According to the information provided by the parties, ABB's share of orders for electrical locomotives in the period from 1992 to 1994 was 73 % ⁽¹⁷⁾ in Norway. In the case of mainline train sets and regional electrical multiple units, ABB has a share of 100 % ⁽¹⁸⁾ in Sweden, and in the case of regional multiple units 67 % ⁽¹⁹⁾ in Denmark and 89 % ⁽²⁰⁾ in Norway. In the case of regional diesel multiple units, ABB's share is 100 % ⁽²¹⁾ both in Sweden and in Denmark. In those Member States, Daimler-Benz did not receive any orders during that period. Only on the market for traction power supply in Sweden will there be a slight addition of ABB's 50 % ⁽²²⁾ share and a share of some 0,5 % ⁽²³⁾ on the part of Daimler-Benz, while during this period Daimler-Benz achieved a share of some 20 % ⁽²⁴⁾ in Denmark and ABB a share of 13 % ⁽²⁵⁾ in Norway, no additional shares being
- C. EFFECTS OF THE MERGER

I. General

- (44) Following the concentration, ABB Daimler-Benz Transportation will become the leading rail-technology supplier worldwide ahead of Siemens and GEC-Alsthom. Within the EEA as a whole too, the joint venture can be expected to become the leading supplier ahead of Siemens and GEC-Alsthom. EEA-wide, there will be only three remaining clear 'full-line' suppliers, namely

⁽¹¹⁾ Confidential.

⁽¹²⁾ Confidential.

⁽¹³⁾ Confidential.

⁽¹⁴⁾ See footnote 3.

⁽¹⁵⁾ Confidential.

⁽¹⁶⁾ Confidential.

⁽¹⁷⁾ See footnote 3.

⁽¹⁸⁾ See footnote 3.

⁽¹⁹⁾ See footnote 3.

⁽²⁰⁾ See footnote 3.

⁽²¹⁾ See footnote 3.

⁽²²⁾ See footnote 3.

⁽²³⁾ See footnote 3.

⁽²⁴⁾ See footnote 3.

⁽²⁵⁾ See footnote 3.

involved here. There are also enlarged market shares in the case of train control and protection systems in Norway (ABB 17 % ⁽²⁶⁾, Daimler-Benz 3 % ⁽²⁷⁾).

- (47) According to the information provided by the parties, Daimler-Benz/AEG also won an order in Norway in 1991 for 12 electrical equipment items for Metro T 2 000 in Oslo, with an order volume of ECU 8,7 million. In Bergen, Daimler-Benz/AEG won orders in 1990/93 for five electrical equipment items for trolley buses, with a total volume of ECU 1.3 million. On both product markets, no orders were awarded in Norway from 1992 to 1994. For the Oslo tram system, ABB/Strommens Verksted had supplied 15 vehicles in 1989/90. In 1995, according to the information provided by the parties, orders for a total of 32 vehicles are to be placed for the Oslo tram system. The suppliers are ABB, AEG, Siemens, GEC-Alsthom and Deutsche Waggonbau Aktiengesellschaft (DWA).
- (48) All told, it is not evident that the concentration would, over and above ABB's existing market position, lead to a substantial change in the competitive situation in Scandinavia. If Daimler-Benz/AEG has, as a non-Scandinavian undertaking, been able to secure orders in Oslo, it cannot be ruled out that the other major European suppliers might also be successful in similar moves.
- (49) The proposed concentration leads to no enlarged market share in Belgium, France, Ireland, Italy, Luxembourg, the Netherlands, Iceland, Portugal and the United Kingdom. In Finland (AEG only 1 % ⁽²⁸⁾ market share in overall rail equipment), Greece (ABB only 2 % ⁽²⁹⁾ market share in overall rail equipment), Austria (AEG only 1 % ⁽³⁰⁾ market share in overall rail equipment) and Spain (AEG only 1 % ⁽³¹⁾ market share in overall rail equipment), there is only a very marginal enlargement of market share. The same considerations apply for these Member States as for Norway. In view of the absence of any very large domestic rail equipment industry, the criteria set out above do not suggest that there are national geographical reference markets in those States within the meaning of Article 9 (7) of the Merger Regulation.

- (50) In order to determine whether the proposed transaction is incompatible with the common market, it is therefore appropriate to focus primarily on the competitive situation in Germany as a substantial part of the common market. Only where the proposed concentration was found to be incompatible with the common market in the relevant German market would a similar verdict on other geographic markets be conceivable. However, in so far as the proposed concentration is compatible with the common market on a relevant German market, it is out of the question that there could be any incompatibility with the common market on other geographic markets.

II. *Effects of the concentration on the competitive structure of the relevant product markets in Germany.*

1. *General features of rail technology markets and demand structure*

- (51) Whereas in the past the design, development and production of rail technology products took place in close collaboration between suppliers and customers, with customers having a direct influence on the products to be manufactured and the selection of the firms producing them, the trend now is for suppliers to offer their own set products from which customers can choose. Consequently, a key factor in the competitive strength of an undertaking nowadays is the ability to offer a complete product, whether alone or in cooperation with other firms.
- (52) The customers for rail technology products in Germany are Deutsche Bahn AG, the national railway company, and a fairly large number of regional and local transport companies operating at municipal level. Deutsche Bahn AG is a buyer of 'stationary equipment' for mainline and regional transport and for the associated rail vehicles. With the regionalization of local rail passenger transport scheduled for 1 January 1996, responsibility for this will be transferred from the Federal Government to the *Länder*, thereby having an impact on demand structure in regional transport. 'Stationary equipment' for regional transport and the associated rail vehicles are also purchased by regional transport companies. 'Stationary equipment' for local transport and the associated rail vehicles are purchased by the municipal transport companies.

2. *Present supply structure on the German rail technology markets*

- (53) In Germany, there are at present three 'full-line' suppliers in the rail technology sector. Although, in

⁽²⁶⁾ See footnote 3.

⁽²⁷⁾ See footnote 3.

⁽²⁸⁾ See footnote 3.

⁽²⁹⁾ See footnote 3.

⁽³⁰⁾ See footnote 3.

⁽³¹⁾ See footnote 3.

addition to the parties and Siemens, GEC-Alsthom also operates on certain product markets, it has done so only via its subsidiary LHB, which was acquired by GEC-Alsthom only a few years ago and, as a supplier of mechanical engineering alone, holds only part of the capacity necessary for the production of rail vehicles. Talbot, the German subsidiary acquired some time ago by Bombardier is, like Bombardier itself, a supplier of mechanical engineering equipment alone. There are no subsidiaries of other large European rail technology suppliers in Germany. Possible market participation by other foreign firms in Germany can therefore take place only through imports, which have not hitherto been on any significant scale. However, there are signs that foreign firms are beginning to supply equipment, mainly in response to invitations to tender issued by Deutsche Bahn AG. The only other fairly large company in Germany is Deutsche Waggonbau Aktiengesellschaft (DWA), which, however, as a former supplier of mechanical-engineering equipment, does not operate on all the markets, although it is in the process of setting up its own electrical engineering business. In addition to the abovementioned firms, there are in Germany a few other suppliers, but they are involved only in certain rail technology products and often manufacture only parts of such products themselves.

3. Impact of the concentration on supply structure

(a) General considerations

(54) The concentration will leave only two undertakings, ABB/Daimler-Benz and Siemens, present as 'full-line' suppliers in Germany.

(55) In determining the market strength of the firms, account must be taken of the fact that demand for rail technology products and services varies over time. Consequently, in order to assess the parties' market strength correctly, a fairly long period must be applied. The parties have suggested that calculation of market shares should be based on the average for the last three years (1992 to 1994). This appears appropriate. The market shares are calculated by reference to the flow of new orders, since these are the direct result of competition between the various suppliers in the relevant period.

(56) The combined 1992 to 1994 market shares of the parties concerned in the concentration do not pose any problems in the following seven of the 15 product markets ⁽³²⁾:

- diesel locomotives (0 %, market not of major importance in Germany and the EEA),
- passenger coaches (about 4 % in Germany, about 3 % in the EEA),
- freight wagons (about 14 % in Germany, about 9 % in the EEA),
- automatic guided transportation (0 %),
- train control and protection systems (about 1 % in Germany, about 10 % in the EEA),
- maintenance and refurbishment of rail vehicles (about 4 % in Germany, about 7 % in the EEA),
- passenger information systems and ticketing (about 55 % turnover of Daimler-Benz in Germany and in the EEA, but no increase in market share; an extremely small market and potential competition from other sizeable companies with experience in computer system).

(57) The activities of Daimler-Benz and ABB, together with those of Siemens, result in very high shares on the German market for electrical locomotives, train sets for mainline transportation, electrical and diesel multiple units for regional transportation, trams, underground-railway vehicles, catenary systems and traction power supply, the latter including dispatching and remote control. The concentration will give the parties substantial combined market shares on eight product markets (approximate figures based on the figures given by the parties by reference to order inflows) ⁽³³⁾:

	ABB+DB	= JV
— electrical locomotives	37 % + 17 %	= 54 %
— train sets for mainline transportation	5 % + 26 %	= 31 %
— regional electrical multiple units	18 % + 26 %	= 44 %
— regional diesel multiple units	0 % + 49 %	= 49 %
— trams	15 % + 29 %	= 44 %
— underground-railway vehicles	42 % + 22 %	= 64 %
— catenary systems	30 % + 31 %	= 61 %
— traction power supply	6 % + 26 %	= 32 %

⁽³²⁾ See footnote 3.

⁽³³⁾ See footnote 3.

(58) Despite the often very strong position of the parties on the German market, there is no question of any individual dominant position, since on the relevant markets Siemens is also present as a supplier and in most cases also has substantial market shares.

(59) The parties and Siemens have the following combined market shares (based on information provided by the parties by reference to orders booked) in the abovementioned product markets ⁽³⁴⁾:

	<i>ABB+DB+Siemens</i>
— electrical locomotives	54 % + 46 % = 100 %
— train sets for mainline transportation	31 % + 46 % = 77 %
— regional electrical multiple units	44 % + 25 % = 69 %
— regional diesel multiple units	49 % + 23 % = 72 %
— trams	44 % + 41 % = 85 %
— underground-railway vehicles	64 % + 19 % = 83 %
— catenary systems	61 % + 33 % = 94 %
— traction power supply	32 % + 35 % = 67 %

(60) The market shares indicated by the parties correspond essentially to the market strength of the undertakings determined by the Commission in its investigations. In view of the competitive strength of Siemens in key technologies, its established position on the German market and its great financial strength, it cannot be assumed that the parties will manage to achieve a dominant position *vis-à-vis* Siemens on the relevant markets.

(61) For the purposes of competition-law analysis it is also of relevance that, in the case of electrical and electronic equipment for rail vehicles, the parties and Siemens jointly have an even greater market strength than is reflected in the above market shares. The main remaining competitors of the parties in Germany supply only the mechanical part of rail vehicles, and they are therefore dependent on collaboration with a firm having the necessary electrical and electronic know-how to be able to make a viable response to an invitation to tender for a rail vehicle system. The parties and Siemens are the only major potential partners available for such cooperation.

(62) In the light of the market shares indicated by the parties, there is at present no other undertaking

which comes close to either them or Siemens in terms of overall importance on the German market. On the eight product markets in question, the parties combined and Siemens are the largest undertakings in terms of market shares. The next most successful competitors are:

- in electrical locomotives, on account of a lack of orders to other undertakings, nobody,
- in train sets for mainline transportation, DWA with an 18 % ⁽³⁵⁾ market share,
- in regional electrical multiple units, DWA with a 17 % ⁽³⁶⁾ market share and LHB with a 14 % ⁽³⁷⁾ market share,
- in regional diesel multiple units, LHB with a 19 % ⁽³⁸⁾ market share,
- in trams, LHB with an 8 % ⁽³⁹⁾ market share,
- in underground-railway vehicles, LHB with an 11 % ⁽⁴⁰⁾ market share,
- in catenary systems, Elpro with a 6 % ⁽⁴¹⁾ market share,
- in traction power supply, Elpro with a 13 % ⁽⁴²⁾ market share.

The orders placed with LHB predate the acquisition by GEC-Alsthom and are therefore to be assigned to the latter only conditionally.

(b) Impact in terms of the creation or strengthening of a dominant oligopoly

(1) General considerations

(63) Because of the high combined market shares of the parties and Siemens in Germany, it should be considered whether a dominant duopoly will be created or an existing oligopoly strengthened on all eight product markets. Although the competitive strength of the remaining competitors cannot be measured solely in terms of their market shares, the strength of the parties and Siemens in relation to them is significant. Market shares of 67 % to 100 % ⁽⁴³⁾ achieved by only two undertakings are

⁽³⁵⁾ See footnote 3.

⁽³⁶⁾ See footnote 3.

⁽³⁷⁾ See footnote 3.

⁽³⁸⁾ See footnote 3.

⁽³⁹⁾ See footnote 3.

⁽⁴⁰⁾ See footnote 3.

⁽⁴¹⁾ See footnote 3.

⁽⁴²⁾ See footnote 3.

⁽⁴³⁾ See footnote 3.

⁽³⁴⁾ See footnote 3.

an indication of a dominant position on the part of both undertakings together *vis-à-vis* those outside the duopoly.

(64) Similarly, the superior size and financial strength of ABB/Daimler-Benz and Siemens *vis-à-vis* the competitors which have hitherto faced them in Germany also indicate that both undertakings have a considerable competitive lead on all the relevant product markets. In terms of turnover, Daimler-Benz and Siemens are the second and third largest companies in Europe. ABB is amongst the 30 largest European undertakings in terms of turnover (figures based on statistics from the archives of the *Frankfurter Allgemeine Zeitung*). Even if the financial strength of the undertakings is not such on its own as to allow proper conclusions to be drawn as to their competitive achievement potential, the economic strength underlying the size of the undertakings in conjunction with the current market position and the investment necessary on rail technology markets, on which research and development are important, is a general indication of a considerable competitive lead over other suppliers.

(65) In particular, the full range of rail technology products manufactured by the parties and Siemens as 'full-line' suppliers, and their ability to handle large orders, again give them a competitive edge. They can successfully pursue orders which, because of their size, are out of reach of smaller suppliers. They can consequently achieve better and, above all, higher-level capacity utilization. Only GEC-Alsthom has in Europe, apart from the parties, similar advantages of a 'full line' supplier with corresponding corporate size. Daimler-Benz and Siemens have advantages over GEC-Alsthom on the German product markets since their rail technology products are already established on the market and they have considerable capacities in Germany. In addition, it must be asked to what extent, as the dominant undertaking in France, GEC-Alsthom can have any interest in triggering competitive ripostes by German firms in France in response to competitive forays into Germany. Nevertheless, GEC-Alsthom has, particularly through the acquisition of LHB, shown a clear interest in the German market, and through the acquisition has improved its prospects of success on that market.

(2) Rail vehicles

(66) On the product markets for rail vehicles, ABB/Daimler-Benz and Siemens possess particular know-how in electrical and electronic components. Both Bombardier through Talbot, GEC-Alsthom through LHB and, up till now, DWA have plants

in Germany that can produce only the mechanical components of a rail vehicle system. Thus, in acquiring its only two rail vehicle orders so far on the German market, for the production of the electrical components of the vehicles Bombardier entered into a cooperative arrangement with the Daimler-Benz/AEG subsidiary Kiepe. Only GEC-Alsthom has sufficient capability in-house to produce the necessary electrical components itself, while DWA and Bombardier have to depend on cooperation arrangements mainly with the duopolists. Although DWA is trying to create its own electrical engineering capacity through its subsidiary FAGA, it is too early to evaluate properly the results of those efforts. The parties have stated that, at the insistence of Deutsche Bahn AG, AEG had to transfer free of charge to FAGA, in connection with a contract for the Berlin light rail vehicle system, essential know-how in the field of traction technology, thereby enabling FAGA to supply complete traction units for regional electrical trains. As regards GEC-Alsthom, there is substantial evidence to suggest that, in view of the different specifications, participation on the German market poses difficulties wherever German production facilities are lacking.

(67) The present shift in demand away from individual parts of a rail vehicle and towards a complete rail vehicle system, with the contract being coordinated by an overall lead contractor, supports these points. It is the task of the lead contractor to award any subcontracts that may be required. However, the lead contractor alone remains responsible to the company placing the order. Suppliers must therefore be in a position not only to be able to offer a viable solution as regards the electrical components of a rail vehicle system, but must also, on the basis of their financial strength and any experience they have, to be seen as an appropriate partner. The financially strong 'full-line' suppliers Siemens, AEG and ABB are fully capable of this. The other companies operating on the German market must first find a suitable partner if they do not have their own electrical production capacities available.

(68) There are in Germany no other available companies apart from the parties and Siemens that would be suitable partners for the electrical components of a rail vehicle. Apart from GEC-Alsthom, other potential companies are the Netherlands firm Holec, the British firm Brush and the Austrian firm Elin. However, these three firms are very small, particularly compared with the above-mentioned 'full-line' suppliers, and have not so far obtained any orders in Germany.

Consequently, they also lack important reference products. The Italian firms Fiat and Ansaldo are also potential partners for electrical components, but so far they have no reference products in this field in Germany. For example, although Fiat is supplying the tilt technology as part of an inter-city contract for Deutsche Bahn AG, the electrical components are being made by Siemens.

- (69) Although GEC-Alsthom is a 'full-line' supplier, it has hitherto focused mainly on the French and the British market, whereas in Germany it has not as yet, as GEC-Alsthom, obtained any orders as prime contractor or subcontractor for electrical components. The existing technical specifications also mean that market entry by GEC-Alsthom is economically feasible only where fairly large numbers of units are involved. There are, for example, different mains voltages in Germany and France. In Germany, 15 000 volts and 16 hertz are the norm in mainline transportation, whereas France uses 25 000 volts and 50 hertz. These differences, which also apply in relation to other Member States of the Community, still often mean today that locomotives must be changed at frontiers. Although it is technically possible to produce locomotives that can operate on several systems, they are considerably more expensive to produce.

- (70) The parties have submitted that, in the case of the orders performed by the Daimler-Benz/AEG subsidiary Kiepe for the cities of Cologne, Saarbrücken and Düsseldorf, motors from the French company GEC-Alsthom, which acquired Kiepe a few years ago before selling it to Daimler-Benz, were used for the electrical parts of the products. However, this example relates in the first place only to the product market for trams. In addition, however, even if this example were transposed to other markets for rail vehicles, it is not in itself such as to provide evidence of significant competition. Since the parties themselves, in line with the basic results of the Commission's investigations so far, submit that in future it will no longer be possible to offer individual components of a rail vehicle, but that the trend is towards the supply of a complete rail vehicle, any such supply of components to a prime contractor or subcontractor cannot be regarded as participation in the relevant product markets for rail vehicles. The supply of components by subcontractors involves a market other than that for the supply of a rail vehicle. Furthermore, it cannot readily be used as evidence of the possibility of market participation, raising the argument that it is technically possible to incorporate components and that the customer accepts the supply of a motor manufactured abroad. Rather, a distinction must be made

between the different levels of the market. Clearly, the markets for components are essentially more international than those for rail vehicles. Above all, the purchased supply of components no longer involves contracts which will in future still be concluded by the customers, as the parties submit. Responsibility to the customers is borne only by the prime contractor. Customers may still have some influence over the selection of the subcontractors. It has not been established, however, that the influence of customers in most cases goes so far as to cover control of the supply of components, and this is in any case doubtful in view of the parties' submission that customers attach importance to placing their orders with a prime contractor who designs and supplies a product system and who is solely responsible. In addition, although technical differences in rail technology between individual Member States can be overcome from a technical point of view, this generates costs. It is extremely doubtful whether, in view of higher costs, a competitive tender for the electrical subsystem can be made by a foreign supplier. At all events, foreign electrical component suppliers have yet to win an order in Germany despite the fact that it is and has been in the past technically possible to overcome any differences. Technical specifications may differ in the case of individual components and result in differing obstacles to market access. Lastly, foreign suppliers wishing for the first time to overcome such obstacles do not as a rule have any reference project available that can generate confidence in the products they have on offer.

(a) Mainline trains

- (71) The level of concentration is particularly high on the markets for electrical locomotives and train sets for mainline transportation. Thus, according to the information they themselves have provided, the parties together with Siemens have a market share of 100 % ⁽⁴⁴⁾ in the case of electrical locomotives and a market share of 77 % ⁽⁴⁵⁾ in the case of train sets for mainline transportation. The next largest competitor in Germany in the case of train sets for mainline transportation is DWA, with a market share of 18 % ⁽⁴⁶⁾. In assessing the competitive strength of DWA, account must be taken of the fact that, as a supplier — at least so far — of purely mechanical-engineering products, it does not yet have at its disposal the necessary key technologies in the electrical engineering field. For this reason, but also in view of its much smaller size compared with the parties, DWA does not seem likely as yet to be able to offer its own independent supply of products in competition with the parties and Siemens. Similarly, the German mechanical-engineering suppliers LHB, as a GEC-Alsthom subsidiary, and Talbot, as a

⁽⁴⁴⁾ See footnote 3.

⁽⁴⁵⁾ See footnote 3.

⁽⁴⁶⁾ See footnote 3.

Bombardier subsidiary, are not in a position as mechanical engineering suppliers, whether on their own or jointly, to provide the parties and Siemens with any substantial competition external to the duopoly.

(72) In the case of train sets for mainline transportation, AEG has so far at any rate been unable on its own to compete head-on with Siemens. In view of Siemens's strength in the key technologies, it is currently to be assumed that even AEG is capable of supplying products only in cooperation with Siemens. Accordingly, as far as the Commission is aware, the cooperation between Siemens, AEG and ABB for the ICE 1 and between Siemens and AEG for the ICE 2 was not objected to on competition grounds. According to the information supplied by the undertakings, the cooperation with Siemens on which AEG relies here will no longer be necessary after the concentration because AEG and ABB will jointly be able to compete with Siemens or a Siemens-led consortium.

(73) Only GEC-Alsthom has so far been in a position to offer the parties and Siemens any significant competition on these two product markets. However, leaving aside its subsidiary LHB, GEC-Alsthom has not so far obtained any orders in these areas. GEC-Alsthom does, it is true, produce a high-speed train (the TGV) with which it has in the past competed very actively worldwide with the ICE high-speed train produced by German companies, essentially Siemens and Daimler-Benz/AEG. Account must be taken, however, of the fact that the production of train sets for mainline transportation is a matter of prestige for full-line suppliers and that especially here it is unlikely that a national railway company will place an order with an undertaking which is not primarily established in that Member State, because domestic suppliers would be deprived of an internationally indispensable reference product and their market participation might in future be jeopardized entirely. In view of the strictly national award of contracts so far and the question of safeguarding jobs that is of national relevance in the awarding of contracts of this size, it cannot be assumed that the mere fact that the TGV exists provides a basis for significant competition to the parties and Siemens. Nevertheless, Deutsche Bahn AG succeeded in securing a distinctly lower price for the ICE 2 compared with the ICE 1.

(74) In the case of electrical locomotives, Deutsche Bahn AG has since 1992 invited tenders only once

(in 1994) for the construction of three types of locomotive. Besides the parties and Siemens, GEC-Alsthom, Ansaldo and Skoda submitted tenders. In addition to the bids from the parties and Siemens, which were each awarded the contract for one type of locomotive, Deutsche Bahn AG also (so it has indicated) shortlisted GEC-Alsthom's bid. In the opinion of Deutsche Bahn AG, the only customer in Germany, there will be a sufficient number of suppliers on the market even after the concentration.

(b) Regional trains

(75) The markets for regional electrical and diesel multiple units are markets which are at least very closely linked to one another. The question whether the different types of traction justify the assumption of separate markets cannot be conclusively determined. In so far as there is the assumption a separate market for diesel-powered regional trains, there will be no enlargement of market share on such market, since ABB did not obtain any orders in Germany during the relevant period. However, since ABB did obtain orders for diesel-powered regional trains during this period in Denmark and Sweden in particular, it must be considered to be a potential competitor on the German markets because of its strong presence elsewhere.

(76) According to the information obtained by the Commission there has not as yet been any instance, in regional transportation as in mainline transportation, of an order for a rail vehicle going to a company not established in Germany, either on a prime contractor or subcontractor basis, in respect of the electrical or mechanical components. There is only one instance of tenders having been made for regional electrical multiple units; the tenders were presented by Talbot/GEC-Alsthom and Bombardier/Brush and were not successful. A survey of German customers has provided evidence to suggest that GEC-Alsthom at any rate is regarded by some customers as a potentially suitable partner for mechanical component suppliers for regional trains.

(c) Local trains

(77) On the markets for trams (including light rail vehicles and electrical equipment for trolleybuses) and underground-railway vehicles, there are at present, apart from the parties and Siemens, no other competitors with sizeable market shares. Contracts have so far been awarded almost exclusively to undertakings established in Germany. On the market for trams, Bombardier did win two orders as prime contractor for the manufacture of trams for Cologne and Saarbrücken. However, Bombardier can

manufacture only the mechanical parts of rail vehicles itself and entered into a cooperative arrangement with the Daimler-Benz/AEG subsidiary Kiepe as subcontractor for the electrical components. The two companies also tendered jointly in other, unsuccessful, bids on the tram market.

- (78) The Commission asked the larger German local transport companies to provide it with information on contracts awarded from 1992. From the replies received, it appears that, of the 18 awards so far notified to the Commission for contracts placed by 14 medium-sized municipal transport companies for products relating to the tram market, Bombardier, apart from the Cologne tender, submitted unsuccessful tenders for six other contracts. In one case, a tender was also submitted by the firm Breda. In one instance, the Czech firm Tatra submitted a tender, in two instances tenders were submitted by the Swiss firm Vevey and in three instances Fiat submitted tenders, but in none of these cases, on the basis of the information available to the Commission, did the companies awarding the contracts take the tenders into account in the subsequent stages of the selection procedure. In addition, Vevey is a mechanical-engineering supplier which once again had to enter into cooperative arrangements.

- (79) Of the six awards of contracts for underground-railway vehicles by four German customers that have been communicated to the Commission, there were, according to the information in the Commission's possession, tenders by GEC-Alsthom and Bombardier in two cases and tenders by Ansaldo, Vevey and CAF in one case. However, to the Commission's knowledge, these tenders did not get beyond the initial stage. One contract was, however, awarded to LHB and ABB. Whether LHB could also have tendered successfully with an electrical-engineering partner not established in Germany is doubtful, because there has not so far been any tender by a potential partner regarded as sufficiently suitable in the award of a contract. For supply from LHB to be independent of the parties and Siemens, it is important that a corresponding electrical partner be available. In addition, the misgivings stemming from the fact of a firm's not being established on the German market apply here as well. In one case, no prime contractor was sought, but contracts were awarded for parts of the total order. In this instance, a tender was also submitted by the Swiss firm Schindler for the coach-construction part of the metro vehicles.

(3) Catenary systems and traction power supply

- (80) In the 'stationary equipment' sphere, the suppliers of the mechanical components of rail vehicle systems do not play any role.

- (81) The 94 % ⁽⁴⁷⁾ combined market share of the parties and Siemens on the market for catenary systems provides a substantial indication of a lack of any significant outside competition. According to the submission of the parties, only the German company Elpro has otherwise obtained any orders on this market. Elpro cannot be compared with the duopolists either in terms of its market strength or in terms of its capacities.

- (82) The customers for catenary systems are Deutsche Bahn AG and the municipal transport companies. Demand in recent years has emanated predominantly from Deutsche Bahn AG. The volumes of the orders placed by Deutsche Bahn AG and the municipal transport companies differ in nature to a considerable extent. Particularly in the case of larger orders placed by Deutsche Bahn AG, it is necessary for any firm carrying out the order on its own to be of a size which only the parties and Siemens have on the German market. This limits the market significance of other suppliers from the outset.

- (83) According to the information obtained by the Commission, orders on the market for catenary systems have to a limited extent been awarded to the German company SAG and the French company Spie Enertrans.

- (84) It is evident from the pattern on this market that other suppliers have some competitive potential. However, there is at present a lack of sufficient domestic production capacities outside the duopoly formed by ABB/Daimler Benz and Siemens. Deutsche Bahn AG, as the only customer in the mainline train field, where the problems for smaller suppliers are particularly acute, takes the view, however, that in the past two years the conditions for an increase in competition outside the duopoly have been created, with European suppliers now qualifying for tenders as they meet the requisite product specifications.

- (85) On the market for traction power supply, the combined market share of the parties and Siemens is about 67 % ⁽⁴⁸⁾. The main competitor on this market, according to the information provided by the parties, is the firm Elpro (whose turnover in rail technology is some ECU [...] ⁽⁴⁹⁾ according to the figures provided by the parties), and this company's market share is, according to the parties, 13 % ⁽⁵⁰⁾. On this market too, smaller

⁽⁴⁷⁾ See footnote 3.

⁽⁴⁸⁾ See footnote 3.

⁽⁴⁹⁾ Confidential.

⁽⁵⁰⁾ See footnote 3.

orders have been awarded to SAG, Spie Enertrans and the Austrian firm Elin. According to the information provided by the parties, all the other suppliers, put together, achieve a market share of 20 % ⁽⁵¹⁾. With respect to the mainline train field, Deutsche Bahn AG is again of the opinion that European suppliers can provide more competition.

(4) Conclusion

- (86) In the light of these market structure data, the object of the competition assessment must be to establish whether, on the relevant market — Germany — the proposed concentration will result in the creation of a market-dominating duopoly or the strengthening of an existing market-dominating oligopoly through its becoming a narrower duopoly. Before there can be an oligopoly, two conditions must be met: first, the oligopolists must not compete to a significant extent with one another; and second, they must no longer be faced with any significant outside competition.

(4) *Creation or strengthening of a dominant position*

(a) **Competition between the parties and Siemens: general**

- (87) An assessment of the scale of internal competition between the parties and Siemens before and after the venture has to take account both of considerations of market structure and price trends which apply across the board to all the relevant product markets, and of special considerations regarding cooperation between companies and the influence of the demand side which apply on certain specific markets. The intensity of competition inside the duopoly will also be affected by the intensity of competition outside it: if there is a structural basis for significant internal competition, that competition may be strengthened by outside competition which would not itself be considered significant, making anticompetitive parallel conduct on the part of the duopolists economically impossible, or at least so unlikely that a lack of competition inside the duopoly can no longer be predicted with the requisite degree of probability.

(1) Structure of supply

- (88) The symmetry of the duopoly tends to suggest that the duopolists would not engage in significant competition in the future. Since the competitive

strength of each is more or less equally great, the incentives for competitive incursions are rather limited. In terms of the products supplied as well, the two undertakings will after any concentration be similar in structure, although the parties might argue that products will not be fully identical, in the first place at least, and that even after the transaction the parties will retain specific strengths by comparison with Siemens, and *vice versa*. But given the capacity of the full-line suppliers to operate on any market, and especially the economic strength of Siemens, which prevents the parties from dominating any of the relevant product markets by themselves, the planned joint venture and Siemens do remain fundamentally comparable despite these distinctions.

- (89) Parallel conduct on the part of ABB/Daimler-Benz and Siemens might also be encouraged by the openness of public procurement in rail technology markets. The number of competitors is small, and public invitations to tender have to be issued. Openness in public procurement does indeed help to promote competition, being intended to ensure that tenders will be submitted by as many firms as possible. But the suppliers do obtain further information, both in the course of negotiations following the submission of tenders and as a result of the fact that of the parties and Siemens at least one has hitherto been associated with almost every rail technology contract in Germany. The better market overview which this gives them will greatly facilitate non-competitive parallel conduct within a duopoly.

- (90) The supposition that there will not in future be any significant competition between the parties and Siemens is further supported in the case of the rail vehicle markets by the overcapacities which exist, particularly as regards mechanical components. If they are to utilize their own production capacities, it does not appear reasonable for the two groups to cooperate with outsiders, and especially mechanical-engineering suppliers, by supplying electrical components, thus encouraging new competition. This means that it is in their joint interest to avoid cooperating with other suppliers, if possible, where those suppliers would thereby be enabled to obtain orders.

- (91) This structural danger of the curtailment of internal competition on the markets for rail

⁽⁵¹⁾ See footnote 3.

technology is mitigated by the fact that rail technology products are not uniform mass-produced goods, but heterogeneous products in which research and development play a major role. There is therefore as a rule less direct scope for reactions to competitive advances by a duopolist where innovative competitive forays are involved.

(2) Price trends

- (92) The fall in prices in recent years, at any rate in the case of rail vehicles, may be an indication of significant competition hitherto. According to the Commission's enquiries, most customers confirm that prices for rail vehicles have fallen in recent years. There are several reasons for this trend. It is based firstly on a reduction in the equipment which customers wish to see in rail vehicles and on greater reliance on batch production. The main reason for this is the increased cost pressure to which customers are exposed. As, for example, in the case of the ICE, the technical requirements to be met by products are now increasingly being subjected to cost-efficiency control. For the award of the ICE 2.2 contract Deutsche Bahn AG achieved a price reduction of [...] ⁽⁵²⁾. Buyers tend to define what is wanted in terms of performance rather than technical specifications. Another reason which must be taken into account is developing competition from foreign firms. On the market for trams, the award of contracts by the cities of Cologne and Saarbrücken to Bombardier, citing in each case in cooperation with the Daimler-Benz/AEG subsidiary, Kiepe, for the electrical part of the rail vehicle, led to a considerable fall in prices on the market.

- (93) It cannot be assumed, however, that these causes underlying the price decreases will continue in future to ensure significant competition on all the relevant product markets. Any cost advantages on the production side would as a rule be passed on to customers only if significant competition exists. This link is illustrated in particular by the example of the contract awards to Bombardier. Without competitive pressure from European suppliers, the duopolists would no longer be forced to make such price cuts. In so far as the concentration may entail the danger of further partitioning-off of the German market, particularly as a result of the lack of an appropriate electrical-engineering partner for any mechanical-engineering supplier having an active approach to prices, it cannot be predicted

that this trend will continue following a concentration. Nor are the cost reductions brought about by customers dispensing with more costly equipment for rail vehicles likely in themselves to provide an evidential basis for assuming the future existence of significant competition. Without sufficient outside competition, the existence of overcapacities would if anything encourage non-competitive behaviour and induce a refusal on the part of the duopolists to enter into cooperative arrangements with mechanical-engineering firms.

- (94) According to the Commission's enquiries the fall in prices observed in the case of rail vehicles applies to only a limited extent in the case of catenary systems and traction power supply. Where customers have observed a fall in prices, they attribute it mainly to an opening up of markets and the competition which this gives rise to.

(3) Cooperative arrangements

- (95) A further factor is the cooperation between the parties and Siemens in the past. There is a web of cooperative relationships in the rail technology sphere. This applies in particular to the rail vehicle markets. However, the nature and extent of the cooperative arrangements differ on the individual markets for rail vehicles.
- (96) It must be borne in mind that cooperative arrangements may also be prompted by customers. In particular, the special importance which customers can be seen to attach to the geographical proximity of suppliers may, where this results in several suppliers being close together, result in a desire on the part of the customer for cooperation, and whilst this does not invalidate the evidential value of cooperative arrangements, it may limit it in individual instances.

(4) Other factors

- (97) Lastly, internal competition within the oligopoly cannot be assessed without considering outside competition, since, if there is outside competition, the behavioural links within a duopoly are restricted.
- (98) However, the pointers to residual internal competition continuing on the product markets vary. The intensity of the residual competition between the companies is, on present information, crucially dependent on the intensity of the external competition that continues to exist. The stronger the competitive pressures outside the duopoly are, the smaller will be the incentives for the duopolists to pursue anticompetitive parallel behaviour.

⁽⁵²⁾ Confidential.

(99) In assessing the signs of a lack of internal competition within the duopoly, account must also be taken of the fact that the only customer in Germany for the parties' products, as far as products for mainline transportation are concerned, is Deutsche Bahn. Similarly in the market for regional trains the vast majority of demand in the last few years has arisen from Deutsche Bahn AG. It is only in local transportation that the suppliers are at present faced with a fairly large number of customers, namely the German municipal local transport companies. The Commission's enquiries have established that there are currently 54 German municipal transport companies as customers for trams (including light rail vehicles and electrical equipment for trolley buses) and four as customers for underground-railway systems. Consequently, a lesser degree of competition intensity from outsiders is necessary in mainline and regional transportation to give the monopsonist, Deutsche Bahn, sufficient competitive room for manoeuvre. By contrast, the municipal transport companies are not in a position to exert influence on the suppliers in the same way that Deutsche Bahn can, so that they are to a much greater extent dependent on already existing competitive alternatives.

(b) Effects on the product markets

(100) These general considerations lead to varying conclusions as to the effects of the concentration on competition on the product markets studied.

(101) In mainline and regional trains and in catenary systems and traction power supply Deutsche Bahn AG is easily the largest or indeed the only buyer on the German market. Deutsche Bahn AG came into being through the conversion of Deutsche Bundesbahn and the Reichsbahn, and is wholly owned by the public sector. According to the Commission's findings, Deutsche Bahn, as a monopsonist, is in a position to influence the structure of supply to a far greater extent than the municipal transport companies. Deutsche Bahn will be able to obtain competitive offers from the parties and Siemens, even after the concentration, if there is still residual competition from outside the duopoly, even though that competition might not ordinarily qualify as significant for purposes of merger control. By inviting tenders for large orders,

for example, Deutsche Bahn can make its orders well-nigh indispensable to the German full-line suppliers, and thus incite them to bid low. This will be insufficient only if, in the event of anticompetitive parallel conduct on the part of the two German full-line suppliers, Deutsche Bahn cannot economically turn to other competitors. And where technical specifications differ between Member States, the differences are not as a rule insurmountable technically; by inviting tenders for large orders, Deutsche Bahn can make the technical differences surmountable in economic terms as well. It is Deutsche Bahn's large-volume orders which interest foreign suppliers. An example is the order for catenary systems which Deutsche Bahn placed with Spie Enertrans.

(102) It cannot be maintained that Deutsche Bahn will not in fact make use of the margin of manoeuvre open to it here in the future. It is true, certainly, that because of its great importance as the only buyer of mainline rail technology products in Germany it may come under some general pressure to take proper account of the two German-based suppliers when it is awarding contracts, so as to enable them to exploit their economic potential. And the mere fact that two of the three full-line suppliers in Europe will be based in Germany makes it probable that substantial orders will continue to go to German manufacturers in any event, even if they are awarded on purely competitive considerations. But the decisive point is that in the changed circumstances which will now prevail Deutsche Bahn cannot be expected to follow anything other than an economically oriented procurement policy. There are, admittedly, indications from past performance which might seem to make this argument less than evident. Given the new framework, however, no conclusions can be drawn from past performance with the degree of probability needed in forecasting of this kind. The conversion of Deutsche Bundesbahn into the private-law company Deutsche Bahn AG is not the only factor which has to be borne in mind here. That conversion reflects a general desire to see Deutsche Bahn run as a commercial operation. Other transport companies whose finances were not hitherto independent of the budgets of their regional or local authorities have been forced to take the same approach by the shortage of public funds. But there is also the fact that the railways are in competition with other forms of transport, which forces them to offer their customers advantageous terms. Whether the legislation will once again give the railways more room for manoeuvre in future, for example by making other forms of transport dearer, is something which

- cannot be foreseen at this stage. Lastly, to give preference to domestic firms would be a breach of the public procurement directives.
- (103) Municipal transport companies do not have the same freedom of manoeuvre in their purchases as Deutsche Bahn has. They are much smaller than Deutsche Bahn, not only in turnover but also in terms of the size of their orders, and so far they have seldom, if ever, mounted joint procurement operations. The parties' contention that larger transport companies play a role as market leaders is valid only up to a point, if at all. The parties estimate that Deutsche Bahn's orders of regional trains alone may total about ECU 5 billion by the year 2000. According to their estimates the total volume of orders of local trains over the same period will be about ECU 4 billion. In any event the assessment of the importance of buyer bargaining power on the markets for trams and metro systems must be different. Whilst the buyer bargaining power of the 54 municipal transport companies is limited, that of the four customers on the market for underground-railway systems must be regarded as greater. In this market, the vast majority of demand can be attributed to the Berlin transport operators, which as such are able to play something of a leadership role. Nevertheless, in particular because of its lower purchasing volume, the buyer bargaining power of the Berlin transport operators cannot match that of Deutsche Bahn AG.
- (104) It is true that individual orders at prices favourable to the customer may significantly lower the overall price level. But as the Commission's enquiries have shown, this effect will not necessarily be felt by all local transport undertakings, even where average market prices have undoubtedly fallen. And there are still substantial differences between the products sought by local transport undertakings, even where they belong to the same product category. Together with any differences in the infrastructure to be used, these distinctions help to make joint purchasing difficult.
- (105) The parties have argued that the transaction would provide a basis for competition with Siemens, or at least facilitate it; but this argument holds good only for mainline trains, and then only to a limited extent. It does not apply to the case of local trains, where the parties themselves have emphasized the scope for competition on the part of smaller suppliers.
- (106) Lastly, the cooperation between suppliers which the Commission has identified has been particularly noteworthy in the case of local trains, the area in which according to the Commission's findings cooperation was least needed. This suggests that precisely on the markets for local trains there is a special need for the control exerted by competition from suppliers outside a duopoly.
- (107) These distinctions are supported by the conduct of foreign firms with regard to tenders so far. From the answers given to the Commission's questions by Deutsche Bahn and local railways, it emerges that foreign competitors compete more often in Deutsche Bahn's tendering procedures than on average in the local railways' tendering procedures.
- (108) The validity of these distinctions is also borne out by the Commission's enquiries into estimates of the likely effects of the transaction. Deutsche Bahn does not expect any negative consequences for itself, but there is a strong view among local railways that the venture would weaken competition.
- (109) These differing situations mean that the assessment of the effects of the transaction on the markets in rail technology products has to be different for mainline and regional railways on the one hand and local railways on the other.
- (1) Mainline trains and regional trains
- (110) On the markets for mainline and regional train sets, for a series of reasons it cannot be established with sufficient likelihood that the proposed concentration will lead to the creation or strengthening of a market dominant duopoly. As we have seen, the supply-side power of ABB/Daimler-Benz and Siemens is greatly weakened by the monopsonistic demand-side power of Deutsche Bahn. While the heterogeneous nature of the products and the need for research and development do not rule out the possibility of anticompetitive parallel conduct, nevertheless the scope for interdependency is generally a great deal more restricted than it is on markets where the products are homogeneous and the intensity of research and development is lower. Again for these product markets it is partly the case that orders are particularly large, and, seen overall, awarded at irregular intervals; this also substantially reduces interdependency.

(a) Mainline trains

- (111) On the market in mainline train sets, orders for the production of high-speed trains at least have in the past been placed with domestic consortia in which it was difficult to discern any internal competitive relationship. Thus Siemens, AEG and ABB collaborated on Deutsche Bahn's ICE 1. Siemens and AEG are currently collaborating on the ICE 2. ABB is working on its own competing train set, and is taking no further part in the development of the ICE 2. ABB's X 2000 is a mainline train set which would operate below the high-speed category proper but which would use a tilting system to enable it to reach high velocities even on less developed stretches of line. Following the concentration all this competitive potential would be merged.
- (112) But the transaction will not worsen the situation; structurally speaking it will tend to improve it. It can be assumed that the cooperative arrangements entered into in the past were the result of the lack of capacity of competitors, or at least German competitors other than Siemens, to make an independent tender for the manufacture of mainline train sets. It may be that significant competition internal to the duopoly will arise after the transaction because cooperation between Siemens and AEG on the ICE project will come to a stop, but that cannot yet be said with sufficient certainty. The fact that Siemens and GEC-Alsthom have announced that they will be cooperating on the marketing of the ICE and TGV high-speed trains outside Europe may be an indication that there will indeed be more competition inside the duopoly on this market. But at present it cannot be ruled out either that the cooperation which has been announced between Siemens and GEC-Alsthom outside Europe will have no effect on the competitive situation inside the EEA.
- (113) It has also to be borne in mind that practice in the past made it unlikely that a contract would be awarded to a foreign firm. This means that within the duopoly formed by the parties and Siemens it is only with the merging of the parties' potential that an undertaking will have arisen which is capable of competing with Siemens. According to the Commission's enquiries Siemens would be in a position to offer a mainline train set even without the cooperation of Daimler-Benz; it might also work together with other companies.
- (114) Lastly, the products sold on the market in mainline train sets are very heterogeneous. They include not

only the high-speed trains just discussed but also intercity tilt trains, which have to be taken to include the X 2000 developed by ABB. Deutsche Bahn invited tenders in this market segment in 1994; ABB, Fiat and DWA/Fiat/Siemens all tendered. It was the DWA/Fiat/Siemens consortium that won the contract; Fiat is to supply the tilt technology.

- (115) Even if we assume after viewing the market situation that there is already an oligopoly which dominates the German market, consisting of Siemens and AEG, this oligopoly will not necessarily be strengthened by the transaction. The chances of competitive offers against Siemens will in fact be improved, so that the competitive structure inside the duopoly will be improved too. In view of the basis which this provides for competition, it is impossible to say with sufficient certainty that the emerging symmetry would worsen the internal structure.
- (116) On the market in electrical locomotives the Commission's enquiries have not established that there has been any cooperation on the contracts awarded by Deutsche Bahn between the parties and Siemens/Krauss-Maffei, even though the three undertakings did each secure one of the three contracts awarded. The competition which exists here may be attenuated if there is not enough outside competition to ensure significant competition inside the duopoly between the parties and Siemens.
- (117) By grouping its orders, as it did in the case of electrical locomotives, Deutsche Bahn can increase the volume put out to tender, and thus make it worthwhile for a foreign firm to make a bid. In that tendering procedure, GEC-Alsthom's offer was one of those short-listed. Deutsche Bahn here succeeded in securing independent tenders from AEG, ABB, and Siemens, [...] ⁽⁵³⁾. It is true that Deutsche Bahn then divided the order between the three tenderers, with each of them producing one type of locomotive. But Deutsche Bahn itself says that it suffered no disadvantage as a result of this division. Given the lack of cooperation on the market in electrical locomotives in the past, and particularly in view of the structural factors present, which include the growing competition from outside and especially from GEC-Alsthom, it

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cannot be assumed that there would be a lack of significant competition between AEG, ABB and Siemens in the absence of the concentration.

- (118) Nor can it be said with certainty, however, that there would be no significant competition between ABB/AEG and Siemens after the transaction. The market structure will indeed change, because Deutsche Bahn will now have only two German-based full-line suppliers. But on the basis of the general market structure which has been outlined it cannot confidently be said that this reduction in the number of players on the supply side will lead to a reduction in competition between ABB/AEG and Siemens. Deutsche Bahn itself says that it will have enough alternative competitors to deal with. This is supported by the fact that GEC-Alsthom will have better market access in future, via LHB. Talbot, acquired as a German subsidiary by Bombardier, would be a candidate for the mechanical component of an electrical locomotive. Talbot would still need to cooperate with an electrical engineering firm. But given the buying power of Deutsche Bahn, and bearing in mind that if there were no significant competition between ABB/AEG and Siemens part of the contract at least could be given to a cooperative arrangement set up between GEC-Alsthom and German mechanical-engineering firms, it cannot in any event be said with sufficient certainty that there are structural reasons which would in future prevent AEG/ABB and Siemens from being forced to enter into competition with one another by pressure from Deutsche Bahn, itself under pressure to cut costs.

(b) Regional trains

- (119) Four invitations to tender were issued for regional electrical trains in 1992; two options have been exercised on the basis of the contracts awarded, and one additional order of identical goods was made without tenders being invited. Following the four tendering procedures a total of five assignments of work were handled on a cooperative basis: one went to Siemens and MAN (AEG), two to LHB and ABB, each acting once as lead contractor, one to DWA and AEG, and one to AEG, Siemens and DWA. There were two awards for regional diesel trains, one of which went to AEG alone and one to AEG and Siemens together, with MAN as subcontractor. One option was taken up involving Siemens, LHB and AEG.

- (120) Demand for regional electrical and diesel trains emanates from Deutsche Bahn AG and to some extent also from regional transport companies. To that extent, the demand structure is not wholly the same as that for mainline transportation. Further changes in demand structure may be brought about by the regionalization of local passenger transport. In view of the possibility of Deutsche Bahn AG's taking over a certain leading function, it can be assumed, in the regional transport area too, that it will have demand-side power which will curtail supply-side power, though, because of the existence of a number of smaller regional transport companies with significantly smaller demand-side power than Deutsche Bahn AG, demand-side power cannot be considered as great as in the case of mainline transportation.

- (121) Because of the importance of the electrical and electronic components, however, the effects of demand-side power are liable to restore or maintain outside competition within the period of relevance for merger control purposes only if adequate supply-side alternatives exist for other components as well as for the mechanical components. It has to be borne in mind here that in regional train markets cooperation between the parties and Siemens has not been especially well-developed. The relatively limited importance of cooperative arrangements in the past tends to relativize the evidence suggesting that there will be a lack of internal competition in future.

- (122) Given LHB's previous role in cooperative arrangements with ABB, a decisive factor in its future strength on the market will be the extent of its success in bidding in Germany, perhaps along with its parent GEC-Alsthom. LHB is a very strong company, particularly in its home region. This regional base makes it impossible to assume that LHB will have no important role on regional train markets in the future. According to the information supplied by the parties, LHB's share of the market in regional electrical trains is currently about 14 % ⁽⁵⁴⁾, and its share of the market in regional diesel trains is about 19 % ⁽⁵⁵⁾. The parties submit in particular that DWA has acquired the know-how needed to be able to bid in its own right from its cooperation with AEG on a contract with Deutsche Bahn for urban trains for

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Berlin. This transfer of skills, together with DWA's efforts to establish its own electrical capability, must in any event be seen as one factor which makes it possible for competition independent of the parties and Siemens to be maintained in future. According to the parties' figures DWA's share of the market in electrical regional trains is currently about 17 % ⁽⁵⁶⁾ and its share of the market in diesel regional trains is about 9 % ⁽⁵⁷⁾.

- (123) Given this basis for competition outside the duopoly, therefore, and the demand-side power of Deutsche Bahn and the other structural factors making for competitive conduct, it cannot be established that the planned concentration will create a market-dominant duopoly.

(2) Local trains

- (124) The planned concentration does create a market-dominant duopoly, consisting of the parties and Siemens, on the markets in trams (including light rail vehicles and electrical equipment for trolley buses) and underground-railway vehicles. As far as the forecast needed for merger control purposes is concerned, it has to be assumed that in the absence of the concentration there would be significant future competition between Daimler-Benz, ABB and Siemens. This evaluation rests, in addition to the fundamental considerations described, on the competitive pressure from other suppliers such as Bombardier, which is such as to hinder anti-competitive parallel behaviour. Leaving aside the lower degree of market concentration, it cannot confidently be assumed that without the concentration market access would be closed to companies such as Bombardier for want of a cooperation partner. This is demonstrated by the existing cooperation between Bombardier and the Daimler-Benz/AEG subsidiary, Kiepe. The same forecast cannot be made for these two product markets in the relevant time frame if the concentration does take place.

- (125) There is a web of cooperative arrangements of various forms on the markets for rail vehicles used in local transport. In line with the increasing tendency to award the contract to a prime contractor, cooperation often takes the form of subcontracting. Of the 18 contract awards on the market for trams notified to the Commission by municipal transport companies in response to its enquiries, the following pattern emerges:

- Siemens and Daimler-Benz each won only one order on their own,

- in two cases, Siemens and AEG cooperated directly,
- in two cases, Siemens and the Daimler-Benz/AEG subsidiary Kiepe cooperated,
- in one case, Siemens, AEG and ABB cooperated,
- in one case, Siemens, AEG and MAN cooperated,
- in three cases, Siemens and ABB cooperated,
- in four cases, Siemens, ABB and DWA cooperated.

Of the six contract awards so far notified to the Commission by the four German customers on the market for underground-railway vehicles, ABB, AEG and Siemens cooperated in three instances.

- (126) Here, in contrast to the markets in other rail vehicles, there is sufficient evidence of lack of structurally generated competition between the parties and Siemens, in any event after the concentration. This conclusion is supported primarily by the far-reaching cooperation which has existed between the parties and Siemens in the past; the lack of any plausible need for cooperation on these markets between the full-line suppliers AEG, ABB and Siemens, which is clear among other things from the parties' own submissions; and the fact that the demand-side power of local transport companies is limited compared with that of Deutsche Bahn. This assessment holds good at any rate as long as uncompetitive parallel conduct is not structurally prevented by competition from other suppliers. Such competitive efforts would have to be stronger than on the other rail vehicle markets, given the weight of the structural evidence against the existence of significant internal competition. Furthermore, the large number of contracts awarded in the local transport market means that the incentive to suppliers to compete for every single contract is substantially less than on those markets where Deutsche Bahn, as the only purchaser, is in a position to put work out to tender in much larger lots than has hitherto been the practice in local transport.

- (127) The decisive question is accordingly to what extent other suppliers will in future be in a position to tender successfully.

- (128) In determining to what extent the geographical proximity of a supplier will play a role in the award of a contract, the mechanical elements of a vehicle will no doubt be of particular importance, since the mechanical-engineering work is relatively labour-intensive compared with the electrical-engineering work, even though most of the value added is at present accounted for by the

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electrical element of a rail vehicle. However, where such considerations may be relevant in the award of a contract for a rail vehicle, they are in principle relevant to all parts of the contract.

(129) In local rail transport in particular, the geographical proximity of suppliers plays a role which is important in economic terms as well. At present, the maintenance, repair and necessary spare parts of a rail vehicle are less and less often retained by the local transport company itself, but the tendency is for stocks to be kept down and larger maintenance and repair contracts to be awarded externally. The closer the workshop of the rail vehicle supplier being considered as a partner for these purposes is to the relevant customer, the better the customer's requirements in this area can be satisfied. Because of the particular importance of ensuring the optimum readiness for use of rail vehicles, domestic competitors stand better chances of supplying them. This factor acts as a further obstacle to foreign firms which have not hitherto been involved on the German market and which do not have their own production facilities there. Another aspect that is of significance in underlining the importance of domestic workshops is the fact that companies such as GEC-Alsthom and Bombardier obviously consider it important to acquire German plants so as to be able to participate in the German market process.

(130) In addition, customers primarily wish to acquire rail vehicles that operate in as trouble-free a manner as possible. Because of strong national demand, it is advantageous to have a reference product already established on the German market. Even Bombardier, which is so far the only foreign company which has been appointed prime contractor for a rail vehicle in Germany, still lacks an established reference product on the German market, since the product must first be manufactured and prove itself in operation. Since the important competition parameter of reliability can be assessed only after a certain period of time, the effects of the award of the contracts to Bombardier on the German market cannot yet be fully assessed. In particular, the possible withdrawal of Bombardier's present cooperation partner, Kiepe, will doubtless cancel out the market-opening effects of the award of the contracts in Cologne and Saarbrücken. Since Kiepe is part of the planned joint venture, the parties are in a position to have a say in the market entry and market success of a competitor. The market power which this creates is liable to prevent significant competition.

(131) Market dominance tendencies on the part of the duopolists are significantly more likely after a

concentration than before it. The mere fact of the oligopoly being narrowed to a duopoly will increase the structural danger of a joint blocking strategy by the duopolists. In addition, with the joint venture, there will alongside Siemens be a second undertaking of a quite similar structure which will initially attempt, for business policy reasons, to win orders as far as possible on its own and not in cooperation with a mechanical-engineering supplier. Since the duopolists' electrical-engineering know-how makes any such blocking strategy on the German market following a concentration seem likely to be successful, it is not possible to forecast any significant outside competition from Bombardier following a concentration. The same applies to the two German companies DWA and the GEC-Alsthom subsidiary LHB. In fact the shares held by both of these companies on the markets in local trains are currently smaller than their shares of the regional train markets. According to the parties, DWA's share of the tram market is about 3 % ⁽⁵⁸⁾ at present, and its share of the market in underground-railway vehicles is approximately 5 % ⁽⁵⁹⁾. LHB has about 8 % ⁽⁶⁰⁾ of the tram market and 11 % ⁽⁶¹⁾ of the underground-railway vehicles market. In this respect the position on the market for underground-railway systems is to be assessed as more positive as the new parent of LHB, GEC-Alsthom, is the largest producer of underground-railway equipment in Europe. An increase in the market strength of LHB can be expected through this acquisition.

(132) These factors have not only meant that, with the abovementioned exceptions, no orders have in the past been awarded in Germany to foreign firms. There has also hitherto been a lack of any significant tendering activity by foreign-based firms in Germany. It is not possible to determine conclusively whether this is attributable to a lack of competitiveness on the part of these firms on the German markets or also to discouragement because of a lack of orders. What is certain, however, is that it has not hitherto been possible for any significant competitive pressure to be exerted on the German market for trams by any companies other than Bombardier in cooperation with Kiepe.

(133) GEC-Alsthom is regarded as a potential supplier by some customers. However, in view of its lack of

⁽⁵⁸⁾ See footnote 3.

⁽⁵⁹⁾ See footnote 3.

⁽⁶⁰⁾ See footnote 3.

⁽⁶¹⁾ See footnote 3.

competitive success and its relatively limited tendering activity, this assessment provides only very limited grounds to warrant the assumption that potential competition will develop into actual competitive pressure on the parties and Siemens. The acquisition of LHB gives rise to some prospect of future market success. It cannot be excluded that in the medium term customers in the region where LHB is strong will also accept tenders from LHB with GEC-Alsthom as electrical partner. However, in the short run this is less likely. Again, the Dutch firm Holec has not so far been active on these markets. Although Fiat has submitted tenders in three instances in Germany, [...] ⁽⁶²⁾ and no significant competition can therefore be assumed here either.

(134) An assessment of the possibility of outside structural competition has also to take account of the fact that in the EEA as a whole the parties and Siemens likewise hold such strong competitive positions that they are vulnerable only to outside competition with a sufficient structural basis. According to the information which the parties have supplied, the parties together and Siemens both hold about 39 % ⁽⁶³⁾ of the EEA market in trams, while GEC-Alsthom has only about 11 % ⁽⁶⁴⁾. On the market in underground-railway vehicles the parties have only about 25 % ⁽⁶⁵⁾ and Siemens only about 12 % ⁽⁶⁶⁾, while here GEC-Alsthom has some 45 % ⁽⁶⁷⁾. The parties' much weaker position on the EEA market in underground-railway vehicles as compared with GEC-Alsthom's is doubtless partly due to the fact that only four local transport undertakings are currently using underground-railway vehicles in Germany, and since 1992 only Berlin has placed large orders. These market shares support the assumption that it will be easier for GEC-Alsthom with LHB to enter the market for underground-railway systems than that for trams and to submit successful bids independent of the parties and Siemens.

(135) In summary, it is evident that the companies which, apart from the parties concerned in the concentration and Siemens, have so far won orders in Germany on the markets for trams and underground-railway vehicles are purely mechanical-engineering suppliers which, in order to be able to supply products on the markets for rail

vehicles used in local transportation, have to enter into a cooperative arrangement with an electrical-engineering supplier. The pattern on these markets hitherto does not permit the conclusion that these companies would at present find any realistic alternative to cooperation with the parties or Siemens. Buyer bargaining power is limited, although it is to be considered greater for underground-railway systems. For this reason less competitive alternatives are in principle necessary on this market to limit sufficiently the supply-side power of the parties and Siemens. The market strength of the duopolists does not suggest that any significant competition to the duopoly can be expected from outsiders. Nor is there any reason to expect that the intensity of the residual external competition continuing after the concentration would aggravate the points of friction existing in the duopoly as a result of the fundamental structural context and the heterogeneous nature of the products, and of the research and development being carried on, in such a way as to make parallel competitive conduct between the parties and Siemens sufficiently unlikely.

3) Catenary systems and traction power supply

(136) As regards cooperative arrangements, the situation on the markets for catenary systems and traction power supply is different in that no significant cooperation between suppliers has been established. In these two product markets, the Commission has so far been informed by municipal customers of a total of 19 contract awards. Only in two projects was there any cooperation, involving Siemens and ABB on the one hand and Siemens, ABB and AEG on the other. In the case of four other projects, the contracts were awarded to a variety of suppliers. In the case of contracts awarded by Deutsche Bahn, the Commission has not so far learnt of any significant cooperation arrangements. However, with regard to the construction of catenary systems for the ICE high-speed train in particular, there is a joint licensing agreement between Deutsche Bahn, the parties and Siemens. This licensing agreement is the result of joint research and development. The market-partitioning effect of the concentration is, on the Commission's information, smaller on these two markets to the extent that cooperative arrangements are not so essential to supplying the product at all. And in fact the Commission has observed that very few cooperative arrangements have been concluded on these markets in the last few years. However, they are of substantial importance inasmuch as the competitors of the parties and Siemens will, because of much smaller available production capacities, be much less able to supply products, in the case of larger contract awards as well, without a cooperative arrangement with a sizeable supplier. To this extent, the reduction in the number of possible cooperation

⁽⁶²⁾ Confidential.

⁽⁶³⁾ See footnote 3.

⁽⁶⁴⁾ See footnote 3.

⁽⁶⁵⁾ See footnote 3.

⁽⁶⁶⁾ See footnote 3.

⁽⁶⁷⁾ See footnote 3.

partners from three to two means that the situation is exacerbated for smaller suppliers.

- (137) In view of the demand-side power which Deutsche Bahn can exert when it awards large contracts, the absence of cooperation between the parties in the past, and strengthening competition on the part of other suppliers and foreign suppliers in particular, which Deutsche Bahn itself already considers sufficient to provide competitive pressure, it cannot be forecast with certainty that there will not be significant competition between the parties and Siemens on these two product markets, either before or after the concentration. Where local transport undertakings award contracts on these markets the volumes involved are small, and can be supplied by small suppliers too. This has been confirmed by the Commission's enquiries. Many smaller contracts have in the past been placed in individual lots with several suppliers, some of them local, who were clearly not operating nationwide.

5. Summary

- (138) As a consequence of the planned concentration, a duopoly consisting of the parties and Siemens would hold dominant positions on the German markets in trams (including light rail vehicles and electrical equipment for trolley buses) and underground-railway vehicles, as a result of which competition would be significantly impeded in a substantial part of the Community. No dominant positions will be created or strengthened on the other markets affected by the concentration.

D. PARTIES' UNDERTAKINGS

1. Undertakings given

- (139) The parties have given the Commission the following undertaking for the purposes of averting any prohibition:

- (1) 'The parties undertake to ensure that all the shares in Kiepe Elektrik GmbH, Düsseldorf ('Kiepe'), are sold by [...] ⁽⁶⁸⁾ to purchasers who are neither associated with ABB nor with Daimler-Benz or their group companies through a shareholding of [...] ⁽⁶⁹⁾ or more. Efforts to sell the shares shall begin forthwith. Sale to Siemens AG or to a company associated with it is ruled out. This is without prejudice to the right of the parties to transfer the shares in Kiepe initially into the joint venture.

⁽⁶⁸⁾ Deleted, business secret.

⁽⁶⁹⁾ Deleted, business secret.

- (2) The parties undertake to ensure that, until the time of sale, Kiepe will continue to operate in accordance with the principles which have been applied since the acquisition of Kiepe by AEG Aktiengesellschaft. One of these principles is that Kiepe is available without restriction as a cooperation partner and/or supplier of components for rail technology undertakings which are associated neither with ABB nor with Daimler-Benz. The parties shall not give Kiepe's management any instructions regarding the choice of such contractual partners and shall not exercise any influence on the management in the context of the ordinary running of the business, wherever this is not required for maintaining the corporate assets or productiveness of Kiepe. In addition, the parties undertake to ensure that Kiepe's business assets will not be reduced outside the context of the ordinary running of the business pending sale. This also applies in particular to the maintenance of fixed assets, know-how and the technical and business skills of the staff.

- (3) The object of the sale requirement in point 1 are the shares in Kiepe excluding its Austrian subsidiary, unless the sale would otherwise be impossible.

- (4) In the event that a sale has not taken place by [...] ⁽⁷⁰⁾, the parties shall at the Commission's request transfer the shares irrevocably to a trustee to be appointed in consultation with the Commission; the trustee shall, within [...] ⁽⁷¹⁾ of transfer, carry out the sale independently and at the expense of the owner of the shares in accordance with proper business principles. The Commission shall not make use of this right before [...] ⁽⁷²⁾, if the parties have, by [...] ⁽⁷³⁾, agreed with a purchaser a binding letter of intent which provides for a sale by [...] ⁽⁷⁴⁾ at the latest.'

2. Assessment of the undertakings given

- (140) The undertakings given by the parties are such as to prevent the creation of a dominant duopoly by the parties and Siemens on the markets for trams and underground-railway vehicles in Germany within the forecast period relevant for assessing the concentration.

⁽⁷⁰⁾ Deleted, business secret.

⁽⁷¹⁾ Deleted, business secret.

⁽⁷²⁾ Deleted, business secret.

⁽⁷³⁾ Deleted, business secret.

⁽⁷⁴⁾ Deleted, business secret.

(a) Effects on external competition

- (141) Through its divestiture Kiepe will continue as an electrical engineering supplier independent of the parties and of Siemens in the area of rail vehicles for local transportation. In this area, Kiepe Germany has an annual turnover of some DM [...] ⁽⁷⁵⁾ and has as a result to a considerable extent been a player in electrical engineering turnover relating to rail vehicles for local transportation. Kiepe is profitable and was acquired by Daimler-Benz in 1992. To date it has operated as an autonomous company and is well established on the market.
- (142) In the 18 awards of contracts for trams by large German local transport companies noted by the Commission, Kiepe has been the electrical engineering partner of a mechanical engineering supplier in four such awards. Moreover, Kiepe is active in one further contract award for electrical equipment. On the basis of the data compiled by the Commission for contract awards in the period 1992 to 1994, the contracts for which Kiepe supplies the electrical equipment of the rail vehicle represent about 30 % of the total volume of the contracts awarded in this period for tram systems. The Commission also has knowledge of the contract award for Saarbrücken in a cooperative arrangement with Bombardier. In the light of the above Kiepe was probably, after Siemens, the second most successful electrical supplier in this period. Kiepe was clearly more successful than ABB and the rest of AEG. In total the combined market share of the residual part of AEG and ABB in this market was not significantly greater than that of Kiepe. In the market for underground-railway systems Kiepe was involved in part of the contract for the construction of the underground-railway system in Munich. Kiepe therefore has a considerable market significance as an electrical engineering partner, particularly for mechanical engineering suppliers, in the case of rail vehicles for local transportation.
- (143) In the tram market the divestiture of Kiepe will maintain a potential partner for mechanical suppliers active in this market, a partner which having regard to its market success to date is able to provide customers with a market-tested solution. Currently, Kiepe is of less importance in the market for underground-railway systems. Nevertheless, the undertaking given is such as to remove existing misgivings on this market. There has been no incentive for the owners of Kiepe to date to allow the company to play a more prominent role in this market. If such a market need were to emerge, Kiepe appears in the medium term capable of acting as a cooperation partner. In any event the necessary investment appears

financially possible given the profitable results of Kiepe. To this extent, the divestiture of Kiepe creates an undertaking independent of the parties and Siemens, capable of cooperating with mechanical suppliers if necessary. The undertaking given, together with the greater buyer bargaining power and the more favourable forecast for the market entry of LHB through the participation of GEC-Alsthom, no longer allow the absence of effective competition to be forecast with sufficient probability.

- (144) Therefore, the maintenance of Kiepe as an electrical engineering supplier that is independent of the parties and of Siemens is likely to ensure in future that competitive bids for rail vehicles for local transportation can be made against the parties and Siemens. In view of Kiepe's not unlimited production capacity, there may be limits to the volume of orders awarded to it in this respect. However, as a supplier that is independent of the parties and Siemens, Kiepe will, in connection with certain opportunities for using, through the intermediary of Kiepe, foreign production capacities available for the electrical element, make it possible for other, and in particular foreign, suppliers to have market access. Bombardier, LHB and DWA can use the resources of Kiepe independently of the parties and Siemens, and thus establish their market position and develop it in the future. Through the sale of Kiepe, it will thus be ensured that the emerging openingup of the market in the local transportation sphere, evident particularly in the example of the award of contracts to Bombardier in cooperation with Kiepe, can continue.

(b) Effects on competition between the parties and Siemens

- (145) In addition, according to the Commission's findings, this structural competitive impetus is sufficient to promote future substantial internal competition between the parties and Siemens such that it can no longer be assumed that there will be a lack of internal competition. Rather, the competitive impetus made possible by the market structure will remain strong enough to prevent uncompetitive parallel behaviour by the parties and Siemens on these markets. If the parties and Siemens for their part should in future forgo competitive incursions, they would have to expect more orders to go for example to a cooperative arrangement between Bombardier and Kiepe or to other possible cooperative arrangements involving Kiepe. In view of the potential otherwise available, the competitive losses of the parties and Siemens in the event of uncompetitive parallel behaviour would as a result of this external competition be so great that the losses to be expected through the

⁽⁷⁵⁾ Confidential.

award of orders to other competitors would outweigh any advantages deriving from the uncompetitive parallel behaviour. Lastly, in view of such competitive tenders that would then be available, customers for their part would hardly be prepared in the case of other contract awards to accept possibly less competitive offers from the parties and Siemens, even if for capacity reasons the contracts did ultimately go to the parties and Siemens. Although customers would possibly have to accept this situation temporarily in view of the present market structure, the resulting dissatisfaction would only further encourage the opening up of German markets to other suppliers. This effect would once again hardly be in the interests of the parties and Siemens. Consequently, the sale of Kiepe will ensure that competition that is external to the parties and Siemens will be maintained to a sufficient extent, competition which is relevant in view of its importance to the competitive behaviour of the parties and Siemens amongst themselves as well.

(c) Reporting requirements

- (146) The Commission's experience has shown that, for the purposes of monitoring compliance with the undertakings given by the parties, it is necessary that the parties report to the Commission at three-monthly intervals on the progress made in efforts to sell the shares and on compliance with the undertakings given. The first report should be submitted three months after the adoption of this Decision.

The reports should contain a detailed description of the sales efforts so far, specifying the interested parties. The presentation must be such as to allow the Commission to check the information.

With regard to compliance with the undertaking given in 2 concerning the maintenance of the economic productive capacity of Kiepe until the time of sale, the reports must also contain the following information:

- balance sheets, annual statements of accounts and quarterly statements of accounts drawn up during the reporting period for internal management purposes,
 - general report on the economic activity of Kiepe during the reporting period.
- (147) The Commission reserves the right to request further information from the parties in so far as this is necessary to check compliance with the undertakings given by them.
- #### E. HEARING OF WORKS COUNCILS
- (148) The Works Councils of AEG Austria and Kiepe Electric, Vienna, have made known their wish that, in the event of a divestiture of Kiepe as a result of an undertaking given by the parties, there should be a common divestiture of the German company Kiepe in Düsseldorf with its Austrian subsidiary Kiepe Electric in Vienna. While it does deliver some components on a contract basis to Kiepe Düsseldorf, for the rest Kiepe, Vienna, is primarily an extended workshop of Kiepe Düsseldorf. Consequently, since the identified competition problems relate only to the German market, a divestiture of Kiepe, Vienna, is not necessary. However, the position is different if the divestiture of Kiepe Düsseldorf separately from Kiepe, Vienna, proves impossible.
- (149) The Works Council of AEG Schienenfahrzeuge GmbH, Henningsdorf in its submission dated 29 September 1995 has requested that consideration be given to the need to provide adequate information to employees by the undertakings concerning the planned restructuring and equally the question of involving a European Works Council when setting conditions. The information requested by the Works Councils and the involvement of a European Works Council, which can be required in certain circumstances under other legal provisions, cannot be ordered by the Commission within the field of merger control for lack of legal authority.
- #### F. OVERALL ASSESSMENT
- (150) The Commission's investigations on the relevant product markets for rail technology in Germany have shown that, on the basis of the concentration between ABB and Daimler-Benz, in view of the competitive strength of Siemens alone, there will not be any creation of a margin of manoeuvre that is not sufficiently controlled competitively. Subject to the condition that the undertakings given by the parties are complied with, the concentration will similarly not lead to the creation or strengthening of a joint dominant position with Siemens on the relevant rail technology markets in Germany. On
- basic confirmation that the parties are conducting themselves in accordance with the undertaking given,
 - any measures taken by the parties with respect to Kiepe,
 - changes in the workforce of Kiepe, and in particular the following changes: workforce at the beginning and end of the three-month period, number of staff leaving and recruited, specification of staff transferred by Kiepe to ABB or Daimler-Benz or to one of their group companies,

five of the eight product markets considered, it is to be assumed that the proposed concentration will not, even without the undertaking given by the parties, lead to the disappearance of significant internal competition between the parties and Siemens. On the market for train sets for mainline transportation, the proposed concentration will at least not result in any strengthening of any existing dominant duopoly. On the markets for trams and underground-railway vehicles, the development of a dominant duopoly following a concentration will be prevented by the undertaking given by the parties, since it is to be assumed that there will continue to be significant competition between the parties and Siemens.

- (151) This Decision is without prejudice to the application of the general Community competition rules to pre-existing contractual arrangements between the parties to the proposed concentration and third parties.

V. CONCLUSION

- (152) For the reasons set out above, and subject to the condition that the undertakings given by the parties are complied with, it is to be assumed that the proposed concentration will not lead to the creation or strengthening of a dominant position as a result of which effective competition in a substantial part of the Community would be significantly impeded. The concentration must therefore, subject to that condition, be declared compatible with the common market and with the operation of the EEA Agreement in accordance with Article 2 (2) of the Merger Regulation and Article 57 of the EEA Agreement,

HAS ADOPTED THIS DECISION:

Article 1

The notified concentration between ABB and Daimler-Benz AG is hereby declared compatible with the common market and with the operation of the EEA Agreement, on condition that the undertakings given by the parties and set out in point 139 are fulfilled.

Article 2

The parties shall report to the Commission in accordance with point 146 of this Decision.

Article 3

This Decision is addressed to:

1. ABB Asea Brown Boveri AG
PO Box 8131
Affolternstraße 44
CH-8050 Zürich
2. Daimler-Benz AG
Epplestraße 225
D-70546 Stuttgart

Done at Brussels, 18 October 1995.

For the Commission

Karel VAN MIERT

Member of the Commission

COMMISSION DECISION

of 24 April 1996

declaring a concentration to be incompatible with the common market and the functioning of the EEA Agreement

(Case No IV/M.619 — Gencor/Lonrho)

(Text with EEA relevance)

(Only the English text is authentic)

(97/26/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to the Agreement on the European Economic Area, and in particular Article 57 thereof,

Having regard to Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings⁽¹⁾, as amended by the Act of Accession of Austria, Finland and Sweden, and in particular Article 8 (3) thereof,

Having regard to the Commission Decision of 20 December 1995 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission,

Having regard to the opinion of the Advisory Committee on Concentrations⁽²⁾,

Whereas:

- (1) The procedure under consideration concerns Gencor Limited of South Africa ('Gencor') and Lonrho plc of the United Kingdom ('Lonrho') who have jointly notified a transaction whereby they will acquire joint control of the company Implats Platinum Holdings Limited ('Implats'). Implats currently holds all of Gencor's platinum group metal (PGMs) mining and refining interests. Lonrho's platinum activities are held in the companies Eastern Platinum Limited ('Eastplats') and Western Platinum Limited ('Westplats'), together forming the Lonrho Platinum Division

('LPD'). Gencor is jointly controlled by the South African National Life Insurance Company ('Sanlam') and the Rembrandt Group Limited ('Rembrandt') within the meaning of Article 3 (3) of Regulation (EEC) No 4064/89 (hereinafter 'the Merger Regulation').

- (2) By decision dated 8 December 1995, the Commission ordered the suspension of the concentration as a whole, pursuant to Article 7 (2) and Article 18 (2) of the Merger Regulation, until it took a final decision.
- (3) By decision dated 20 December 1995, the Commission found that the concentration raised serious doubts as to its compatibility with the common market. The Commission accordingly initiated proceedings in this case, pursuant to Article 6 (1) (c) of the Merger Regulation.

I. THE PARTIES

- (4) Gencor is an international metals and minerals resource group based in South Africa. Lonrho is a British company with interests in mining and refining, hotels, agriculture and general trade.

II. THE OPERATION

- (5) The proposed transaction leads to Lonrho and Gencor acquiring joint control of the whole of Implats and LPD.
- (6) This operation involves two steps: (a) the acquisition of joint control by Lonrho and Gencor of Implats in which Gencor currently holds 46,5 %, the rest of the share capital being held by the public; and (b) the acquisition of sole control by Implats of the two companies Eastplats and

⁽¹⁾ OJ No L 395, 30. 12. 1989, p. 1 (corrected version OJ No L 257, 21. 9. 1990, p. 13).

⁽²⁾ OJ No C 13, 14. 1. 1997.

Westplats which today hold all the platinum activities of Lonrho, and in which Lonrho currently holds 73 % and Implats 27 %.

- (7) In return for the transfer by Lonrho to Implats of its interest in Eastplats and Westplats Lonrho will receive new shares in Implats. The shares will be listed on the Johannesburg Stock Exchange and the International Stock Exchange in London. Following the issue of new shares Gencor and Lonrho will each hold about 32 % of the shares in Implats and the remaining shares will be held by the public.

III. THE CONCENTRATION

Joint control

- (8) The parties will each appoint four directors to the board of Implats. The board will also include two independent non-executive directors and four executive directors none of whom will be an employee or director of either the Lonrho or the Gencor groups of companies. One of the Gencor nominees will be appointed Executive Chairman and will have a casting vote. However, this casting vote will not be used in the case of 'board affected items', where a voting pool agreement ensures that the nominees of the parties vote together. A similar mechanism will apply to ensure that the parties vote together in matters proposed at the general meetings of Implats. Board affected items include:
- (a) the entry into, variation of or termination of any agreement or contract between Implats and Gencor or Lonrho;
 - (b) disposal or acquisition in a single transaction of assets whose combined value exceeds R 50 million (about ECU 10 million);
 - (c) approval of the budget;
 - (d) dividend payments and the issue of shares.

The management structure following the operation will, therefore, give the parties joint control over Implats.

Full function on a lasting basis

- (9) Implats will continue to be active in the production and refining of PGMs. The effect of the operation

is to combine the activities of Implats with those of the LPD companies, Westplats and Eastplats. The operation will thus create a larger company containing all the PGM interests of the parents. Implats and LPD are already full functioning companies and the combination of the current Implats with Westplats and Eastplats does not change anything in this respect. The joint venture is, therefore, full function.

Absence of coordination

- (10) Implats, Eastplats and Westplats represent the entire interests of Lonrho and Gencor in the mining, production and refining of PGMs. Furthermore, the parties have agreed, as part of the operation, that Implats will be the sole medium through which any future interest in primary mining, processing, refining or trading operations in PGMs are acquired and/or held by either of the two groups for the purpose of exploitation of such platinum group metals. There is therefore no potential for coordination between Gencor or Lonrho with Implats arising from the operation, nor any risk of re-entry by the parties into the PGMs markets.
- (11) According to the parties, Rembrandt has an effective 14 % stake in Northam Platinum Limited ('Northam') whose other major shareholders are Anglo American Corporation of South Africa Limited ('AAC') 21 %, and Liberty Life (a Gencor shareholder) 7 %, with the rest of the shares in Northam being widely held. In addition, it has been stated that Sanlam does not have any material interest in other PGMs mines and that neither Sanlam nor Rembrandt have any material links to AAC. In any case, Lonrho will not, in the future, have any PGM mining and refining interest outside Implats. There is, therefore, no potential for coordination between Lonrho and the parents of Gencor arising from the notified transaction.

Conclusion

- (12) The joint venture will be jointly controlled by Gencor and Lonrho and it will be full function. There is no risk of coordination between the parties arising from the operation, since only Rembrandt, one of the parents of Gencor, will have PGM mining and refining interests outside the joint venture. Therefore, the resulting joint venture has a concentrative character within the meaning of the Merger Regulation.

IV. COMMUNITY DIMENSION

- (13) The concentration has a Community dimension as specified in Article 1 (2) of the Merger Regulation. The undertakings concerned have an aggregate worldwide turnover of more than ECU 10 billion, which is above the ECU 5 billion required by the Merger Regulation. Gencor and Lonrho both had a Community-wide turnover of more than ECU 250 million in the latest financial year and they do not achieve more than two thirds of their aggregate Community-wide turnover within one and the same Member State.

V. IMPACT IN THE EUROPEAN ECONOMIC AREA

- (14) The parties' total sales in the EEA are as follows: Lonrho ECU 1 281 million in 1994 and Gencor ECU 1 164 million in 1995. Furthermore LPD's sales of PGMs are made through Western Metal Sales, a Lonrho subsidiary, based in Brussels.
- (15) AAC's platinum operation ('Amplats'), the third major South African supplier also sells a significant proportion of its metal through its exclusive sales' agent, Johnson Matthey in the UK. Johnson Matthey then sells to its customers and subsidiaries throughout the world.
- (16) During the period 1993 to 1995 western European consumption of PGMs accounted for some 20 % of world demand. However this statistic must be treated with caution because, as concluded below, the PGM markets are worldwide. Accordingly PGMs travel freely, widely and easily; a sale in one region incurs a use in another. Some of the parties' sales to customers located in the EEA are exported to third countries, for example LPD sells to Mitsubishi in the UK which then sells to ultimate customers based in Japan. Conversely, Implats' largest customer is General Motors which makes its purchases in North America. General Motors then resells to its subsidiaries in the Community.
- (17) There is a considerable presence of the downstream 'fabricator' industry (turning PGMs into semi-finished and finished products) in the EEA and includes multinational companies based in the UK, Germany and France. Furthermore one of the three international markets for PGMs is based in London with good delivery, for this market, taking place in Zurich.
- (18) On the basis of the above it has been concluded that any effects on the world market would be fully reflected in the European Union and the EEA.

VI. RELEVANT MARKETS

A. *Relevant product markets*

A.1. Background: the platinum group metals

- (19) Both parties are active in the mining and refining of certain metals known collectively as PGMs. They are refined to defined purity standards through a series of complex processes.
- (20) PGMs occur naturally together in the same ore body. In addition, they tend to be concentrated together with the ferrous metals (iron, nickel, copper, chromium and cobalt) as a result of natural geological processes. However, PGMs do not constitute a single relevant product market, but, instead, six individual markets, specifically: platinum, palladium, rhodium, iridium, ruthenium and osmium. In their notification the parties stated that PGMs 'may be combined for use in autocatalysts but are otherwise used in a variety of different applications and are not substitutable for each other, having different properties.' Furthermore, in reality substitution is limited for PGMs. As one fabricator noted:
- 'PGMs have many unique properties and ... complete substitution tends to take place rarely or slowly, although 'thrifting' (i.e. reducing the quantity of PGMs used per unit of production) is a regular feature of the market.'
- (21) Total worldwide sales of PGMs amounted to about ECU 2,3 billion in 1994. Platinum is the most important (65 % of sales) and most widely used of the PGMs (hence, the origin of the group's name). Palladium and rhodium are ranked as the second and third most important PGMs with 23 and 12 % of sales, respectively. The remaining three PGMs (iridium, osmium and ruthenium) are of lesser commercial importance and together they account for less than 1 % of total sales of PGMs. They are commonly used in alloys with platinum or palladium. In addition, they each have a small number of specialized applications, where their use

is preferred because of their particular physical or chemical characteristics.

- (22) The PGMs are classified as precious metals, due to their scarcity. Only one twentieth as much platinum is produced as gold, which is itself a rare metal. They are also classified as noble metals. Specifically, PGMs demonstrate great resistance to oxidation and corrosion, an ability to withstand severely high temperatures (with melting points above 1 500 °C), they do not dissolve in acid and are excellent conductors of electricity. Finally, they display excellent catalytic properties (a catalyst initiates or speeds up a chemical reaction, without undergoing any change itself). Because of these outstanding physical and chemical properties, they are found in a wide range of applications, including:

- jewellery;
- catalytic converters for cars, and other automotive applications, such as spark plugs and oxygen sensors,
- general industrial catalytic applications, industrial production processes such as petroleum refining, and the production of liquid crystal display (LCD) glass,
- electronic equipment such as the hard disks of personal computers,
- electronic components of the multilayer ceramic capacitors (MLCC) type which are widely used in computer and telecommunications equipment.

- (23) Clearly, PGMs' properties render them important in the automotive, electronics and chemicals industries, and in the case of platinum, for jewellery products as well. It is considered, as explored below, that the affected markets in this operation are the markets for each individual refined PGM.

A.2. Platinum

(i) Main uses of platinum

- (24) The main applications of platinum are in autocatalysts (32 %), industrial (20 %) and jewellery (38 %), while the residual (10 %) is basically sold for investment purposes (see Section VII.B.1). As discussed below, the substitution of platinum with other metals is limited for all these purposes.

Automotive applications

- (25) Autocatalysts based on platinum, palladium and/or rhodium have been developed to eliminate the

three most dangerous gases emitted by motor vehicle exhausts, namely, carbon monoxide (CO), nitrous oxides (NO_x) and unburnt hydrocarbons (HC). The function of autocatalysts is to convert these noxious gases to less harmful components (carbon dioxide, nitrogen and water).

- (26) Essentially two types of commercial autocatalysts are currently manufactured. The older system uses an oxidizing platinum/palladium catalyst that converts the CO and HC (thus named the 'two-way' system) to carbon dioxide and water. The newer system not only performs the task of the two-way system, but is also capable of dealing with the third pollutant, NO_x. With the addition of rhodium to the platinum/palladium catalyst, the system then converts the CO, HC, and NO_x to carbon dioxide, nitrogen and water. This catalyst is therefore called the 'three-way' system. The three-way catalysts currently use either platinum/rhodium or platinum/palladium/rhodium.
- (27) Platinum, palladium and rhodium are used in varying ratios depending on specific requirements, such as the engine size, fuel used (petrol or diesel), efficiency levels sought, vehicle mass and the manufacturers' design and technology. Platinum has an advantage over the other PGMs, in that it can absorb a wider spectrum of gases. It is the most active of the three metals in CO and HC conversion, it is the least affected by lead and sulphur in the fuel and works well at low temperatures. However, it does not reduce NO_x efficiently (a task that rhodium performs well). Palladium has some ability to convert CO and HC, and to reduce NO_x, but is easily contaminated and is slow to become operational. Therefore, platinum, palladium and rhodium perform differently in the catalytic conversion required by autocatalysts to remove the noxious constituents.

- (28) Moreover, design changes in automotive components typically require lead times of several years. Such changes are costly, requiring substantial R&D and testing to ascertain whether the new model would meet ever-tightening environmental regulations. Automobile manufacturers have indicated that it would not be economically feasible to consider undertaking the R&D required for re-designing, unless there were to be an appreciable and irreversible change in PGM prices or liberalization of environmental protection laws. Clearly, the switching costs for automobile manufacturers go well beyond the costs of the various PGMs involved. Thus, there is rather

limited substitutability among the PGMs in autocatalytic applications. Rather than substitution, the complementarity of PGMs is well demonstrated in the field of catalytic converters for cars. Furthermore, diesel engines use only platinum and not palladium converters. The substitution possibilities between palladium and platinum therefore appear limited for these purposes.

- (29) The parties have submitted that there is a much more significant scope for the substitution of palladium for platinum in autocatalysts than suggested by the Commission. In this respect Ford, Nissan and Engelhard are stated as being at the forefront of the development of this technology which it is said will be of greater relevance in Europe because of smaller car engine sizes.
- (30) During its investigation the Commission has had contact with two of these companies: one has stated that it has always used platinum and rhodium in the production of autocatalysts and any change would require costly design changes. The other company has confirmed that it does manufacture palladium-only autocatalysts.
- (31) The Commission recognizes that palladium has substituted for platinum in certain types of autocatalysts in recent years. As stated by the parties this trend is likely to continue to a certain extent. However, the Commission considers that there is a rather limited possibility for any significant substitution of palladium for platinum in autocatalysts because of the cost of design changes and the specific properties of each metal to react with specific pollutants. As mentioned above these properties include the fact that lead and sulphur render palladium inactive and that diesel engines and large gasoline engines require platinum catalysts. According to Johnson Matthey, in evidence of this fact 'many European vehicles are fitted with two-brick catalyst systems, and it is now common to use a palladium/rhodium catalyst in conjunction with another containing platinum. This enables auto makers to take advantage of palladium's efficiency in converting HC emissions, while retaining platinum for its CO activity, and rhodium for its ability to deal with NO_x.' The parties agree that palladium cannot be totally substituted for platinum (see parties' reply of 19 March 1996 to the questions following the hearing).
- (32) Although the use of palladium has increased in proportion to platinum, the market demand for

platinum will continue as it will remain an essential element for use in autocatalysts.

Industrial applications

- (33) Platinum is widely utilized in industrial applications, for example as a catalyst gauze for manufacturing nitric acid for fertilizers, and in the glass industry, which uses equipment made from platinum-rhodium alloys for the highly corrosive operating environments needed in the production of high quality LCD glass (used in the screens of computers and televisions). There are no substitution possibilities for platinum in such industrial applications.

Jewellery

- (34) Platinum, as explained below, is a global commodity product. The demand for platinum in jewellery is dominated by the Japanese market. Approximately 85 % of the world's demand for platinum for jewellery end-use came from Japanese consumers in 1994. The unique characteristics of the Japanese jewellery market therefore have a crucial influence on the demand for platinum and, accordingly, on whether other metals can substitute for platinum to any significant extent.
- (35) The reasons for this high consumption are historical. First, the Japanese have a predilection for purity: platinum satisfies this preference due to its 99,95 % standard of purity and the fact that the metal has a 'whitish' appearance. Secondly, for many years (until 1973) the import of gold into Japan was tightly controlled and the tradition for platinum jewellery therefore developed. Finally, the strength of the yen in recent years, relative to the US dollar (in which platinum is always priced), has supported the demand for platinum as well as other precious metals like gold.
- (36) Platinum is the only PGM which is used for jewellery. It is also the most precious among all the precious metals, and in particular, platinum jewellery is more expensive than gold jewellery. In addition to its higher unit cost platinum jewellery is more expensive because: first, platinum jewellery is of a higher purity than gold, and secondly, platinum is harder to work than gold. However, as explained below, neither gold nor other precious metals are substitutes for platinum in the Japanese jewellery market.

- (37) The Commission has obtained data allowing it to assess the current market position of platinum versus gold in the Japanese market. In 1994, 29.3 million pieces of jewellery made from platinum, gold or platinum/gold combinations were sold in

Japan. As can be seen from Table 1 platinum accounted for 23,2 % of units (pieces) of jewellery, but 57 % of the value of jewellery sales, thus highlighting the much higher unit costs of platinum jewellery.

Table 1

Retail sales of platinum, platinum/gold and gold jewellery in Japan, 1994

	(%)	
	Proportion of pieces sold	Proportion of sales value
Platinum	23,2	57
Combination platinum/gold	7,8	6,8
Gold	69,0	36,2

Source: Platinum Guild International.

Note: Platinum jewellery is often sold with gemstones, which in this comparison, will to exaggerate the price differential between platinum and gold jewellery.

- (38) Measured in sales value, in 1994 platinum accounted for 64 % of jewellery with a stone, gold for 31 % and platinum/gold in combination for 5 %. On the other hand, gold accounted for 59 % of jewellery without a stone in 1994. The indication is therefore that platinum is mainly used for more expensive jewellery at the top-end of the Japanese jewellery market.

in jewellery are not to any large extent substitutable for jewellery purposes. More importantly, a price elasticity estimate of Japanese demand for platinum in jewellery confirmed that platinum is not subject to strong competition from other metals.

- (39) Platinum is the overwhelming first choice for rings in Japan. In 1994, 98 % of all engagement rings, 63 % of all wedding rings and 66 % of other rings were made of platinum. Thus, only 2 % of engagement rings were made of either gold or a platinum/gold combination; and similarly, only 16 % of wedding rings were gold, and 21 % were platinum/gold. The superior popularity of platinum over gold and platinum/gold combinations for rings has remained fairly steady in the last five years due to the unique characteristics influencing jewellery buying patterns in Japan. In contrast, platinum is used less for other types of jewellery. Measured in sales value, platinum accounted for 45 % of pendants, 36 % of necklaces, and 25 % of earrings sold in Japan in 1994.

- (42) This estimate of the price elasticity of Japanese demand for platinum in jewellery requires an econometric estimate. The Commission, as part of the investigation in the current case, commissioned a study to identify factors influencing the price of platinum (see below). As part of the study the price elasticity for Japanese demand for platinum in jewellery was estimated to be - 0,6, i.e. inelastic (numerically smaller than 1) ⁽³⁾.

- (43) Low price elasticity implies low substitutability. In view of the above data, it can be concluded that demand for platinum in jewellery is therefore not subject to strong competition from other precious metals on the Japanese market.

Investment demand

- (40) Therefore, gold and platinum do not appear to be good substitutes for jewellery purposes, since their usage patterns in terms of jewellery end-use, are quite different.

- (44) Platinum is sold to individuals and companies (principally in Japan) to hold, for example in the form of platinum bars, and such investment demand can be speculative. However, platinum does not have a position similar to gold which historically has been used as a means of payment.

- (41) The substantial difference in the price levels of gold and platinum jewellery on the Japanese market could also be an indicator that gold and platinum

⁽³⁾ This means that if the price, for example, increases by 10 % then quantity demanded will decrease by less than 10 %. The total sales revenue therefore increases in this situation, despite a decrease in quantity sold.

Therefore, investment demand for platinum reflects the underlying uses of platinum for autocatalysts, industrial purposes and jewellery, since it is these uses which give platinum its value. In addition there is no evidence to indicate that accumulated stocks of such bars and coins re-enter the market for platinum. This is demonstrated in the Johnson Matthey *Platinum 1995 Interim review* that shows a reversal in investment demand in only one year (1986) and then for only one type of bar.

Conclusion

- (45) There are in reality no substitutes for platinum for its main applications being autocatalysts, industrial processes and in jewellery. This conclusion is confirmed by an analysis of which factors influence the price of platinum.

(ii) Factors influencing the platinum price

- (46) Platinum is a freely traded commodity, where the price is established by market supply and demand. According to some of the most important traders/fabricators and banks dealing in the platinum market, platinum prices are determined by the fundamental uses of platinum. The platinum market is a relatively small market in terms of volume compared to, for example, gold. According to traders/fabricators and banks, the platinum market is therefore not very speculative, because if a large position were to be acquired, it would obviously be difficult to get out of the market again (which increases the risk of engaging in speculation).

- (47) As set out below the Commission considers that the fundamentals of supply and demand for the use of platinum in jewellery, in autocatalysts and for industrial purposes have a critical impact on the price of platinum.

Observations from 'Metals analysis outlook'

- (48) In order to establish the fundamental supply and demand factors on prices, the Commission tracked the most important factors affecting prices over the last five years, by looking at extracts from the journal 'Metals analysis outlook', which forecasts the development of the market quarter by quarter. According to these documents it was found that the most important factors are:

- forecasts in the South African production, expansion or suspension of shafts,
- level of recycled platinum,
- level of Almaz's sales for the Russian State, forecast from the nickel production and levels of stockpiles,
- offtake for autocatalyst and car demand,
- jewellery demand in Japan, economic conditions in that country and the yen/dollar exchange rates, and,
- pipeline stocks (stock in process).

- (49) The factors enumerated above show that the price of platinum is driven by fundamental supply and demand factors for platinum.

Commission study on factors affecting platinum price movements

- (50) The purpose of the Commission's study was to determine, if possible, the most important factors driving platinum prices. The main conclusions of the study are that:
- (a) the platinum price is statistically correlated with the gold price on a short-term basis, if not necessarily long-term basis (the relationship is shown below to be spurious), but platinum prices are also driven by the fundamentals of supply and demand within the platinum industry;
 - (b) the correlation between the gold and the platinum prices does not prove that there is a causal relationship between these prices;
 - (c) it is not possible to determine any significant relationship between platinum prices and the major macroeconomic indicators, nor between gold prices and the major macroeconomic indicators (inflation, interest rates, exchange rates and economic growth);
 - (d) the platinum futures market is primarily a forward market and does not normally have a high level of speculator activity. In the long term, fundamentals will therefore prevail as the decisive price determining factor;
 - (e) demand for platinum is price inelastic (elasticity numerically less than 1, see Section (iii));

(f) while the platinum market is smaller and more volatile than gold, there is no evidence of excessive speculator activity. Unlike gold there are at most limited stocks of platinum to satisfy periodic spikes in investment demand.

- (51) The study, therefore, confirms that the platinum market is not a highly speculative market and that fundamental supply-demand factors are important for the platinum price.

Price correlations between platinum, gold, silver, rhodium and palladium, are spurious

- (52) Although the prices of precious metals like gold and platinum are highly correlated, a high correlation does not in itself imply a causal relationship. Indeed economic price-series data are often non-stationary (i.e. trended) and therefore automatically correlated. The Commission therefore decided to undertake a more elaborate analysis of the correlation between the prices of platinum, gold, silver, rhodium and palladium.

- (53) The Commission proceeded with a co-integration analysis of the data set of the prices of platinum, rhodium and palladium, as well as gold and silver prices. Co-integration analysis is an econometric method which can test whether there is a systematic equilibrium (or long-run) relationship between two or more time-series of data. The results of the analysis show that the data do not suggest any equilibrium (or long-run) relationship between the respective price levels of platinum, rhodium, palladium, gold and silver, nor of any subset of these metals. This econometric analysis of metal prices indicates that platinum, rhodium, palladium, gold and silver prices tend to vary, over the long run, independently of each other, thus confirming the view that platinum, rhodium, palladium, silver and gold are separate relevant product markets.

The parties' methodology for forecasting platinum prices

- (54) The importance of the fundamental supply-demand factors for the development of platinum prices is confirmed by the parties in the way they forecast platinum prices. According to Implats, prices are very hard to predict in the short term (less than one year), and they depend on a number of factors

such as gold and silver prices, movements in interest rates, movements in exchange rates, rumours of technological developments, etc. However, in the longer term (more than one year) Implats looks to the fundamentals of supply and demand balances, where supply surpluses are synonymous with weak prices, while the inverse applies to market deficits. LPD forecasts short term prices (6 to 12 months) by looking at a mixture of market sentiment, speculative activity and metal availability. Long-term prices are forecast by simply applying an estimated US inflation factor to the prices of the short-term forecast. However, it is clear that both LPD and Implats view the availability of metal and therefore supply and demand balances as important for the determination of the market price of platinum.

Conclusion

- (55) An analysis of factors influencing the price of platinum indicates that the platinum price over time is driven by the fundamental supply and demand factors for platinum, such as the demand for uses in autocatalysts, industrial processes and jewellery. The platinum price may be influenced by short term speculative movements in precious metals like gold, but the platinum price is not driven by the prices of other precious metals seen over a longer period of time.

(iii) Demand for platinum is price-inelastic

- (56) The portion of platinum demand accounted for by industrial processes and autocatalysts is price-inelastic, probably with a very low price elasticity, since there are basically no substitutes for platinum for these purposes, apart from limited substitution possibilities between platinum and palladium for certain types of autocatalysts. The price elasticity for jewellery demand on the Japanese market was found, in the abovementioned study, to be price-inelastic with an elasticity of -6. Since autocatalysts and industrial processes account for about 51 % of the market, and the Japanese jewellery market for about 34 %, this means that the price-elasticity of 85 % of the global platinum market is highly inelastic. The remaining 15 % of demand is for jewellery outside Japan (5 %) and investment (10 %). The jewellery market outside Japan is likely to have an inelastic

demand, since platinum jewellery is a special, up-market product. Furthermore, the effect of investment demand, on overall price elasticity is limited. All in all, it can therefore be concluded that the price elasticity for the total market is inelastic (numerically smaller than 1).

- (57) A price elasticity numerically smaller than 1 implies that the cross-price substitution elasticities to other metals are even smaller, i.e. the competitive impact of other metals is not very high. Therefore, an inelastic price elasticity of demand indicates that platinum is a separate relevant product market.
- (58) The demand for platinum is obviously only price-inelastic in the current price range. This means that, for example, a 10 % shift in the price level would be possible without any significant substitution starting to take place. However, the Commission recognizes that substantial substitution of platinum by other metals could not be excluded, subject to certain lead times, if there were to be, for example, a 100 % or even greater increase in price. Such a phenomenon was witnessed in the case of rhodium, when the price for rhodium increased from US \$ 300 to US \$ 7 000 per ounce at the beginning of the 1990s. With a price increase of more than 2 000 %, buyers of rhodium started development work with the aim of finding substitutes. The result was that many uses of rhodium disappeared. However, this extreme situation is not the main concern in the present case.
- (59) The parties in their reply to the statement of objections (hereinafter 'reply') argue that the analysis underlying the Commission conclusion of an inelastic demand for platinum is not robust (NERA report, p. 27). However the parties have not provided any evidence to support this assertion and they have not disputed that the price elasticity of demand for platinum is inelastic.

(iv) *Conclusion*

- (60) Based on the above analysis the Commission agrees with the parties' conclusion in their notification that platinum constitutes a separate relevant product market.

A.3. Palladium

- (61) Palladium is used mainly for industrial purposes. Only 4 % (200 000 ounces) of yearly palladium demand is for use in jewellery as an alloy with

platinum or as a non-allergenic whitening agent for gold. Specifically, palladium is not a substitute for platinum in jewellery.

- (62) Palladium is widely used in autocatalysts and industrial catalysts in the petroleum refining and chemical industries, for example being employed to reduce losses of platinum and rhodium during the conversion of ammonia to nitric acid. Palladium is also an important strategic raw material in electronic components, in particular in palladium-containing components known as multilayer ceramic capacitors (MLCC). These components are widely used in electronics and telecommunications equipment. For example, a single mobile phone contains around 100 MLCC.
- (63) Palladium is found in the same ore body as platinum and is produced, albeit with a different refining process, by the same companies as platinum.
- (64) As discussed above under platinum, the palladium price varies independently of the prices of the other PGMs as well as gold and silver prices (Section VI.A.2 (ii)). There are limited substitution possibilities for palladium with platinum in autocatalysts and with nickel in lower specification electronic capacitors. The Commission agrees with the parties' conclusion in their notification that palladium constitutes a separate relevant product market.

A.4. Rhodium

- (65) Rhodium is used mainly for automotive purposes. Rhodium is found in the same ore body as platinum and is produced, albeit with a different refining process, by the same companies as platinum. As discussed above under platinum, the rhodium price varies independently of the prices of the other PGMs as well as gold and silver prices (Section A.2 (ii)). There are no substitutes (Section A.2 (i)). Therefore, the price elasticity is close to zero in the current price range. The Commission agrees with the parties' conclusion in their notification that rhodium constitutes a separate relevant product market.

A.5. Ruthenium, iridium and osmium

- (66) The remaining three PGMs (iridium, osmium, and ruthenium) are of lesser commercial importance and are commonly used in alloys with platinum or palladium.

- (67) There are no substitutes for these metals, and based on public data on prices, their prices appear to develop independently of other metals. Therefore, they each appear to be separate relevant product markets. The Commission agrees with the parties' conclusion in their notification that they each constitute a separate relevant product market.

B. *Relevant geographic market*

B.1. Trading of PGMs

- (68) PGMs are fungible assets, are easily transported, are refined to the same purity standards throughout the world and readily traded without tariff barriers. PGMs are sold on a worldwide basis either under long-term contracts or on the metal market. Prices of PGMs bought under long-term contracts are linked to a market price index and are generally fixed on a monthly basis on the average of the daily 'fixes' of the exchanges during the month prior to the month of delivery. Prices are expressed in US dollars per troy ounce gross.

B.2. The platinum and palladium metal exchanges

- (69) The principal metal exchanges for platinum and palladium are the London Platinum and Palladium Market (LPPM), the New York Mercantile Exchange (Nymex) and the Tokyo Commodity Exchange for Industry (Tocom). There are well-defined specification requirements for both platinum and palladium determining the form, weight, purity and markings to which each metal must conform in order to be traded on the metal exchanges. Producers have to be recognized as 'good delivery' producers or manufacturers before their material is accepted for trading on the market. There are a number of producers who have been recognized under this agreement.
- (70) The LPPM market is the only spot market of the three, while Nymex and Tocom are both futures markets of which Nymex is the most important. However, these metal exchanges function as part of the same integrated world market for platinum and palladium. Traders regularly act in all three market places simultaneously, for example by trading on the LPPM spot market for physical delivery and hedging positions on the futures market in New York.

B.3. Dealer prices for rhodium, ruthenium, iridium and osmium

- (71) The prices for rhodium, ruthenium, iridium and osmium are not quoted on the metal exchanges, but are determined through the NYD (New York Dealer) prices and the Johnson Matthey base prices. These prices are market prices published on a regular basis in the publication 'Platt's metals week' or, in the case of the Johnson Matthey base price, are available for traders on their computer screens.

B.4. Conclusion

- (72) The metal exchanges are in reality interlinked. There is, therefore, a worldwide geographic market with a world market price expressed in US dollars per troy ounce for both platinum and palladium.
- (73) The markets for the smaller metals are less well developed. However, these metals are traded on a global basis at publicly quoted prices expressed in US dollars per troy ounce. Therefore, due to the worldwide trading and market price determination of rhodium, ruthenium, osmium and iridium, the relevant geographic market for each of these metals is a world market.

VII. COMPATIBILITY WITH THE COMMON MARKET AND THE EEA AGREEMENT

- (74) The proposed transaction would reduce the number of primary producers of PGMs from three to two in South Africa. These three producers effectively control all South African reserves of platinum. Only in South Africa and, to much lesser extent the USA, are there ores rich enough to be mined for their content of PGMs (rather than mining PGMs as a by-product). This will also be the case in Zimbabwe in the future.
- (75) Apart from Russian reserves (which account for approximately 10 % of worldwide reserves) from which PGMs are mined as a by-product of nickel, there are no other substantial sources of PGMs in the world. Thus the operation would leave only two firms holding approximately 90 % of world reserves of PGMs.
- (76) Industry feasibility studies and working estimates have consistently confirmed that South Africa is and will remain for the foreseeable future the most important source of PGMs, and in particular platinum.

(77) Of the three South African producers, LPD can be distinguished. This is first because of its parentage: being European in origin has meant that the company has been regarded as an outsider in the industry. Furthermore, it has a different management approach from the other South African mining houses, being considered 'lean and mean' by other operators.

(78) While all PGMs are mined together, the focus of the assessment centres on the effect of the proposed operation on the mining and refining of platinum and rhodium, since the operation was found to create dominant positions only in these markets. Moreover, as concerns osmium there is no overlap between the parties, since LPD does not produce osmium. Similarly, the transaction has no appreciable effect on the palladium market.

A. Sources of PGMs

A.1. Proven and probable reserves, stocks and existing mines of primary PGMs

(79) PGMs are mined mainly in South Africa and Russia, but minor deposits are found in the USA and Canada. PGM mining, in South Africa, takes one of three forms: opencast mining where the ore is quarried from ground level; incline shaft mining where an inclining shaft is driven into the ground at the same angle as the ore bed; and vertical shaft mining. In this last case a vertical shaft is sunk into the ground and horizontal tunnels are mined therefrom into the ore beds. Opencast mining is the cheapest method of operation, followed by incline shaft mining and lastly vertical shaft mining. The costs associated with vertical shaft mining increase substantially once a depth of 1 000 m is reached. This is because of the additional refrigeration needed, as well as the longer distance for the workforce to travel and for the transport of the ore. Neither LPD nor Implats have an opencast

mine, the only one in existence being owned by AAC's platinum operation, Amplats. In general the technology involved in all three types of operation is considered to be mature.

(80) The individual PGM metals are produced in fixed ratios, determined by nature, which depend on the particular ore body mined. Indications from official sources⁽⁴⁾ are that the ratio of platinum/palladium/rhodium is about 100:42:21 at the Merensky reef and 100:83:54 at the UG2 reef. In other countries palladium occurs in higher concentrations relative to platinum. In the main Russian mine, in Noril'sk, the ratio is about 100:284:16, at the American mine in Stillwater 100:350:73 and at the Canadian mine in Sudbury 100:110:24. This production structure often results in some stocking or oversupply of the minor metals. It also means that palladium automatically makes up a larger part of Russian production than platinum. However, in the South African mines platinum is by far the most important metal which accounts for more than 80 % of the sales revenue.

(81) As can be seen from Table 2, South African producers supplied 70 % of the world's platinum and 75 % of the rhodium supply in 1994, whereas Russia supplied 22 % of platinum and 21 % of rhodium. Russia was the largest supplier of palladium with 63 % of world supplies, whereas South Africa supplied 28 %. However, these market shares can fluctuate somewhat from year to year, should producers sell from their stocks, and it is, for example, certain that the Russians reduced their stocks in 1994. Indeed, viewed over several years there seems to be no doubt that South Africa is and will remain the main supplier of all PGMs. As seen from Table 3, in 1993, 89 % of world reserves were located in South Africa, about 10 % in Russia and 1 % in North America⁽⁵⁾.

⁽⁴⁾ *European minerals yearbook*, 1995.

⁽⁵⁾ South African reserves of palladium are by some sources estimated to be about double the Russian reserves of palladium (Vermaak, 1995).

Table 2

World supply of PGMs in 1994 by geographic region

	Platinum	Palladium	Rhodium
South Africa	70	28	75
Russia	22	63	21
North America	5	8	4
Others	3	1	0
Total	100	100	100

Source: *Platinum 1995* by Johnson Matthey.

Table 3

Estimated reserves of PGMs 1993

		(in tonnes)
South Africa	50 030	88,6 %
CIS	5 900	10,5 %
Canada	250	0,5 %
USA	250	0,5 %
Total	56 430	100,0 %

Source: *European minerals yearbook*.

(82) An alternative assessment of reserves, completed by C. F. Vermaak in 'The platinum-group metals — a global perspective', shows Zimbabwe with some 9 % of world reserves and Finland with some 12 %. In respect of the former, as discussed below, the actual mining of these reserves has not yet started and the *in-situ* reserves are some 50 % lower than those in the Bushveld complex. For Finland PGM mining is, in principle, sub-economic, taking place as a by-product of nickel mining. Finland produced, on average, only 2 000 ounces per annum of platinum during the period 1981 to 1992. Consequently it may be discounted as a major source for the future. In any case development would take a long time and much capital expenditure to develop Finland into a significant producer. Furthermore, it should be noted that, in the last 30 years extensive exploration for PGM metals has been undertaken, and it is not expected that any new not already known land-based platinum deposits of significance can be found.

(83) Reserves of PGMs in South Africa are basically located in the Bushveld complex about 130 km north west of Johannesburg. The Bushveld complex is the richest known deposit of PGMs in

the world. The Bushveld complex is an elliptically shaped intrusion of about 350 × 250 km in size. PGMs are mined from three ore beds: the Merensky reef and the UG2 reef vertically below the Merensky reef and the Platereef. The Merensky and UG2 reefs are located in the eastern and western parts and the Platereef in the northern part of the Bushveld complex.

(84) In Russia PGMs are basically mined at the Noril'sk deposit in northern Siberia. This deposit is a nickel deposit, where PGMs are produced as a by-product of the nickel production. Similarly PGMs are a by-product of nickel in Canada.

Conclusion

(85) The Bushveld complex in South Africa is the only major area, where deposits are mined only for their PGMs content. Furthermore, the Bushveld complex accounts for about 89 % of the world's reserves of PGMs and Russia for about 10 %, as a by-product to mining of nickel.

A.2. Entry into the PGMs markets and new mining projects

- (86) There has not been any independent, new entrant to the world market for PGMs for the last five years ⁽⁶⁾.
- (87) There are two mining ventures under way in Zimbabwe. The first and more important project is the Hartley Platinum Project which is a joint venture between two Australian companies, Delta Gold and BHP. According to publicly available information, the first ore is planned to be mined in 1996. Yearly output is planned to reach about 150 000 ounces of platinum, 110 000 ounces of palladium and 11 500 ounces of rhodium in the period 1997 to 1999. This corresponds to 2,5 % of world supply of platinum, 2 % of world supply of palladium, and 2,5 % of world rhodium supply. Any expansion above these amounts as claimed by the parties in their reply is speculative.
- (88) The second project in Zimbabwe is the Mimosa trial mine to be operated by the Zimbabwe Mining and Smelting Company, which is a company controlled by its management group. Published sources estimate that the trial project will produce 6 000 ounces per year, but that it could eventually expand. However, the ore is apparently of poorer quality than in the Hartley project, and in any case expansion the production is not foreseen in the near future. A number of other projects remain on the drawing board, for example in Zimbabwe, Canada and the USA. In respect of the Stillwater mine, in the USA, the parties have submitted that production could double to 125 000 ounces per annum by the end of 1997. This mine would still be a minor supplier as such a production level amounts to some 2,5 % of annual world supply. In addition it has been indicated that subject to the result of a feasibility study, Stillwater's production could amount, in total, to 250 000 ounces per annum by the year 2000. This is 5 % of current supply and is considered to be minor, even if realized. Moreover it should be noted that Stillwater does not have facilities to process its platinum but ships it abroad for refining.
- (89) All known, economically viable claims in the Bushveld complex in South Africa are controlled

by Implats, LPD or Amplats. Therefore no new entrants to this area are to be expected. Furthermore, it is very capital intensive to develop a new PGM mine with the total capital expenditure of entry, in terms of purchasing land or obtaining a claim and investing in equipment likely to be in excess of US \$ 100 million. A large part of this expenditure represents sunk costs. However, even if such projects should materialize they normally have a lead time of five or more years. Therefore, any important new projects, even if they were economically feasible, could not have an effect on the market in the foreseeable future.

Conclusion

- (90) Only the Hartley mine is likely to be a new source of PGMs outside the control of one of the existing players. However, it will be only an insignificant actor on the world market, having little impact on the total market. It therefore appears that primary PGMs will essentially continue to come from known reserves in South Africa and Russia in the foreseeable future and will be produced and sold by Amplats, Implats, LPD and the Russians.

A.3. Recycling of PGMs

- (91) The recycling of PGMs takes two forms:

(a) Closed circuit

When PGMs are used in industrial catalysts the metals need to be refurbished after a certain period of operation because of the contamination that takes place. Losses occur to a small extent (some 2 %) in either the recycling or the industrial process. The metal is toll-refined for the benefit of the plant operator and accordingly its ownership does not change because of the recycling. Consequently new demand from industry is either from expanded capacity or when these small losses are replaced.

(b) Recycling from scrap

PGMs are recycled in small quantities from scrap, such as printed circuits, but by far the most important source of scrap is from autocatalysts. Johnson Matthey estimates that western world PGM recovery from autocatalysts is as follows.

⁽⁶⁾ Except for the Northam mine in which AAC and Rembrandt have shares. However, the future of this mine is uncertain due to its lack of profitability.

Table 4

Total consumption of PGMs for autocatalysts and related scrap recovery

PLATINUM

(en 1 000 ounces)

	1990	1991	1992	1993	1994	1995
Total	1 535	1 565	1 550	1 685	1 870	1 790
Recovery	215	215	245	275	315	315
Percentage recovery	14,0 %	13,7 %	15,8 %	16,3 %	16,8 %	17,6 %

PALLADIUM

(en 1 000 ounces)

	1990	1991	1992	1993	1994	1995
Total	315	355	490	705	950	1 515
Recovery	85	85	95	100	105	105
Percentage recovery	27,0 %	23,9 %	19,4 %	14,1 %	11,0 %	6,9 %

RHODIUM

(en 1 000 ounces)

	1990	1991	1992	1993	1994	1995
Total	334	301	305	356	381	415
Recovery	13	16	22	26	38	39
Percentage recovery	3,9 %	5,3 %	7,2 %	7,3 %	10,0 %	9,4 %

(92) Table 4 shows that the proportion of platinum recovered (as a percentage of total consumption) has been growing slowly, reaching 17,6 % in 1995. The recovery of palladium and rhodium in absolute terms has also risen.

(93) The total amount of recovered autocatalyst PGMs is likely to increase with autocatalysts' increased use. Even with the established collection networks in North America and Japan this proportion is unlikely to reach 100 % as the inherent logistics and costs of collection act as a disincentive to the accumulation of the scrap. In addition many used cars, from Europe and the USA, are exported to Eastern Europe or to third world countries meaning that they escape from any recycling systems. The American experience, where environmental legislation has been in place for approximately 20 years, indicates that recycled PGMs accounted for only 30 % of North American autocatalyst annual consumption in 1994.

(94) The parties have submitted that some 737 000 ounces of platinum will arise from recycled

autocatalysts in the year 2000 representing a virtual doubling from the 1995 level (if Johnson Matthey figures are taken, it represents an increase of 134 %). Such a volume of recycled material should be compared with Implats' forecast consumption for autocatalysts. The 1995 ratio of recycled platinum to consumption was 19 %; in 2000 it is forecast to be 39 %. Such an increase appears ambitious especially as the recycling level in 1995 (per Johnson Matthey) was 30 % in North America, 16 % in Japan and 7 % in Europe. Consequently the Commission has concluded that such a forecast is not realizable.

Conclusion

(95) In assessing the impact of recycling, it should first be noted that total demand for PGMs is expected to increase (see Section VII.B.3). Consequently current recycling rates could not fulfil any demand imbalance. Furthermore, as regards closed circuit recycling, such PGMs do not, in fact, become part

of the market and thus can be discounted. On the other hand recycled autocatalyst PGMs are a limited, supplementary source of supply, a fact which is not expected to change in the foreseeable future. Finally, a large proportion of platinum is consumed in the jewellery industry, from which relatively little scrap is generated and there is no available evidence to demonstrate that items of jewellery are returned for reprocessing. On this basis recycled PGMs are expected to continue to have only a limited supply role in the foreseeable future.

B. Platinum

B.1. Demand

Current demand patterns

- (96) During the last five years the western world's demand for platinum, in thousands of ounces, by application and by region is set out in Tables 5 and 6 below. All these figures are drawn from 'Platinum 1992, 1993, 1994, 1995 and Interim review 1995' by Johnson Matthey and are based on consumption.

Table 5

Application	1991	1992	1993	1994	1995
Autocatalysts (net)	1 350 (33 %)	1 305 (34 %)	1 410 (35 %)	1 555 (34 %)	1 475 (32 %)
Industrial	825 (20 %)	730 (19 %)	695 (17 %)	815 (18 %)	945 (20 %)
Jewellery	1 470 (36 %)	1 510 (40 %)	1 615 (40 %)	1 735 (38 %)	1 805 (38 %)
Other	395 (11 %)	255 (7 %)	325 (8 %)	445 (10 %)	485 (10 %)
Total	4 040 (100 %)	3 800 (100 %)	4 045 (100 %)	4 550 (100 %)	4 710 (100 %)

Table 6

Region	1991	1992	1993	1994	1995
Western Europe	775 (19 %)	845 (22 %)	875 (22 %)	910 (20 %)	810 (17 %)
Japan	2 050 (51 %)	1 870 (49 %)	1 975 (49 %)	2 140 (47 %)	2 235 (48 %)
North America	815 (20 %)	705 (19 %)	760 (19 %)	940 (21 %)	960 (20 %)
Rest of the world	420 (10 %)	380 (10 %)	415 (10 %)	510 (11 %)	585 (12 %)
China	-20 (0 %)	0 (0 %)	20 (0 %)	50 (1 %)	120 (3 %)
Total	4 040 (100 %)	3 800 (100 %)	4 045 (100 %)	4 550 (100 %)	4 710 (100 %)

- (97) Demand for platinum for autocatalysts accounted for 32 %, industrial demand amounts for 20 % and jewellery 38 % of total demand in 1995. These proportions are broadly similar for the whole period 1982 to 1995 in respect of jewellery but the proportions as regards the motor vehicle sector have increased, while for industrial purposes, they have fallen.

world's total demand during the same period and between 19 % and 20 % in the last five years. Western Europe has consumed between 17 % and 22 % in the last five years and its average rate of consumption, during the last 14 years, has been some 17 %.

- (98) Japan, during the last five years consumed between 47 % and 51 % of the world's total demand for platinum and this ratio has not dropped below 42 % during the period 1982 to 1995. North America has, on average, consumed 25 % of the

- (99) These various regional differences in consumption can be explained. On average, during the last 14 years, some 63 % of Japan's total platinum consumption has been by its jewellery industry; the reasons for this level of consumption have been noted earlier.

(100) The regional pattern of consumption of platinum for autocatalysts is based on two factors: the date of the introduction of emission control legislation and car density, in which the USA leads, followed by Japan and Western Europe. As concerns environmental legislation the USA was the first to impose obligatory emission control legislation in 1970; tighter controls became applicable in 1990. In Japan, obligatory legislation first came into force during the late 1970 and early 1980. In Western Europe, US standards were introduced in Austria and Switzerland in 1987 and in Norway and Sweden in 1989. A European Community Directive took effect in 1992 meaning that from 1993 all new petrol cars had to be fitted with three-way catalysts. In addition Johnson Matthey reports that, from 1996, the majority of diesel cars in Europe will be fitted with catalysts to comply with stricter legislation.

Conclusion

(101) Platinum fulfils an important function as both a catalyst and a precious metal. It appears that historically there has been an increase in demand for the metal as new industrial applications have been discovered or environmental legislation has required the installation of autocatalysts.

B.2. Suppliers

(102) As seen from Table A1 (Annex I) the main suppliers of platinum in 1994 and 1995 were the South African companies Gencor, LPD and Amplats and the Russians. Other producers include Inco of Canada and Stillwater of the United States. A brief description of the major producers highlights the importance of the South African platinum mining operations.

Amplats

(103) Amplats is the leading company in the industry and the oldest producer of platinum in South Africa. The company had a market share of [...] (*) (7) of the world platinum market in 1995 and has very good reserves. Reserve figures are highly secretive. However, Amplats has estimated reserves based on official unpublished data. According to the most recent estimates of Amplats

it controls about 50 % of the economically viable reserves in the Bushveld complex (the other 50 % being controlled by its competitors Implats and LPD).

(104) Amplats mines 75 % of its production in the Merensky reef. The Merensky reef has a higher content of base metals like nickel and copper than the UG2 reef. The base metals are a supplementary source of income to the PGMs. It is therefore normally an advantage to be able to mine Merensky rather than UG2 reef.

(105) As can be seen from Graph 2 A (see Annex II) the mining operations of Amplats range from the low cost operations in the Potgietersrust opencast mine to some relatively high cost conventional shafts, which were not profitable with the price/cost levels prevailing in 1994. Based on Implats data the Commission estimates that shafts accounting for some [...] % (*) (8) of Amplats' production were only breaking even or had a negative operating profit in 1994.

(106) Amplats has a financial interest in downstream trading, fabricating and marketing operations:

(a) AAC holds shares indirectly through Minorco, its overseas operating arm based in Luxembourg, and through Johannesburg Consolidated Investment Limited (JCI) in two fabricators being Johnson Matthey (less than 25 %) and Engelhard (less than 40 %). In addition Engelhard is a major customer of Amplats and Johnson Matthey is its exclusive sales agent, but customers can under certain circumstances also buy directly from Amplats.

(b) Amplats is the main contributor to Platinum Guild International (PGI) whose purpose is to promote platinum for jewellery uses. There are five separate PGIs which operate in Italy, Germany, the United Kingdom, the United States and Japan. The PGI in Japan is by far the most important simply due to the size of the Japanese jewellery market.

(107) Amplats is the leading player in the platinum industry with a strong financial position having low debts and high cash reserves.

(*) Blanks between square brackets indicate business secrets deleted in the published version of this Decision.

(7) Less than 40 %.

(8) Less than 25 %.

Implats

- (108) Implats is the second largest supplier of platinum with a market share of [...] ⁽⁹⁾ of the global platinum market in 1995. According to Amplats, Implats and LPD between them control about 50 % of economically attractive reserves in the Bushveld complex. According to the circular to the shareholders, prepared for the merger, it was estimated that Implats' reserves would last for at least another 40 years. However, it is in this context also important to note that Implats is an older company in the platinum industry, and most of the reserves of Implats are deep and therefore high cost. The composition of Implats' mined ore is currently 50 % Merensky and 50 % UG2 reef.
- (109) As can be seen from graph 2 A in Annex II, Implats has some very cost-competitive shafts, but is still the high cost producer in South Africa. About [...] ⁽¹⁰⁾ of Implats' production was loss making or only breaking even in 1994. In comparison to Amplats and LPD, expansion is only possible by accessing deeper and therefore higher cost reserves.
- (110) Historically Gencor owned the trader Ayrton Metals Limited, but this company was sold to Standard Bank Investment Corporation Limited in 1994. Standard Bank is owned by South African Mutual Life which owns shares in Rembrandt and in De Beers (which is connected to AAC). More importantly, Gencor acquired the Billiton mining assets from Shell in 1994. The Billiton assets include mining, refining and large non-ferrous metals trading operations, which already trade in precious metals such as gold. Billiton is a ring-dealing member of the London Metal Exchange. Furthermore, Implats contributes on a project-by-project basis to some of the activities of the PGI in the United States and Japan.
- (111) Implats' operations are in a good financial position with a strong cash position and low indebtedness. Prior to its plans for the merger, Implats was interested in expanding its platinum activities. However, it found the strategic option of merging with LPD more attractive than expansion by accessing deeper reserves, since the latter

alternative would require high capital expenditure.

LPD

- (112) LPD is the third largest of the South African producers with a market share of [...] ⁽¹¹⁾ of the world platinum market in 1995. As discussed above, based on information from Amplats it can be concluded that LPD and Implats between them control 50 % of the reserves of the Bushveld complex. According to Lonrho's circular to shareholders, of November 1995, LPD's reserves will last for at least another 35 years with indications of further reserves well beyond this period. In this context it should be noted that LPD has ample shallow reserves and very low cost operations.
- (113) LPD mines 75 % UG2 and 25 % Merensky ore. LPD has managed to become very cost competitive. As can be seen from graph 2 A in Annex II, LPD has the lowest average costs of the three South African producers, and none of its shafts were unprofitable in 1994. The low cost of LPD's operations are partly due to its shallow reserves and partly to the lean operations of the company. LPD has a flat organizational structure, a highly entrepreneurial culture and emphasizes accountability. LPD is therefore quite different from many of the bigger South African mining houses.
- (114) LPD has, to a limited extent, contributed to the activities of the PGI, but otherwise the company does not have any downstream interests. However there have been structural links between Implats and LPD since 1990 when the Lonrho group acquired the Karee mine from Implats in exchange for a 27 % shareholding in LPD. This transaction also gave rise to a shareholders' agreement between the Lonrho and Gencor groups of companies. This agreement states that an equal number of directors be appointed by each shareholder, that these directors have an equality of voting rights and that no single director has a casting vote. The agreement requires the approval of the board of directors for certain decisions being: the diversification of LPD; the level of dividend distribution; the annual strategic plan and budget; the approval of the annual financial statements and changes in the rates of fees paid for management agreements, etc. Decisions regarding major investments and divestments require the approval of the shareholders.

⁽⁹⁾ Less than 20 %.

⁽¹⁰⁾ Less than 25 %.

⁽¹¹⁾ Less than 15 %.

- (115) Despite these links LPD has remained an independent competitor. In 1989, when its platinum output amounted to 346 000 ounces, LPD was undertaking an expansion programme. In the same year a new 1 million tonne per annum concentrating plant was commissioned at the Westplats mine. Subsequently during 1990 major extensions to the smelting complex, base metal refinery and precious metal refinery were completed. The programme continued at a modest pace, during 1991 and 1992, resulting in the production of some 550 000 ounces per annum. In 1992 the capital expansion plans came to an end, but Lonrho's annual report states that future production stability of 900 000 ounces per annum was foreseen for the LPD operation. Furthermore expansion has been forecast. As identified in Lonrho's 1993 annual report the 'platinum mines are in a springboard position to implement ... additional expansion rapidly, effectively and at minimal cost'. According to the circular to shareholders of November 1995, capital expenditure at LPD amounted to 163 million in 1993, 96 million in 1994 and 79 million in 1995. It is foreseen that limited additional capital expenditure would allow LPD to expand to the level of 900 000 ounces mentioned above.
- (116) Following the 1990 agreement LPD is an independent operation, with its own management structure and marketing and commercial strategies. Lonrho Management Services, a Lonrho group company and structurally independent of LPD, retains the right to manage both Eastplats and Westplats, which includes the responsibility for 'the ordinary and day-to-day management and control of the business, undertaking and affairs' of these companies. In addition Lonrho Management Services is bound 'to provide such advice and services ... for the proper carrying on of the business and affairs' of LPD 'without detracting from ... matters relating to management services and personnel'. Lonrho Management Services is controlled by the Lonrho group and all its directors are Lonrho group personnel.
- (117) The whole of LPD's production is contractually bound to be marketed and sold by Western Metal Sales, a company operating from Brussels, which has no structural links with LPD, is owned by the Lonrho group and has neither management nor directors appointed or controlled by the Gencor group. In fact both LPD and Implats, by retaining separate marketing departments, compete and currently supply some of the same customers on different terms (e.g. by offering differing discounts).
- (118) The Gencor group exercised no influence on the competitive strategies of LPD. This is confirmed by the parties themselves who have stated that 'each of Implats and LPD were, and to date remain, entirely separate entities, managed individually on a day to day basis by their respective management with no reference to each other. Implats' interest was and remains ... that of a 27 % shareholder in LPD'. Moreover the parties have stated that 'the relationship [between the Gencor and the Lonrho groups of companies] was one of two shareholders in the two companies Western Platinum Limited and Eastern Platinum Limited and not one of partnership or quasi partnership'. The fact that Lonrho Management Services provides management to LPD means that it is in the powerful and privileged position of both knowing and running the business and strongly influencing the outcome of all business decisions.
- (119) The autonomy of LPD is reinforced by the aggressive stance taken by Lonrho group management to maintain LPD as an independent operation. At the inception of the arrangement, the Lonrho group appointed Mr. T. Wilkinson, a Lonrho executive, to the post of managing director who has remained there since that time. His position has been strengthened by the fact that the Gencor group did not appoint any directors to LPD until over a year after the signing of the agreement in January 1990.
- (120) As explored further in Section VII B.5, as result of the current operation, the activities of Western Metal Sales and Lonrho Management Services will be absorbed. In addition LPD will lose its opportunity to expand production independently and, therefore, it is concluded that the independent activities of LPD through its management structure, and production, marketing and commercial strategies will disappear. Consequently a marked change in the competitive nature of the industry will occur.
- (121) LPD has relatively high debt and a low cash position due to its investments over the last years, but operations are profitable at current price levels. It could be desirable to reduce the debt burden but the management group of LPD and Lonrho South Africa do not believe that a merger with Gencor is necessary in order to achieve a reduction of the debt burden. Instead it is believed that it would be possible to raise new capital from other sources. These sources may, for example, be internal cash flows (which are forecast to be sufficient to meet limited capital expenditure); bank loans (based on shareholder guarantees) or further loans from a shareholder.

Russia

- (122) Russia accounted for 23 % of global platinum supplies in 1995. However, in 1995 Johnson Matthey indicates that only about 13 of the 23 percentage points were supplied from production, whereas about 10 percentage points or about 500 000 ounces were supplied from stocks. The Russian Government controls Russian exports of precious metals through its Committee for Precious Metals and Stones and its sales agency, Almaz.

- (123) According to Johnson Matthey in *Platinum 1995* Russian production of platinum peaked in the late 1980s. In addition they report that the political changes in Russia have led to falling output for, among other reasons, a lack of essential investments and because PGM grades have fallen as the ore rich in sulphide has increasingly been mined out. Therefore the Russian mines cannot provide competition through expansion in the foreseeable future.

- (124) In principle it would be possible for Western companies to invest in Russian PGM production. However, as explained below, this is unlikely (see Section VII B.3). It would therefore appear that the Russian ability to compete in the platinum market will decline in the coming years.

- (125) The parties have submitted that the Russian mine at Noril'sk will increase annual production to 1 million ounces within the next five years: this is a level of production never before achieved according to *The platinum group metals — a global perspective* by C. F. Vermaak. According to the parties, in order to achieve this production substantial investment of US \$ 1 to US \$ 2 billion is necessary which may be forthcoming in the next four to five years. The parties further claim that commitments to attract these funds (within the

next two years) have been made by Uneximbank and EBRD. However, contrary to what has been indicated, the EBRD is not offering finance. Given the length of the investment horizon and the likelihood of raising these monies it is highly unlikely that the Russians will be able to reach past production levels (or surpass those levels, as suggested by the parties), for the next five years.

Other players

- (126) Other players in the industry are in particular Stillwater in the United States and Inco in Canada. Stillwater neither has the productive capacity nor the reserves of the South African operations to contest their market position. Inco is primarily a nickel mine. In any case, each of these operations only has the potential to account for a few percent of the global platinum market.

B.3. Demand and supply forecasts*Demand forecasts submitted by the parties*

- (127) Both Implats and Lonrho have submitted forecasts of the future demand for platinum. While that of Implats has been compiled internally, the forecast submitted by Lonrho (Table 7) is a public document prepared by Anderson, Wilson & Partners Inc., Johannesburg brokers, and contained in a circular dated 28 August 1995. This indicates that demand (in thousands of ounces) will amount to the following:

Table 7

	1995	1996	1997	1998	1999	2000
Autocatalysts	2 000	2 050	2 100	2 100	2 200	2 300
Recovery	-375	-375	-400	-425	-450	-500
Jewellery	1 750	1 900	2 000	2 100	2 200	2 300
Industrial	700	745	770	775	790	800
Fuel cell	30	30	40	50	60	70
Investment	400	350	300	350	400	400
Other	200	200	200	200	200	200
Total	4 705	4 900	5 010	5 150	5 400	5 570

The average proportion of the above total demand figures given over to automobile catalysts is some 34 %, jewellery some 40 %, industrial consumption 19 % and investment 7 %. Other forecasts have been made available to the Commission by the parties: for 1996 and 1997, BOE Nat West Securities and SBC Warburg; and for the period to the year 2000 prepared by Engelhard. The Implats and BOE Nat West Securities forecasts are more optimistic than those set out above and the Engelhard and SBC Warburg more pessimistic. For the period 1997 to 2000, the above table is more optimistic than the Implats' forecast and Engelhard more pessimistic.

Factors affecting the forecast

Automobile catalysts

- (128) The future demand for platinum for automobile catalysts is dependent on the growth in demand for motor vehicles and the introduction of new or revised legislation concerning exhaust emissions. As regards environmental legislation, stricter emission control is foreseen in both the USA and Europe between now and the end of the century. In addition there is evidence of increased use of platinum in catalysts for diesel cars in Europe. This is believed to be a growth area worldwide.
- (129) There will be a continuing and increasing demand for platinum for use in autocatalysts: this demand will be enhanced by new legislation taking place, for example, in Brazil in 1996 and Argentina in 1997.

Jewellery

- (130) The PGI forecasts that the Japanese platinum jewellery market will grow until the end of the

century. Furthermore, both the Chinese and American markets are subject to a heavy marketing campaign from International Platinum Association and the PGI. As regards the USA, demand may return to the levels of the 1920s (150 000 ounces per annum). On the other hand the increase in demand for platinum jewellery in China is more speculative, but it is true that there are cultural similarities between Japan and China with purity and the 'whiteness' of the metal being important factors for any such growth.

Industrial

- (131) In general there is unlikely to be any significant new demand from the petroleum and chemical industries as their applications for platinum are generally mature. Despite this, some replacement will occur because plants that were shut down during the recession are now being brought back on stream. The increasing use of personal computers will lead to increased demand as more platinum will be employed in the disk coatings and other components in the computers. In addition fuel cells could, in the long term lead to increased demand.

Supply forecasts submitted by the parties

- (132) Lonrho has made reference to a forecast prepared (Table 8) by Anderson, Wilson & Partners Inc, Johannesburg brokers, and contained in a circular dated 28 August 1995. This indicates that supply will amount (in thousands of ounces) to the following.

Table 8

	1995	1996	1997	1998	1999	2000
North America	230	220	210	210	210	210
Hartley	0	25	50	75	100	125
Mimosa	0	25	50	75	100	125
Others	140	140	140	140	140	140
South Africa	3 294	3 495	3 510	3 510	3 528	3 569
Sub total	3 664	3 905	3 960	4 010	4 078	4 169
Russian sales	900	750	650	550	450	450
Total	4 564	4 655	4 610	4 560	4 528	4 619

- (133) Other forecasts have been made available to the Commission by the parties: for 1996 and 1997 BOE Nat West Securities and SBC Warburg; and for the period to the year 2000 prepared by Engelhard. All three forecasts show greater supply than set out above for 1996 and 1997. Similarly for the period 1998 to 2000, Engelhard believes supply will exceed the above figures. Implats has also submitted a supply forecast, contained in Board papers, for the above period: this shows supply in excess of the above levels. This forecast has been disputed by LPD as being too pessimistic about excess supply.
- (134) Whichever of these forecasts is the most accurate is not of relevance; what is important and what is clear from Table 8 is that South African and Russian supplies will continue to dominate the world supply of platinum and that moderate demand growth will occur. Given that supplies from other geographic areas, and recycling, are minimal, any deficit of supply over demand can be sourced only from either South Africa or Russia. It is improbable that sales by the Russians will be sufficient to mitigate any future supply and demand imbalance due to the fact that the Noril'sk mine is not fully operational (because of a lack of spare parts and supplies and other problems such as the breakdown of a local power plant). Furthermore it is unlikely that the mine would become fully operational without significant, probably Western, investment. Such investment is unlikely to be forthcoming because any Western investor would have to make good the environmental damage before investing in the plant.
- (135) Johnson Matthey estimates that the Russians have sold from stocks 'in at least four of the five years since 1991'; it is therefore a question as to how many years' stocks remain that may be used to fill any gap between demand by the Western world and production. No exact answer can be given to this question but [...] it is widely believed in the industry that at the current level of sales the Russian stockpile will be depleted in about two years time.] This view is reflected in Table 8 showing declining Russian sales.
- (136) In a growing market, it is therefore likely that a supply deficit may arise which can only be realistically filled by the South African producers.
- B.4. The underlying economic premises for the Commission's analysis of dominance in the platinum industry**
- (137) The Commission finds that competition in the platinum industry is basically a matter of competition among the four main suppliers: Amplats, Implats, LPD and Russia who account for 90 % of the market. Furthermore, each of these players are aware of the impact they have on the market which, accordingly, influences their market behaviour. The reasons for this view are the following:
- (138) (a) The platinum industry is a natural resource industry producing a homogeneous product with a quoted market price. Each of the four main producers are aware of their weight in the market. This is for example evidenced in the report prepared by [...], showing that, [...] a restriction of output by the new entity would lead to a price increase. Similarly, the Russians apparently have realized the advantages of selling platinum into market strength (see below). Therefore, the suppliers are aware of the danger of depressing platinum prices. In economic terms the suppliers do not view themselves simply as price takers. This is even less so after the merger of Implats and LPD, when there would initially be three and shortly thereafter (assuming the decline of Russian sales, see below) two major players.
- (b) The platinum industry is a high fixed cost industry with an inflexible cost structure. [...] for example indicates that fixed costs account for 70 % of total costs. [...] in platinum mining output cannot be varied significantly due to the high fixed-cost structure, even if a number of producing shafts make little or no contribution to profitability. A strategy to close the low margin shafts and concentrate on the most profitable would simply mean that non-removable costs would have to be spread across the remaining shafts making each marginal shaft unprofitable, repeatedly necessitating more shaft closures...]. Therefore, a platinum producer will need to look at the overall cost position of its operations in deciding the appropriate production level and not simply the operating costs of individual shafts.

Furthermore, the costs of temporarily closing and reopening mining shafts increase the 'stickiness' of production. Individual mining shafts are not simply taken on and off stream according to short-term movements in the platinum price.

The Commission has presented a cost comparison of the main South African producers in Annex II based on data from Implats. This is a comparison of the level of the operating costs of shafts and not the marginal cost curves of production of platinum. Indeed a large part of the operating costs of a mining shaft do not vary with the output of the shaft, but are fixed. In addition as mentioned above, output decisions of a platinum mine are based on a number of factors other than simply the short-term operating costs and margin of individual shafts. Therefore, the cost curves in Annex II neither represent the short-term nor the long-term supply curves of the individual producers, but are only a comparison of operating costs.

- (c) In the platinum industry one characteristic of an abuse of a dominant position would be a controlled restriction of output which would lead to a price increase. For this type of abuse to be successful it is essential that the supply response from the marginal sources of recycling, suppliers outside the oligopoly and above-ground stocks is not strong enough to fill the gap left in the market by the suppression of output.

In this respect it is instructive that past data do not provide much evidence of a supply response at the margin. In volume terms the platinum market increased from 2,8 to 5,2 million ounces between 1985 and 1995 (see Annex VI). Of the 2,4 million additional ounces demanded, 2 million ounces were supplied by Amplats, LPD and Russia, whereas the other suppliers and recycling accounted only for the balance of the increase. Suppliers outside Russia and South Africa only expanded their share from 6 % of the market in 1985 to 7 % in 1995, and recycling increased from 2 % to 6 % of the total market in the same period. Therefore, it is unrealistic to believe that recycling and the marginal suppliers outside South Africa and Russia could have prevented the platinum price from increasing substantially had Amplats, LPD and Russia not met the additional demand for platinum.

There has been a relatively small release from above-ground stocks (except for the Russians) during the period 1985 to 1995. This is despite the fact that real platinum prices increased from USD 400 per ounce in 1985 and remained above US \$ 600 in the years 1986 to 1989, together with the fact that yearly demand increased by 2,4 million ounces over the period 1985 to 1995. Destocking in this period peaked in 1987 and 1988 with 220 000 and 370 000 ounces, respectively, or at most 10 % of demand; but this did not prevent the platinum price from increasing between 1986 and 1987. Therefore destocking could not have provided a sufficient disciplinary check on a dominant player in the platinum market during this period.

The parties have argued that since 1985 there has been build-up of stock amounting to 4 million ounces held in the form of platinum bars for investment. Most of these bars have been sold to private investors in Japan and are widely dispersed. The parties argue that these bars could come back into the market and work as a disciplinary force on pricing. However, due to the fact that the holding of these bars is widely dispersed, that they form part of private investment plans and are bought to be retained, they are unlikely to have the same disciplinary effect on the market as if they were held in one major block as is the case of Russian stocks. Furthermore only in one year (1986) did some of this metal find its way back into the market and then only for one type of bar. In any case the buying and selling of a stock as limited in size as 4 million ounces would be likely to be strongly influenced by the fundamental supply and demand factors for platinum, and therefore by the actions of the producers. This is also consistent with the finding in the RSI study on factors affecting the platinum price that 'Unlike gold there are at most limited stocks to satisfy periodic spikes in investment demand' (see Section VI.A.2 (ii)).

Therefore, as argued above and earlier the Commission does not find that supply responses at the margin from stocks, new mines and recycling represent disciplinary forces of a significance, which could prevent an abuse of a dominant position held jointly by Amplats,

Implats/LPD and Russia ⁽¹²⁾. Indeed a result of the proposed merger is exactly that the merged Implats/LPD will have no incentive to undertake any expansion in conflict with the overall interest of the oligopoly (see below). It should also be noted that any marginal player, in its decision making, will have to consider the overwhelming weight of the oligopoly members in the market.

- (139) In conclusion, an economic analysis of competition and dominance in the platinum industry has to start with the premises that the four main suppliers are aware that prices are influenced by their output decisions and that supply at the margin is insufficient to prevent monopolistic practices. It is in this perspective that the subsequent analysis of oligopolistic dominance as a highly likely consequence of the merger should be seen.

B.5. Oligopolistic dominance

- (140) Similar negative effects which arise from a dominant position held by one firm arise from a dominant position held by an oligopoly. Such a situation can occur where a mere adaptation by members of the oligopoly to market conditions causes anti-competitive parallel behaviour whereby the oligopoly becomes dominant. Active collusion would therefore not be required for the members of the oligopoly to become dominant and to behave to an appreciable extent independently of their remaining competitors, their customers and, ultimately, the consumers.
- (141) In the platinum market Amplats, Implats, LPD and the Russians control supply and form an oligopoly, and even before the merger, the platinum market appears to have many of the characteristics of an anti-competitive oligopolistic market:
- (a) on the demand side, there is moderate growth, inelastic demand and insignificant countervailing buyer power. Buyers are therefore highly vulnerable to a potential abuse;
 - (b) the supply side is highly concentrated with high market transparency for a homogeneous

product, mature production technology, high entry barriers (including high sunk costs) and suppliers with financial links and multi-market contacts. These supply side characteristics make it easy for suppliers to engage in parallel behaviour and provide them with incentives to do so, without any countervailing checks from the demand side.

- (142) As a result of these market characteristics the degree of competition has been low in the platinum market with only a few elements of competition present in the past and a tendency towards oligopolistic dominance. The present merger will lead to the elimination of these elements and to the creation of oligopolistic dominance to the detriment, ultimately, of the consumers.

The platinum market characteristics are conducive to oligopolistic dominance

- (i) Market transparency and homogeneity

- (143) In a transparent market it is easy for a company to follow the moves of its competitors and adapt its own decisions accordingly. In a commodity market like platinum the product is homogeneous and the most important market parameters are price and quantities supplied.
- (144) The nature of platinum as a commodity and the trading of platinum on the metal exchanges make the market highly transparent in terms of prices.
- (145) The quantities supplied to the market are readily known to the industry. First, quantities sold on the metal exchanges are publicly known and it would be immediately evident to all players in the market if, for example, significant new quantities were released on the metal exchanges. Secondly, statistics on production and sales are published regularly by companies such as Johnson Matthey and Degussa. Even figures on Russian sales are available from public sources, for example, through these publications, and there seems to be a basic fundamental agreement in the industry on the general state of the Russian mine, the output level of the mine as well as Russian stock and reserve estimates. Third, the number of direct customers is relatively small and it is easy for the producers to be in contact with all potential and actual clients. Fourth, the fact that most platinum is sold under

⁽¹²⁾ Indeed, the implication would be the conclusion that even a hypothetical company controlling all South African and Russian production, thus having a market share of 90 %, would not be in a dominant position.

long-term contracts (see below) means that customers can react to new offers only with a certain time lag and it will be known immediately to competitors, if a customer considers changing suppliers. Finally, clauses in long-term contracts preventing resale of the platinum bought under the contract (see below) limit the number of sellers in the market and thereby increase transparency.

price inelastic (numerically smaller than 1) in the current price range. The low price elasticity of platinum demand creates a larger incentive for anti-competitive parallel behaviour, since all suppliers would lose by engaging in price competition. Furthermore, price competition appears to be relatively weak in the platinum market (see below).

(146) In the platinum industry new capacity is normally added through discrete investment projects. Details of new investment projects leading to capacity increases are normally also known in the industry. Stillwater's expansion plans and the exact expected production levels of the new Hartley mine in Zimbabwe are, for example, public.

(iii) Buyers do not have countervailing buyer power

(147) Obviously transparency does not extend to all aspects of platinum mining and refining operations of the individual companies. Certain data are kept as business secrets. This is thus the case for details of customer contracts, detailed production data concerning ore grade, and the exact quality and extent of reserves. Furthermore, even though the industry has a certain knowledge of the Russian operations, it is not complete.

(150) According to the parties, buyers are highly concentrated with about 10 main buyers on a worldwide basis, which have considerable purchasing power. However, two of the biggest fabricators, Johnson Matthey and Engelhard, are linked to Amplats. Furthermore, the relatively low level of discounts accorded to customers, and the clauses in the long-term contracts preventing customers from reselling any quantity without authorization from the producer (see below) are indications of low buyer power. More importantly, with the exception of a major car company (which receives discounts), the fabricators are not the ultimate customers and price increases are simply passed on to their customers. It is unlikely that these customers have any countervailing purchasing power of significance due to the indispensable nature of the product and the large number of downstream customers.

(148) However, all in all it must be concluded that there is a high degree of transparency in the platinum industry as far as prices, quantities produced and sold, capacity increases through new investment projects and overall reserves of the producers are concerned. The transparency of the market is increased by the fact that the platinum industry is a relatively small and close group of companies. Information apparently spreads very rapidly via more informal channels within the industry. Basically all the key players know each other personally and they meet frequently. It is also normal that key personnel move from company to company. For example Mr Gilbertson, Executive Chairman of Gencor, is the former chairman of Rustenburg Platinum Mines (now Amplats). The high transparency of the market and the product homogeneity enable the major players to know each others' moves which accordingly facilitate anti-competitive parallel behaviour.

(iv) Demand is forecast to grow moderately

(151) Demand is forecast to grow on average at a moderate rate of around 3 % per year over the next five years. This will lead to a total market in year 2000 of about 5,7 million ounces (i.e. about 1 million ounces larger than in 1995). A fairly stable market will not encourage new entry or aggressive moves to capture the growth of the market and is therefore unlikely to provide a high incentive for competition.

(v) Mining and refining technologies are mature

(ii) Demand is price-inelastic in the current price range

(149) As discussed in the section on product-market definition it seems that due to its indispensable nature for many uses, the demand for platinum is

(152) Companies, as a normal course of their business, constantly strive to improve their cost position by introducing new work methods and new production technologies. Therefore, over time most industries experience an upgrading of the work methods and technologies utilized. The platinum-mining industry is no exception in this respect. Furthermore, it is also quite normal that

some differences in work methods exist between companies in the same industry. There are thus recognized differences between the work methods of the four main platinum producers. LPD is thus acknowledged as being the most advanced and efficient of the South African platinum mines. It is also recognized in the industry that competition from LPD has forced Amplats and Implats to reduce their cost positions.

- (153) However, technological developments in the platinum mining industry take place relatively slowly. There are no major technological breakthroughs expected which would fundamentally change the production structure of the platinum industry. Progress in mining or refining technologies are therefore not likely to be a source of intense competition.

(vi) High entry barriers and no significant new entrants

- (154) The global high quality ore reserves of platinum are in the hands of Amplats, Implats, LPD, and Russia. In particular, Amplats, Implats and LPD control all economically viable reserves in South Africa. This is a definitive barrier to entry. Furthermore, mining and refining of platinum is a capital intensive industry. The capital requirements also imply high barriers to entry. In addition, a large part of the costs of developing a mine are sunk, thus increasing the risk of entering platinum mining. It appears that there will be no significant new entrants capable of challenging the oligopoly members in the foreseeable future.

(vii) Multimarket contacts and structural links

- (155) The members of the oligopoly meet each other in all the PGM markets as well as in a number of other markets, for example Gencor, the parents of Gencor, AAC and the Russians are all large gold producers.
- (156) Structural links exist among several of the players of the industry. Notably AAC controls De Beers, the company responsible for operating the Central Selling Organization which controls between 70 % and 80 % of world diamond sales. De Beers and the Russians have a cartel agreement in the diamond market. In addition, Gencor (through Samancor) and AAC (through Vanadium) are shareholders in the Columbus stainless steel joint venture in South Africa. Since 1992, Columbus has been involved in major expansion operations to make the joint venture the sixth largest stainless steel producer in the world. To meet its demand for input materials, Columbus has access to the

ferro-chrome smelter of one of its owners (Samancor) and for its nickel requirements, it has access to the domestic nickel producers Amplats and Implats. While these operations are outside the PGM business they none the less demonstrate the close links that exist between the parties and their competitors.

- (157) On the 13 March 1996 (the day of the Oral Hearing in the case), AAC bought about 6 % of the shares of Lonrho PLC, with a right of first refusal over a further 18 %. Sanlam, one of the parents of Gencor, has about 3 % of Lonrho plc. A stake as large as almost 25 % is likely to give considerable influence over Lonrho plc due to the fact that the remaining shares of the company are widely dispersed. This confirms the interest of Amplats in the activities of LPD and increases the structural links between the suppliers in the platinum industry.

- (158) Multimarket contacts and structural links may have a disciplinary effect on the members of an oligopoly by increasing the risks of retaliation, due to the existence of a high number of possibilities for retaliation if a member of the oligopoly were to behave unacceptably for the other members. In papers submitted to the Gencor and Implats boards, dated 6 May 1994, a study was presented by a consultant noting a range of possible competitor responses to Implats' interactions with LPD. One possible scenario included the following: 'disciplining attacks and signals — focused price wars, for example Rh [rhodium].'

(viii) Conclusion

- (159) The transparency of the market and the product homogeneity in combination with the other demand and supply characteristics have created a situation conducive to oligopolistic dominance. As discussed below, the tendency towards oligopolistic dominance is borne out by the low level of competition in the market over the past two decades.

There has in the past been a tendency towards oligopolistic dominance

- (160) Market growth and market share developments over the past decade indicate that a certain level of competition has been present in the market. However, low competition and other past behaviour of members of the oligopoly demonstrate the low degree of competition and the

tendency towards oligopolistic dominance in the last two decades.

(i) Past market growth and market share developments

(161) As can be seen from the table in Annex VI the total platinum market increased by 2,4 million ounces from 2,8 to 5,2 million ounces in the period 1985 to 1995. Recycling increased by 245 000 ounces and increased its market share from 2 to 6 %. However, the main beneficiaries of the increase in demand were Russia, Amplats and LPD, who together increased their supplies by almost 2 million ounces. Russia increased its market share from 8 to 23 %, mostly through increased sales from stocks, and LPD from [...] ⁽¹³⁾ to [...] ⁽¹⁴⁾ through increased production, whereas the expansion by Amplats could not prevent a decrease in its market share from [...] ⁽¹⁵⁾ to [...] ⁽¹⁶⁾. Implats was not able to increase its production and its market share decreased from [...] % ⁽¹⁷⁾ to [...] % ⁽¹⁸⁾. These changes in market shares are indications of a certain level of competition in the market. Particularly, the competition for the market growth has been provided by Russia and LPD, whereas Amplats cannot be characterized as an aggressive competitor, since it has had a declining market share and only expanded at a pace which has allowed it to defend its position as the leading producer, while it had opportunities for still further expansion.

(ii) Low degree of direct price competition for long-term customer contracts

(162) The evidence is that direct price competition for long-term customer contracts in the market is low. Day-to-day prices are determined on the metal exchanges, but according to information from customers as well as the parties, about 90 % of platinum is sold under long-term contracts and 10 % on the metal exchanges. Most long-term contracts have a duration of one year, but are normally automatically renewed annually. Supplier-buyer relationships, therefore, tend to be relatively stable. Long-term contracts often have a clause stipulating that the metal has to be used for its intended purposes, and in particular that it cannot be resold without the permission of the seller, who also has the right to buy back the metal in case the buyer does not need it. In return for

these restrictions the buyer often receives a small discount of [...] ⁽¹⁹⁾ of the market price. However, these restrictions also prevent metal from being offered to other customers or from entering the metal exchanges and thereby from influencing the market price for platinum. In particular, the long-term contracts of the car companies contain such clauses, but it is the case for some fabricators as well. The Commission estimates that up to 40 % of annual platinum sales could be sold subject to these restrictions. The stability of supplier-buyer relationships, the small discounts and the restrictions on the resale of metal are evidence of limited direct price competition for customer contracts in the platinum market.

(163) The parties in their reply argue that:

'The Commission's concern as regards price competition appears to be with the small variation in discounts to customers, but in a homogeneous industry one would not expect to observe any such dispersion (whether the market was perfectly competitive or monopolized)' (NERA report, p. 27).

(164) The Commission disagrees with this conclusion about competition in the platinum industry. Producers sometimes compete for long-term customer contracts. Indeed an important factor behind the growth of LPD in recent years was the company's significant supply contract with Engelhard. The contract was obtained in competition with Amplats, but LPD offered better conditions and won the contract, even though Engelhard is linked to AAC. In a market with a limited number of suppliers and customers, where prices of metal sold under long-term contracts are indexed to market prices, price competition for long-term customer contracts could take place only in the form of discounts offered when suppliers are competing for the main contracts. Indeed, it would be illogical, if discounts were not a parameter in the purchaser's choice of supplier. However, the evidence is that there is only a low level of such competition in the market.

(iii) Low degree of competition is evidenced by sustained high price levels

(165) The parties in their reply argue that real platinum prices in rand have fallen throughout the 1990s

⁽¹³⁾ Less than 10 %.

⁽¹⁴⁾ Less than 15 %.

⁽¹⁵⁾ Less than 50 %.

⁽¹⁶⁾ Less than 40 %.

⁽¹⁷⁾ Less than 40 %.

⁽¹⁸⁾ Less than 25 %.

⁽¹⁹⁾ Less than 5 %.

putting a competitive squeeze on South African suppliers:

'When account is taken of the relatively high inflation in the South African economy over the period, the sharp fall in real platinum price levels throughout the 1990s is evident. The 1995 average price was half that which had held 10 years previously. This gives some feel for the competitive squeeze to which the South African suppliers have been exerted in recent years' (NERA report, p. 18).

(166) The development in yearly real platinum prices in 1975 to 1995 measured in US dollars, yen and rand are shown in Annex V. It is seen that real platinum prices in rand moved from R 1 500 per ounce to above R 3 000 per ounce in 1980 and 1986. With the exception of 1982 the real platinum price stayed above R 2 00 per ounce in the whole period 1978 to 1990. In view of the increase of demand since 1985, and the fact that LPD and Russia have increased their market share, it must be concluded that LPD and Russia played a crucial role in driving real prices down over the last five years, almost to the level of the mid-1970s. This is further confirmation that a certain level of competition has been provided by LPD and the Russians over the past five years, but it is certainly not the case if the whole period of the past two decades is considered.

(167) Furthermore, it should be noted that the relatively small amount of platinum traded on the metal exchanges and existence of long-term contracts potentially give the producers considerable scope to influence market price developments. First, long-term contracts give the producers more control over the destiny of the quantities delivered and thereby over the market price. This is particularly the case of contracts with restrictions on resale of metal. Long-term contracts, therefore, tend to prevent metal from influencing directly the market price development on the metal exchanges. Secondly, the main suppliers have a large scope for influencing prices on the metal exchanges through their supplies to the metal exchanges. The Russians have, for example, in recent years sold a considerable amount of platinum on the metal exchanges, which has contributed to the lower platinum prices discussed above. In 1991 the platinum price even dropped below US \$ 350 when Russian exports increased for the first time to above 1 million ounces.

(iv) Past behaviour of the main market player

(168) The Commission has not conducted an investigation as to whether the main suppliers have behaved as a cartel in the past. However, in evaluating the possibility of future anti-competitive parallel behaviour, it is important to note the competitive environment of which the South African suppliers have been part in the past, as well as the actual competitive behaviour of the Russians.

(169) Competition has not been a prevalent characteristic of the South African economy before the recent political change. President Mandela, in an interview with Tim Modise on the South African television programme 'Focus', when asked about his views on the need for antitrust policies, expressly said:

'The fact that you have five conglomerates that own more than three quarters of the stocks quoted on the stock exchange is absolutely undesirable. We cannot have our industry or economy flourishing and growing if the economy is choked by five conglomerates which monopolize industry in the country. There must be competition. This is why the Minister for Trade and Industry is determined to amend the Competition Act to ensure that there is competition. Antitrust laws are crucial in this respect.'

(170) In line with the statement of President Mandela, an official South African Government discussion document on a minerals and mining policy for South Africa stated that:

'Market structures arising from conglomerate domination contain some critical problems as they result in oligopolistic markets.... What has happened in South Africa is that conglomerates have turned to market sharing agreements through a range of collusive practices that carve up markets between themselves and result in collusion to refrain from competition in some markets in return for undisturbed operations on other, unrelated markets.'

This document is a discussion document, which can contain contradicting views. However, this particular statement is not disputed in the document. It should be noted that mining is one of the most important industries in South Africa and that AAC, Gencor and the parents of Gencor are some of the most important players in South African mining.

- (171) In the platinum market the Russians have during recent years supplied 10 % of market demand through sales from their stocks. Sales from Russian stocks are likely to have been primarily motivated by hard currency needs. The Russians through their sales have provided some competition and helped force the real price of platinum down at the beginning of the 1990s and to a certain extent prevented large price increases until today. However, judging from publicly available information from Johnson Matthey it seems that the Russians have realized the advantages of selling into market strength and not letting the platinum price drop too far. There are therefore limits to the extent that Russia will provide competition in the platinum market. On the basis of past behaviour it must be concluded that the Russians can be expected to provide only a certain level of effective competition to the main South African producers, and only until their stocks are depleted (see below).
- (172) According to Mr R. W. Rowland, former managing director and chief executive of Lonrho, anti-competitive behaviour has been on the industry agenda for several years extending to the possibility of forming a De Beers style cartel. Furthermore, Gencor has for several years been interested in acquiring Lonrho's platinum operations with the aim of gaining practical control of LPD's mines. The monopolistic aims were, according to Mr Rowland, evident to all parties. The parties have in the reply argued that Mr Rowland's allegations are either unsubstantiated or irrelevant (the reply, p. 11). However, the parties have neither denied nor refuted Mr Rowland's statements.
- (v) Only a few elements of competition in the future market situation
- (173) As mentioned the Russians have had an incentive to sell from stocks in recent years due to a need for foreign currency. These additional quantities have provided some competition in the market as evidenced for example in the development of real prices. However, the Russian mines are in a deplorable state and it is widely believed, among others by the parties, that Russian stocks will be depleted in about two years at the current rate of sales. The competition provided by supplies from Russian stocks can therefore be expected to come to an end in about two years. As a consequence the market power of Implats, LPD and Amplats will increase relative to the Russians in the foreseeable future and reduce the Russians to a minor player in the industry.
- (174) The other main new element of competition in the market in the past decade (apart from Russian stocks) has been Lonrho's expansion, increasing its market share from [...] ⁽²⁰⁾ to [...] ⁽²¹⁾ between 1985 and 1995. According to a major buyer of platinum: 'Over the years Lonrho's platinum division by way of expansion has developed itself into a significant 'third-force' in the market.'
- (175) Lonrho has potential for further expansion over the next years at only limited extra capital expenditure. Further expansion by Lonrho would provide competition in the platinum industry and must be expected to trigger competitive action from, particularly, Amplats as a response to the challenge.
- (176) The operating cost curves of the mines of the South African based producers are shown in the graphs in Annex II. It should be noted that, in the case of [...], for example, about 80 % of total costs relate to mining and concentration, of which 70 % are fixed costs. As can be seen from the graph and as discussed in Section VII.B.2 the variations in the cost structures of Implats and Amplats are much bigger than is the case of LPD. It is also generally recognized that Implats is the high cost producer and LPD the low cost producer among the three South African producers. The differences in their cost structures give the companies different incentives in terms of competition. Particularly, LPD with its low cost operations has an incentive to expand its production which would provide competition to the other members of the oligopoly.
- (177) Of the three South African suppliers, Implats has the most to lose from further competition due to its high cost mines. However, competition would also put pressure on the higher cost operations of Amplats, and force the company to develop its low cost reserves further and at an earlier stage. It is clear from internal papers from Implats and Lonrho that Lonrho wants to expand output and that Implats is against an expansion of LPD.
- (vi) Conclusion
- (178) It is clear from the market characteristics, the development of price competition and the past behaviour of the main market players that a tendency towards anti-competitive parallel behaviour has been a feature of the platinum market. However, over the past five years
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- ⁽²⁰⁾ Less than 10 %.
- ⁽²¹⁾ Less than 15 %.

competition has been provided by Russian sales from stock (which will end in two years) and the expansion of LPD which has developed LPD into a significant 'third force' in the market. In the future LPD has potential for further expansion at only low additional capital cost expenditures and would be able to provide competition to the other members of the oligopoly.

The current operation will create oligopolistic dominance and effectively a duopoly

(i) The role of Amplats in the platinum industry

(179) According to the parties' reply the strategy of Amplats is clear:

'Amplats' has consistently made its strategy manifestly clear to its competitors. In a recent example of this behaviour pattern, Amplats is quoted in the *Business Day* of 29 October 1995 as saying that it would use its financial muscle and superior ore reserves to deny competitors any growth in the platinum market. It added that its current planned expansions would leave production costs as the element separating winners and losers in the market (see Annex IV). It is their control over the lowest cost expansion possibilities in the industry (at PP Rust) which make statements like this credible.

... This leaves Amplats in a position where it can, if unchecked, exercise unique market power. For Amplats, this is the best of all worlds, while for Implats and LPD this necessitates a realignment that is the best option for re-establishing meaningful competition at the producer level (see Annexes V, VI and VII).' (Appendix 10 of the reply).

(180) Amplats has the capability to bring new capacity to the market at low costs at the pace the company finds appropriate. The main competitive checks on the competitive behaviour of Amplats in the past decade have been the expansion of LPD and Russian sales from stocks.

(ii) The merger will effectively create a duopoly

(181) The operation will combine all the platinum operations of Gencor and Lonrho in one company. Implats/LPD and Amplats would each have had a market share of about 30 to 35 % in 1995. This

market share is likely to increase to about 40 % for each of the companies when the Russians are expected to stop selling from their stocks in about two years. This will also leave the Russians in the role of a minor player versus Implats/LPD and Amplats. In the medium to long term the competitive situation is likely to effectively develop into a duopoly. A duopoly situation would make it much easier for the main suppliers to adapt to each other's behaviour and, for example, restrict output.

(iii) Similar cost structures of Amplats and Implats/LPD will reduce the incentive to compete

(182) As can be seen from Graph 2 B in Annex II, the merger between LPD and Implats will result in a new company with an operating cost structure of mines which is similar to Amplats. Graph 2 B in Annex II does not imply that operational costs in all respects will be the same, since important differences can still exist due to differences in ore quality, different mix of ore mined, different costs in processing and refining operations and differences of costs in administration. However, the graphs in Annex II do reflect a greater similarity of the costs of Amplats and Implats/LPD after the merger.

(183) Implats has argued that the operation will enable the combined Implats/LPD to achieve considerable synergies. As can be seen in Section VIII these synergies are disputed by LPD management. The Commission believes that the synergies outlined could even be negative, since the differences in organizational cultures which exist between Implats and LPD will make integration difficult and could therefore be very costly. Therefore, the only effect of the merger on the cost structure is to create a company with similar cost structure to Amplats, but synergies will not give Implats/LPD a cost advantage compared to Amplats.

(184) The greater similarity of the cost structure of Amplats and Implats/LPD means that the combined Implats/LPD and Amplats, to a greater extent, are likely to be affected and act in the same way on market developments, for example, in their production decisions. A price increase would, for example, have a similar effect on the profitability of the two companies. The two South African

players would therefore have a higher degree of common interest in the way the market should develop, and this would increase the likelihood of anti-competitive parallel behaviour following the merger, for example restrictions of output.

- (185) The parties have submitted in their reply that Implats has radically overhauled itself in the past few years and that the cost differences between the South African producers are much less than suggested. However, there is no disagreement that LPD is the low cost producer of the South African platinum industry and that one of Implats' main objectives of the merger is to secure access to low cost reserves.

- (iv) The merger will eliminate LPD from the market and reduce competition

- (186) The merger will eliminate LPD as an independent market player. All aspects of the mining, processing, refining, and marketing of platinum will be concentrated with a unitary management in Implats/LPD. Therefore, LPD as a significant 'third force' in the market will be eliminated as a consequence of the merger, thereby leaving customers with less market choice. As a consequence contract conditions are likely to become even less favourable to customers. The existing limited competition on rebates can for example be expected to be reduced even further after the merger.

- (187) The merger is highly likely to lead to a restriction of output of the combined Implats and LPD. In this context it should be noted that a restriction of output is not only a matter of reducing the absolute level of production. Controlling the rate of expansion of capacity can be just as important. Even in a moderately growing market like the platinum market, simply slowing the rate of expansion of capacity will be enough to lead to a tightening of supply-demand balance and thereby to price increases. Indeed controlling the rate of expansion of capacity seems to be a main objective of the merger. As noted in the circular to the Lonrho shareholders prepared for the merger:

'Implats and Lonrho have in the past been unable to reach agreement on a number of issues including plans proposed by Lonrho to expand LPD's operations. The Directors believe that following the merger, the interests of both Lonrho and Gencor in enhancing the value of the enlarged Implats will be aligned to both shareholders' benefit.'

- (188) Furthermore, according to projections presented to [...], the alignment of interests following the merger will involve the scaling back of expansion plans, thus leading to higher prices compared to a situation where the merger did not go ahead and both companies continued with their existing future planning. In particular [...] has been presented with two different production scenarios outlining the impact on production of Implats and LPD, if the merger were to be implemented or, respectively, not implemented:

'(a) [...]

(b) [...] ⁽²²⁾'

- (189) Particularly, [...] believes, according to the report entitled [...], that there will be two main benefits on the market side from the merger (in addition to possible cost savings):

'[...] maintaining current production levels should positively influence key metal prices...' ⁽²³⁾

and furthermore,

'[...] the merged group will have a higher market capitalization than the underlying value of the merged entities due to its size and ability to exert greater influence in the market...']

- (190) In the absence of a merger, an expansion by LPD would increase the competitive pressure on the low-margin mining shafts of Implats and Amplats. The Commission, estimates, based on the graph in Annex II, that shafts with negative operating profits accounted for [...] ⁽²⁴⁾ of Implats' production and [...] ⁽²⁵⁾ of Amplats in 1994. The merger will reduce competition and create oligopolistic dominance for two reasons:

- (i) the merger will definitively remove the competitive threat of LPD to the high cost operations of Implats by consolidating the marketing functions of LPD and Implats and by ensuring that any future expansion of the current reserves of LPD is undertaken with a

⁽²²⁾ [...].

⁽²³⁾ [...].

⁽²⁴⁾ Less than 25 %.

⁽²⁵⁾ Less than 25 %.

view to the interest of the whole of Implats/LPD. From the point of view of Implats the merger would provide a check on the competitive behaviour of the current LPD;

- (ii) the merger will create a company of the same size as Amplats, with ample low cost reserves, a similar cost structure and with an ability to exert greater influence in the market. In this situation, given the market characteristics and the past behaviour of competition in the industry, there will be no incentive for Amplats and Implats/LPD to compete with each other. Anti-competitive parallel behaviour is therefore a highly likely outcome of the merger. Indeed the current structure is much more likely to result in some degree of competition, because LPD is a third force in the market and has a higher incentive to expand its production than a merged Implats/LPD.
- (191) Despite the previous links between the Gencor and the Lonrho groups, in the absence of the merger, Implats would not, over time, be able to prevent LPD from expanding its platinum production. LPD can expand with only limited additional capital expenditure. From the data provided by the parties as well as an analysis provided by Mr R. W. Rowland, former chairman of Lonrho, it appears that the planned expansion can be financed simply through internally generated funds. Further low cost expansion is also possible and despite Implats' minority protection rights, these cannot over time prevent actions leading to benefits accruing to all the shareholders.
- (192) In their reply, the parties express concern that the Commission has failed to give proper weight to the evidence in the case by giving a misleading impression of third party views of the merger. They attempt to quantify the importance of evidence by citing a percentage of responses to two particular questions included in Commission questionnaires which they believe would support their position regarding the impact of the transaction. The Commission does not agree that it is possible to evaluate the weight of this evidence by assigning percentages to the responses. In fact, it is precisely because the Commission has considered all evidence that it has concluded that the merger would reduce competition in the platinum market.

B.6. Economic analysis presented by the parties

- (193) The parties as part of their reply submitted an economic analysis of the proposed merger prepared by the economic consultant NERA of Great Britain, retained jointly by the parties.
- (194) The economic analysis by NERA sets out a framework for the analysis of competition in the platinum industry. The conclusion about past competition in the platinum industry is that, 'The relationship between the current market price and the operating costs of the South African producers is consistent with competitive market outcomes' (NERA report, p. 12).
- (195) The Commission finds that the extent to which the current price level reflects the competitive price of a perfectly competitive industry would be a matter of empirical research and has not been established by either NERA or the Commission. However, as discussed in Section VII.B.5, the Commission agrees that there has been a certain level of competition in the platinum market in recent years. Competition has mainly been provided by Russian sales from stocks and the expansion of LPD. The Commission also agrees with NERA that this competition has led to a reduction in operating costs and an incentive to introduce new low cost supply sources (NERA report, p. 6). LPD has played an important role in the South African platinum industry in this respect.
- (196) Concerning the possibility of a monopoly abuse NERA argues that 'First, one of the key characteristics of monopoly abuse is the suppression of output whose operating costs are lower than the (prevailing) monopoly price level; and second, the exercise of monopoly power is largely dependent on the monopolist's ability to control marginal sources of supply'.
- (197) The Commission agrees that the possibility of a supply response at the margin is crucial for the exercise of monopoly power in a classic economic sense. However, as argued previously (see, for example, Section VII.B.4.) a restriction of platinum production by the oligopoly is highly unlikely to be filled by supply from marginal sources, i.e. from suppliers outside the oligopoly, recycling and stocks outside Russia.
- (198) Concerning the possibility of oligopolistic dominance NERA argues that 'Perhaps the most essential precondition if a tight oligopoly group is to succeed in achieving an anti-competitive market outcome is that there should be a stable market

environment, free from external shocks that might upset the status quo' (NERA report, p. 25).

(199) According to NERA the possible sources of external shocks include:

- (a) exposure to shifts in demand;
- (b) uncertainty regarding the (short and long-run) elasticity of demand;
- (c) uncertainty regarding the selling policies of holders of platinum stocks and marginal sources of platinum such as nickel mines;
- (d) uncertainty regarding the availability of recycled platinum (NERA report, p. 25).

(200) *Concerning point (a)*: It is worth noting that some shifts of demand over time are a normal feature of many markets and not particular to the platinum industry. However, such shifts can be important to the assessment of oligopolistic dominance only to the extent they would upset the equilibrium of the oligopoly. As mentioned above, only a moderate growth of the platinum market is forecast in the coming years. Furthermore, in the past decades shifts in demand have been positive leading to higher levels of demand, and at present there is virtually no downside risk to expected market growth. Rather the supply gaps which are expected to arise can realistically be filled only by Amplats, Implats, LPD or from Russian stocks (in the short term).

(201) NERA argues 'that platinum is to some extent subject to speculative shifts in demand' and that 'the volume of paper trading on Nymex and Tocom amounted to some 135 million ounces in 1995, some 27 times more than the volume of physical deliveries' (NERA report, p. 8). The absolute volume of paper trading is a poor indicator of the level of speculative activity in a market. The Commission has not found in its investigation that the platinum market is a speculative market but rather that it is driven by fundamental supply and demand factors as discussed in the product market section. In particular, the RSI study commissioned by the Commission found that the Nymex is primarily a forward market serving the physical trade rather than a purely futures market.

(202) *Concerning point (b)*: The Commission has concluded that the demand for platinum is price

inelastic in the current price range. As discussed under the product market (Section VI.A.2 (iii)), the Commission recognizes that long-run demand elasticities of platinum could be higher in the event that prices were to increase, for example, two or three-fold. However, a significant but more limited price increase (for example 10 %) is highly unlikely to lead to substantial substitution. Indeed, this is clear from the experience of the period 1985 to 1989 where the real price of platinum was above US \$ 600 (about 40 % above the 1995 level), but where substitution did not occur and demand continued to increase. In the reply, the parties do not dispute that the price elasticity of demand is inelastic in the current price range. This is consistent with a competitive market outcome. Indeed, according to economic theory a price elasticity of demand above 1 could have implied that the platinum price already before the current operation had been set at the monopoly level (NERA report, p. 27, point 3). However, as argued above, the Commission does not believe that the current price level is a monopoly price due to the competition provided, particularly by LPD and sales from Russian stocks. This is entirely consistent with the finding of an inelastic price elasticity of demand for platinum.

(203) *Concerning points (c) and (d)*: As discussed previously the Commission finds it highly unlikely that suppliers outside the oligopoly, stocks outside Russia and the availability of recycled platinum will have a sufficient impact on the market to prevent an abuse of a joint dominant position.

B.7. Conclusion

(204) In the past the platinum market has been characterized by tendencies towards anti-competitive parallel behaviour. There is thus evidence of low price competition in the past two decades. The Russians have in recent years been selling from stocks — probably due to a need for foreign currency. However, they have pursued a policy of 'selling into market strength'. Furthermore, it is recognized that the South African mining industry has been characterized by strong anti-competitive behaviour in the past. LPD has been a part of this environment, but has still been able to expand its production and has thereby provided competition for Amplats and Implats. The Russian sales from stocks and the expansion of LPD are the main elements of competition in the market.

(205) If the merger were to go ahead the future situation would see two South African suppliers with similar

mining cost structures and incentives. The merger of LPD and Implats would have an anti-competitive impact on the market, since at present there is an incentive for LPD to expand and LPD, as a more active player on the market, would disappear. The new entity would have less incentive to expand as it would not wish to put Implats' high cost operations under pressure. In view of the market characteristics, resulting similar cost structures and the record of past competition in the platinum industry, there will be no incentive for Implats/LPD and Amplats to compete against each other. The removal of LPD would mean a qualitatively important difference in the market place. It is highly likely that a consequence of the merger would be a further tightening of platinum supply in the medium term, and therefore a higher level of platinum prices. This would be in the interest of both Amplats and a merged Implats/LPD which would hold a dominant duopoly position due to the weak competitiveness of the Russians in the medium term.

- (206) In conclusion, the operation would create a dominant duopoly position in the medium term, consisting of Amplats and Implats/LPD, in the platinum market (already characterized by weak competition), as a result of which effective competition would be significantly impeded in the common market. The parties have, seen relatively, lower market shares in the common market than in other parts of the world and have argued that the operation, therefore, would only have a minor impact on the common market. However, as argued earlier the platinum market is a world market and prices for platinum in the European Community are set at the world market level. Therefore, anti-competitive effects of the operation in the platinum market would be felt in the European Community, for example, through higher prices for all the platinum sold in the European Community and not only the platinum sold by Implats and LPD.

C. Rhodium

- (207) Rhodium is the third most important of the PGMs after platinum and palladium measured on sales value. Rhodium accounted for 12 % of total sales in volume of PGMs in 1994.
- (208) In terms of market shares and concentration of supply, the situation is comparable to that for platinum. Implats/LPD and Amplats account for about 70 % of the market and Russia for about 20

to 25 % (see Table A2 in Annex I). The rhodium market characteristics appear to be the same as for platinum. The market is transparent, the metal is a homogeneous product which is freely traded, and the prices of the traders are publicly available. In addition, the mining and refining technology is mature, the mining production process is the same as for other PGMs, the industry has high barriers to entry, there are financial links and multimarket contacts and it is unlikely that buyers have any purchasing power as for platinum.

- (209) As in the case of platinum, demand for rhodium is price-inelastic because its use is tied almost exclusively to autocatalysts. Specifically 98 % of rhodium is used in autocatalysts and the remaining 2 % in other industrial applications.

Conclusion

- (210) For the same reasons as set forth in the discussion on the platinum market, the characteristics of the rhodium market imply that post-merger competition between the remaining players will not be enough to secure effective competition in this market. Therefore, the operation would create a dominant duopoly position in the medium term in the rhodium market as a result of which effective competition would be significantly impeded in the common market.

D. Palladium, ruthenium, iridium

- (211) Apart from the markets for platinum and rhodium the Commission has also investigated the markets for palladium, ruthenium, and iridium. No competition problems were identified in the ruthenium and iridium markets. The Russians appear to be dominant in the palladium market. However, LPD will only add [...] ⁽²⁶⁾ points to the Implats market share of [...] ⁽²⁷⁾ (1994) and consequently the merger will not remove the dominant position of the Russian producer in the palladium market.

VIII. ECONOMIC AND TECHNOLOGICAL PROGRESS

- (212) Implats has argued that it is possible to achieve considerable synergies and thereby reduce costs by

⁽²⁶⁾ Less than 5 %.

⁽²⁷⁾ Less than 15 %.

merging Implats and LPD. Implats believes synergies can be achieved particularly through:

- (i) the productivity benefits of the parties learning from each other; and,
- (ii) savings derived from closing some of LPD's processing and refining facilities.

(213) The extent of these synergies are disputed by LPD management. Morgan Grenfell and James Capel in a report prepared for the Board of Directors of Lonrho plc estimated the synergies of the merger to be only about one tenth of the synergies identified by Implats (excluding certain negative and positive non-quantifiable effects). The Commission believes that the only substantial synergies are to be found in the processing and refining facilities, but these synergies can first be realized in several years time. In particular, the large synergies derived from the concentration of the precious metal refining operations into one refinery are vague. In addition, the overall synergies of the merger could even turn out to be negative due to the very different organizational cultures of the two companies, which will make integration difficult and probably costly.

(214) It appears that the main effect of the merger is the increase in the market power of the merged entity. However, even if there were synergies, the Commission finds that they would not be to the advantage of the consumers since the operation will create a jointly dominant position in the platinum and rhodium markets and form an obstacle to competition in those markets.

IX. DRAFT COMMITMENT PROPOSED BY THE PARTIES

(215) The parties have proposed a draft commitment to the Commission which seeks to allay the competition concerns raised by the operation; the commitment was submitted to the Member States and was discussed at the meeting of the Advisory Committee on 9 April, 1996. It comprises three elements:

- (i) the development of an extra [...] ounces of capacity at [...];
- (ii) the maintenance of output at existing levels [...] ounces per annum;
- (iii) the creation of a 'new supplier' in the market.

(216) The commitment offered is behavioural in nature and cannot therefore be accepted under the Merger

Regulation. In any event this commitment does not meet the Commission's competition concerns. This is because, while the development of additional capacity would be of benefit, this offer of additional capacity, together with the proposal to maintain production at current levels, does not reflect the market growth which all commentators agree will take place. Furthermore output could be reduced prematurely at other mine shafts, owned by the merged entity, simply to maintain output, at the [...] ounce level, thereby restricting overall supply. More importantly these points do not address the question of the oligopolistic market structure. Therefore if one supplier maintains output at a constant level, this fact would be signalled to other members of the oligopoly for example Amplats. Consequently, if market demand grows, an upward pressure on prices would be generated.

(217) As regards the creation of a 'new supplier' the parties are simply to [...]. Consequently, this action would have a negligible impact on the future supply of platinum to ultimate consumers.

(218) Consequently, given these factors, the proposed, draft commitment offered by the parties is insufficient to meet the competition concerns raised in this case.

X. CONCLUSION

(219) The result of the operation would be the creation of a dominant duopoly position in the platinum and rhodium markets between Amplats and Implats/LPD, as a result of which effective competition would be significantly impeded in the common market within the meaning of Article 2 (3) of the Merger Regulation,

HAS ADOPTED THIS DECISION:

Article 1

The concentration by way of Gencor Limited and Lonrho plc acquiring joint control of the whole of Implats and LPD as notified by Gencor Limited and Lonrho plc is hereby declared incompatible with the common market and the functioning of the EEA Agreement.

Article 2

This Decision is addressed to:

1. Gencor Limited
6 Hollard Street
Johannesburg 2001
PO Box 61820
Marshalltown 2107
Republic of South Africa

Done at Brussels, 24 April 1996.

2. Lonrho plc
4 Grosvenor Place
UK-London SW1X 7DL.

For the Commission

Karel VAN MIERT

Member of the Commission

ANNEX I

Table A1

Estimated market shares for platinum in 1994 and 1995, volume basis (*)

(%)

	1994	1995
Implats	< 25	< 25 (**)
LPD	< 15	< 15
Parties	< 35	< 35
Amplats	< 35	< 40
Russia	< 25	< 25
Others	< 10	< 10
Recycling	< 10	< 10
Total	100	100

Source: Data from the parties.

(*) Volume and value market shares are identical in the platinum market.

(**) The decline in the market share of Implats from 1994 to 1995 was due to temporary production problems.

Table A2

Estimated market shares for palladium and rhodium in 1994, volume basis (*)

(%)

	Palladium	Rhodium
Implats	< 15	< 25
LPD	< 5	< 10
Parties	< 20	< 35
Amplats	< 20	< 35
Russia	< 60	< 25
Others	< 10 (**)	< 15 (**)
Total	100	100

Source: Data from the parties.

(*) Volume and value market shares are identical in these markets.

(**) The figures exclude recycling, which was less than 10 % of total demand for palladium and rhodium in 1994 according to Johnson Matthey.

*ANNEX II***EXPLANATORY NOTE TO GRAPHS**

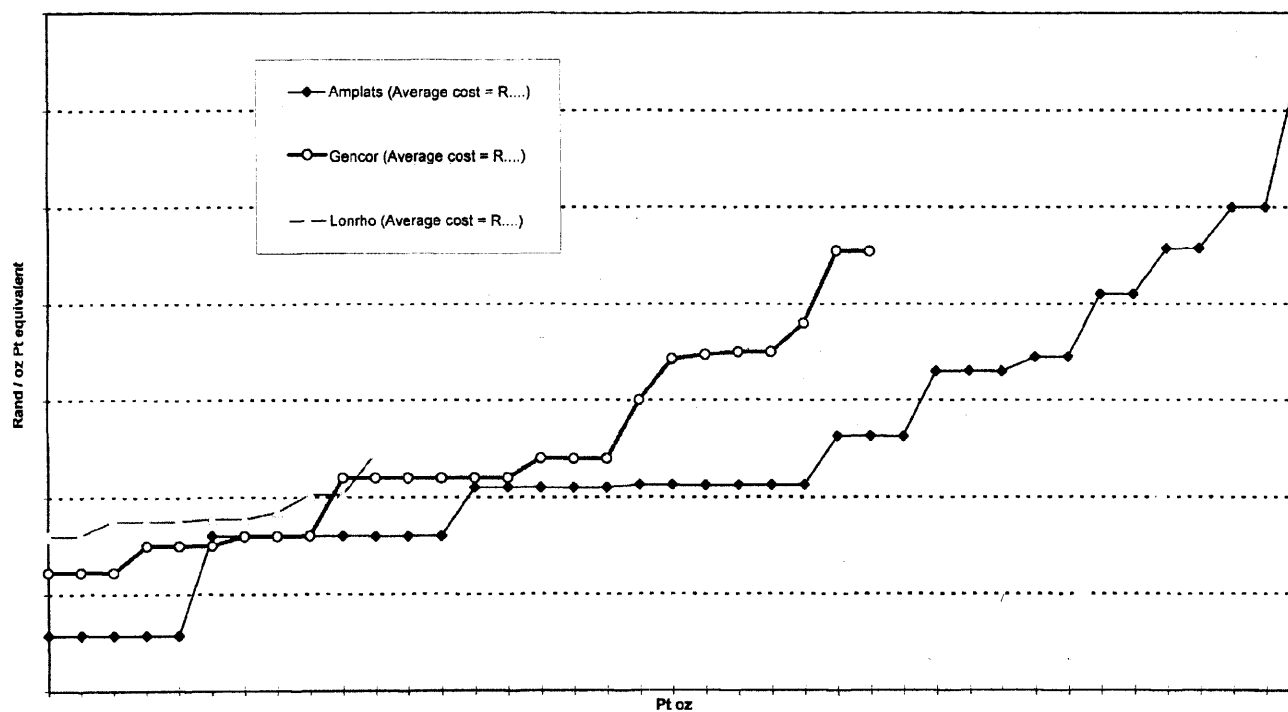
The graphs set out in Annex II represent the before and after merger operating cost curves of the three South African platinum producers as prepared by the parties to the operation. Operating costs include mining and processing costs and are largely fixed in nature.

These graphs have been prepared based on the total operating costs of each of the producers' mines (expressed as rand per ounce platinum equivalent) for 1994 and the quantity produced (in thousands of ounces) by each mine.

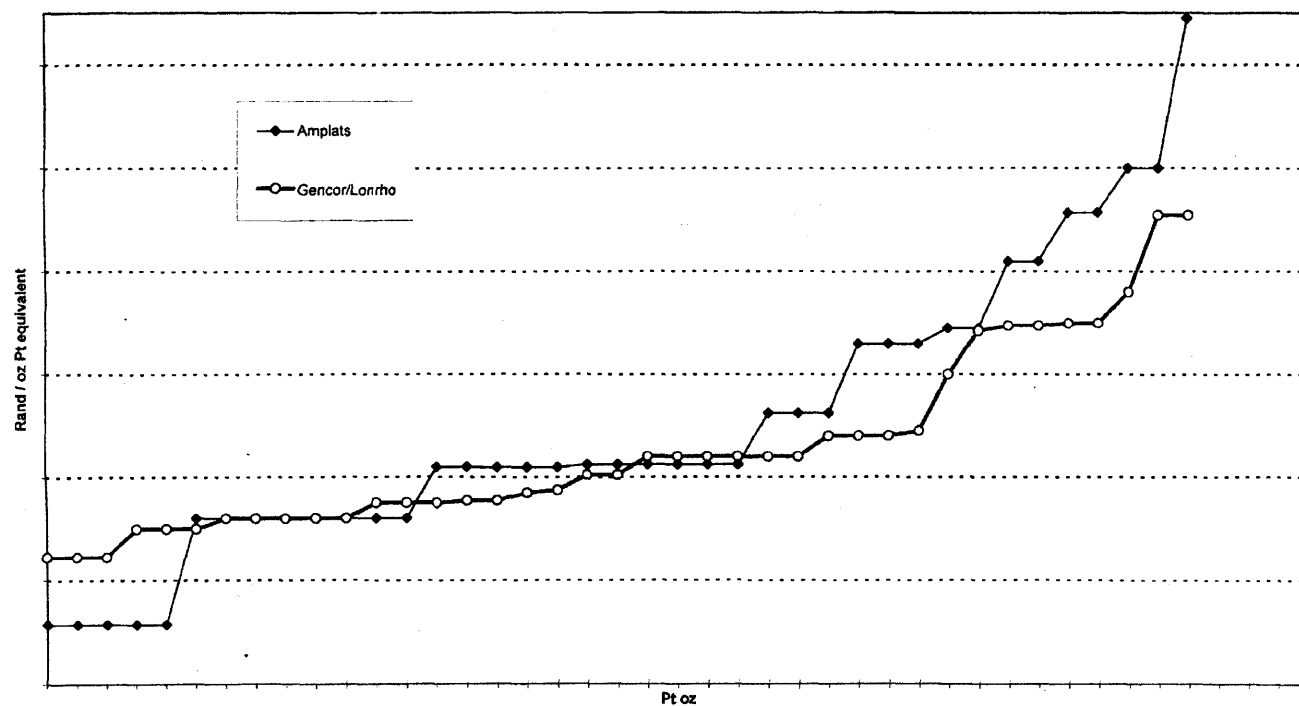
Therefore, each step in the cost curve indicates the incremental production and associated operating costs of each additional mine.

The graphs show the current asymmetry in the operating cost structures between LPD, Implats and Amplats and the symmetrical post-merger cost structure between Implats/LPD and Amplats.

GRAPH II A
BEFORE MERGER (OPERATING COSTS OF SHAFTS)



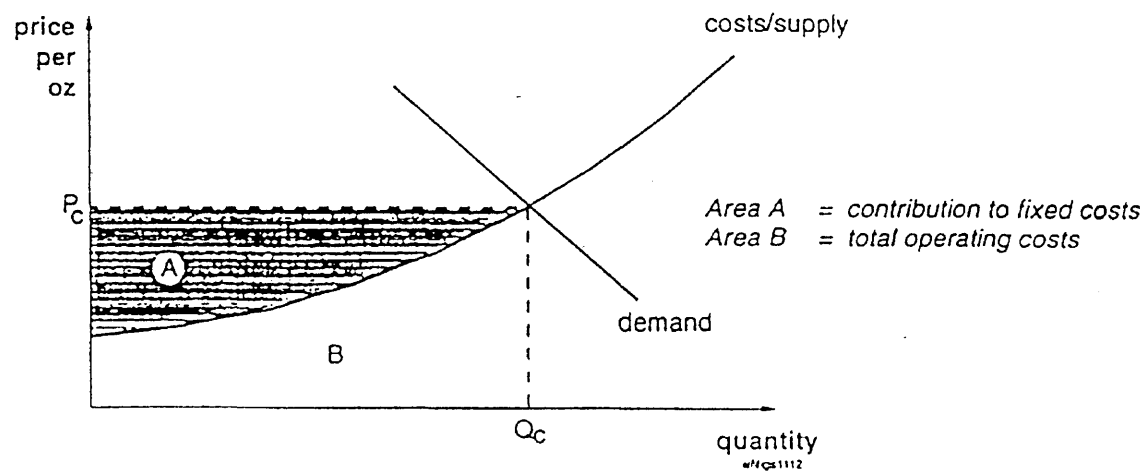
GRAPH II B
POST MERGER (OPERATING COSTS OF SHAFTS)



ANNEX III

Figure 2.1

Costs, supply and demand in a natural resources industry



ANNEX IV

Figure 3.1

Platinum industry cost curve for South African producers
(first six months financial year 1995)

[business secret]

ANNEX V

PLATINUM PRICE — VARIOUS CURRENCIES

Year	Exchange rates (local currency unit/dollar)		Platinum price: nominal			Platinum price: real		
	Japan	South Africa	US dollar/ounce	100 yen/ounce	Rand/ounce	US dollar/ounce	100 yen/ounce	Rand/ounce
1975	296,79	0,74	147,9	438,9	109,4	385,6	700,04	1 414
1976	296,55	0,87	153,5	454,6	133,3	376,2	672,57	1 567
1977	268,51	0,87	157,6	423,2	137,0	362,0	588,49	1 450
1978	210,44	0,87	259,9	546,9	226,0	553,6	723,93	2 150
1979	219,14	0,84	447,7	981,1	377,0	876,6	1 264,87	3 113
1980	226,74	0,78	662,0	1 501,0	515,6	1 184,6	1 850,55	3 437
1981	220,54	0,88	446,4	984,5	391,8	726,4	1 169,48	2 335
1982	249,08	1,09	328,2	817,5	356,4	503,0	955,85	1 868
1983	237,51	1,11	424,7	1 008,7	473,2	625,6	1 162,53	2 142
1984	237,52	1,48	357,4	848,9	527,3	503,8	956,16	2 141
1985	238,54	2,23	293,2	699,4	653,4	398,8	776,02	2 286
1986	168,52	2,29	466,9	786,9	1 066,9	618,3	857,58	3 203
1987	144,64	2,04	556,6	805,1	1 113,3	714,8	877,48	2 979
1988	128,12	2,27	530,3	679,5	1 205,7	655,6	738,22	2 755
1989	137,96	2,62	509,8	703,3	1 337,1	602,8	750,08	2 605
1990	144,74	2,58	472,1	683,4	1 218,1	535,1	712,77	2 062
1991	143,47	2,76	376,1	505,8	1 038,1	410,5	517,19	1 549
1992	126,70	2,85	359,9	456,0	1 025,8	382,1	459,57	1 361
1993	111,20	3,27	374,1	416,0	1 223,4	388,7	417,21	1 461
1994	102,20	3,55	405,3	414,2	1 438,7	412,6	415,36	1 556
1995	94,00	3,60	424,2	398,8	1 527,2	424,2	398,78	1 527

ANNEX VI

PLATINUM MARKET VOLUMES AND SHARES, 1985 to 1995

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
a) Volume (in 1 000 ounces)											
Amplats	1 260	1 350	1 350	1 370	1 360	1 330	1 385	1 265	1 670	1 530	1 805
Implats	940	850	1 010	1 050	1 040	1 120	1 005	1 065	1 080	1 010	870
Lonrho	140	150	160	160	220	310	380	420	505	510	560
Northam									105	110	115
Total South Africa	2 340	2 350	2 520	2 580	2 620	2 760	2 770	2 750	3 360	3 160	3 350
Russia (sales)	230	290	400	440	550	720	1 100	750	680	1 010	1 200
North America	150	150	140	210	195	185	220	200	220	220	240
Other	40	40	40	50	60	65	70	120	130	140	100
Recycling	70	90	115	160	175	215	215	245	275	315	315
Total world	2 830	2 920	3 215	3 440	3 600	3 945	4 375	4 065	4 665	4 845	5 205
b) Shares (%)											
Amplats	45	46	42	40	38	34	32	31	36	32	35
Implats	33	29	31	31	29	28	23	26	23	21	17
Lonrho	5	5	5	5	6	8	9	10	11	11	11
Northam	0	0	0	0	0	0	0	0	2	2	2
Total South-Africa	83	80	78	75	73	70	63	68	72	65	64
Russia (sales)	8	10	12	13	15	18	25	18	15	21	23
North America	5	5	4	6	5	5	5	5	5	5	5
Other	1	1	1	1	2	2	2	3	3	3	2
Recycling	2	3	4	5	5	5	5	6	6	7	6
Total world	100	100	100	100	100	100	100	100	100	100	100

Source: Johnson Matthey Platinum 1995 en Platinum 1995 Interim review. Supply figures are Implats estimates of sales by the mines of primary platinum. With the exception of the Russians this equates closely to mine production.

ANNEX VII

PLATINUM PRICES — VARIOUS CURRENCIES

