7949

somo
Paulus Potterstraat 20
1071 DA Amsterdam

[redacted]

Stichting Onderzoek Multinationale Ondernemingen
Centre for Research on Multinational Corporations

somo

BROKEN CHAINS?

BOYCOTT OF SOUTH AFRICAN COAL

IN

NORTH-WEST EUROPE

somo
Paulus Potterstraat 20
1071 DA Amsterdam

SOMO
Amsterdam
mai 21, 1989

"Whether the country succeeds in achieving its potential as a growing coal exporter or whether is is pushed gradually off the exports market to a greater or lesser degree by a growing reluctance to buy South African coal depend crucially on the nature of political and social developments in the country over the next few years"

Ray Long.

The availability and cost of coal in South Africa
March 1986
IEA Coal Research, London.

somo
Paulus Potterstraat 20
1071 DA Amsterdam

TABLE OF CONTENTS.

1. Justification. 1
1.1. Preface. 1
1.2. Introduction. 1
1.3. Restrictions and decisions. 2
1.4. Research methods. 3

2. The chain: From mining to consumption. 4
2.1. South African coal: A characterization. 4
2.2. Exporters in South Africa. 5
2.3. Trade and transport. 6
2.4. Final consumption in North-West Europe. 7
2.5. The involvement of large oil multinationals in the coal chain. 14

3. The effects of a boycott on the price of coal. 16
3.1. The world market and price developments. 16
3.2. Which coal exporters can replace South African coal? 18
3.4. The price increase forecasted by WEFA. 19

4. The consequences for the amount of coal coming in to Rotterdam and Amsterdam. 21

5. The circumstances under which consumers of South African coal might switch over to other coal sources or other fuels. 22
5.1. Switching to another coal sources. 22
5.2. Switching to other sorts of fuel. 23

6. Description of the boycott variants. 25

7. The financial consequences of a boycott. 32

8. The consequences for employment of a boycott. 35

9. The financial-economic significance of a coal boycott for South Africa. 39

10. Summary of the most important consequences of the different boycott variants in 1992. 41

11. Limitations of and conditions on the boycott variants. 43

12. Conclusions. 44

1. Justification.

1.1. Preface.

The reluctance to buy South African coal - the topic of Ray Long's comments - has led to a motion from Ms. Y.C.M. de Rijk and other members of the City Council in Rotterdam to demand that the Mayor and Aldermen look into the flow of coal from South Africa to Europe.[1]

SOMO has been asked to carry out this research and provide the missing information needed to decide on the possibility and effectiveness of a boycott on South African coal. This report is the result of that research, and we hope that it fulfills its purpose.

The municipals of Rotterdam and Amsterdam commissioned this research. The following people worked for SOMO: Ewoud Butter, Dineke Deelman, Rene Hulst, Thijs Jansen, John Jaspers, and Natascha Verhaaren. Hans Heerings, from SOMO, was the project coordinator and had final responsibility for this report. Members of the advisory committee were Dilia van der Heem (Vervoersbond FNV district Rotterdam), Henna van Heemst (Municipal Rotterdam), Ruurd Huisman (Kairos), Wouter van der Schaaf (FNV), and Janneke Zumpolle (Municipal Amsterdam). We thank them for their involvement in this research and for their invaluable advise and help.

Many other people have worked in the background on this research. We cannot possibly name them all, but without them it would have been impossible. Finaly, we would also like to thank the many people from various institutions and businesses who open heartedly exchanged thoughts with us on the questions raised in this research.

1.2. Introduction.

With this research we hoped to have answered three closely related questions. Which enterprises are connected to South African coal? How would these businesses react to a boycott on South African coal? And what would be the financial and employments consequences of a boycott? It is critical that we know which enterprises are connected with South African coal, for only then can we look into the reaction of theses businesses to a possible boycott. And only when the first two questions have been answered can we examine the financial and employment consequences of a boycott on South African coal.

In addition to the above, we have also examined what the consequences of a boycott by the European Community (EC) in its totality would be. That is, the consequences of a boycott by The Netherlands alone, the North-West European countries together, these countries without West Germany and Belgium, these countries without the United Kingdom and Belgium, these countries without the United Kingdom, and these countries without West Germany. In this study we only indicate the global economic effect on South Africa of a boycott.

The themes are handled in this research in the order described above.

---

[1] Where the coal comes in, via which harbors, and via which ships it travels should be examined in order that the role of Rotterdam become clear as well as the alternatives available. Just which companies are involved and just what the possibilities are for replacing South African coal with coal from other sources should be documented.

1.3. Restrictions and decisions.

During the course of this research we had to sharpen the study on a number of points. The following decisions and restrictions were made as a result of the assumptions we adopted.

We have assumed seven different boycott possibilities. In this way we can assess the degree to which the boycott steps taken in North-West Europe actually lead to the blockage of South African coal. When we refer to the North-West European countries, we mean: West Germany, The Netherlands, Belgium, Luxembourg, France, the United Kingdom, and Ireland. Denmark was excluded because a boycott on South African coal already exists there.

The variant in which all the North-West European countries except Belgium participate in a boycott has not been examined because this variant is only of interest when we assume any and all of the evasions of the boycott measures to occur via Belgium. (The possibility of evading the boycott measures is handled separately in Chapter 10).

In the case of a boycott by The Netherlands alone, we have distinguished two subtypes: an "import boycott" on South African coal and a "full boycott" on all transport of South African coal. When we talk about a full boycott, we mean that all of the incoming coal by sea and to the hinterland gets blocked. The feasibility of the import boycott and/or full boycott by The Netherlands was not examined, however.[2]

The boycott variants are considered in terms of countries. In only two obvious cases did we look at the consequences of actions by countries and harbors. The significance of boycott measures taken by specific businesses was not examined.

When looking at those enterprises connected to South African coal, we have concentrated on the final consumers - those companies found at the end of the flow of coal from South Africa to and through The Netherlands. In the amount of time allotted us, it was not possible to perform a larger study. In so far as they were relevant, the reactions of a number of businesses that are not just concerned with the final consumption of coal were considered. We concentrated on the final consumers, however, because it is important to know whether they will continue to take in South African coal in the case of a boycott but via a different route. It is also important, for example, to know whether they will turn to coal from other origins or even shift to a completely different type of fuel in the case of a boycott.

The financial as well as employment consequences of an eventual boycott are examined. The consequences for employment in the harbors of Amsterdam and Rotterdam are not, however, quantified. We only examine whether employment positions are threatened or not. By 'financial consequences' we mean the effects on turnover of the municipal harbors and stevedoring companies. Tug-boat, pilotage, and coal inspection companies are - of course - also involved in the flow of coal from South Africa, although their portion of the cost of a ton of coal is very marginal relative to that of, for example, the stevedoring companies. The consequences of a boycott for these companies was therefore not examined further: the consequences of a boycott for their turnover and employment would be marginal because these companies have more to do with the total number of in- and out-going ships than the total tonnage of coal.[3]

In calculating the financial and employment effects of the different boycott variants, a conservative estimate of the total amount of coal coming into the

---

[2] For example, the judicial feasibility in light of the guaranteed right of free passage (thus, transport) of goods on the Rhine (Act of Mannheim).

[3] This holds to a lesser degree for specialized "agents" such as Gans en Wagenborg/Lagendijk.

harbors of Amsterdam and Rotterdam was adopted. We did this in order to illustrate the most far-reaching consequences of removal of South African coal. In calculating the chances of South African coal being sold and traded in other, nonboycotting countries, the best estimate was always adopted. This was done in order to illustrate the economic effects that a boycott will have in any case. (Note that we are not talking about the political implications of a boycott or boycottthreatening). On the basis of this set of choices, the most pessimistic prognosis for turnover and employment in the harbors of Amsterdam and Rotterdam will be seen and the most optimistic prognosis for South Africa.

The prognosis of the total coal transport to the Netherlands and the prognosis of th sales possibilities for South Africa in other nonboycotting countries is always for the period up to and including 1992. After that date, any prognosis is simply unjustified.

We have assumed that the transport of South African coal - as the result of a boycott - will gradually decrease. As the starting point for the boycott measures we have selected begin 1990. We assume that transport of South African coal will decrease by 50% in this year. In the second year, the decrease is assumed to reach 75%. And in 1992, the boycott is assumed to be complete.

In this research, we did not examine the effects of a boycott on South African employment. We do not deny that a boycott may create employment problems in South Africa. But in so far as the largest miners union in South Africa, the NUM, calls for a boycott from abroad, it seems that a discussion of the employment consequences of a boycott belongs in South Africa rather than in The Netherlands. In this research, therefore, we concentrate on the economic damage a boycott can create for South Africa, with the assumption that pressure on the people in power to do away with apartheid will increase.

Finally, in consultation with the advisory board, it was decided not to consider the judicial and political feasibility of a boycott in this research.

1.4. Research methods.

In this research we have relied on a variety of methods. The relevant companies were identified through an analysis of sales contracts, regularly published in trade journals. In addition, we posed questions in person, via the telephone, and in writing. For each North-West European country, the final consumers of South African coal and the economic sectors in which this coal gets utilized were determined. Using these statistics, the flow of South African coal could then be reconstructed.

The reactions to an eventual boycott were determined in a large number of interviews with the various consumers, traders, and stevedoring companies involved with South African coal. A number of discussions with experts in the areas of coal and energy matters also took place. In addition, the available literature was studied. By identifying the relevant companies and determining their reactions to an eventual boycott, the prognosis for the economic and employment effects of a boycott could be summarized. We also determined the prognosis of incoming coal in the case of no boycott.

In order to determine the effects of a boycott on South Africa, the recent literature was studied. The absorption possibilities of other nonboycotting countries were examined. And using these figures, an estimate of the economic consequences for South Africa of a boycott has been made.

Finally, special attention was paid to the possibility of obtaining a water-tight boycott on South African coal. In order to do this, interviews were carried out with government employees in Denmark - where a boycott is already in effect - and experts in the area of coal inspection in the United Kingdom and The Netherlands.

2. The chain: From mining to consumption.

In this chapter, the links of the coal-chain from South Africa to and through The Netherlands - from mining to consumption - are examined. And, as a result of this review, the first question in our study - which companies are involved with South African coal - is answered.

2.1. South African coal: A characterization.

South African coal lies in relatively shallow, little deformed seams. Most of the coal is of low caloric value (i.e., has a low carbon content) and contains a large quantity of volatile matter and inorganic matter. In contrast to the economic advantages of the coal's positioning, the large quantity of volatile matter and polluting minerals can only be reduced using advanced methods of washing.

South Africa uses coal with a high caloric value predominately for export. The steam coal[4] that arrives in Europe has usually been washed and has a high ash content and relatively low content of sulfur. See Table 2.1, which follows, for a sampling of the characteristics of export steamcoal.[5]

Table 2.1
Characteristics of export steamcoal (in Btu/lb. and weight percentages).

	Btu	Sulfur	Ash	Moisture	Volatile matter
South Africa	10,500-11,700	0.6-1.5	12-18	7-10	22-32
Colombia	11,750-12,200	0.6-0.7	8-9.5	8-10	32-36
Australia	11,000-12,500	0.4-1.0	12-18	7-10	25-36
United States	10,500-14,000	0.8-3.0	6-20	6-15	16-36
China	11,500	1.0	12.9	6	31-32

South Africa can in principle continue exporting 80 million tons of coal per year well into the next century together with 240 million tons of national consumption per year. At the beginning of the eighties the South Africans expected national consumption to reach 240 million tons a year in 2000, and coalexports to reach 80 million tons per year in 1990 and thereafter.

At this moment however, South Africa produces a total of 185 million tons of coal. Of this, 43 million tons are intended for export.[6] In 1986 - a good export year - South Africa exported 46 million tons: 40.3 million tons of steamcoal for burning and heating purposes and 5.7 million tons of coking coal for production of cokes for blast furnaces.

---

[4] Steam coal is coal appropriate for burning and heating purposes.

[5] ColTrans, July/August 1986, p. 27.
China: An Tai Bao. Drewry. Steamcoal. July 1988, p.7.
Btu/lb = 0.555 kcal/kg.

[6] The statistics for 1988 are estimates from "South Africa - Record coal exports in 1988?" In International Bulk Journal, September 1988, p.6.

2.2. Exporters in South Africa.

SOMO
Paulus Potterstraat 20
1071 DA Amsterdam

The most important exporters in South Africa are:
- Amcoal (daughter of Anglo American Corporation)
- Gencor (with daughter Trans Natal)
- Rand Mines (daughter of Barlow Rand)
- Shell
- British Petroleum (BP)
- Transvaal Coal Owners Association (TCOA)
- Gold Fields Coal (via Gold Fields of South Africa controlled by British Consolidated Gold Fields)

The South African authorities allocateds export quotas for coal. In 1981 it was assumed that a level of 80 million tons of coal exportquota - "phase 4" - would be reached within a few years. Through boycott measures in the world, however, phase 4 level of exports has not been reached. Nevertheless, 70 million of provisonal quota have been allocated. These can only be used, however, if the capacity of the largest export harbor, Richards Bay, is expanded. Richards Bay is on the east coast and now has a maximal capacity of 44 million tons per year. In 1987, moreover, plans for expansion to 80 million tons were put on hold.

As far as the allocation of quotas, South Africa favors large (oil) multinationals. In such a manner, BP, Shell, and Total received 30% of the "phase 3" export quota. Smaller mining companies have opposed this distribution policy for they would not receive their portion of the export quota until "phase 4" has been reached. In 1979, the then Minister of Economic Affairs, Heunis, made it clear that the allocation of export quotas to BP, Shell, and Total "have been subjected tot the condition that they continue to fulfil their obligation in supplying liquid petroleum fuels to the country". In other words, we'll let you have coal if you keep up the flow of oil. Mr. Heunis added that if the oil tap is closed the companies coal export quotas will be "reviewed".[7]

In short, there is a direct connection between the export of coal and import of oil in South Africa. Coal is used by South Africa as a "strategic good."

In the transport of coal to and through The Netherlands, BP and Shell - among others - play a central role.[8]

Table 2.2 provides an overview of the largest export mines in South africa.

---

7 The Economist, May 26, 1979.

8 We have no insight into the exact amount and distribution. Total has traditionally exported to France. BP exported approximately 2 million tons via EMO to West Germany. Shell coal is transported via OBA in Amsterdam and the stevedoring companies EMO and Swarttouw in Rotterdam, and - since 1988 in Vlissingen - transshipped by the stevedoring company OVET.

somo
Paulus Potterstraat 20
1071 DA Amsterdam

Table 2.2
Overview of the largest South African export mines

Steam- and coking-coal	
Bank	Amcoal
Landau	Amcoal
Greenside	Gold Fields Coal, also via TCOA[9]
Van Dyks Drift	Rand Mines, exports via TCOA
Haasfontein	Trans Natal/Gencor, also via TCOA
Steamcoal	
Kleinkopje	Amcoal
Goedehoop	Amcoal
Ermelo	Trans Natal/Total[10]
Optimum	Trans Natal
Middelburg	BP 88% (and Kanhym/Gencor + Douglas/Rand)
Rietspruit	Rand/Shell
Spitzkop	Kangra

Source: The availability and cost of coal in South Africa, IEA- Coal Research, March 1986; International Bulk Journal, April 1987, p.15.

2.3. Trade and transport.

The large export companies have their own trade and transport companies: Goldfield, Anglo American, Shell Coal, and Total (-Hutchinson). The trade and transport of South African coal to overseas destinations runs for the rest via a limited number of large traders. Well known companies that organize the transport of coal via the harbors of Amsterdam / Rotterdam / Antwerpen (ARA) are Marc Rich, Stinnes, Hansen & Neuerburg, Transcor, Krupp Handel/Lohnro, Thyssen, Ruhrkohle, Raab Karcher (Corry Coal), Carbotrade (for BP), Nicholas Jackson, Cobelfret, Bocimar, and others. Just as the names here and there indicate, most of these companies are daughters of large consumers. Nevertheless, the companies have a relatively independent status and also handle coal from other countries and other consumers. These trading companies are also represented in the larger export countries and import harbors through local establishments and agents.

Three-quarters of the South African coal that flows to and passes through The Netherlands is intended for consumers who buy large volumes on a yearly-contract basis.

According to our estimates, one quarter of the South African coal that comes through Amsterdam, Rotterdam, and Antwerpen is traded on the so-called "spot market."[11] Often it involves remainig lots from discharged ships. The spot market is concentrated in Rotterdam for a number of reasons. The harbor is extremely deep,

---

9 TCOA is an export cartel, composed of a number of South African mining companies. It stopped operating as a national cartel in March 1989.

10 In december 1987 BP withdrew from this joint venture.

11 Spot sales are loose sales that do not take place in the framework of a longer-running contract (i.e., a year or more). The ARA spot market has both an economic and a physical function: ARA serves as the reference point for price agreements between exporters and buyers in North-West Europe and is also a location for the intermediate storage of goods by large traders and final consumers.

which means that ships carrying large quantities of coal can dock there. Topping off is also easy there. And transport to the hinterland from Rotterdam is ideal.

2.4. Final consumption in North-West Europe.

More than 99% of the South African coal for Europe is steam- coal. It is intended for burning - that is, energy production: heating, steam, and electricity. Part of this coal is used in the cement- and sugar-industries, and also - for example - in grass drying industries. A little, although growing amount, of South African steamcoal is used in cokeries and blast furnaces (so called injection-coal).

During the last years coal buyers must meet continually stricter environmental norms. Inspection specifications are becoming more and more detailed because the burning techniques have become more and more refined to increased energy efficiency in special desighed boilers. The overall result of these developments is that a buyer will prefer to purchase coal from a specific mine. Frequently a certificate of origin is demanded and testing of the product now accurs at many loading docks. Although large coal buyers may desire coal from a specific mine, they nevertheless want to avoid becoming too dependent on a particular area or supplier. The need for flexibility is characteristic of most buyers, although the habit of trading contracts themselves or selling lots during the transport, as in the oil market, is not characteristic.

Buyers, for example the buying associations of electricity companies, work with contracts that resemble letters of intent in many ways. The exact quantities and specifications get agreed upon over several years, but the price is dealt with on a yearly basis. If no agreement on the prices can be reached, the buyers are free to turn to other suppliers. Other large buyers work with so-called "tenders". Coal supplies with a specific quality are requested from exporters and traders.[12]

While the contracts concluded by electricity corporations and other large buyers can be traced, deals transacted on the spot market are often difficult to trace. It is possible to determine the origin and destination of coal tranported over seas using a number of sources but time did not allow us top do this.

2.4.1. The Netherlands.

2.4.1.1 Redistribution of the flow in The Netherlands.

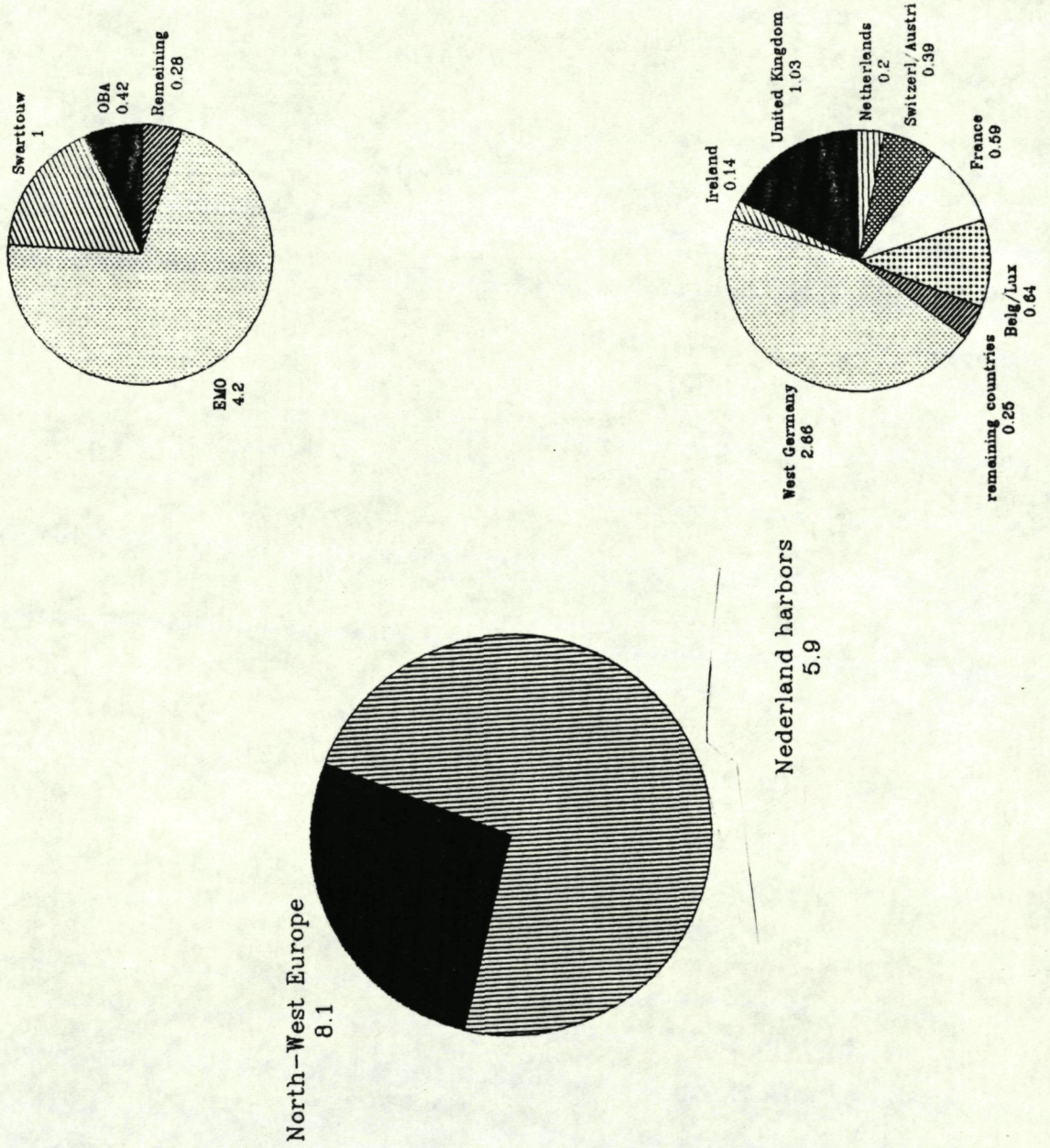
Figure 2.1 below provides insight into the flow of South African coal to and passing through The Netherlands to final consumers. The Netherlands plays an important role. Two-thirds of all the South African coal imported in North-West Europe travels via The Netherlands. The flow of South African coal represents more than one fourth of the total transport of coal to The Netherlands. The harbor of Rotterdam is the hub of North-West Europe. That is, the amount of incoming coal is the greatest in this harbor due to its favorable location and characteristics. The harbor is attractively located with respect to both West Germany and the United Kingdom. The harbor has no obstacles or locks. Moreover, the coal terminals can receive any of the maximum-size ships. Topping off is performed here with ships that are traveling through to other ports. And the harbor has a large loading and transfer capacity. Finally, the total costs for using this hub are relatively low because of its favorable location.

---

[12] Contracts and price-agreements are systematically noted in the journals International Coal Report (ICR) and Coal Week International (CWI). Various consumers indicated in our interviews that the published prices are not always accurate.

Figure 2.1.

Coal from South Africa to or passing through The Netherlands.



2.4.1.2 The stevedoring companies

Rotterdam: The stevedoring company EMO handled a total of 12 million tons of coal in 1988.[13] Except for screening, no further preparation of the coal takes place with EMO. Frans Swarttouw handled a total of 2.9 million tons in that year. Some major preparation do take place with Swarttouw. Through screening and breaking the coal, different types of steam-coal and anthracite are produced. Frans Swarttouw is building on a deep-water terminal, in order to be able to receive large vessels like at the terminal of EMO. The terminal should be operational in 1991. Arrival of more South African coal at that point is a strong possibility

Of the South African coal that arrives in Rotterdam, about 80% of it is handled by EMO and 20% by Frans Swarttouw. In 1987 5.3 million tons of South African coal entered or passed through Rotterdam.

The share-holders in EMO include the colleague/competitor Frans Swarttouw Holding BV (30%), Manufrance - allied with ATIC (19%), and the large transporters, traders, and buyers of iron ore and coal. The latter represent 51%, via the Steenkolen Utrecht BV, which includes Ruhrkohle AG, Thyssen AG, SHV Holding (SSM), Shell-Netherlands, and Shell-West Germany.

The share-holders in Frans Swarttouw Holding BV are divided among HES Beheer NV (60%) and Internatio Muller NV (40%). Swarttouw Holding NV has 33.3% of the shares in the Zeeuwse stevedoring company OVET.

Amsterdam: Stevedoring company OBA handles all incoming coal from South Africa, including storage and transshipment.[14] OBA handled .4 million tons of South African coal in 1987. In the beginning of 1989 the business was taken over by Interstevedoring BV, which also transships other mass goods.

Zeeland: Stevedoring company OVET turned over 60,000 tons of South African coal in 1987. OVET has recently expanded her activities in the Kalootharbor, in Vlissingen. New storage and transhipment capacity, as well as screening installations, were invested in.[15] OVET has also established a new contract with Shell. This suggests that increased handling of South African coal in the future could occur.

The share-holders in OVET are Fran Swarttouw Holding BV (33.3%), Manufrance BV (33.3%), and ACZ de Carbonisation (the Sluiskilse cokery).

2.4.1.3 Final consumers in The Netherlands.

In the different trade journals we examined, we did not find any Dutch contracts for South African coal. We therefore asked each potential coal user in The Netherlands whether they used South African coal. This led to the following results.

Potential consumers SEP and DSM ban South African coal as policy; SEP purchases via GKE. Two other potential consumers - Hoogovens and AZC de Carbonisation - reported not buying South African coal.

The Suikerunie, CSM, and the ENCI reported absolutely no more use of coal.

---

[13] 1.2 million tons of the amount of coal handled by EMO consisted of outgoing coal from West Germany. Another 1.3 million tons of coal was shipped over seas. International Bulk Journal, February 1989, p.51.

[14] The management of De Rietlanden - the other stevedoring company handling coal in Amsterdam - told us that they had not transshipped South African coal for the last two years though this was not in policy.

[15] International Bulk Journal, February 1989, p.53.

The use of coal in the green houses (horticulture) has decreased rapidly and is virtually none.

Twelve of the grass-drying businesses approached by us (each good for 2-to-3000 tons of coal per year) reported that they obtained their coal through trade companies; in two cases BP and Van Ingen were mentioned.

AKZO (90,000 tons of coal per year) refused to provide information on this question. The company, with its own coal- driven power plant, is experimenting at this moment in the new fluid-bed combustion using a variety of lots from diverse origins.

On the basis of this information, we should conclude that South African coal is stoked on a very limited scale in The Netherlands.

Coal traders - also active on the Dutch market - estimated in interviews with us, however, that the final consumption in The Netherlands is between the .1 and .2 million tons per year. If this estimate is correct, then it is possible that one or more of the potential coal consumers approached by us use South African coal. In any case, we must conclude that a "gap" exists between the estimates and the information provided to us by different consumers.

In the remainder of this research we have presumed that The Netherlands use .2 million tons of South African coal per year. We have also pressupposed this .2 million in our interpretation of the Dutch import and export statistics. In 1987 The Netherlands imported 1.44 million tons of South African steam coal and 23,000 tons of South African anthracite. This comes to a total of 1.67 million tons.

We calculated that The Netherlands exports 1.47 million tons of coal originating in South Africa. In 1987: Assuming national use of .2 million tons of South African coal, 1.47 million tons of the 1.67 million ton of South African coal must have been exported by The Netherlands during that year.[16]

2.4.2. **West Germany.**

We found a number of South African coal contracts with West German consumers in the trade journals. We asked these and other potential coal consumers whether they, indeed, used South African coal. The response was moderate to adequate. It was therefore possible - using information from the trade journals, interviews, statistical analyses, and ownership patterns - to sketch a reasonably complete picture of West German consumption of South African coal.

In 1987, West Germany officially imported 2.673 million tons of South African coal. In 1988, that total was 2.738 million and of this, 2.3 million tons were imported through Rotterdam and the Rhine.[17] In 1986, West Germany put a ceiling on the amount of South African coal that can be imported. The ceiling of 4 million tons has not been approached by far in the last few years.

The total coal import of West Germany in 1988 was 8 million tons.

The use of South African coal in West Germany across the different economic sectors is presented in Table 2.4 below.

---

16 The Netherlands exported 2.04 million tons of coal in total.

17 This is 33% and 34%, respectively, of the total West German coal import. In the import from South Africa, the re-export out of The Netherlands of South African coal to West Germany must be added, which was .3 million tons in 1987. Re-export of South African coal out of Belgium to West Germany was negligible.

Table 2.3
Import of South African coal by West Germany, according to consumer category (in millions of tons and percent of total).

Construction material industry	1.36	51
Public power plants	0.69	26
Chemical industry	0.21	8
Iron and steel industries	0.13	5
Paper industry	0.11	4
Remaining	0.16	6
Total	2.67	

Source: Statistik der Kohlenwirtschaft.

The German "construction materials industry" in 1987 used 51% of the official South African coal import. That is 1.36 million tons of South African coal. Of the coal imported by the cement industry, 89% of this consisted of South African coal.[18] Exceptions aside, all of the cement businesses in West Germany buy South African coal.

Technically seen, cement production can be fueled by any number of substances: steamcoal, browncoal, petroleumcoke, tires, or shale. Due to environmental regulations, the amount of petroleumcoke, browncoal, and tires that can be stoked is limited. In general coal has certain environmental limitations because of its high sulfur content. However, South African coal has a low sulfur content and relatively high ash content.

The iron and steel industry in West Germany imported a total of .225 million tons of coal in 1987, of which .126 million was of South African origin. These companies use low caloric value injection coal[19] and coal that gets mixed with cokingcoal in the coking process.

Presumable inland shipping of South African coal is dan by one or more of the following companies: Krupp Handel, Mannesmann Rederij BV, and Thyssen Carbometal GmbH.

For the production of electricity - in public power plants and the chemical industry - .9 million tons of South African coal were used in 1987. And according to the trade press, the following businesses have concluded contracts with South Africa:
- Vereinigte Elektrizitaetswerke Westfalen AG (VEW) (1986)
- PreussenElektra AG (1988) (via Krupp Handel)
- Volkswagen AG/PreussenElektra AG OHG (1989) (via Krupp Handel).

The "Deutsche Bundesbahn" (36,000 tons) and the sugar industry (15,000 tons) belong to the category of smaller coal consumers in West Germany.

---

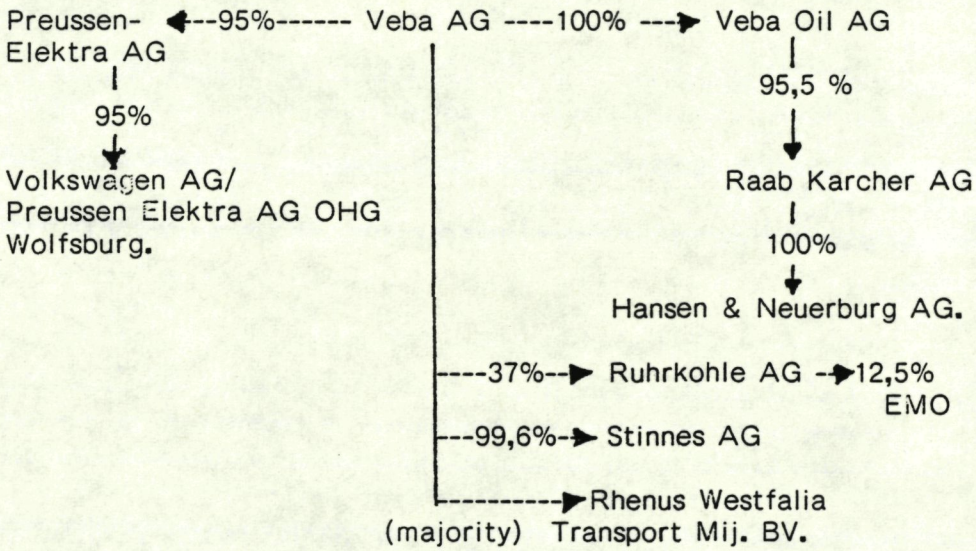
[18] According to the "Bundesverband der Deutschen Zementindustrie," the use of coal in the construction materials industry is almost all attributable to the cement sector. In 1987 the total energy use of the cement industry was 3.4 mtce. ($check comma or period?) Of this, 1.6 mtce (= 1.74 million tons) were steam-coal. Of this, 1.53 million tons were imported and 13,000 tons of German origin. And of the imported coal, 1.36 million tons were of South African origin.

[19] Lower in value than cokingcoal.

Other firms in West Germany involved in the trading or transporting of coal from South Africa are: Stinnes AG (trade); Raab Karcher Kohle GmbH (trade); Rhenus Westfalia Transport Mij BV (Rhine shipping), Mannesmann Rederij BV (Rhine shipping).

The energy-giant, Veba AG, appeared upon closer examination of ownership patterns to constitute the central link in the import of South African coal in West Germany. As can be seen in Figure 2.1. Veba is either the mother-company or has a minority interest in a large number of the companies.

Figure 2.1.
The position of Veba AG relative to enterprises connected to South African coal.



The largest share-holder in Veba is the West German state with 30%. For the rest, there are a large number of small share-holders.

2.4.3. **Belgium.**

In 1987, Belgium officially imported 2.418 million tons of South African coal (26% of the total coalimports.) In 1988, 22% of the total coal import cam from South Africa (2.354 million tons).

Approximately .64 million tons of south African cola travels via The Netherlands to Belgium.[20] We were unable to determine which consumers received this coal. In 1987, the 2.418 million tons of imported South African coal was distributed across the various consumer categories shown in Table 2.4

---

20 Approximately .4 million tons appear in Belgium as Dutch coal.

Table 2.4
Distribution of imported South African across economic sectors in 1987 (in millions of tons and percentage).

Public power plants	1,194	49
Iron and steel industries	92	4
Remaining industries	435	18
Domestic use	135	6
Re-export	562	23

Source: Ministery of Economic Affairs, Belgium.

South African coal, intended for public power plants, is purchased by the buying-association named Pool der Calorieen.[21] This company directly ships the South African coal into Antwerpen and Gent. Zeebrugge is not favorably located for power plants fueled by South African coal.

The coal shipped through The Netherlands goes to the other consumers.

2.4.4. **United Kingdom.**

The United Kingdom imports about 1.0 million tons of South African coal via The Netherlands.[22] The majority of this coal arrives as so-called "Dutch blend".

We did not perform a detailed analysis of British consumers of South African coal because these users are difficult to discover.

The import of steam coal by the United Kingdom via The Netherlands is largely handled by intermediate traders. The coal is transported in small ships directly to the buyers - also often intermediate traders and local blenders - and to a large number of harbors. The English traders import large volumes of coal from The Netherlands and in this flow there is a great deal of South African coal. A good price for these blends can then be locally obtained for the coal because the price of British coal is higher.

Most of the final consumers of steam coal however buy "British." Only a limited number of large consumers import directly: ICI, Rugby Cement, and only recently Blue Circle (Cement). We were unable to determine whether these companies import South African coal or not. The trade journals did not report it. Two other large importers of steam coal are the Central Electricity Generating Board (CEGB) and the South of Scotland Electricity Board (SSEB). Both avoid South African coal, although it is known that domestic traders sell them British coal mixed with import coal - including South African coal.

2.4.5. **France.**

In 1986 France still imported 1.546 million tons of South African coal. One year later this was only .78 million tons. Since the boycott measures of November 1985, the national power companies - Electricite de France (EdF) and Charbonnages de France (CdF) may not conclude contracts with South Africa. These measures have resulted in a sharp decline in the French import, as can be seen in Table 2.5 below.

---

21 The buying-association of Intercom, EBES, and Unerg.

22 We did not further analyze the destinations of South African coal shipped via Belgium, the so-called "ingevoerde doorvoer" (imported through shipment). In 1987, this involved .4 million tons via Gent and Antwerpen.

Table 2.5
Import of south African coal by France according to consumer categories (in thousands of tons and percentages).

	1986	1987	%
EdF	748.5	141.2	18
CdF*	88.9	26.6	3
Iron and steel industry	563.3	612.6	78
Cement industry	46.6	-	
Remaining industries	86.6	-	
Domestic use	3.7	-	
Remaining	8.6	-	
Total	1,546.2	780.4	

*Power plants in North and Pas de Calais.

Source: ATIC, Annual Report 1987.

The French iron and steel industries still use a large quantity of South African coal.[23]

In 1986 and 1987 the Belgian re-export to France increased tremendously. It was suspected that South African coal had in such a manner reached the boycotting power companies after all. And it was found that South African coal had, indeed, arrived at French power plants as "Australian coal."[24] All together, approximately 1.0 million tons of South African coal are transported to France via Belgium. Through re-export South African coal also gets shipped through Rotterdam to West Germany, Belgium, Denmark and other countries.

2.5. The involvement of large oil multinationals in the coal chain.

Large oil multinationals such as Shell, BP, Total, and to a lesser degree ENI (Agip Coal) occupy key positions in the coal chain. Their key position does not however extend to the final consumption of the coal; the (national) power companies and iron and steel industry could be found there. Nevertheless oil multinationals are moving slowly in this direction as well through the delivery of the technology for coal gasification.[25] In such a way, the multinationals are preparing the way for

---

[23] It is unclear whether this coal is used for production of electricity or is used for injection in blast furnaces.

[24] SouthScan, Vol.4, no.4, January 15, 1989, p.31.

[25] The technique of coal gasification should take off in the coming decades because it represents a number of clear improvements on current coal burning methods. The gas obtained contains 80-to-83% of the heat generated in burning $ and 16-to-18% of the overheated steam (almost perfect conversion). The gasification technique is almost insensitive to the properties of the coal used: from ash content, sulfur content and tendency to bake, to moisture content. The coal need not to be preprocessed, therefore all different sorts of coal can be utilized straight from the mine: from browncoal to anthracite. Even petroleumcoke can be used as fuel.
At present, there are a number of gasification processes that will shortly be ready

expansion of the sales from their own coal mines.

Up until now, the oil multinationals had interests in South African mines as well as American and Australian mines and had interests in the coal terminals in the ships and shipping companies, and trade organizations. By involving themselves in the technological advances and thereby in the final consumption of the coal their sales will maximise.

somo
Paulus Potterstraat 20
1071 DA Amsterdam

---

for commercial use: British Gas/Lurgi, DOW, HT, Winkler, Exxon, Shell, and Texaco. Shell is currently building its first commercial coal gasification project in The Netherlands (Buggenum 1993).
Source: "Uit Europoortkringen", vol.27, no.13, 1988, p.17.

3. The effects of a boycott on the price of coal.

South African coal is relatively low priced. A boycott of South African coal can therefore lead to a rise in the world market price. As a consequence, consumers may decide that coal is too expensive and consider switching to oil or gas. If other fuel is sought, the expected growth in the transport of incoming coal will in fact decline. The South African coal may then, perhaps, not be completely replaced with coal from other origins. The financial and employment consequences of a boycott for South Africa depend to a large degree on the price change brought about by the boycott, and it is therefore critical that this issue be carefully examined.

The effect of a boycott on the price of coal depends on the extent of the boycott and the speed of implementation. The coal price is also dependent on the CIF-price of steam coal in Europe[26] and the possibilities South African exporters have to sell the coal elsewhere.

3.1. The world market and price developments.

All of the predictions that we examined regarding the supply and demand for coal in the world indicate that there will be a strong demand for coal both in the short run and in the long run. In order to illustrate this, we have included the short-term prognosis of Drewry (December 1988) below.

Table 3.1
Forecasts for seaborne import of steam-coal, 1988-1992 (in millions of tons).

	1988	1990	1995
European Community	70,0	80,5	93,0
Remainder of Western Europe	8,0	9,5	12,6
Japan	24,2	28,7	30,5
Remainder of the Far East	36,5	40,4	48,1
Rest of the World*	6,3	8,9	10,6
Total	145,0	168,0	194,8

* Predominately the Middle East and Africa and including the centrally planned economies of Eastern Europe.

Ocean Shipping Consultants estimated "seaborne trade" to be 173.5 million tons in 1990 and, in their "low case", almost 209.0 million tons in 1995. This was calculated on the basis of a price increase of 6.8% per year between 1987 and 1990, and a lesser increase thereafter.

Table 3.2 indicates where the coal is expected to come from.

---

26 CIF = Cost Insurance Freight. The CIF price includes shipping and other costs. In the remainder of this report we use the terms "CIF-Europe" and CIF-ARA" interchangeably; "ARA" stands for Amsterdam, Rotterdam and Antwerpen.

Table 3.2
Forecasts for seaborne coal exports in 1986, 1990, and 1995.
In millions of tons.

	1986	1990	1995
European Community	3.4	2.5	1.5
United States	21.4	20.0	22.4
Australia	42.2	58.5	68.5
South Africa	39.3	40.3	59.6
Poland	9.4	10.5	8.8
Colombia	3.8	9.5	11.5
Soviet Union	3.9	5.8	6.0
Canada	4.1	5.5	6.5
PR of China	3.3	8.6	11.3
Venezuela	-	2.5	4.9
Indonesia	-	0.5	1.5
Remaining	2.8	2.7	6.3
Total	133.5	173.5	208.8

Source: Ocean Shipping Consultants, 1988, p.140.

In the course of 1988, the price of steam coal (CIF-ARA) increased more quickly and strongly than predicted by these forecasters. From the lowest level of around thirty US dollars, $30 in 1987, the price went up to over $45 in April 1989, depending on the caloric-value and quality of the coal. The recent price increases include an increase in over-seas shipping costs. Not withstanding increases in most of the overseas freight tariffs, the FOB dollar price[27] for exporters has drastically risen.

The price forecasts from between 1988 and now assume a gradual increase in the CIF-price of steamcoal in North-West Europe. The 1988 estimates of Prior and McCloskey in their study "Can British coal survive privatisation?" are representative. They came up with a price range (CIF-Rotterdam) of between $42 and $52 in 1988 and between $48 and $55 in 1995. This is illustrated in Figure 3.3.

---

[27] FOB = Free On Board. Mining price plus cost of transport to the loading harbor plus handling costs in the loading harbor.

Figure 3.3
CIF-ARA prices in 1988 dollars for steamcoal of 11,500 btu/lb. (66,400 kcal/ton).

Source: Coaltrans 1988. Rotterdam. Steamcoal - firmer prices to continue? H. Lee. British Coal. p.25. Plus price projections of Prior and McCloskey.

3.2. Which coal exporters can replace South African coal?

American and Australian coal particularly in the long run can replace South African export coal. And because the price of steamcoal is expected to continue increasing in the near future, either with or without a boycott, the American and eventually the Australian exporters will be in an even better position to replace South African coal without price increases forced by boycott measures. This will definitely be the case if boycott measures are implemented gradually.

If all of the countries in the EC participate in a boycott, the largest amount of South African coal will disappear from the European market. Moreover, many other countries have called for an EC-boycott and indicated that they are willing to go along with it. In all of the other (non-EC) boycott variants we have examined, less South African coal would disappear.

Japan and Hong Kong have, on political grounds, called for a boycott if the EC boycotts. And Japan, Hong Kong, and the EC together in 1987 imported 29 million tons of South African coal; the EC about 19 million tons. Given the current and expected price levels for steamcoal, the American exporters are in a position to fill this "gap" in the European market. With every one of the boycott variants examined here less South African coal would disappear from the european market. American coal and to a lesser degree coal from other countries can easily replace this amount.

The U.S. is known as the so-called "swing supplier." The volume of coal exported by the U.S. is only 4% of their total coal production. In 1987, the U.S. produced 572 million tons of coal. They have a large national sale that can be

converted into export sales under higher world market prices. Extra export by the U.S. is expected particularly if the price in North-West Europe goes above $45 per ton. The sale of American coal fluctuates with the world market price. Thus, for example, in 1984 only 20 million tons of coal were exported while in 1986 that was 35 million tons. Over the last few years the American coal export could rise in part because of the increasing world market price and because harbors have been dredged out (making them deeper) and shipment from the inland has been improved too.

Given current increases in the price of steamcoal, the American exporters are more than able to increase their exports within 6-18 months to the volume of South African coal that would disappear. Even in the case of a full boycott (of 29 million tons from Japan, Hong Hong, and the EC). At this moment, the price is at $45 per ton. In 1990, it is expected that the price will be between $42 and $52 per ton. In 1995, a ton of coal is expected to cost between $48 and $55.

Other coal-export countries are in the short term less able to fill the gap created by a boycott. With increasing coal prices, extra exports to Europe can be expected to become attractive to Australian exporters. The Australian situation is different, however, from the American one. In 1986 and 1987, Australia closed down a number of unprofitable mines; this was in part due to the low export prices and high exchange rates. National sales in Australia are much lower than in the US. It will be some years before Australia can start these mines up again. Nevertheless, expansion plans with new mines are still being executed. And it is expected that this country will be able to export 74 million tons of coal in 1995. In the year 2000, this could reach as much as 99 millions tons, more than dubbel the export in 1986. (high case-estimates). In the short run, Australia can only replace a limited amount of South African coal; but in the medium turn and in the long run, Australia will definitely be able to compensate for the South African coal that disappears.

The coal producer, China, will not be in a position to export extra coal as coal must be imported by China to meet the national need.

Other coal-producers and exporters such as Poland, Colombia, the Soviet Union, Canada, Venezuela, and Indonesia simply have limited expansion possibilities. That is, increases in coal export can be expected from these countries in the case that South African coal disappears from the market, but nowhere to the level of American export-sales.

3.3. The price increase forecasted by WEFA.

In the preceding we concluded that boycott measures initiated by European countries have no effect on worldmarket prices of steamcoal. WEFA (Wharton Econometric Forecasting Associates) does no appear to support this conclusion. The WEFA forecasts that if the South African export falls back to 5.0 million tons, the coal price in Western Europe will increase by $11 per ton. WEFA suggests this in the study, "World coal trade in the 1990s - trade patterns and prices." We would like to suggest four counter-arguments to this claim.

(A) For the time being, the South African export of coal will not drop to 5 million tons. That is, the price of coal will simply not increase as rapidly as the WEFA predicts. Because if the EC should boycott before 1992, followed by Hong Kong and Japan, we calculated that South Africa would still be able to export some 22 million tons of coal to other - nonboycotting - countries.[28] (According to our estimates, South Africa exported 43.3 million tons of coal in 1988).

(B) The export of coal from South Africa will also not decline as rapidly as the WEFA predict because we presume a gradual implementation of the boycott

---

[28] See Chapter 9.

measures. On the basis of this assumption we calculated that in 1990 - the first boycott year - South Africa will still be able to sell 33 tons and in 1991 - the second boycott year - as much as 27 million tons.

(C) For the above reason, the coal-prices in Europe cannot be expected to rise so rapidly. In 1988 and 1989, coal-prices did however rise in the absence of a boycott on South African coal. The WEFA did not take this autonomous increase into consideration in their price-forecasts.

Concerning the effects of price- increases says the WEFA, rather, "US industry sources indicate that a $3-5 increase in exportprices would pull substantial volumes of coal from a weakening domestic market".

(D) The WEFA further argues that "If UK imports of steamcoal are increased from a base case assumption of 15mt to 33mt by 1992" (...) "prices are then predicted to differ from the base case, but only some $1/ton extra".

This WEFA-base-case does not include a boycott on South African coal. It is assumed that the British Central Electricity Generating Board (CEGB) is responsible for the growing imports in the United Kingdom. In our boycott variant, we assume the CEGB import of coal to grow 'only' by 5 to 6 million tons per year. And if we incorporate this into the WEFA-base-case, it can be seen that the market can handle an additional 10-to-26 million tons before a price increase of $1 will occur. This is about equal to the tonnage that gradually would drop out of the market in the case of an EC boycott.

4. The consequences for the amount of coal coming in to Rotterdam and Amsterdam.

We concluded in the above that in the case of a boycott the coal replacing South African coal would, in at least the short term, come predominately from the United States. U.S. coal generally comes in smaller ships than South African and Australian coal. Smaller ships can land directly at their destination[29]; that is, without unloading in - for example - Rotterdam. In the case that the amount of incoming U.S. coal increases, it is not unthinkable that Rotterdam, in particular, will lose business. In the following, we will argue that this switch to US-coal will have little or no effect on the volume of coal to be handled in Rotterdam.

In the first place, a portion of the boycotted South African coal will be replaced by Australian coal. This coal is shipped in larger ships. And given that the Australians can sell at lower prices than the Americans and plan to expand their mining facilities between 1990 and 1992, it can be expected that they will gradually fill more and more of the "gap" created by a boycott of South African coal. The same holds for the export of Colombian coal.

In the second place, Losing business, if it should apply at all, would aply to only a portion of the 5.9 million tons of coal that replace the South African coal. That is, the coal consumers in Austria, Switzerland, mid-Germany and southern-Germany, can be expected to continue to import via Rotterdam, Amsterdam, and the Rhine (2.6 million tons). (Transport via Belgium and Northern Germany is more expensive). One can further expect that the storage function of Rotterdam will continue to be used because of the existing combination of harbor functions (1.5 million tons). Finally, the import for consumption in The Netherlands itself can be expected to continue (.2 million tons). Together, this is 4.3 million tons of continued imports. The rest of the coal involved (5.9 minus 4.3 = 1.6 million tons) flows for the larger part in the United Kingdom (1.0 million tons). And this often involves very small harbors.[30] In these cases, direct import from the U.S. is simply impossible.

Finally - and this is the most important argument - the majority of the steamcoal coming from the United States and intended for the United Kingdom is currently shipped via Rotterdam, in, on the average, smaller ships.

---

29 Notably the United Kingdom which has a lot of coal-import-terminals that can handle smaller ships (and has no coalterminals that can handle the big capesize vessels).

30 This includes harbors such as: Exeter, Avonmouth, Dundee, Londonderry, Ipswich, London, Trent, Goole, Colchester, Ramsgate, and Southhampton (Source: AAM 1988).

somo
Paulus Potterstraat 20
1071 DA Amsterdam

5. The circumstances under which consumers of South African coal might switch over to other coal sources or other fuels.

Consumers of South African coal might switch to other sources of coal or other types of fuel for two economic reasons. First, coal from other countries may become cheaper than South African coal. South African coal is relatively inexpensive now but in the case of a boycott - of a limited number op countries - the difference in price between South African and other coal can go up because of higher transport costs involved in alternate transportroutes avoiding boycotting countries. Second, other sorts of fuel may become cheaper than South African coal.

5.1. Switching to another coal sources.

Consumers choose South African coal because it was cheaper. Up until the second half of 1988, South African exporters were the market price leaders simply because they offered their coal at the lowest prices. Large consumers would first agree on a price with the South Africans. And in a buyers market, the other exporters had to follow. Nevertheless, a substantial price difference still remained. Consumers were prepared to pay extra for the import of coal from different mines and countries. While the difference in price between South African coal and other coal in one and the same period could amount to $10 (CIF-Europe), it was nevertheless unattractive for many consumers to become totally dependent on a single, inexpensive supplier.

The market situation has now changed towards a balance between supply and demand. The price of coal has increased sharply. The position of South African exporters as the market price leaders has changed. The coal gets easely sold now, and the difference between South african coal and other coal is at this moment $5 (when corrected for caloric value the difference is $1 to $3).

We can conclude from the above that if - through a boycott - South African coal can only be shipped via nonboycotting countries, the coal will only be bought under one of the following conditions: (a) the (transport) costs via the alternative route(s) do not increase by more than $3 per ton; (b) the South African exporters drop their sales price to such an extent that the extra (transport) costs are compensated.[31]

From figures on the production- and shipping-costs for South African coal, it appears that these exporters do at present have the flexibility necessary to drop their sales price. The predisposition to discount prices, however, is connected to the ability of South Africa to compensate for the lost sales in another nonboycotting countries.

As concluded in Chapter 9 only with a complete boycott by the entire European Community will the level of South African coal exports fall. Relative to 1988, this fall was estimated to be by 10 million tons in 1990 and 22 million tons (the maximum) in 1992. In all of the other boycott variants studied, South African exporters can - more than - compensate for the boycotted volume with sales on, most notably, the Asian market. In these variants, the South African exporters certainly miss out on a large degree of export growth, but they are still in a position to pick up extra sales in other, nonboycotting countries. And it is exactly in these incomplete-EC boycott variants the problem of alternative, price-increasing routes for South African coal will occure.

We therefore conclude that South African exporters will not discount coal prices in the case of an incomplete-EC boycott to compensate for extra transport costs.

---

31 This conclusion is one of the assumptions made in describing the different boycott variants in Chapter 5.

5.2. Switching to other sorts of fuel.

The final consumers of South African coal can also switch to another sort of fuel. For example: heavy fuel oil or natural gas. The question is whether or not consumers will do this in reaction to a boycott on South African coal.

The choice between South African coal or some other type of fuel depends on a number of factors: (a) the other fuel must be less expensive[32]; (b) it must be possible on technical grounds to adapt the boilers to another type of fuel; and (c) it must be possible on product/environmental grounds to switch from coal to another fuel.

In the following we examine (a), (b), and (c) in more detail.

(a) Current users of (South African) coal are technically, infrastructurally, and logistically set up to stoke coal. Efficient transport of the incoming coal by ship or by rail is already available, as well as storage. And there are installations for breaking or pulverizing the coal. This holds for all of the large consumers: both private and public power plants; the cementindustries and iron and steel-industries. Even if the companies have the capacity, from the technical perspective, to switch to other types of fuel, the fixed costs of the "coal infrastructure" will remain.

The facilities for the transport and storage of oil are admittedly cheaper, but even in this light, the cost of heavy fuel oil or gas will need to be quite a bit lower than coal before a consumer will even consider converting to some other fuel.

The average price of heavy fuel oil was cheaper than that of coal only for a short time in 1986.[33] The price was then $10 per barrel, is now around $20 per barrel, and is expected to slowly increase in the coming years. However there is not much certain the future price of oil; it is a political price, strongly determined by OPEC-policy. And the unstable price of oil encourages coal-consumers to stick with coal. Moreover, the drop in oil prices in 1986 did not appear to have encouraged coal-users to switch to oil.[34]

The price of natural gas is coupled in North-West Europe on oil prices. This will change after 1992, however.[35]

Large consumers certainly do not consider switching to different products on a daily basis. Contracts are often for than a year, and the price is negotiated on a yearly basis. If in the long run the difference in price between coal, oil, and gas changes, the final consumers may consider conversion. Given that the price of South African coal only differs by 1-3 dollars from that of other coal, it is unrealistic in the case of a boycott to assume that the difference in price will motivate users to switch to some other type of fuel.

Table 4.1. illustrates the difference in price between imported coal and other

---

32 We mean the costs to the final consumer here, including cost fo transport, storage, and preparation of the alternative fuel types.

33 The price of heavy fuel oil varies in Western Europe between 85 and 90 percent of the price of crude oil.

34 "The impact of lower oil prices on utility coal use," OECD, Paris, 1988.

35 The Norwegian company Statoil is currently closing off contracts with European gas distribution companies (for deliveries beginning in 1995). In these contracts, the price of gas is coupled on the price of internationally traded steam coal.

fuels in West Germany.[36]

Table 4.1.
Average prices of imported coal at the German border and heavy fuel oil and gas. First quarter 1988. In German Mark per ton coalequivalent (tce).

Imported coal at the border	80
Heavy fuel oil (1% sulfur)	138
Natural gas	191

(b) The design of boilers in power plants allows often only coal with specific characteristics (in view of caking, energy efficiency and emission of sulfur and other pollutants). The companies can easily get coal with the desired properties in other countries than South Africa. The most limiting factor in the choice between types of steamcoal is the sulfur content. this is because de sometimes very strict environmental regulations in certain countries and regions.

(c) The cement industries use a mixture of fuels: coal, oil, petroleumcoke, browncoaldust, tires, shale etc. The mix is determined by the ash content and the sulfur content of the various fuels in use. Part of the sulfur and ash go into the cement. The other part leaves the chimney along with volatile matter. Given the different types of fuel in use and the environmental regulations, change in one fuel must lead to change in quantity and mix of the other fuels.
South African export-coal has a typically low sulfur content and high ash content. The use of South African coal thus allows a relatively high sulfur content of the other fuels. The high ash content does not matter for it all disappears in the cement.

Although South African coal is very suitable in the cement industries it can easily be replaced by other coal. This might only lead to change in the fuel mix.

Taken together, (a), (b) and (c) lead to the conclusion that a boycott will have no influence on the consumers choice between South African coal and other types of fuel.

In the following Chapters we will start from this conclusion and we will assume that in case of a boycott consumers involved will substitute the south African coal for coal originating from other countries.

---

36 ICR 9-9-1988. p.8.

6. Description of the boycott variants.

In this chapter we will describe each of the boycott variants outlined in Chapter 1. We assume that South Africa will not (be able to) increase, relative to 1988, its coal exports to European countries between now and 1992. For each of the boycot variants a map has been sketched (except for the EC boycot). The boycotting nations are represented in black in these maps.

6.1. A boycott by all of the countries in the European Community.

If all of the countries in the EC participated in a boycott of South African coal, this would include: the United Kingdom, Ireland, The Netherlands, West Germany, Belgium, Luxembourg, France, Spain, Portugal, Italy, and Greece - Denmark is already boycotting. Over the past few years the use of South African coal by the EC has been about 19 million tons a year. Following a decision to boycott, the import of South African coal by the EC will drop 9.5 million tons in 1990. In 1992, South Africa wil export 19.1 million tons of coal less to the EC. We assume that these 19 million tons of coal will be replaced by coal from other sources: As argued in chapter 3, initially predominately by American coal and later by Australian coal too. We assume that the shipment of coal via Dutch harbors will not decline.

6.2. A full boycott by The Netherlands.

If The Netherlands should boycott all transport of South African coal, South Africa would ship 5.9 million tons of coal a year less to The Netherlands (in 1992). With a full boycott we assume that the transshipment, import, storrage and transport to the hinterland of South African coal would no longer occur. We are talking about 5.9 million tons of coal, although it should be noted that the quantity of South African coal that appears in Dutch harbors is much larger than this because not all the coal is discharged from the ships. In particular, a great deal of topping-off from large ships occurs in the harbor of Rotterdam and the shipments that move on after topping-off never show up in the statistics.[37]

The South African coal that presently travel via The Netherlands will in this boycott variant be shipped to Antwerpen, Zeebrugge, Duinkerken, and Le Havre.

The topping-off of coal from ships carrying more that 160,000 tons must be done elsewhere (for example, in Gijon-Mussel, northern Spain) because the Belgian,

---

[37] The amount of South African coal that moves on to other destinations after being topped-off in one of the harbors of TheNetherlands is estimated to be 2 million tons in 1985 and 1.5 million tons in 1986.

northern German, and northern French coalterminals do not have the capacity to accommodate the verry large coalvessels.

The import-storage-export movement, typically for South African coal would disappear from the Rotterdam and Amsterdam harbors. This does not, however, mean that the transport/storage function of the harbors will disappear. Other - low priced - coal will take the place of South African coal (for example, Colombian coal).

In this research we have estimated that .2 million tons of South African coal get stoked in The Netherlands and that, in this boycott variant, these consumers will simply call upon coal from other origins.

6.2.1 An import boycott by The Netherlands.

If we assume a boycott on only the import of South African coal, 1.7 million less tons of South African coal per year will enter The Netherlands by 1992. Besides the domestic use of approximately .2 million tons by this measure the re-export of South African coal is interfered with. This means that 1.5 million less tons of South African coal will be exported from the Netherlands to other North-West European countries. We expect that this re-export will be picked up by Antwerpen, Zeebrugge, or Le Havre.

Imagine that The Netherlands decides to impose only an import boycott on South African coal. This will have the remarkable consequence of allowing Dutch stevedoring companies to continue handling up to 5 million tons of South African coal per year for overseas shipment and transport to the hinterland while The Netherlands is "officially" boycotting South African coal. We have not examined the degree to which this boycott variant might have consequences for the total volume of South African coal transshipped via Dutch ports.

6.3. A boycott by the North-West European countries.

When we talk about a boycott by the North-West European countries, we mean: the United Kingdom, Ireland, West Germany, The Netherlands, Belgium, Luxembourg, and France. (A boycott is already in effect in Denmark and partially in effect in France). A boycott by these countries will stepwise reduce the total yearly use of South African coal by 4.1 million tons in 1990 to as much as 8.1 million tons in 1992.

The necessary amount of coal can be obtained from other sources.

The possibility that other countries will follow suit and also decide to boycott has not been included in this variant.

6.4. A boycott by the North-West European countries without Belgium and West-Germany.

The extend of this boycott variant - that is, the total decline in South African coal exports as a result of boycott - is equal to the total North-West European import of South African coal minus the national use of Belgium and West Germany. In Table 5.1. the total national consumption of South African coal by Belgium and West-Germany is calculated. The total national use in North-West Europe is 8.1 million tons.

Table 5.1
The use of South African coal in Belgium and West Germany in 1987 (in millions of tons)

	Belgium	West Germany
Directly imported*	2.10	0.3
Shipped via Dutch harbors	0.27	2.4
Re-export coming from The Netherlands	0.38	0.3
Re-export leaving Belgium	-0.56	
Total	2.19	3.0

*This is the total import minus transport via Dutch harbors.

The national use of South African coal by Belgium and West Germany together is 5.19 million tons. With the gradual adoption of boycott measures between the years of 1990 and 1992, this variant will result in an estimated decline in the export of South African coal of 2.9 million tons per year (the total use by the North-West European countries minus the 5.2 million tons consumption in Belgium and West Germany).

In this boycott by the North-West European countries without the participation of Belgium and West Germany, Zeebrugge and Antwerp can take over from Rotterdam and Amsterdam all through-shipment to Germany and Switzerland and part of the transshipment:

- Zeebrugge takes over the topping-off function (ships above 160,000 tons will have to be topped-off in another harbor, for example, Gijon-Mussel);
- Antwerpen takes over shipment through to West Germany and Switzerland from

Rotterdam and Amsterdam[38];
- The Belgian ports will take over other transport that reached them via The Netherlands before the boycott measures[39].

In sum, this boycott variant has the following consequences for the amount of incomming coal from South African coming in via Dutch harbors. The shipping-through and re-export to West Germany will disappear: 2.66 million tons. The shipment through to Switzerland/Austria disappears: .39 million tons. And the shipment-through and re- export to Belgium/Luxembourg disappears: .64 million tons (1987 statistics). Together, this is 3.69 million tons less of incomming coal in the Dutch harbors in 1992, assuming a gradual adoption of the boycott measures between 1990 and 1992.

In this boycott variant, we assume transshipment and re-export to the United Kingdom, Ireland, and France - a shipping package of 1.6 million tons of (South African) coal per year - will continue to travel via harbors in The Netherlands. But because these countries are assumed to participate in the boycott, the coal will from elsewhere. In this boycott variant, we also assume that the final consumers in The Netherlands will aswell turn to coal from sources other than South Africa.

6.5. A boycott by the North-West European countries without Belgium and the United Kingdom.

In this boycott variant, the following countries are assumed to participate: West Germany, The Netherlands, and France (and already-boycotting Denmark). This means that South Africa can continue supplying Belgium and the United Kingdom with coal for national use, which comes to a total of 3.3 million tons. (See Table 5.2 for the relevant calculations.)

It is assumed that Belgium will be able to supply its national need by directly importing South African coal; transshipment and inland transport to Belgium via The Netherlands will no longer take place. We also assume that Belgium will take over the 1.0 million tons of South African coal that is

---

38 The extra transport costs for passing the the Schelde-Rhine canal on to Duisburg constitute only a marginal (Hfl 0,50 per ton) addition to the price paid by the final consumer. Topping-off will require only the increased in harbor dues of Hfl 0,90 per ton. This means that the coal price increases only by a total of Hfl 1,40 per ton using this alternative route. The stevedoring tariffs are assumed to be similar across different North-West European harbors.
(One American dollar is about two Dutch guilders. So total freight cost will increase by $ .70).

39 The re-export of South African coal leaving Belgium disappears. Because of the French boycot in this variant. This Belgian re-export increased from insignificant in 1985 to a total of .56 million tons in 1987. The coal was for the most part destined for France. See Table 5.1.

transshipped and/or re-exported via The Netherlands to the United Kingdom. The so-called "Dutch blend" will become known as the "Belgian blend."

In sum, this boycott variant will gradually lead to a decline in the South African coal export of 4.8 million tons in 1992. (The North-West European use of 8.1 million tons minus the total Belgian and British national use of 3.3 million.)

Table 5.2
National use of South African coal by Belgium and the United Kingdom in 1987 (in million tons)

	Belgium	United Kingdom
Directly imported*	2.10	
Shipped via Dutch harbors	0.27	0.73
Re-export coming from The Netherlands	0.38	0.29
Shipped via Belgian harbors		-
Re-export leaving Belgium	-0.56	
Total	2.19	1.06

* Total imports minus shipments via Dutch harbors.[40]

In this boycott variant the final consumers in the boycotting nations will find other sources for their coal. For these countries the transport of coal via Rotterdam and Amsterdam will not change either. The import/storage/export-travel of South African coal through the harbors of Rotterdam and Amsterdam will come to a halt and be replaced by - low priced - coal from other sources.

The storage and handling in The Netherlands of South African coal intended for Belgium and the United Kingdom will stop, which is a total of 1.67 million tons (see the figures in Table 5.2).

The strategic position of Zeebrugge for transshipment of South African coal through to the United Kingdom deserves attention here. Indeed, if Zeebrugge were to undertake a boycott without Belgium, then the topping-off of South African coal - given the present boycott variant - would have to occur elsewhere in (southern) Europe. The reason for this is the limited depth of the Westerschelde Which allows it to accomodat only to ships of up to about 120,000 dwt. A boycott of Zeebrugge will furthermore hamper the transshipment to the United Kindom because it then will have to be done in Gent or Antwerpen which means a longer route.

---

40 The total amount of South African coal imported by the United Kingdom was .187 million tons. It is presupposed that this is included in the transshipment of South African coal to Great Brittain (0.73 million tons).

6.6. A boycott by the North-West European countries without the United Kingdom.

In this boycott variant, the following countries participate: West Germany, The Netherlands, Belgium, Luxembourg, France, and Ireland (and already boycotting Denmark). We estimate this boycott to involve 7.5 million tons of South African coal. The United Kingdom can no longer import the 1.0 million tons of coal needed for national use via Rotterdam or Amsterdam. As stated in Chapter 4, harbors with coalterminals that can accomodate capesize vessels are absent in Great Brittain. Transshipment from the nearest - not boycotting - harbour in southern Europe would add $2.5 to $5 on freightcost (becaus of the longer distance in comparison with the short distance between ARA-harbors and Great Brittain). This is too much of an increase for most buyers; the majority of them are traders (we estimate half, mostly local blenders) and the attractiveness of South African coal would disappear with the higher transportation costs.

We assume in this boycott case that the British national use of South African coal will decrease by 50%. The United Kingdom will continue to import .5 million tons of South African coal.

6.7. A boycott by the North-West European countries without West Germany.

In this variant the following countries participate: the United Kingdom, and Ireland, and on the continent The Netherlands, Belgium, Luxembourg, and France (along with already boycotting Denmark). The extent of this boycott variant will be in 1992, 5.1 million tons. And following 1992 the export loss for South Africa can be assumed to rise to 7.8 million tons (see below for details).

We assume in this variant that the transport of South African coal via The Netherlands, Belgium, and France is cut off. Transport via France is in any case a to expensive alternative, moreover, France is assumed in this variant to participate in the boycott. The transport of South African coal via the Rhine will gradually - between 1990 and 1992 - shift to to North German ports, and be transported fur-

ther on to mid- and southern Germany by train. This escape-route won't add to the freightcost because of the special tariff ('Sondern Tarif') the Deutsche Bundesbahn (German railway company) offers in case of large shipments. With the liberalization and harmonization of the European market after 1992, the picture will probably look different: The transport of South African coal by rail from the northern German harbors to the South will become too expensive.

Topping-off in Wilhemshaven will be possible for ships larger than 150,000 dwt heading towards Bremen and Hamburg, if expansion plans are set extra-quickly into action. (The plan is to broaden and and deepen the harbor to handle ships up to 200,000 dwt by Spring 1991). It is expected that upto 1992 gradually more incoming South African coal can be transported from Wilhelmshaven via rail to the West German hinterland.

The extent of this boycott variant in 1992 is 5.1 million tons (decline of South African coal sales per year). (This is, 8.1 million tons imported by North-West Europe minus West German use of 3.0 million tons.) After 1992, the extent of the boycott will reach 7.8 million tons. Only .3 million tons will continue to be imported via northern Germany.

Between 1990 and 1992, the shipment of South African coal through Rotterdam and Amsterdam to mid- and southern-Germany, Switzerland and Austria can be expected to gradually decline. In 1992, the decline will reach a total of 3.05 million tons.

6.7.1 The strategic position of the northern German harbors Laender, and the German railroad.

In the case of a boycott by the North-West European countries without West Germany, the northern German harbors, the northern German Laender, and the German railways will play a critical role in bringing South African coal to the users in mid- and southern-Germany. The necessary infrastructure is present: Hamburg can tranfer the extra tonnage to rail without a problem. In 1987, 1.4 million tons of the 2.0 million tons of coal received by Hamburg were transported via rail to the hinterland: to East Germany DDR (1 million tons); to southern Germany/Regensburg (.26 million tons); to Austria (.04 million tons); and to Hungary (.06 million tons). Only the topping-off of the larger capesize ships from South Africa create a problem. A speeded expansion of the Wilhelmshaven harbor will solve this problem; topping-off of large ships with cargo for Emden, Bremen/Nordenham, and Hamburg will then be possible.

Only if rail transport of South African coal is (made) impossible and the expansion of the Wilhelmshaven is somehow delayed or the northern German ports ban upon South African coal will the consumers in middle and southern Germany and Switzerland be cut off from their supply of South African coal. In this case, the consumers can be expected to obtain their coal from another source and shipment can be expected to continue via Rotterdam, Amsterdam (and Antwerpen).

7. The financial consequences of a boycott.

In this chapter we answer the first part of the third question posed by us, namely: What are the financial consequences of a boycott of South African coal for Rotterdam and Amsterdam? As noted in the introduction, we assume the most pessimistic prognosis. We are now in a position to answer this question because we know which companies are connected to South African coal and what the reactions of these various enterprises to an eventual boycott will be. We also know what the effect of a boycott on the price of coal will be.

For each of the boycott variants examined, we have made detailed estimates of the effect on turnover in Rotterdam and Amsterdam in 1990, 1991, and 1992. These estimates have been divided according to the stevedoring companies that deal with South African coal (EMO and Swarttouw in Rotterdam and OBA in Amsterdam) and the harbors themselves. (In Rotterdam and Amsterdam these are municipal owned companies. We will refer to them as 'municipal harbor companies'). In what follows we will be talking about two different sorts of loss of turnover:
- missed turnover: This is the turnover that companies have missed as a result of the declining amounts of South African coal coming in; the amount of coal, for example, transported via other routes to nonboycotting countries. "Missed turnover" need not always lead to a decline in sales relative to 1988 because of compensating general growth of coalinflow (the so called autonomous growth);
- declining turnover: This is the decline in turnover relative to 1988. That is, the (negative) difference between the increases resulting from the autonomous growth of the coal inflow and the decreases in the amount of South African coal coming in.

An important assumption in this line of reasoning is that the amount of iron ore currently handled overgeslagen by EMO does not decrease between now and the end of 1992.[41]

In three of the boycott variants examined by us, there is no loss of turnover.
(a) If all of the countries in the EC participate in a boycott there is no loss of turnover because all of the South African coal can be replaced by other coal, and the shipping routes will not change.
(b) For the same reasons as in (a), there will be no loss of turnover when all of the North-West European countries boycott.
(c) In addition, no loss of turnover will be observed if the North-West European countries boycott without West Germany. This is the case, however, only when the harbors in northern Germany decide to participate in the boycott too. This will also be the case if West German consumers decided, after 1992, to switch to other coal forced by the higher rail freightcharges (in connection with the liberalization of the European market).

Some sales loss may be observed with the other boycott variants, including:
(d) either a full boycott or an import boycott by The Netherlands;
(e) a boycott by the North-West European countries without Belgium and West Germany;
(f) a boycott by the North-West European countries without Belgium and the United Kingdom;
(g) a boycott by the North-West European countries without the United Kingdom.

---

41 The prognosis on the amount of incoming iron-ore has been changed in the course of 1988. Before this it whas expected the handling of iron-ore in Rotterdam would decrease to under 30 million tons a year in 1992. Now it is expected that the incoming amount of iron-ore will not fall below 34 million tons. This is the total amount of iron-ore handled at EECV and EMO together.

In Figure 7.1, a summary of the losses of turnover is summarized. For each of the five companies studied, the losses of turnover in each of the different boycott variants are presented. The first bar (solid black) represents the growth in turnover expected without a boycott (= autonomous growth). The difference between the value of the solid bar and each of the other bars represents "missed turnover" All of the bars falling under zero, represent "declining turnover".

We choose the year 1992 because in 1992 the boycott effect will be at its maximum. After 1992 the yearly effect will decrease because of the autonomous growth of incoming coal.

In the figure, a number of main points can be seen:

Rotterdam:

With a full boycott by The netherlands, the sales loss will be the highest in Rotterdam. A decline in turnover for EMO and Swarttouw will occur. This also holds to a lesser degree for the variant in which Belgium and West Germany do not participate and next for the variant in which West Germany, alone, does not participate. (We assume in this case that the northern ports also continue importing.)

For the three different Rotterdam companies the picture is the same, although the sums are the largest by EMO. EMO will miss about 25 million guilders in sales in 1992. The decline in returns/sales will be about 14 million guilders.

In the case of an import boycott by The Netherlands alone, the municipal harbor company in Rotterdam deviates. The declining turnover can be traced to the import, storage, and export of South African coal that is concentrated in Rotterdam and the extra shipping and harbor fees that would disappear in the case of an import boycott.

The boycott variant in which the North-West European harbors of Belgium and the United Kingdom do not participate reveals only missed turnover.

In the boycott variant excluding just the United Kingdom, missed turnover would be minimal.

Amsterdam:

The consequences for Amsterdam are marginal. Only in the case of a full boycott by The Netherlands will the turnover of OBA decline.

General conclusions:

(1) If boycott measures with no losses for the companies studied in Rotterdam and Amsterdam are to be imposed, then only the following three alternatives should be considered:

(a) a boycott by all of the countries in the EC;

(b) a boycott by all of the countries in North-West Europe;

(c) a boycott by the countries in North-West Europe without the participation of the West German government but with the participation of the harbors in northern Germany.

(2) If boycott measures leading to only a limited or no missed turnover are to be imposed, then variants (a), (b), and (c) above should be considered along with

(d) a boycott by the countries in North-West Europe without the United Kingdom.

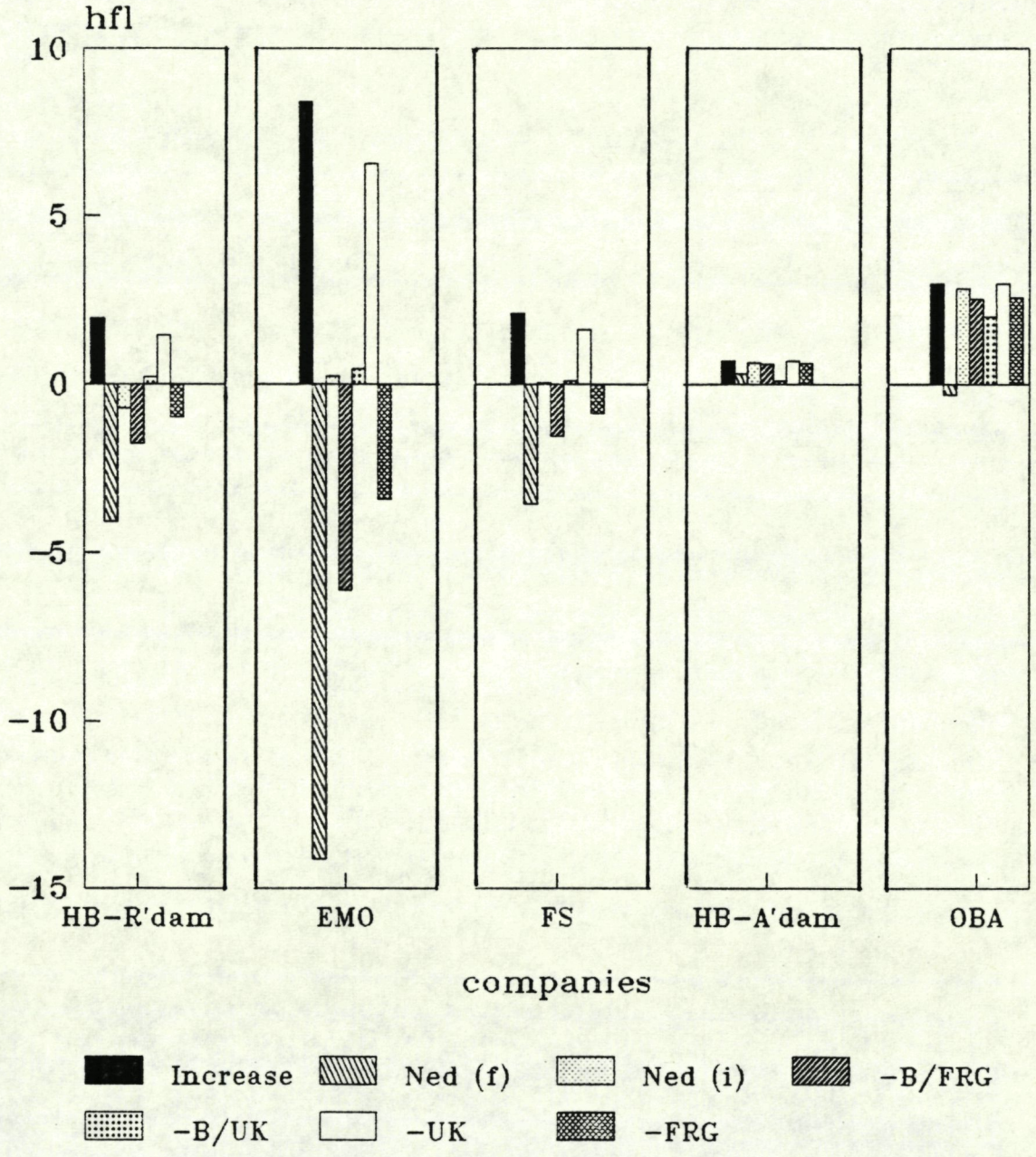
(3) All of the other boycott variants studied here lead to missed turnover and to a greater or lesser degree a decline in turnover relative to 1988. This includes the variants in which either West Germany and Belgium or the United Kingdom and Belgium do not participate in a boycott by the countries of North-West Europe.

The effects of a boycott will be maximal in 1992 and will decrease thereafter as a result of the general increases expected in the amount of incoming coal.

somo
Paulus Potterstraat 20
1071 DA Amsterdam

Figure 7.1

Consequences of a boycot on turnover per variant in 1992



In millions of guilders (Hfl)

8. The consequences for employment of a boycott.

In this chapter we answer the second part of the question we posed in Chapter 1: What are the employment consequences in Amsterdam and Rotterdam of a boycott? In Chapter 7, we answered the first part of this question: What are the financial consequences of a boycott?

In this chapter we follow the same line of reasoning as in Chapter 7. We first give an overview of the loss of incoming coal in the case of each boycott variant relative to the general growth expected in the case of no boycott at all. In this chapter, however, we only present the consequences for the stevedoring companies and not for the Municipal harbors. This is because we assume there to be no demonstratable link between (a decrease in) the amount of incoming coal and the employment opportunities by the Municipal Harbor Companies.

We use in this Chapter the term "missed incoming coal" analogous to the term "missed turnover" in Chapter 7. And "decline of incoming coal" analogous to "decline of turnover" (relative to 1988). Like in Chapter 7, we assume the amount of iron ore entering the harbor of Rotterdam to remain stable.

When we analyse the data regarding the missed and decline of incoming coal for each of the stevedoring companies, the conclusions about consequences for employment will be drawn according to the following criterions.

Rotterdam:

Frans Swarttouw: If any of the boycott variants lead to missed incoming coal, then employment in this company is threatened.

This company has, mainly on the basis of an expected increase in the amount of incoming coal, invested in the construction of a new deep-water terminal. From the credit request for this terminal with the Municipal of Rotterdam, it appears that Swarttouw expects the demand for its coal-handling capacity tot increase to 9.4 million tons in 1990. We estimate that the new terminal will have to operate with at least 60% of capacity in order to survive, which means that 60% of 9.4 million tons of incoming coal (= 5.6 million tons) will have to be handled. In 1988, Swarttouw handled 3 million tons of coal in the Botlek and Laurents harbors. This work will be transferred to the new terminal in the future.[42] So an additional 2.6 million tons of incoming coal relative to 1988 (= 5.6 minus 3.0 million tons handled) will be needed for the terminal to survive. In our - conservative - estimate for 1990, we estimated this growth for Swarttouw to be only .6 million tons (= autonomous growth, in the case of no boycott).

From this analysis of the - isolated - situation of Swarttouw it can be concluded that employment at Swarttouw's terminal may be threatened even without a boycott. And on this basis, two lines of reasoning can be followed:

(a) Any boycott variant that leads to 'missed incoming coal' provides an extra threat to employment.

(b) A boycott on South African coal will have no (further) negative effects on employment at Swarttouw because the new terminal, as currently planned, has little chance of survival and therefore represents a serious threat to employment - even without a boycott - at Swarttouw.

We tend to towards the latter.

EMO: The stevedoring company EMO (coal and iron-ore) is currently operating over and above capacity. Virtually no more coal and iron-ore can be taken on. Their capacity is 20 million tons. And in 1988 they handled 14 million tons of iron-ore and

---

[42] Employees from the Botlek- and Laurents-harbors will have to transfer to this new terminal as of 1991.

12 million tons of coal. Nevertheless, we cannot assume that the colleague and competitor - Frans Swarttouw - will be able pick up the "overflow" from EMO, for EMO too has plans for expansion.[43] With a boycot that has no effects on the volume of incoming coal the overflow from EMO will equel 2.2 milion tons in 1992 relatively to 1988. (see figure 8.1. the solid black bar)

Two possible lines of events may occur:

(a) The EMO's expansion plans come off and they, themselves, absorb the growing amount of incoming coal.

On the basis of this assumption, only a decline in the amount of incoming coal (relative to 1988) would threaten employment at EMO. However, EMO is large company with more than 20 million tons of iron ore and steam coal coming in yearly. In 1988, this was more than 25 million tons. A fluctuation of 2 to 3 million tons in a year will only have limited effects on employment.[44]

On this basis, we will decide on a decline in employment at EMO only if the amount of incoming coal declines with more than 3 million tons (relative to 1988).

(b) If EMO does not expand its capacity, then it is only 'natural' that neighbor/competitor Swarttouw will pick up the the amout of coal that is left over of expected 2.2 million tons of autonomous growth in each boycot variant.

This means that when - in the case of a boycotvariant that has no effects on the volume of incoming coal - Swarttouw's volume would grow by .6 million tons plus 2.2 million tons, that is 2.8 million tons. Together with the present volume of handled coal of 3 million tons at Swarttouw, this is sufficient for the new terminal to work at the 60% capacity needed for survival.

Amsterdam:

OBA: At OBA, a stevedoring company that handles mostly coal but relatively little South African coal, a decline in the volume of incoming coal could also threaten employment. OBA is relatively small when compared to, for example, EMO and we therefore decide that labor positions will be threatened when incoming coal diclines by half-a-million tons (.5 million tons). If the drop in volume is less than this, then it will have little to no effect.

Figure 8.1 gives an overview of the effects of each boycott variant on the total volume of incoming coal for each of the stevedoring companies studied (in 1992).

In Figure 8.1 three boycott variants are not presented. This is because these variants would in no way threaten employment at the stevedoring companies studied; these variants do not lead to a drop in the volume of incoming coal.

The boycott variants that pose no threat to employment are:

A boycott by all of the countries in the EC. A boycott by all of the North-West European countries. A boycott by all of the North-West European countries without cooperation of the West German government but with the participation of the harbors in northern Germany. (Note that in the latter case, no employment threat would occur after 1992 even if the northern German ports do not participate in the boycott.)

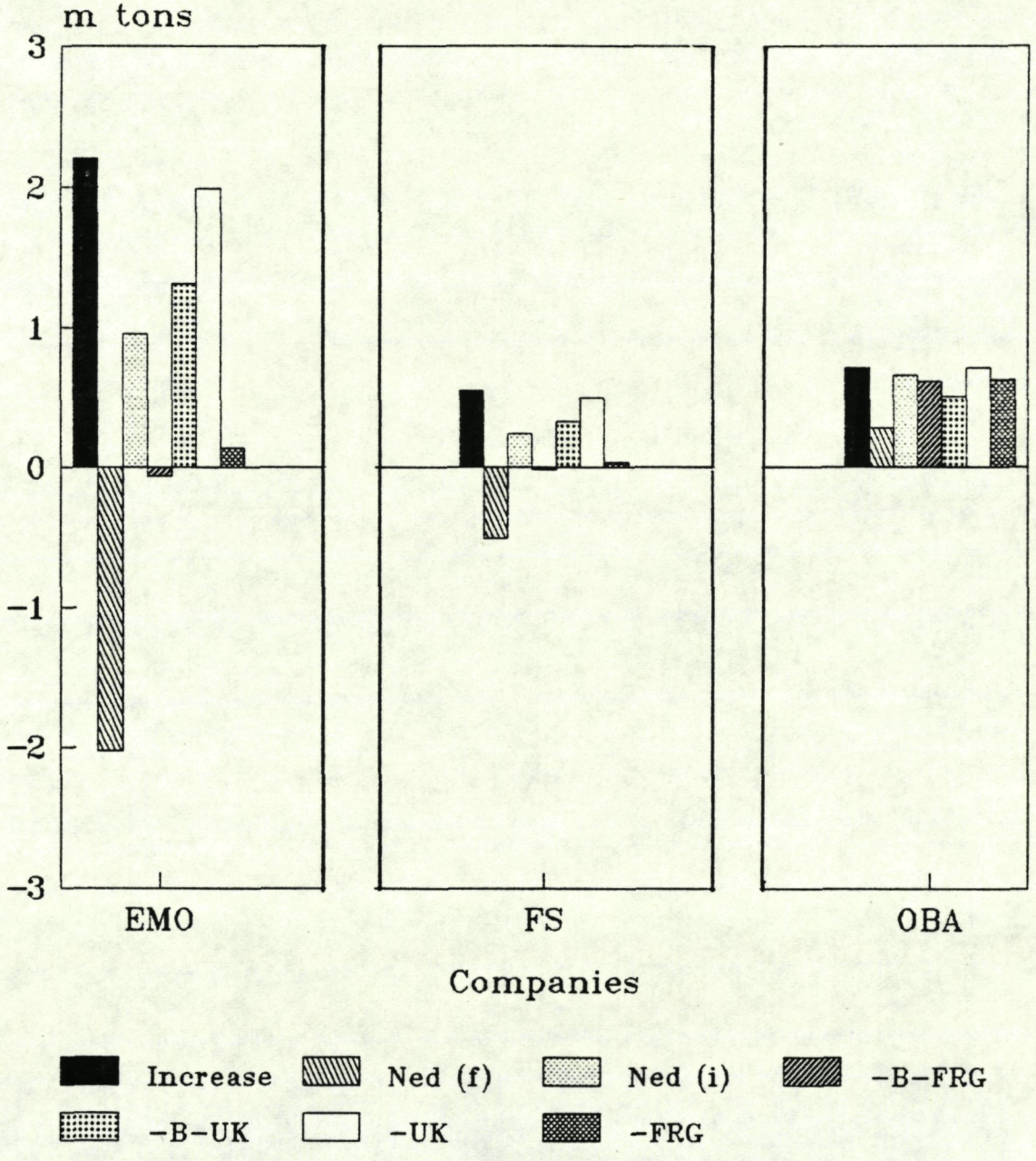
---

[43] According to their credit request for the Swarttouw deep-water terminal with the Municipal of Rotterdam, this concerns expansion from the current 20 million ton capacity to 27 million tons.

[44] The shifts must simply be fully manned. Indirect labor might be affected by a large drop in the volume of coal.

Figure 8.1.

Consequences of a boycot on the volume of incoming coal in 1992.



In millions of tons.

The conclusions about employment in Rotterdam and Amsterdam that can be drawn from Figure 8.1. are as follows.

Employment at the stevedoring companies EMO and OBA is in no way threatened by any of the boycott variants. If The Netherlands should boycott alone, then employment at EMO could be in danger.

At the new deep-water terminal of Swarttouw, employment is threatened in all boycotvariants (presented in the figure) because of occurring 'missed incoming coal'. This is both the case when growth of incoming coal expected at EMO will flow to the terminal of Swarttouw, and when EMO leaves nothing over for Swarttouw's new terminal. In the latter case however the threatening of employment cannot be attributed to any boycot measure.

9. The financial-economic significance of a coal boycott for South Africa.

In this chapter we will provide an answer to the question of what the economic consequences of a boycott would be for South Africa. Recall that we have assumed the most optimistic set of circumstances for the South African economy. A boycott can, thus, always have stronger negative effects on the South African economy. The threat itselve of a boycott and boycott measures that are currently in effect have made it impossible for South Africa to realize its coal export plans. The country had predicted 80.0 million tons of coal exports in 1981 still. In 1987, related plans for the expansion of the coal terminal of Richard's Bay, were put on hold, and the country had to admit that they had not achieved their planned export quota. It is estimated that 43.3 million tons of coal get exported at this moment (1988). And because of the insecure futere economic situation, mining enterprises are no longer prepared to invest in the expansion of the mines. On a yearly basis, between .75 and 1.05 billions of dollars are therefore lost out on. In such a way, the export income for South Africa is curbed and the large international debts are made more difficult to refinance. In other words, the threat of a boycott and small-scale boycott measures too have indirectly had and will continue to have large consequences for the South African economy.

In order to get a more detailed picture of the effect of (European) boycott measures on the South African coal exports, we have made a prognosis for the coal-absorption capacities of nonboycotting countries. In other words, we have examined how much coal South Africa can sell elsewhere in the world in the case that they can no longer sell their coal to one or more of the European countries.

We did this in the following manner: First, we made a prognosis for the volume of coal that South Africa will sell when there are no new boycott measures put into operation. (Denmark and France - partially - boycott South African coal already.) Next, we subtract the amount of coal cut out by a boycott from the expected growth in the sales of South African coal on the world market (relative to 1988). This difference was then multiplied by the price the coal brings in South Africa per ton. With what appears to be a complicated set of calculations we can show the (minimal) economic effects for South Africa of a boycott. By this, we mean missed sales. Table 9.1 gives an overview.

Table 9.1
The export of South African coal under different boycott variants; Decline or growth relative to 1988; and the effects of the different boycott variants on export income (in millions of dollars per year).

	growth in the year*			effects in the year		
	1990	1991	1992	1990	1991	1992
EC complete	-10.1	-16.1	-22.1	170	293	376
Netherlands - full	5.6	7.9	10.2	1	2	2
Netherlands - import	5.6	7.9	10.2	1	2	2
NWE full	1.6	1.9	2.3	44	74	94
NWE - B/WG	4.2	5.8	7.5	16	26	34
NWE - B/UK	3.2	4.4	5.5	26	44	56
NWE - UK	1.9	2.3	2.8	41	69	88
NWE - WG	3.1	4.2	5.3	28	46	59
NWE - WG + N-WG	1.6	1.9	2.3	44	74	94

* relatively to 1988.

1. In the first boycott year, 1990, 50% drop; in the second year 75%; in the third year, 100%.
2. Nonboycotting EC countries do not increase their import of South African coal.
3. Prognosis exchange rate: $/Rand: 1988=0.40 1989=0.26 1990=0.33 1991=0.31 (Source: ICR, 2 December 1988.)
4. Costs include national transport and transfer. $overslag
5. Mining and transport costs increase by 10% per year (calculated in South African currency).

From the figures, it appears that in the case of a boycott by all of the countries in the EC, the current level of export of South Africa will drop. South Africa currently exports an estimated 43.3 million tons. With a gradual boycott, this will be 10.1 million tons less in 1991. In 1992, South Africa will export 22.1 million tons of coal less.[45] In this EC boycott variant, the export income in the coal mining industry will drop. The South African state will receive lower tax income.

In the other boycott variants, the South African coal exporters will be in a position to sell their coal elsewhere. For example, in the nonboycotting Asiatic countries.

In a full EC boycott, South Africa will miss out on 170 million dollars in sales in 1990; in 1992, they will miss out on 375 million dollars in sales. (See Table 9.1.)

In the non-full-EC boycott variants, South Africa will not miss out on as mutch sales. At least 75% fewer sales will be missed in these variants in comparison with the full EC boycott variant. Nevertheless, the growth in export sales will still be slowed and South Africa will still miss out on a significant amount of income.

---

45 We assume in the export prognosis (without any new boycott measures) that South Africa is capable of increasing exports. This presupposes the expansion of Richard's Bay. Further, we assume in the case of a boycott that the prognosis for exports to nonboycotting countries stays the same.

10. Summary of the most important consequences of the different boycott variants in 1992.

In this chapter we will summarize the effects of a boycott. We paint the most somber picture for effects on turnover and employment in Rotterdam and Amsterdam. And we present the minimal effects for South Africa. So according to our prognosis things shall not be worse for the Dutch economy and the situation can get worse for South Africa. In Table 10.1, the answers to the questions raised in chapters 7, 8, and 9 are summarized.

We have chosen 1992 for our calculations in this table because the effects of a boycott will be the heaviest at this point. Under a gradual boycott, which we presuppose, all of the measures will be in effect by that year. Thereafter, the effects on turnover and employment in The Netherlands can be expected to decrease as a result of the general increase in volume of coal (coming in from other sources).

Table 10.1.
Most important effects of the different boycott variants in 1992.

	Turnover	Employment	South Africa
EC complete	X	X	Xx
Netherlands - full	O	O	X
Netherlands - import	X	X	X
NWE full	X	X	X
NWE - B/WG	O	O	X
NWE - B/UK	O	O	X
NWE - UK	X	X	X
NWE - WG	O	O	X
NWE - WG + N-WG	X	X	X

Explanation:

Turnover	:	X = Limited or no loss.
		O = Declining relative to 1988.
Employment	:	X = No threat on employment.
		O = Threat for employmenyt at Swarttouw.
South Africa	:	Xx= Direct economic damage (declining export volume relative to 1988) as well as indirect economic damage.
		O = Indirect economic damage.

Conclusions:

- A boycott by the entire EC or by all of the countries in North-West Europe will have large direct and indirect economic consequences for South Africa. The turnover and employment of the companies studied in Rotterdam and Amsterdam will not decline.
- A full boycott by The Netherlands alone will have little direct effect on the South African economy. Indirect the effects are big. This boycott variant does have consequences for the turnover of the harbors examined. Only in Rotterdam at the Swarttouw company is there a threat to employment.
- In a boycott where one or two of the North-West European countries with important porttraffic of South African coal do not participate, there are large indirect consequences for the South African economy. And the coal export cannot grow. In these boycott variants, a loss of turnover for the companies studied in

Rotterdam and Amsterdam is found. Loss of jobs is threatened only at the new deep-water terminal of the Swarttouw company.

The North-West European countries are: the United kingdom, Ireland, France, Belgium, Luxembourg, The Netherlands, and West Germany. We have considered variants in which Belgium and West Germany do not participate, or Belgium and the United Kingdom do not participate. We have also considered variants in which West Germany alone or the United Kingdom alone do not participate.

- If the United Kingdom does not participate in a boycott and the other North-West European countries do, the effect on the turnover and employment in the harbors of Rotterdam and Amsterdam will be marginal. This boycott variant would however have important indirect effects on the South African economy.
- If West Germany does not participate in a boycott and the other North-West European countries do, there will be no consequences for turnover or employment after 1992. Before that time (that is, the liberalization of the European market), there will be effects of the boycott on Rotterdam and Amsterdam. The indirect consequences for the South African economy will continue. In this variant, the final consumers of South African coal in Germany can still be cut off if the northern German harbors decide to disable the inflow of South African coal.

11. Limitations of and conditions on the boycott variants.

Events in the last few years have taught us that boycott measures invite evasion. This can be done by falsifying the papers, by masking the country of origin with re-exportation from a EC country, or by mixing coal that has already been submitted to chemical inspection with South African coal. Given developments in the market (buyers more frequently want to know what the quality of the coal is), it is recommended that the coal be chemically checked. Once in the country where the coal is mined; next when the coal vessel arrives. And in the case of coal that has been stored, still a third check could be performed at the final destination (the consumer). In such a way a boycott can be effectively supervised.

Many consumers demand a 'certificate of origine' indicating where the coal comes from. These forms can be falsified, as recently seen in Belgium. More than 1 million tons of South African coal was 'transformed' into 'Australian' coal for French power plants, which are officially boycotting South African coal.

When a EC country imports coal and then re-exports it, they are not required to report where the coal was mined. 'Boycott fraud' is possible by masking the origin of the coal. A trading company legaly can import South African coal and then (re)export it without mentioning the original source of the coal.

While not required, coal is more and more often being physically checked. Buyers want to know the properties of the coal they are purchasing. According to shipping-agents, chemical tests of the coal in the original loading harbor are being striven for in The Netherlands and other countries for commercial reasons. Denmark linked up to this market-trend. The country, which implemented a boycott in 1986, has their coal chemically checked twice: once in the country where it was mined and once on the incoming ship. With this double-check the Danish are certain to rule out the possibility of evading the boycott measures.

An obligatory double-check fits with developments in the market. The situation in The Netherlands, however, calls for even more stringent measures. France and Denmark are only concerned with the final consumers of the coal. In The Netherlands, however, little of the coal is intended for national consumption. Rather, The Netherlands transshships most of the coal, some of which has been stored and possibly broken up, screened, or mixed. A third check is therefore needed to rule out boycott evasion. The first should be in the country where the coal is loaded, the second should be where the ship arrive, and the third should be at the final consumer.

British Coal has developed a detection method with which it is possible to trace a shipment, on the basis of plant remains, back to the specific mine. The method is, moreover, relatively inexpensive and can be quickly applied; it does demand some experience, however.

12. Conclusions.

- The Netherlands and, in particular, Rotterdam constitute the hub of the shipment of South African coal to North-West Europe. Almost all of the coal handled in The Netherlands is intended for continued transport (import/storage/export, overseas shipment, shipment to the hinterland).

- In this study many of the final consumers of South African coal in the different sectors of the economy were determined. A greater number of consumers should be examined in future research, however.

The final consumption of South African coal in The Netherlands is very limited because companies are already avoiding South African coal.

The final consumption in West Germany is concentrated in two branches of industry:

* The cement industry, where South African coal is generally used.
* The generation of electricity, in particular the enterprises connected to the Veba-concern.

In Belgium, final consumption is concentrated in the production of electricity.

In the United Kingdom, intermediate trading plays an important role.

In France, the iron and steel industry is the greatest (remaining) consumer.

- With the current and expected increases in the price of steam coal, there is sufficient supply on the world market to make up for a gradually decreasing amount of South African coal and there will be no further price increases as a result of boycottmeasures. Even a boycott by the EC (followed by Japan and Hong Kong) does not influence the price-levels in Western Europe.

- None of the boycott variants will require consumers to convert to other types of fuel. With the disappearance of South African coal these users will switch to coal from other sources.

- A boycott by the entire EC or all of the countries in North- West Europe has large direct and indirect economic consequences for South Africa. The turnover and employment in the companies studied in Rotterdam and Amsterdam will not decline.

- A full boycott by The Netherlands alone has little direct effect on the South African economy. Indirect however the effects are significant. This boycott variant does have consequences for the turnover in the harbors of Rotterdam and Amsterdam. Only in Rotterdam at the Swarttouw company is employment threatened.[46]

- A boycott in which one or two of the countries with important harbors in North-West Europe do not participate has large indirect economic consequences for South Africa. And the coal exports cannot grow. In these boycott variants a loss of turnover is experienced in the harbors of Rotterdam and Amsterdam. Employment is only threatened at the new deep- water terminal of the Swarttouw company.46

---

[46] Note that the conclusion about the employment at the new Swarttouw terminal applies to both a situation in which growth of incoming coal expected at EMO will flow to the terminal of Swarttouw, and in which EMO leaves nothing over for Swarttouw's new terminal. In the latter case however the threatening of employment cannot be attributed to any boycot measure.

- If the United Kingdom does not participate in a boycott and the other North-West European countries do, the effect on the turnover and employment in the harbors of Rotterdam and Amsterdam will be marginal. This boycott variant would however have important indirect effects on the South African economy.

- If West Germany does not participate in a boycott and the other North-West European countries do, there will be no consequences for turnover or employment after 1992. Before that time (that is, the liberalization of the European market), there will be effects of the boycott on Rotterdam and Amsterdam. The indirect consequences for the South African economy will continue. In this variant, the final consumers of South African coal in Germany can still be cut off if the northern German harbors decide to disable the inflow of South African coal.

- The effective enforcement of boycott measures will require physical (chemical and microscopic) inspection of coal. This fits in with recent developments in the market (buyers more often want to know what the quality of the coal they are buying is). Physical checks should be performed at least twice. Once in the country where the coal is mined. Once when the coal ship arrives. And as far as coal that has been stored, a third check at the consumers themselves will lead to a water-tight system.

[redacted]

Stichting Onderzoek Multinationale Ondernemingen
Centre for Research on Multinational Corporations

somo