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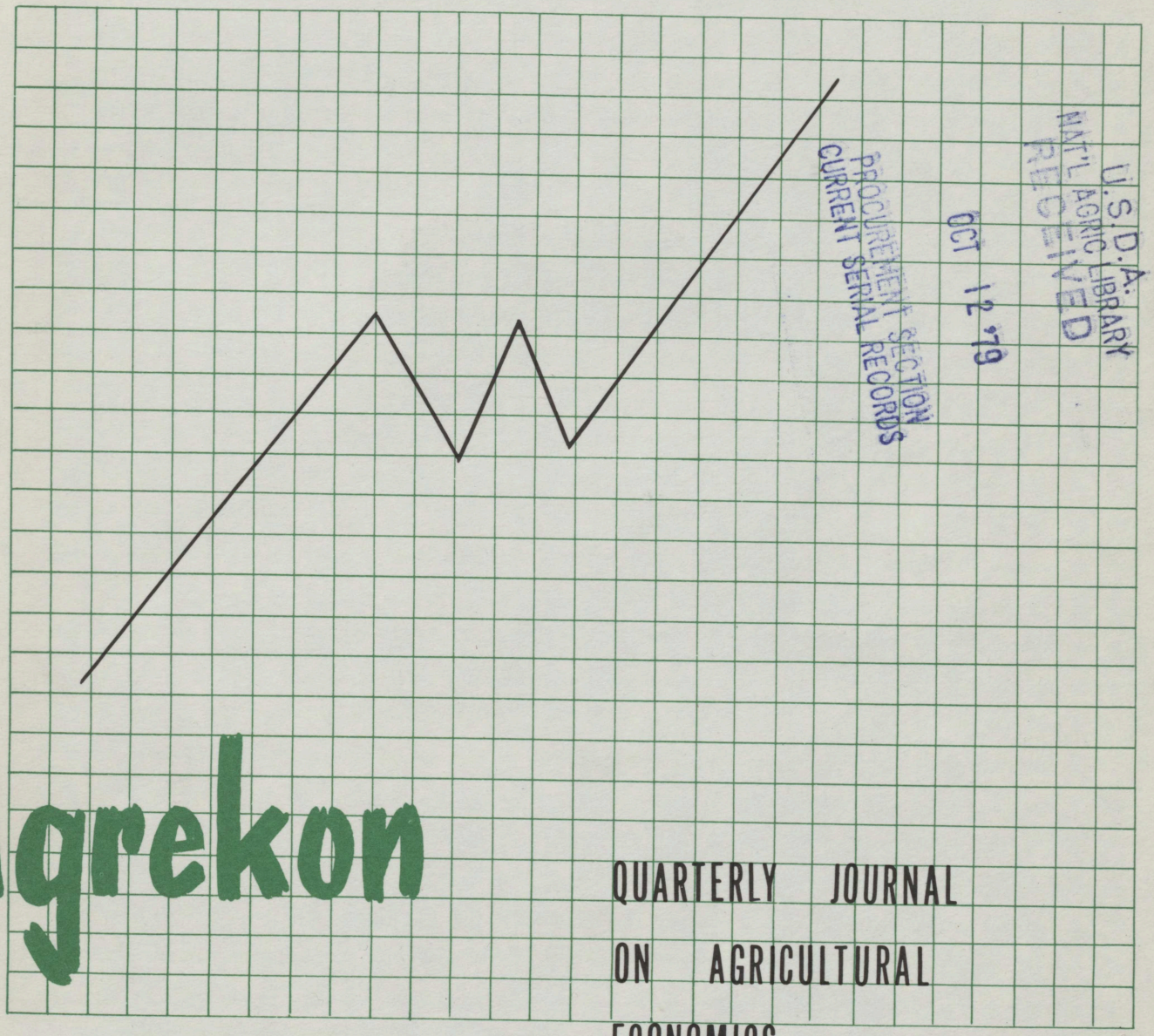

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SUPPLY OF FARM INPUTS : CARTELS OR FREE COMPETITION?

by

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Accepting the general theme of the conference as "Agricultural policy and marketing : challenges for agricultural economists", one must first define the word SUPPLY in this marketing context. For the purpose of this paper I therefore define supply as the function of manufacturing/importing, distributing, promoting (creating demand), selling, financing, and after-sales servicing.

Having defined SUPPLY, I do not propose to restrict the discussion to the comparative merits of cartels versus free competition, but to view the problem in the broader context of competition within the restrictive South African economic structure. I assume the audience to be familiar with the concepts of free competition, monopolies, cartels, etc., as these are taught in elementary economics courses. In this paper I will therefore only sketch the development and structure of some relevant aspects of the South African economy. Against this background and within this framework we must then judge the extent to which competition prevails, should prevail, and can be improved. I limit the discussion to the five major farm input categories, i.e. fertilizers, fuel, stock and poultry feeds, dips and sprays, and farm machinery (Schedule 1), as well as the agricultural co-operative societies. The latter are the major distributors of farm inputs. I will describe the environment in which these industries operate, in order to set the stage on which the degree of economic concentration/competition in these specific industries should be judged. It must be decided to what extent constraints on competition could and should be imposed or relieved. The desirability of competition or restrictions should be judged solely on the norm of what is best in the public interest. I do not intend to offer solutions, but rather to outline the problem areas and to define the challenges.

1. RELEVANT STRUCTURAL ASPECTS OF THE SOUTH AFRICAN ECONOMY, AND ECONOMIC CONCENTRATION VERSUS FREE COMPETITION

In this part of the paper I rely to a large extent on the Report of the Commission of Inquiry into the Regulation of Monopolistic Conditions Act, 1955[1] - in the rest of this paper I will refer to this act as the Monopolies Act.

SCHEDULE 1 - Value of the major production goods purchased by farmers for 1950/51 to 1976/77, in R million

Year	Fertilizers	Fuel	Stock and poultry feed	Dips and sprays	Machinery
1950/51	16,0	22,0	18,0	2,2	35,2
1955/56	23,9	31,6	28,9	4,0	61,5
1960/61	34,3	47,2	43,7	8,7	58,6
1965/66	53,5	41,8	62,7	12,4	66,7
1966/67	59,9	45,4	67,4	13,2	70,4
1967/68	66,5	46,6	66,4	14,2	95,6
1968/69	63,2	45,7	85,3	15,8	98,2
1969/70	70,8	47,9	91,0	17,7	107,7
1970/71	83,0	50,7	90,8	20,5	120,9
1971/72	93,3	56,6	99,7	22,3	142,4
1972/73	102,3	62,1	121,2	25,8	142,0
1973/74	121,5	83,4	152,4	34,1	163,7
1974/75	163,7	105,4	189,9	46,6	187,7
1975/76	226,2	142,7	228,7	58,3	342,1
1976/77	255,0	174,9	284,7	66,1	227,9

SOURCE: Abstract of Agricultural Statistics, 1978. Division of Agricultural Marketing Research, Department of Agricultural Economics and Marketing

The development of the South African economy is unique in that our gold and diamonds have for many years provided us with sufficient wealth to import most of our consumption and production requirements.

After World War I it was increasingly realized that we are consuming our reserves and this led to a more positive approach to industrial development. In 1924 the Board of Trade and Industries was established, and in 1925 the Customs and Excise Act was passed to protect local industries against foreign competition. Local industries developed very slowly, however, and although World War II greatly stimulated this development, it was only in the 1960's that we really progressed from a mining-agricultural economy to a mining-agricultural-industrial economy.

This development path has been dictated by several factors, of which the more important ones are

- a small population of which the major portion has a low per capita purchasing power
- scarcity of capital and technical expertise

- difficulties in adapting overseas production techniques and machinery to our labour surplus economy
- failure to develop export markets.

These factors are described by the Commission as ".... an inevitable inducement towards a structure consisting of a small number of relatively large, concentrated and sometimes integrated firms" (p.29). On the demand side, most of our manufactured products are sold to a few big buyers, e.g. Government departments, mining houses, state corporations, motor industries, co-operative societies, and mass-merchandisers (supermarkets and chain stores). There is thus on both the supply and demand sides a concentration of economic power in the hands of a few large concerns, and the degree of concentration of economic power is normally used as a measure of the state of monopolism/monopsonism versus free competition in the economy.

The Commission found that in general the South African manufacturing industry is highly concentrated, as measured by international norms, and that ".... practically every industry .... can be described as being either monopolistic, duopolistic or oligopolistic in structure" (p.38). This is true not only for the manufacturing industries, but also for the construction, transport, wholesale and retail industries. For these reasons it is clear that the South African economic structure is completely incompatable with the classic concept of free competition. Our problem is therefore not a question of whether we should have free competition or not, but how to eliminate monopolistic practices *that are harmful to the public interest*. It is a question of how to promote competition within the framework of economic concentration *to the benefit of the public interest.*

At this point it must be clearly understood that economic concentration *per se* is not harmful to the public interest but can often be beneficial. The main advantages of economic concentration are

- economies of scale
- greater financial resources and credit-worthiness
- better research and development
- better training facilities
- better ability to participate in community development
- better ability to withstand cyclical down-turns

The main disadvantages of economic concentration are

- potential abuse of economic power
- potential inefficiency and poor service due to size and lack of competition
- potential political pressure groups
- potential harmful effect on the economy in the event of a failure.

In the main it is the *abuse* of the powers gained through economic concentration that is harmful and must be guarded against. *Competition* is generally considered as the safeguard against such abuses (monopolistic practices). Competition also keeps producers on their toes and healthy competition normally benefits the competitors as well as their clients. For this reason competition should be protected and encouraged within the parameters set by our economic structure.

The Board of Trade and Industries can be considered as the "watch dog" on monopolistic practises. Due to the high degree of economic concentration, conflicts arise that cannot be solved by the market mechanism. This necessitates government intervention to create an environment that allows the firms in any industry to compete on a fair and equal basis. The Monopolies Act is the cornerstone of the Board's activities. The Board has formulated specific guiding principles and objectives which are, briefly,

- to distinguish between monopolistic tendencies which are harmful and those which are harmless or even beneficial
- the final test is economic performance
- strong action should be taken against all methods of coercion and exclusion
- state enterprises should be subject to the same monopoly control as private firms (p.7).

This then forms the background against which we must judge the agricultural input industries.

2. THE FERTILIZER INDUSTRY

The fertilizer industry is interesting in that it has a very high degree of economic concentration and integration in the supply of raw materials, as well as in the manufacturing and distributing of the fertilizers. It is also a typical example of economic concentration developing to such a degree that any relaxation of the constraints on free competition would probably be detrimental to the farmers and to public interest in general. For this reason I will discuss the industry in some detail. The industry has recently been investigated by the Board of Trade and Industries[2] and in this section I rely largely on the report of the Board.

Basically the fertilizer industry can be divided into the raw material sector, the manufacturing sector, and the distribution sector. In general the industry is capital intensive and has an estimated current replacement value of approximately R1 000 million. The major portion of this is vested in the mining/manufacturing of raw materials.

A brief review of the history of the fertilizer industry shows the development of its present economic concentration. The first fertilizer factory in South Africa was established in Natal in 1904 by the South African Fertilizer Company, using mainly bonemeal to produce phosphatic fertilizers. In 1919 Kynoch opened a factory also in Natal using mainly imported rock phosphates to produce super-phosphates. In 1921 Cape Explosives started a similar factory in Somerset West. In the following years, various other companies entered into the production of fertilizer mixtures using super-phosphates, ammonium sulphate and potassium chloride. These were Fisons, Safco, Bullbrand and Websters, later followed by

Windmeul, Netherlands, Atlantic and Bisley. Due to difficult economic conditions in the twenties and thirties, the development was slow. The two super-phosphate installations Kynoch and Cape Explosives came under control of AE & CI and amalgamated. The Government instituted a railage rebate system.

During World War II import problems caused production costs to escalate and in 1942 the Government instituted price control to stabilize prices. The Department of Agriculture also limited the then 360 different mixtures to 11 in order to eliminate confusion amongst farmers. In the same year the Government announced a fertilizer subsidy of R2-00/ton and instigated a permit system to ration this scarce commodity. In 1943 the African Metal Corporation Ltd (AMCOR) started to mine a phosphate deposit near Langebaan.

After the war the demand for nitrogen fertilizers increased rapidly and in 1955 SASOL started to manufacture ammonium sulphate as a by-product. During this period AE & CI started the first fully-fledged nitrogen plant, namely the urea plant at Modderfontein. During the late 1950's FOSKOR started developing the phosphate deposits at Phalaborwa. With these developments South Africa became self-sufficient in the supply of nitrogen and phosphates.

In 1961, 15 companies with 25 plants were involved in the mixing, granulation and packaging of fertilizers. However, the next few years saw a spate of mergers and take-overs. Fisons took over Netherlands and Safco, and amalgamated with Optichem (Windmeul), to form Fedmis. In 1964 Omnia Kunsmis (Edms) Bpk., entered the industry and started with the direct application of ammonia to the soil. Triomf then entered the industry with a fully integrated plant at Potchefstroom. Whilst Fisons and Optichem had amalgamated into Fedmis, Triomf amalgamated with a portion of AE & CI's fertilizer manufacturing activities to form Triomf Kunsmis. Meanwhile in 1971 Fedmis had been dissuaded by the Secretary of Industries from starting a second ammonia plant as AE & CI had surplus capacity. An agreement was then negotiated whereby AE & CI would supply surplus ammonia to Fedmis. This agreement and various others were entered into in order to utilize economies of scale and to rationalize the industry as far as possible. In 1971 all the various agreements were combined into the so-called "market division agreement", a legal document of 77 pages. This document not only covered the division of the market, but also catered for the intra-industry supply of raw materials.

In addition to this important agreement, competition is also limited by direct Government control. The prices of the fertilizers are controlled on a basis of average industry return on investment. This does not enhance efficiency - increased efficiency is in fact penalized because it leads to increased return on assets, resulting in the Price Controller decreasing the prices of the end products. The Government disallows any exports until local demand is satisfied, and allows imports only when local supply falls short of demand - an interesting exception is Bonus Kunsmis in Swaziland.

Now then, after all these developments, the industry is now structured as follows:

(a) *Triomf* - operates as Triomf Kunsmis (Edms) Beperk, with 51 % of the shares owned by Triomf Kunsmisbeleggings Beperk, a public company. AE & CI holds the other 49 %. Five large agricultural co-operatives (Sentraal-Wes, Noord-Wes, Vrystaat, Kroonstad-Wes and OTK) own 42 % of the shares in Triomf Kunsmisbeleggings Beperk, and these shares are held by Sentrale Landboubevorderingsmaatskappy (Edms) Beperk - SLB. Several smaller co-operatives have also acquired shares in SLB, the later having been formed especially for this purpose.

Triomf is therefore very well placed regarding the supply of raw materials, as well as the manufacturing and distribution of the fertilizers. In this respect it is important to note that the co-operatives distribute more than 70 % of all fertilizers.

(b) *Fedmis* - Federale Kunsmis Beperk is a public company whose main activities are the investment in and control of companies in the fertilizer and heavy chemical industries. In the fertilizer industry it has shares in

- Fedmis (Edms) Beperk, which manufactures fertilizers, with factories in Sasolburg and Milnerton,
- Bosveld Kunsmis (Edms) Beperk which supplies phosphate as an intermediate product for the group, and various other related companies.

Fedmis is self-sufficient in phosphates, but whilst it manufactures nitrogenous fertilizers from ammonia obtained from Sasol and from the oil refinery in Milnerton, it still obtains a significant portion of its requirements from AE & CI. Fedmis distributes its fertilizers through the co-operatives but has no share involvement with them. It is therefore in a comparatively weak situation with regard to distribution and supply of ammonia.

(c) *Omnia* - Omnia Kunsmis Beperk is a public company which obtains all its nitrogen requirements from Sasol and AE & CI. It is a pioneer in the field of liquid fertilizer application direct to the soil and is the largest distributor of liquid ammonia.

(d) Other, smaller companies in the industry are:

- Chemfos Beperk (previously AMKOR)
- Atlas Organiese Produkte
- Sentramark (Koöperatief) Beperk - markets Chemfos- and Iscor fertilizers, and is wholly owned by co-operatives
- Plaaslike Boeredienste - main activities are to apply Sentramark fertilizers on a contract basis
- Sasol and Iscor - manufacture and supply ammonia to fertilizer manufacturers.

Against this background it is evident that the market participants have not much room to manoeuvre. To a limited extent they compete in the

ranges of mixtures they offer, and also in sales promotion and field service. However, if they sell more than their agreed market share, they have to pay penalties.

The present state of affairs is obviously not desirable and the lack of competition coupled to strict price control limits innovation and efficiency. A higher degree of competitiveness would be desirable, but due to Triomf's superior position a cancellation of the present agreement would spell disaster for the other participants. The Board of Trade and Industries concluded that the cancellation of the agreement, which lapses in 1983, ".... could have dramatic and possibly extremely adverse results for the fertiliser industry and for the consumers of fertiliser" (p. 26). The Board is of the opinion that this would be detrimental to the public interest. The Board also noted several instances where co-operatives abused their economic power and low-cost Land Bank facilities to promote Triomf's products, thereby discriminating against its competitors. The Board has recommended a full investigation into the fertilizer industry under the Monopolies Act before the present agreement lapses.

I think that this industry presents a severe challenge to agricultural economists amongst other. We have a classic example of an industry where the participants are so tied up in undesirable agreements and concentrations of economic power that reasonable competition has become at the same time highly desirable yet very dangerous.

3. THE FARM MACHINERY INDUSTRY

In contrast to the fertilizer industry, the farm machinery industry is an example of competition that is probably as close to the theoretical concept of free competition as one can get in the South African industrial structure. The industry is largely import-orientated, has a large number of competitors, and a large number of independent customers - the co-operatives distribute only about 25 % of all farm machinery on a value basis.

Schedule 2 shows that 7 categories of machines comprise 90 % of the total value of farm machinery sold in 1977. Each category is highly competitive. In total 67 different manufacturers/importers are competing in this sector of the industry, and although these competitors range from large to very small, not one of the machinery categories is dominated by any small number of distributors. However, to form a better idea of the degree of competitiveness in the industry, I offer a brief description of each of these categories:

Tractors - Due to a small local market and a wide range of tractors demanded, as well as the large investment required to manufacture tractors, all tractors are imported. According to the press release by Minister Heunis on the local manufacture of diesel engines, the total funds required for the engine project could reach R260 million by 1983, and this is only to build engines! Also, tractor exports to South Africa form a minor portion of the overseas suppliers' output, so that exports to South Africa involve no real economies of scale on their side. The major tractor importers are (in alphabetical order) Deutz, John Deere, Ford, International Harvester, Malcomess, Massey-Ferguson and Vetsak. Malcomess is a wholly South African-owned public company (part of the Malbak group of companies), Vetsak is a fully South African co-operatively-owned company, and the others are all controlled and mostly fully owned by their overseas parent companies. Malcomess distributes mostly through its own retail branches, whilst Vetsak, and to a lesser extent John Deere, distribute through co-operatives. The others distribute mostly through independent dealers. All tractors are subject to price control based on a mark-up on cost, although no tractors are sold at these prices due to the competitiveness of the industry and the increasing price elasticity of the demand for competing makes of tractors. The tractor market is also very sensitive to service efficiency and here again competition is strong.

SCHEDULE 2 - Retail market share of, and number of manufacturers/importers in, the major farm machinery categories, Jan - Dec 1977

Type of machinery	Market share %	Number of competitors
Tractors	55,8	16
Ploughs and harrows	7,8	26
Tine implements and cultivators	2,7	25
Planters and related applicators	5,1	25
Pest control sprayers	2,6	15
Grain harvesters and equipment	11,7	12
Hay and silage machinery	4,5	37
Subtotal	**90,2**	**67 in subtotal**
Total	**100,0**	**X**

At present, approximately 148 different tractor models are offered, with prices ranging between R5 500 and R80 000.

Ploughs, harrows and implements and cultivators - are mostly locally manufactured, and only the larger, more expensive and more complicated ones are still imported. During 1977, 92 different types of ploughs and harrows were sold, and 29 different types of tine implements and cultivators. Prices ranged between R125 and R11 200 for ploughs and harrows, and between R135 and R9 400 for tine implements and cultivators. Again a large range of machines are demanded by farmers, largely due to soil conditions, crops, tractor sizes, and personal preference. Most implements are interchangeable between tractors in the same power category.

Planters and related applicators - again one finds a wide variety of planters, seeders, and fertilizer, insecticide and herbicide applicators. Prices also vary widely, e.g. single kernel planters vary between R500 and R9 500. The majority of

the machines are locally manufactured and only the more sophisticated, larger ones are imported.

The same is true for pest control sprayers.

Grain harvesters and hay and silage machinery - all self-propelled combines are imported for the same reasons as tractors are - the machines are sophisticated and very expensive to manufacture. The major importers of these machines are Deutz, John Deere, Malcomess, Massey-Ferguson and Vetsak. At present 21 different models are offered and prices range from R23 000 to R56 000. Tractor PTO-driven combines are manufactured locally by four companies.

Balers, forage harvesters and mowers are also imported and, as with tractors and combines, are price controlled by the Government. There are seven major companies operating in this field and again no one dominates the market.

Against this background of multiple participation, a wide variety of machines, and strong competition, one often hears the word rationalization. I take this to indicate that too many different models are offered by too many distributors from too many suppliers. From this I gather that competition has not managed to satisfy everybody. This represents, as I have said, the other extreme to the fertilizer industry.

In a supplement to Rapport (25 June 1978) four major farm machinery companies expressed their views on rationalization within the tractor industry. In general they agreed that a decrease in the number of tractor models could yield scale advantages but differed in their assessment of the extent of these advantages. Malcomess (with 9 different tractor models) argued that the farmer himself must dictate rationalization by exercising his choice. Ford (14 models) argued that the farmers do in any case not suffer under the present system of free choice, and that decreasing the number of models would only really effect savings once tractors are manufactured locally. Massey-Ferguson (8 models) felt that although 7 - 8 models ranging from 30-200 kW would be sufficient, farmers would dislike being dictated to as to which tractors they must buy. Vetsak (22 models) argued that a decrease in the number of models would bring distinct advantages and that 4-6 models ranging from 40-120 kW would be sufficient.

Malcomess and Ford also felt that decreasing the number of competitors would not yield significant advantages and the number of competitors should be determined by the market mechanism. Smaller distributors tend to concentrate on selected areas where they are competitive (models, prices, service). A farmer buys a particular make and model of tractor solely because it satisfies his specific requirements better than any other make and model should the question arises whether he should be deprived this freedom of choice. Vetsak, on the other hand, felt very strongly that the number of distributors should indeed be decreased. Vetsak sees the solution as being the local manufacture of tractors, which effectively means that only one make (4-6 models?) would be available to the farmers. This is a radical deviation from the concept of free competition and free choice.

In the press release on the local manufacture of diesel engines, Minister Heunis also expressed the hope that this latter development would lead to a rationalization in the tractor industry.

The challenge to policy makers, agricultural economists, and others, lies in a more accurate definition of "rationalization" and in deciding what the benefits would be in contrast with the disadvantages of restricting competition. Once this is determined, the next challenge is to find a way of restricting competition without creating a dangerous degree of economic concentration, as has happened in the fertilizer industry.

4. FUEL, DIPS AND SPRAYS, AND STOCK FEED

These inputs fall between the two extremes as represented by fertilizers and farm machinery. I therefore offer only a brief description of these input industries.

Diesel fuel is classified as a strategic product and the prices are controlled. Agriculture is one of the major consumers of diesel and farmers receive special price concessions. The six companies who participate in this market are all South African registered companies. Controlled prices apart, the industry is very competitive especially with regard to customer service.

The dips and sprays industry is differentiated into a wide range of herbicides, insecticides and other related chemical products. The industry consists of the suppliers of basic ingredients, formulators and distributors. Most of the basic ingredients are still imported, but they are now being replaced by local manufacture at an increasing rate - local manufacturers have 20 to 25% import protection. There are 9 main formulators who enjoy more or less equal market shares. The industry is highly competitive chiefly due to product differentiations. At present approximately 380 different products are offered - this number could be considerably reduced in order to eliminate confusion amongst farmers, but would probably decrease competion in the industry. The Ministry of Economic Affairs has investigated the industry and found no reason for Government intervention. The distributors of these products market mainly through the co-operatives, but also direct to end-users.

The stock and poultry feed industry is virtually independent of imports and is free from price control. The manufacturers are compelled to register with the relevant control boards, e.g. if they use maize as a base, they have to register with the Maize Board. At this stage there are approximately 120 registered feed companies, ranging from small bonemeal producers to large manufacturers of balanced feeds.

The major manufacturers are Epol, Tiger Oats, FVB (Nola Industries), Tongaat, and several co-operatives, notably Sentraal-Wes, OTK, Bokomo and Delmas. Of the total output of these concerns, 30 to 40 % is consumed by affiliated companies of the manufacturers. A large proportion of the remainder is distributed through the co-operatives. Competition within the industry is strong and is based on prices, mixtures and service.

5. CO-OPERATIVE SOCIETIES

The agricultural co-operatives play a very important role in the supply of farm inputs. Schedule 3 presents a rough comparison between total farm inputs and co-operatives' turnover in farm inputs. The share of the co-operatives in the distribution of farm inputs is increasing and now comprises more than 80 %. This is an exceptionally high degree of economic concentration in the distribution sector.

In this paper I have however often referred to the co-operatives' involvement in the manufacturing sector as well.

In the fertilizer industry the co-operatives own more than 40 % of the shares in Triomf Kunsmisbeleggings Beperk, and wholly own Sentramark (Koöperatief) Beperk and Boeredienste. At the same time they distribute more than 70 % of all fertilizers. In the farm machinery industry they operate through Vetsak, their main manufacturing arm, and apart from Vetsak machines they also distribute a significant portion of John Deere's machines, as well as the products of many other small local manufacturers. The major portion of the farm diesel consumption is financed through the co-operatives. In the dips and spray industry they not only distribute most of the remedies, but also formulate their own products through Vetsak. They are also engaged in the manufacture of feeds, notably Sentraal-Wes, OTK, Bokomo and Delmas Koöperasie.

A brief review of the development of these societies show that they were originally established to co-ordinate the marketing of the farmers' produce. The institution of the control boards relieved most of the co-operatives of these functions and they now act as the agents of the control boards in handling, storing, grading and financing the produce. This enabled the co-operatives to give more attention to the processing of agricultural produce and to provide services to members on a co-operative basis. From this, the co-operative movement penetrated all sectors of the South African agricultural industry. The Land Bank has, since its inception, undertaken the financing of the co-operatives, and by the provision of low-cost funds it has played an important role in the development of the co-operative movement[3].

In Schedules 4 and 5, I offer an exposition of the growth of the co-operatives in general, and also of Vetsak. (The latter serves as a measure of their expansion in the manufacturing industry). Total

SCHEDULE 3 - Value of total intermediate goods and services purchased by farmers, compared to the total agricultural co-operatives' turnover in farming requisites, for 1969/70 to 1976/77

Year	Intermediate goods and services R m	Co-operatives turn-over R m	Portion of farming requisites supplied by co-operatives (%)
1969/70	391,4	271,5	69,4
1970/71	422,4	308,4	73,0
1971/72	474,7	345,9	72,9
1972/73	531,0	397,2	74,8
1973/74	660,2	473,2	71,7
1974/75	806,1	646,0	80,1
1975/76	1 023,9	850,0	83,0
1976/77	1 181,2	960,3	81,3

Source: 1 Abstract of Agricultural Statistics, 1978. Division of Agricultural Marketing Research, Department of Agricultural Economics and Marketing.
: 2 Unpublished data supplied by the Office of the Registrar of Co-operative Societies.

fixed assets employed by the co-operatives increased by 186 % in 7 years, and current assets by 212 %, against a turnover increase of 197 %. Co-operatives' term borrowings from the Land Bank increased by 167 % in 7 years, whilst Land Bank funds relative to their total term borrowings decreased slightly from 85 % in 1970 to 80 % in 1977. The co-operatives' current ratio is in general dangerously low and their current liabilities are increasingly financed by the Land Bank. Due to the threefold function of the co-operatives (i.e. buying the crops, supplying inputs, providing services) it is difficult to separate the three functions in the financial statements, but by approximation it appears that short-term credit to farmers (accounts receivable) increased by 220 % between 1970 and 1977, and trading stock on hand by 298 %, which is at a faster rate than the increase in their turn-over. According to normal trading norms, this is an unhealthy development, as is also indicated by the slowly deteriorating current ration. Co-operatives, however, function under a different set of rules where this might be acceptable.

The co-operatives' expansion into the manufacturing field, as indicated by Vetsak, is phenomenal. Turnover data is not disclosed, but its total assets employed increased by 345 % in four years. Its capital requirements are funded almost exclusively from members' funds, and its current assets by the Land Bank and trade creditors. Short term Land Bank borrowings increased from R3,3 million in 1974 to R29,5 million in 1978 - by 794 % in only four years! Accounts receivable increased by 294 % and stock on hand by 487 %. The Land Bank is also financing an increasing share of Vetsak's current liabilities.

In the co-operative societies, one has therefore all the ingredients of a potentially dangerous

situation - an approaching monopsony in the distribution of farm inputs, low-cost Land Bank funds coupled to a first lien on the farmers' crops (which is a very important marketing tool), and a very rapid expansion in the manufacturing of farm inputs.

In this situation it would be relatively easy for co-operatives to promote the sale of their own products and obstruct the sales of their competitors' products. The temptation to do so must be fairly strong. The question is whether this would be in the best interest of the farmer and the public.

Basically our challenge lies in answering the following questions:

- would a co-operative monopsony be in the best interest of the farmers and the general public?
- to what degree should competition exist in the farm input manufacturing sector and in the distribution sector?
- how can monopolistic practices be controlled?
- should co-operatives be involved in the manufacturing sector at all?
- should Land Bank (public) funds be used to finance co-operative manufacturing activities?

Without attempting to offer solutions, some light is shed on the problems by the Commission of Inquiry into the Regulation of Monopolistic Conditions Act, by the Board of Trade and Industries in its report on the Inquiry into the Fertilizer, and by the Land Bank in its 1977 Annual Report.

The Commission stated that strong action should be taken against all methods of coercion and exclusion, and that such methods would be in direct contravention of the Monopolies Act (p. 7). Competion should be promoted as far as possible within the already restrictive framework, and the Commission reduced the problem to one central theme "... to ensure the benefits of competition without losing the obvious benefits ascribed to economic concentrations" (p. 51). The Commission thus strongly emphasizes the desirability of competition.

In the fertilizer industry, the Board found that the lack of competition caused consumer dissatisfaction due to a certain amount of dictation by the suppliers. It also found a lack of innovation in the industry, and insufficient aspirations to improve services to customers (p. 31).

Various parties testified on the undesirability of co-operative participation in the fertilizer industry, and also cited examples of co-operatives promoting Triomf's products in favour of others. Fedmis testified (p. 18) to the importance of low-cost Land Bank funds as a marketing tool, and stated that in some cases "... co-operatives have refused to finance any farmer who purchased fertiliser from a company other than Triomf ... This is a case of unfair competition by using the Land Bank's government funds in support of a particular company" (p. 16). Omnia testified accordingly (p. 17). Sentramark, which is fully owned by co-operatives, also testified accordingly and described the co-operatives' shareholding in Triomf as "... one of the most unfortunate manifestations ever to raise its head in the fertiliser industry" (p 18). The South African Agricultural Union regarded the market sharing agreement as detrimental to the farmer "... because it possibly suppresses initiative, progress and a spirit of enterprise" (p. 21). This is due to a lack of competition. The SAAU also doubts that the agreement has really succeeded in achieving rationalisation.

The Land Bank defines its objective as increasing productivity. This is normally associated with competition.

The Bank's resources are limited, and this leads one into the realm of maximizing the marginal value product of the resources in terms of farmer and national benefit. Is this compatible with the channeling of such funds into the manufacturing sector?

These then are the challenges facing the policy makers, agricultural economists and other in regard to co-operative societies.

6. CONCLUSION

In this paper I have attempted to outline the challenges that face agricultural economists (and others) on promoting or restricting competition in the supply of farm inputs. In the fertilizer industry the challenge is to find ways of increasing competition without creating further economic concentration. In the farm machinery industry the challenge is to decide whether rationalization is desirable and, if so, how to bring it about without forcing the industry into the same situation into which the fertilizer industry has arrived. In the stock feed and dips and sprays industries, the challenges are more or less the same. The fuel industry is already stringently controlled.

The co-operative societies present special challenges. We are faced here with an approaching monopsony using scarce public funds *inter alia* to manufacture farm inputs. The challenge lies in finding ways to prevent co-operatives from abusing their economic powers to the detriment of the farmers' and public interest, in determining to what degree competition should be encouraged/restricted in judging the desirability of co-operatives participating in the manufacturing of farm inputs, and to decide whether Land Bank funds should be used to finance such activities.

I am sure that we have enough challenges here to keep a large number of agricultural economists occupied for a long time to come.

REFERENCES

1. Report of the Commission of Inquiry into the Regulation of Monopolistic Conditions Act, 1955. Government Printer RP 64/1977. See also Mouton, D.J. "The behaviour of the firm and the problem of restrictive trade practices. Pretoria, 1974.

2. Board of Trade and Industries, Report No. 1737. Inquiry into the Fertilizer Manufacturing Industry.

3. Land and Agricultural Bank of South Africa. 1977. Annual Report.

SCHEDULE 4 - Summary of the financial statements of co-operatives (in R million) (years ending June)

	All co-operatives				Vetsak		
Capital employed	**1970**	**1974**	**1976**	**1977**	**1974**	**1976**	**1978**
Share capital - Paid up	33,6	48,0	61,8	65,2	3,3	6,2	4,9
Reserves	157,2	266,3	298,2	485,4	6,4	18,9	22,5
Loans from members	54,6	87,3	128,3	161,9	0	0	5,2
Total members funds	**245,4**	**401,6**	**588,3**	**712,5**	**9,7**	**25,1**	**32,6**
Term loans	70,4	109,9	168,8	198,8	0,1	0	0,3
Land Bank	59,6	92,8	128,9	159,4	0	0	0
Other	10,8	17,1	39,9	39,4	0,1	0	0,3
Total capital employed	**315,8**	**511,5**	**757,1**	**911,3**	**10,0**	**25,1**	**32,9**
Employment of capital represented by fixed assets	217,2	354,0	503,6	621,3	2,9	5,3	7,5
Current assets	486,0	734,4	1 309,7	1 516,0	13,9	52,5	67,3
Accounts receivable	220,9	348,1	555,4	706,0	7,7	24,0	30,3
Trading stock in hand	59,2	91,5	207,4	235,8	6,2	27,8	36,4
Farm produce in hand	158,0	222,0	439,3	458,9	X	X	X
Other	47,9	72,8	107,6	115,3	0	0,7	0,6
Less current liabilities	**389,4**	**580,4**	**1 061,3**	**1 231,9**	**7,0**	**32,7**	**41,9**
Bank overdraft and short term loans	45,3	51,5	76,3	75,0	0,2	0	0
Land Bank	228,6	336,8	681,8	847,5	3,3	18,9	29,5
Creditors	98,2	167,9	273,8	276,0	3,5	13,8	12,4
Pool balances	17,3	24,2	29,4	33,4	X	X	X
Intangible assets and accumulated losses	2,0	3,5	5,1	5,9	0	0	0
Total assets employed	**705,2**	**1 091,9**	**1 818,4**	**2 143,2**	**16,8**	**57,8**	**74,8**

SCHEDULE 5- Salient ratios re co-operatives for the years ending June

		All co-operatives				Vetsak		
		1970	**1974**	**1976**	**1977**	**1974**	**1976**	**1978**
Current ratio		1,25	1,27	1,23	1,23	1,99	1,61	1,61
Liabilities to members' funds		1,87	1,72	2,09	2,01	0,73	1,30	1,29
Term Land Bank funds on total term loans	(%)	84,7	84,4	76,4	80,2	0	0	7,1
Current Land Bank funds on current liabilities	(%)	58,7	58,0	64,2	68,8	47,1	57,8	70,4
Total farming requisites supplied by Co-ops	(%)	69,4	71,7	83,0	81,3	X	X	X
Turnover	(R million)	1 298	2 190	3 387	3 849	?	?	?
Net trading surplus	(R million)	19,3	62,9	98,8	93,2	2,3	7,4	1,9

Note: Over the past 10 years, measured on September 30 each year:
(i) Total farm income increased at an average rate of 11,75% per year
(ii) Total farm expenses increased at an average rate of 11,69% per year
(iii) Farm profit before tax increased at an average rate of 11,84% per year
(iv) Total farm interest paid increased at an average rate of 11,23% per year