



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

281.8
Ag 835-
cz

5

Vol. 25 No. 2
JUNE 1986

Price R2-00
(R1-79 +21c GST)



Agrekon

FOUR-MONTHLY JOURNAL
ON AGRICULTURAL
ECONOMICS

Issued by the Department of Agricultural Economics and Marketing

SERIALS SECTION
CURRENT SERIAL RECORDS

MAR 16 '87

USDA
NAT'L AGRIC LIBRARY
RECEIVED

THE PERFORMANCE OF PAST FOOD, AGRICULTURAL AND TRADE POLICIES: IMPLICATIONS FOR THE FUTURE

by J.A. GROENEWALD
University of Pretoria

**"No government which has abolished markets has
been successful in modernizing agriculture"
T.W. Schultz, 1982**

INTRODUCTION

This analysis will involve a view of some institutions involved with agricultural and trade policies, facets of their behaviour, policy instruments and an opinion of the effects of some of these on agriculture and on economic life.

SOME TENETS OF INSTITUTIONS

Institutions have a distinct mode of behaviour; a mode which often does not really differ from the behavioural mode of (particularly) aggressive people. It may not be completely unfair to characterise much of institutional behaviour under three headings:¹

(i) Every institution, be it private or public, is like most people (including those who control institutions), primarily interested in its own position. There is a drive to strengthen the own position relative to those of other persons and institutions. This behaviour is probably basic to the principle of differential advantage. This mode of behaviour pertains to both wealth and power. People and institutions strive towards maximisation of wealth and/or power subject to the constraints set by the legal, economic, political and social environment.

(ii) Whenever conditions favour monopoly formation - in terms of power and/or wealth - those in a position to do so will obtain monopoly powers.

(iii) A monopolist generally (if not invariably) behaves like a monopolist. This happens irrespective of whether it is a monopoly of money or a power; the one leads almost inexorably to the other. Someone who has overtly obtained monopoly powers from governmental action, or a governmental monopoly (even when theoretically regarded as a service to the community) will still act as a monopolist. Thus, a monopolist is a monopolist is a monopolist is a

SOME BUSINESS REALITIES

Policy is formulated and practised and institutions operate against a background of business realities, some of which seem to be as follows:

(i) Government intervention has become part and parcel of economic life of every country and probably almost every economic sector within a country. Economic policies often have profound international effects. Export promotion policies of the U.S.A. can have important effects on South African exports; so have import tariffs of the E.E.C. The question is not whether there should be interference or not; it rather involves questions of type of interference and the extent thereof.

(ii) Absence of government intervention does not automatically imply a "free" and competitive market. Firms sometimes obtain monopoly powers, and use these to reduce or destroy the ability of others to enter or conduct business.

The American Congress found it necessary to pass the Sherman Anti Trust Act, their first main anti-monopoly legislation in 1890 (Robinson, 1948) - at a time of minimal state economic interference.

(iii) A free market and pure competition are not synonymous concepts. A free market simply means that firms are free to enter and conduct business, or leave industries as they wish, without legal and/or other institutional factors hampering their ability to do so. Pure competition, on the other hand, implies the absence of product or price differentiation and a large measure of uniformity. Modern economic realities clearly militate against this. A modern, free market will most probably have a completely different structure. Pure competition may possibly be found in a few small scale sectors, but the majority of sectors in a free market will be characterised by monopolistic or oligopolistic competition, with a limited number of competitors striving for differential advantage.

(iv) Agriculture is an integral part of the whole economy. The economy as a whole dictates the potential welfare of agriculture. No policy actions

retarding economic development will in the long run favour agriculture.

(v) Policy formation, if it is to be defensible and sustainable over the long run, will be aimed at the welfare of the whole population, rather than only a portion thereof.

(vi) The Law of Demand is valid, although evidently not always very popular in certain circles. There would, administratively, be no problem to fix the price of bread at R20 per loaf. But, in accordance to the Law of Demand, very few loaves will get sold at that price. It will not be a market-clearing price.

(vii) No industry can prosper without ready access to markets for its inputs and for its products.

(viii) If an economy is to develop optimally, it has to concentrate largely on those endeavours where it has an existing or potential comparative advantage. Shifting resources to activities without a potential comparative advantage will retard development and impair the welfare of the population.

(ix) A protected industry is similar to a protected child, animal or plant: It loses its ability to compete, and even to survive in an unprotected, competitive environment. The lack of competition breeds lethargy and hence ineffectiveness and inefficiency.

(x) Protection spawns monopolies.

(xi) The more control exercised by any organisation, the larger will be the personnel involved, the more complex will be the nature of the controlling institution, and the higher will be the probability of substantial investments in managerial ego; the more complex will be management of the controlling institution; the higher is the probability of errors and the bigger are these errors; the more serious are these errors; the more sensitive are those people who exert control about their own position and to their own feelings; and the less sensitive become these controllers to positions and feelings of others.

SOME FEATURES OF THE SOUTH(ERN) AFRICAN ECONOMIC AND AGRI- CULTURAL SCENE

Policy can be realistically evaluated only against a background of the environment in which it is supposed to function. The following may be relevant for purposes of this paper:

(i) The dual nature of the Southern African economy, and South African agriculture is well known. The typical (often recurrent) problems of the commercial agricultural sector are reminiscent of those encountered by the agricultural sectors of the developed countries. The subsistence sector, which has to sustain a large part of the total population, is a typical Third World agricultural sector with the problems typifying those encountered all over Sub-Saharan Africa. Problems are often of a conflicting nature: surpluses in one, food shortages in the other; debt servicing in one, lack of investment in the other.

(ii) Southern Africa represents a small part of the world, and its markets are relatively small. This is illustrated by population data, as shown in Table 1.

TABLE 1 - Population of Southern Africa, 1979

Country or region	Population (1 000)
Botswana, Lesotho, Swaziland	2 705
Bophuthatswana, Ciskei, Transkei, Venda	4 881
Republic of South Africa	23 141
South West Africa/Namibia	972
Total: Southern African Customs Union	31 699
Angola, Malawi, Mosambique, Zambia, Zimbabwe	36 396*
Southern Africa	68 095

*1980

Source: Malan (1983)

Even if Southern Africa could co-operate in a single economic community, this would still essentially represent a fairly small market with a total population close to that of Mexico's approximately 70 million people - and Mexico is not ordinarily referred to as a giant economy. It is certainly small relative to the following approximate populations: U.S. and Canada (250 million), Brazil (130 million), the EEC (260 million), Indonesia (120 million), India (600 million), Japan (115 million) and China (800 million).

One cannot realistically think either in terms of real mass markets or an ability to efficiently produce all needed articles internally. Such thoughts are self-illusory.

(iii) South Africa has had a high degree of dependence on international trade. In the five year period 1979 to 1983, total exports amounted to an average of R18 580 million per annum, total imports to R15 465 million per annum and GDP to R63 954 million per annum. Exports and imports averaged 29 per cent and 24 per cent of GDP respectively. Agricultural exports (average, R1 909 million per annum) amounted to 29 per cent of the gross value of agricultural production (R6 622 million per annum) and 50 per cent of agriculture's contribution to GDP (R3 810 million per annum).²

(iv) Compared to the Western world from whence much technology as applied in South Africa originated, South Africa has a scarcity of capital relative to labour, with costs of capital high relative to labour costs. This implies that much imported technology is non-optimal and inappropriate, particularly if shortages of many skills are also borne in mind.

(v) Agriculture rates among the activities with the highest income/capital multipliers.

(△ Income)

(△ capital) and labour/capital multipliers

(△ Labour)

(△ capital) in South Africa (Mullins & Scheepers, 1980).

(vi) Policies of foreign governments have a profound effect on the markets for South African products. Such policies include *inter alia* EEC policies to restrict entry of foreign products, U.S.

and EEC export promotion policies, etc.

(vii) The parity of South African agricultural product prices has steadily worsened *vis-a-vis* input prices. This decline in parity has been more severe in South Africa than in almost every competitor country on world markets (Groenewald 1982).

(viii) Over approximately the past two decades, South Africa has deliberately followed a policy of industrialisation, largely based on import replacement. This policy has been actively promoted by various types of protective measures such as import control and tariffs. To the extent that these industries have not become competitive *vis-a-vis* unimpeded import prices, that they have been responsible for direct and indirect cost increases in other industries, can it be claimed that cross subsidisation has become a prominent feature of our economic scene - with the more effective and efficient sectors subsidising the others. These protected industries have mostly been of a capital intensive nature. Monopoly conduct has not been rare in these sectors.

(ix) The South African economic scene is also characterised by the existence of a large number of statutory monopolies for example railway, air and to a large extent road transport, electricity and communications.

(x) South African natural resources have shown alarming deterioration, caused mainly by erosion and pollution.

Against the above background, it can be convincingly argued that the protectionist trade policies have weakened exporting sectors competitive situations. Those policies have also diverted resources from their best uses to others with lower marginal returns and lower marginal benefits. Cost-push inflation has been an obvious other side-effect. In this author's opinion, they have generally been deleterious to agricultural development and to welfare.

A lack of control over monopolistic practices - and in fact open sanction, as in the case of the brewery industry - has certainly added to a growth of monopolies in South Africa. The general effects were similar to those of protectionist trade policies.

GOVERNMENT INTERVENTION IN AGRICULTURE

Devices and differentiation in agriculture

Parliament, largely as a result of the problems of the twenties and thirties, has passed a number of acts to support agriculture. The Marketing Act is certainly the most important of these legal measures.

Various types of intervention have been adopted, varying from very severe types such as one channel fixed price schemes and quotas - the latter in some cases because of problems generated by other types of control - to mild measures such as

export promotion.³ Some products, such as vegetables and subtropical fruit, are virtually free from control, although there has also been intervention on fresh produce markets.

Different agricultural producers' groups are treated differently. Producers of deciduous fruit, wool, mohair, karakul pelts and citrus fruit have to compete on international markets (albeit through control boards) with a minimum of governmental protection. Some others, such as grain producers are almost completely under government control (and protection?) as far as marketing is concerned.

Fixed prices and costs of production

It was originally thought that price fixation could conveniently be done on a production cost plus basis. It soon became evident that with farm products, this could not be done. In 1947 already, the National Marketing Council stated that in addition to cost of production, the following should be considered: Domestic demand, local supply, price of other farm products, the condition of the national economy and international prices (Brits, 1968).

These other considerations have obviously played a bigger role than has generally been known. In the midst of often heated debates over production costs, South African maize prices simply followed world prices. In the 25 years 1950 to 1975, domestic maize prices exceeded the U.S. domestic price 10 times, and prices did not differ more than 10 per cent (Rees, 1979).

It has, however, remained a popular belief that cost increases were directly reflected in higher product prices. It became psychologically attractive to plant grain on poorer soils in the belief that the resulting higher costs would be reflected in higher prices. Farmers were also not encouraged by this syndrome - or by tax practice - to economise on mechanical inputs. This had a deleterious effect on management.

In the sugar industry, the total net revenue has been divided between growers and millers on a cost base. This has not encouraged improved productivity. Improved productivity on one side would merely shrink their share of the pie and benefit the other party.

This psychosis has not been limited to agriculture. The fertilizer industry, for example, maintained fixed prices for many years. These prices were statutorily based on a certain yield on capital. This could certainly not stimulate efficiency or capital saving. In some circles, it was argued that farmers could merely pass on such types of cost increases - which they could not. Administered prices of the services of the South African Transport Services or of Escom - both in statutory monopoly situations - are of the same nature. They weaken the competitive ability at all productive sectors purchasing inputs or services from them. They also eventually discriminate against the final local consumer - particularly those financially less well off.

Quotas

South Africa has seen growth in the use of quotas particularly by control boards, sometimes as a result of failures in other efforts or of erroneous judgement — eg. unrealistic floor prices. Quotas represent a drastic type of intervention; some of their main disadvantages are summarised below.⁴

Quotas introduce long-run rigidities, they stunt competition, and retard managerial improvement or technological progress. They also hamper market development. Quotas, have for example, been responsible for the fall of grace of cotton in the U.S.A. - the enterprise which there, was regarded as "king" (as was sugar in South Africa?). Its tendency to become capitalised in quota and/or land values causes a quota to become a cost for future farm generations. Quota restrictions can cause farmers to operate in an irrational stage of production - as in the wine industry (Geyer and van Niekerk, 1973).

Quotas contributed to both the deterioration of natural resources and uncertainty. In extensive livestock grazing areas, it is not only more profitable (Louw *et. al.*, 1977), but also essential for the maintenance of natural resources to destock in times of severe droughts. To the extent that the ability to do so has been hampered by access to livestock markets, has the quota (or "permit") system of the Meat Board contributed to deterioration of resources and to longer term riskiness. The uncertainty prevailing among sheepmeat, pigmeat, beef and dairy producers about future access to markets has certainly helped to render management less effective.

Quotas increase producers' revenues only if at least the following conditions hold (Shepherd, 1964): relatively low price elasticity of demand; relatively low cross elasticity of demand relating to substitutes; relatively high income elasticity of demand. This combination of conditions does not, for example, hold for either meats, sugar or vineyard products.

Quotas also transfer marketing decisions from the entrepreneur to the bureaucrat. This leads to a decline in marketing dynamics.

The question may also be posed on whether, in Africa, with its recurrent and often widespread famine, any artificial limitations to food production or marketing can at all be morally justified.

Restrictive registration

The Marketing Act has empowered some control boards "to apply restrictive registration of units in respect of businesses dealing with the product in the course of trade, or industries which process the product". The purpose was "to limit surplus capacity in these enterprises with a view to economising in costs" (Van Rensburg, 1962).

Restrictive registration is a very severe form of intervention, and is similar to quotas. Most of these disadvantages automatically also follow restrictive registration, which can however even do worse. Due to the smaller number of firms involved in the trade or processing of farm products, restrictive

registration often leads to monopolisation. There is sufficient reason to suspect that this has, in fact, happened in quite a few agribusiness industries: dairy plants, milk distributors, meat traders, millers, bakers, meat wholesalers, etc.⁵

A decision to refuse new registration, or a decision to allow a firm to increase its share by buying out others' licences is often justified by claims of economies of scale. These claims are often exaggerated. In the case of abattoirs (Eales, 1979) and sugar mills (Chadwick, 1983; Ryland, 1969) it has been shown that once the disadvantages of very small scale operations have been overcome, and medium size have been obtained, further savings are meagre.

In the United States, some authors have identified excessive economic concentration and monopoly formation in the agribusiness sector as being amongst the most important economic problems confronting the farm sector (Gisser, 1982; Parker & Connor, 1979; Tweeten, 1969). There can be very little reason indeed to doubt that findings would be similar in South Africa. Restrictive registration has aggravated this problem.

Subsidies and taxes

Some agricultural inputs have for long been subsidised. Fertilizers were subsidised to offset protection cost to farmers. This merely added one more artificiality, and the suddenness of removal came as a financial shock. It was one contributing factor to overfertilisation. Subsidies on fuel (or only exemption of excise tax) together with tax concessions on machinery purchases have stimulated overmechanisation in an economy with a shortage of work opportunities. Subsidised credit added to this substitution and, in addition, promoted excessive market prices for land. Supposed advantages became expensive costs.

Conclusion

It is now concluded that many policy measures and regulations have done more harm than good. The agricultural subsectors with the most stringent intervention have oscillated between artificially created periodic surpluses and shortages. Prices have ceased to act as market clearing devices and as signals leading towards Pareto type economic optima (Groenewald, 1964).

Mercantilist type of protection carries within itself the seeds of increasing economic isolation. In times of turbulence, it will render economic boycotts cheaper for participants thereof. It also causes further deviations from Pareto welfare maximising equilibria.

Marketing control, particularly through fixed prices, has almost completely politicised some agricultural price decisions. At present, the Minister of Agricultural Economics and of Water Affairs makes many decisions - including price decisions.

These decisions are made after discussions in a cabinet committee. The result is strong reason to suspect that political motives may often weigh more than economic considerations. It has become a political decision in an era witnessing a decline in the commercial agricultural sector's relative political power. Power struggles between conflicting interest groups within agriculture - eg. maize producers and animal feeders - can be expected to increase in severity.

The question of who had been beneficiaries of state intervention becomes an interesting one. Those with little to sell - the smaller producer (including the subsistence farmer) - could obviously not be the main beneficiaries. To the extent that the net effect - as seems to be the case - has been increased prices, consumers could not be beneficiaries either.

The list of main beneficiaries would include big sellers, probably including the very large farmers - the corporate units and the wealthy. It would also include those in agribusiness who benefited from monopoly formation and those who were able to expand in input-providing ventures under conditions where import tariffs, import control, or governmentally controlled price fixation eliminated competition.

Beneficiaries would furthermore include bureaucratic personnel involved in administering and - in many cases - expanding control.

It can thus be argued that agricultural and commercial policy has in many respects contributed towards widening of economic inequalities. This must have contributed to increased rural depopulation and urban congestion.

EXTENSION POLICY

Until very recently, extensionists, both in the government service and in private organisations, have largely focussed their attention on technical matters, with scant - if any at all - attention to economic and/or financial aspects of agriculture. This has been widespread in both the subsistence and commercial sector. Neither have by far the majority of extension officers had sufficient training in Agricultural Economics and/or finance to give any but naive and superficial extension on the economics and finance of farming.

The result has been efforts to promote achievement of maximum physical production, rather than economically optimum production, except when other considerations such as quota restrictions prevented such maximum physical production.

During the last approximately two decades, much of the extension effort was taken over by private sector groups selling inputs to agriculture. It would hardly be surprising if the extension given by such groups was aimed at maximisation of sales rather than maximising economic benefits of farmers, particularly if an industry operated in a cartel as happened until some time ago in fertilizer (Raad van Handel en Nywerheid, 1976). The impression is that many co-operatives also followed

the lead of private sector and governmental extension to promote maximum physical production as a main aim in farm production.

For the farmers, whose training in business matters generally leaves much to be desired, this tendency was very unfortunate indeed. There are firm indications that under these circumstances, many maize farmers overexpended heavily on fertilizer (Fölsher & du Toit, 1984; van Rensburg, 1985). It has been shown that overinvestment in machinery likewise weakened the financial situation of many farmers (Van Rensburg, 1985).

Such extension can be particularly harmful in situations with a weakening parity of farm product prices. There have lately been promising moves towards more finance-oriented extension in the case of some co-ops, and in the new thrust in agricultural services on the part of some commercial banks.

FUTURE POLICY DIRECTIONS

The main consideration for future agricultural, commercial and economic policy for South Africa is one of direction. This is a matter of choice. The choice can be summed up as one between: more or less intervention; less or more market access for producers; a more closed, or more open economy; centralised, or decentralised decisionmaking; more, or less monopolised business; bureaucratic, or entrepreneurial decisionmaking; a more socialist, or more capitalist economy.

Any change of direction will have to be well thought out, and should constitute a movement over a broad front. Piecemeal approaches can be harmful. There was little - if any - benefit to be gained by lifting price control on fresh milk in a situation of complete monopoly in milk distribution. In such a situation it would make more sense to encourage more competition and thereafter lift price control.

Overreaction must also be avoided. Sudden deregulation, or a sudden stop in protection, is likely to be disruptive. A movement in this direction should be similar to the treatment of drug addiction in human beings. Gradualism is needed to prevent withdrawal symptoms. An instant move from highly subsidised agricultural credit to completely market related credit was disruptive, unwise and created an impression of monetary bureaucratic supermanism. It added to the financial disruption of the farming community. Had this subsidy been phased out over a period of (say) five years, the benefits of market relatedness would have been obtained without such violent shocks to the system.

The question should be raised: What should South African farmers be protected against? What could they expect from government? What, in addition to the ordinary protection against criminal activity etc.? Three things seem to be crucial:

- (i) Protection against violent short-run fluctuations.
- (ii) Protection against monopolies in the markets for inputs and markets handling their products.
- (iii) Protection against actions of foreign

governments. While one should expect South African farmers to be able to compete with the U.S.A., E.E.C or Australian farmers, one cannot expect them to compete with American farmer plus the U.S. government, European producers plus the EEC common agricultural policy or Australian farmers plus their own government. Protectionism by foreign governments warrants aid by South African authorities to South African producers, should the producers suffer real setbacks because of foreign governmental action.

It is also obvious that the problems are not exclusively agricultural; the challenge is to structure economic policy in general, including agricultural policy, to a more effective and efficient way of managing the economy.

In the balance, it may be wise once more to heed the words of T.W. Schultz (1982):

"No government which has abolished markets has been successful in modernizing agriculture".

NOTES

Although classified vastly differently, the spirit of this classification is perhaps not much different from that presented by Parkinson (1957)

2. Data obtained from the 1985 Abstract of Agricultural Statistics
3. For more detail and critical analysis see Groenewald & Nieuwoudt (1979)
4. For more detailed discussion, see Groenewald & Nieuwoudt (1979), Groenewald (1978), Nieuwoudt (1976), Nieuwoudt (1978), Paarlberg (1962), Paarlberg (1964), and Schultz (1953)
5. The Competition Board is at present enquiring the extent to which the Wheat Board's policy of restrictive registration has led to harmful monopoly formation and conduct

REFERENCES

- BRITS, R.N., 1968. *The production and marketing of South African maize since 1910, with special reference to the years 1954 to 1966*. Ph.D. dissertation, Rhodes-university
- CHADWICK, G. 1983. *Minimization of transport and milling costs in the South African sugar industry using a transportation model*. M.Ag.Man.-thesis, University of Natal
- EALES, R., 1979. *A long-term physical abattoir development plan for South Africa*. Ph.D. dissertation, University of the Witwatersrand
- FÖLSCHER, WILLEM & DU TOIT, GAWIE, 1984. Realistiese besparing ten opsigte van mieliebemesting. *Mielies/Maize* No. 46: 19-29
- GEYER, H.J. & VAN NIEKERK, J., 1973. An application of economic theory in the long-run planning in the scale of operation in the primary production of wine grapes. *Agrekon* 12(2): 34-37
- GISSER, MICHA, 1982. Welfare implications of oligopoly in U.S. food manufacturing. *Amer. J. Ag. Econ.* 64:616-624
- GROENEWALD, J.A., 1982. Changes in the parity position of South African agriculture. *Agrekon* 21(2): 8-14
- GROENEWALD, J.A., 1978. Production quotas in agriculture: Comment. *S. Afr. J. Econ.* 46: 62-65
- GROENEWALD, J.A., 1964. The effects on national economic welfare of economic interference in favour of agriculture. *S. Afr. J. Econ.* 32: 283-293
- GROENEWALD, J.A. & NIEUWOUDT, W.L., 1979. Welfare aspects of state intervention in agriculture. *Finance & Trade Review* 13:59-81
- HUIE, J.M., 1970. *Number, size and location of beef slaughter plants in Michigan*. Michigan State University. Ag. Econ Report 161
- LOGAN, S.H. & KING, G.A., 1972. *Economies of scale in beef slaughter plants*. University of California Report 260
- LOUW, A., GROENEWALD, J.A. & GROSSKOPF, J.F.W., 1977. Beef production systems in the North-western Transvaal sweet bushveld: a simulation model. *Agrekon* 16(4):14-22
- MALAN, THEO, 1983. Employment opportunities and problems in a region of unequals. *African Insight*. 13:153-168
- MULLINS, D. & SCHEEPERS, C.F., 1980. A proposed method to quantify the possible impact of alternative sectoral economic development strategies on certain socio-economic objectives. *Finance & Trade Review*. 15:13-30
- NIEUWOUDT, W.L., 1978. Production quotas with special reference to meat: Reply. *S. Afr. J. Econ.* 46:175-178
- NIEUWOUDT, W.L., 1976. Rents of land and production quotas in agriculture. *S. Afr. J. Econ.* 44: 194-196
- PARKER, RUSSELL C. & CONNOR, JOHN M., 1979. Estimates of consumers' loss due to monopoly in the U.S. food manufacturing industries. *Amer. J. Ag. Econ.* 61:626-639
- PARKINSON, C. NORTHCOTE, 1957. *Parkinson's law*. Boston: Houghton Mifflin
- PARSONS, S.A. & GUISE, J.W.B., 1971. An analysis of the cost of operation of export abattoirs in Australia. *Qly. Rev. Agr. Econ.* 24(1): 45-56
- RAAD VAN HANDEL EN NYWERHEID, 1976. *Onderzoek na die kunsmisvervaardigingsbedryf (Verslag No. 1737)*. Pretoria: Staatsdrukker
- REES, D.J., 1979. *Regulation of South African agriculture - performance of agricultural marketing boards*. Ph.D. dissertation, University of Cape Town
- ROBINSON, E.A.G., 1948. *Monopoly*. Cambridge University Press
- RYLAND, G.J., 1969. *Economics of scale in sugar milling*. Ass. of Queensland Sugar Technologists
- SHEPHERD, GEOFFREY S., 1964. *Farm policy-new directions*. Ames: Iowa State University Press
- SCHULTZ, T.W., In Hill, Lowell D(Ed), 1982. *Role of government in a market economy*. Ames: Iowa State University Press
- SCHULTZ, T.W., 1953. *The economic organization of agriculture*. New York: McGraw-Hill
- TWEETEN, LUTHER G., 1969. Theories explaining the persistence of low resource returns in a growing economy. *Amer. J. Ag. Econ.* 51: 798-817
- VAN RENSBURG, B.D.T.J., 1985. *Boerderysukses en finansiële verhoudings in Wes-Transvaalse graangebiede*. M.Sc.(Agric)-thesis, University of Pretoria
- VAN RENSBURG, H.J., 1962. Control under the Marketing Act. *Agrekon* (1): 34-41
- YLI-JOKIPII, P., 1971. The spatial characteristics of the livestock and meat trade in Finland with special reference to slaughter houses. *Fennia* 110: 5-35.