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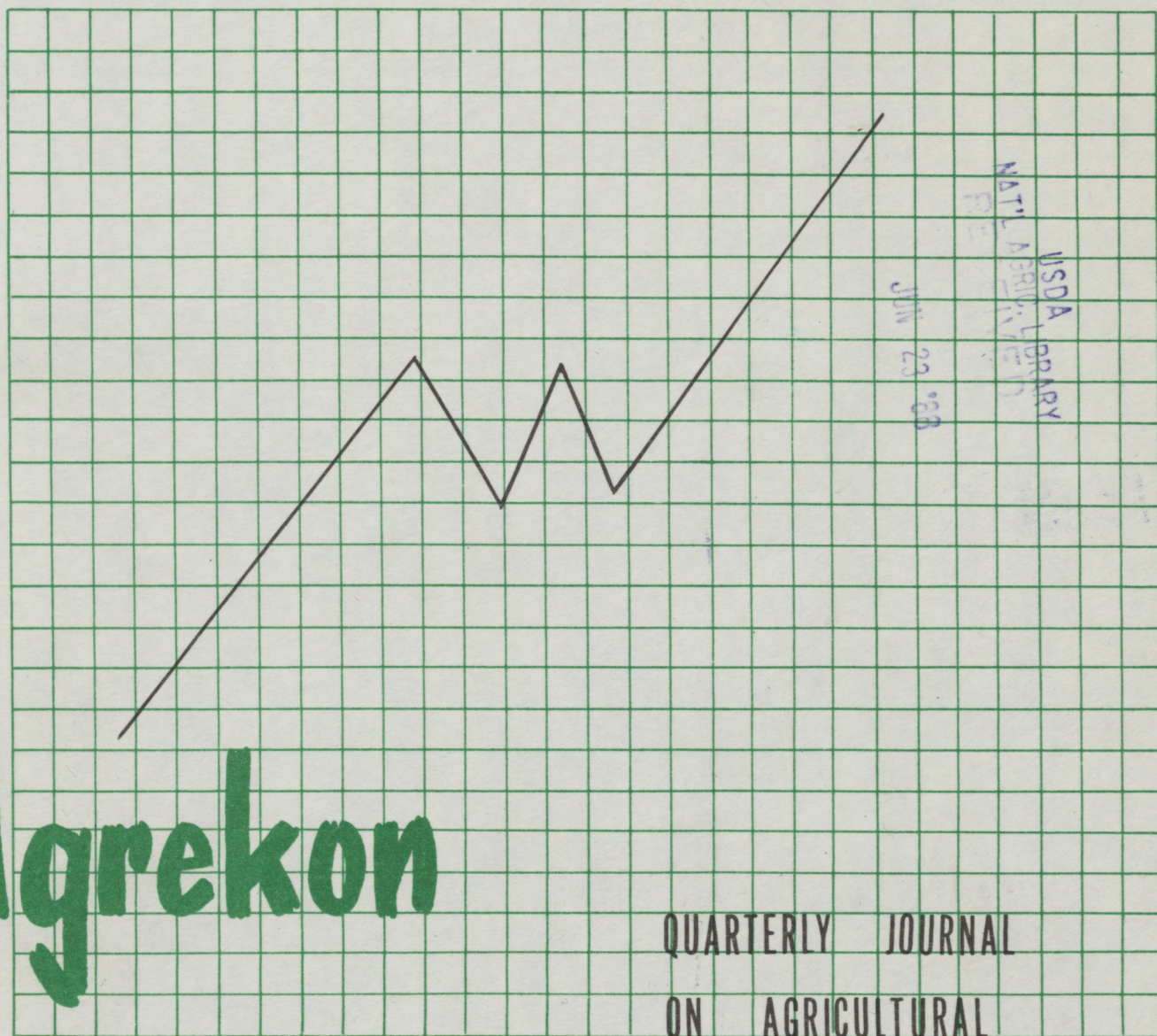
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GOVERNMENT INTERVENTION IN THE DAIRY INDUSTRY IN PERSPECTIVE

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Introduction

In the milk marketing process, by which is meant the business activities that take place from the point of initial production to the point of eventual consumption¹, there are several groups involved, each with different interests: Consumers make every effort to purchase milk and milk products that are palatable, nutritious and healthy at the lowest possible price at the time, place and in the form required. Primary producers and secondary manufacturers, on the other hand, aim to supply milk continuously in anticipation of the demand for the product and to earn the highest possible return on capital, taking account of the risk and uncertainty involved.² A conflict of interests arises and the question is how the conflict should be resolved.

Part played by the Government

According to the Classical and Marginal Schools, under a capitalist system with free enterprise and with the essential characteristics of private ownership of land and capital goods, and the profit motive, the interests of the community are best served if each individual takes care of his own interests (the so-called "harmony of interests"). The forces of the free, competitive market therefore determine the direction the production and distribution of consumer goods will take. Central to the operation of the market mechanism is the function of prices which (i) determine what the nature of production is, (ii) ensure the allocation of production factors to various possible applications, (iii) allocate products to consumers and (iv) provide for growth through increased productivity or an increase in productive sources.³ In these circumstances the Government that governs best is the one that restricts intervention to the minimum because the counteractive forces tend towards equilibrium.

The idealistic assumption of this school of thought is that free competition without Government action promotes general welfare. However, economic history has shown that although the economic system which functions according to the market mechanism has great advantages, it does not always function perfectly.*

Market failures therefore make market corrections essential.

The next question is: which body or group should intervene if the market mechanism *should fail*? Such a body should have authority and should be able to enforce certain measures. In a democratic system these powers are delegated to the authorities or central government. Capitalism can therefore also be controlled or regulated. In this type of economic system there is private enterprise and not free enterprise, but it remains capitalism.

Indeed, one of the tenets of the Institutional School is that control measures by the authorities are necessary for the *constant correction of shortcomings or maladjustments in the economic system*. These measures therefore involve economic planning to counteract fluctuations in the conjuncture. This school also emphasises the part played by institutions in economic life. Institutions are seen as established and accepted organised groups. People organise themselves into groups to promote communal interests. It is therefore necessary to take account of conflicting interests among the groups. Examples of conflicting interests are large and small businesses, consumers and producers or employees and employers. The role of a representative and *impartial* Government is to effect conciliation in order to ensure the effective functioning of the economic system.⁴

Authority intervention in the agricultural sector in South Africa

The low prices during the depression of the early thirties compelled the authorities to apply several assistance measures. Control legislation which authorised measures to raise prices for certain products was adopted. After 1933 the prices of agricultural products did not recover to the same extent as those of industrial products. People came to be of the opinion that fragmented and inflexible control legislation should be replaced by a permanent degree of authority intervention in agricultural marketing.

The Marketing Act of 1968, as amended, is an enabling measure in that it provides for the institution and amendment of marketing schemes for agricultural products by proclamation instead of through specific parliamentary legislation. Under this Act any organised body of producers may

*See, for instance, Heilbroner, R.L. 1972. *The Making of Economic Society*, Fourth Edition, Prentice-Hall Inc.

submit a proposed scheme for the regulation of the *marketing* of a product. After the proposed scheme has been investigated by the National Marketing Council, approved by the Minister of Agriculture and Fisheries and published in the *Gazette* to a board is established to administer the scheme. The provisions of the scheme and the decisions of the board are legally binding.

The aims of the Marketing Act are: -

- (1) to obtain a greater degree of short-term stability in the prices of farm products in order to increase the productivity of farming enterprises;
- (2) to reduce the play between producer and consumer prices by increasing the efficiency of related marketing operations.⁵

The following characteristics of the agricultural sector in respect of the marketing process, and specifically in respect of price formation, justify authority intervention:

- (1) The production process is biological in nature and is subject to the caprices of nature;
- (2) agricultural production is seasonal;
- (3) products are bulky and perishable;
- (4) the time-related biological production cycle and high capital investment in land, fixed improvements and machinery for production result in a low rate of turnover of capital;
- (5) the major share of fixed costs in farming leads to an inelastic offering of products in the short term;
- (6) in the short term the demand for individual agricultural products is relatively inelastic;
- (7) there is a larger number of sellers on the supply side than on the demand side owing to the formation of oligopolies or monopolies.

With free operation of the market mechanism these factors in combination contribute to periodic surpluses and shortages and consequently to extreme price fluctuations. In the short term this is undesirable from the point of view of both the producer and the consumer. In agreement with the Institutional School, the conclusion must therefore be drawn that an unregulated market does not lead to the efficient allocation of resources or to a just distribution of income. Authority intervention should therefore take place solely with the object of stabilisation and not with the object of replacing the market mechanism, and should be aimed at reconciling conflicting interests.

Nature of control in the dairy industry

Milk is marketed under the single-channel pool scheme and the single-channel fixed price scheme. In the first case the dairy control scheme is applicable to six marketing areas in South Africa and no producer may sell fresh milk in a controlled area unless he is registered with the Dairy Control Board in respect of that area.

The supply of milk is regulated through the open pool system and the pool allocation system. The declared purpose of the quota system is to prevent surplus production during the summer

months. Producers in controlled areas may sell milk only to distributors registered with the Board. Payment for these sales is made to the Board at fixed prices. Surplus milk that cannot be sold to distributors by producers or that is received by distributors is delivered to the Board for sale. This surplus milk is disposed of by the Board, generally by selling it at fixed prices to industrial milk factories or dairies inside and outside the controlled areas. The net proceeds from these sales and from full-price sales by producers are pooled and after the deduction of levies are divided monthly among producers in accordance with the quality in terms of the composition of the milk and in proportion to the quantities of milk supplied. Producers who supply milk direct to consumers and are registered as producer-distributors are partly exempt from the pool restrictions.

The production, handling and distribution of fresh milk are further regulated by the health measures instituted by local authorities. Although this is not stipulated by the Board as a requirement upon registration, the producer may not deliver milk unless a licence has been issued to him.

In the case of the fixed price scheme single-channel marketing is not applicable to the primary product but is applicable to butter and cheese, which may only be marketed through the Dairy Control Board. The Board determines the price manufacturers should pay to producers for so-called industrial milk, which is used for the manufacture of butter, cheese, condensed milk and milk powder. In addition to producer prices, wholesale prices and maximum retail prices are also fixed for butter and cheese.⁶

The implementation of the Dairy Control Scheme by the Board comprises the following:

- (1) Registration or recording of producers, distributors and manufacturers;
- (2) measurement of the quantity of milk produced (quantity offered) and milk or milk products processed and sold (quantity consumed);
- (3) measurement of the quality of milk for grading and standardisation;
- (4) supply and demand studies of milk and milk products on (a) local markets and (b) overseas markets;
- (5) cost analyses as part of the supply study in regard to (a) producers, (b) distributors and (c) manufacturers;
- (6) determination of producer prices and distributor's and manufacturer's margins;
- (7) sales of surplus milk and payment to producers for fresh milk delivered;
- (8) application of funds obtained by levies;
- (9) training of or at least the provision of market information to producers, distributors and manufacturers; and
- (10) marketing promotion of milk and milk products.

It is clear that in both the single-channel pool scheme and the single-channel fixed price scheme the operation of the market mechanism has been

suspended. (The distribution of surplus production when the pool allocation system is in operation is done by the Board. Producers realise lower prices owing to the artificially fixed price differences between industrial and fresh milk but the benefit is not passed on to the consumers. With the open pool system the opposite applies during shortages. Price variations on the production side owing to quality differences bear no relation to price differentiation of the consumer product.)

In order to comply with the objects of the Marketing Act, which made the establishment of the Dairy Control Scheme possible, the Board has no choice but to measure the supply and demand quantitatively and qualitatively and make predictions. On the supply side the following factors that affect supply are investigated:

- (1) Changes in the prices of substitutes;
- (2) Changes in the production costs of substitutes;
- (3) Changes in the price levels of production inputs of milk;
- (4) expectations of producers with regard to the future; and
- (5) production conditions such as climate.

On the demand side a study of the following factors is essential:

- (1) The number of consumers in the local and overseas markets;
- (2) the degree of urbanisation, racial composition, religious differences, age differences and size of families;
- (3) purchasing power of consumers on the basis of the above numbers and distribution
- (4) preferences and changes in tastes;
- (5) environmental conditions and seasonal consumption; and
- (6) production innovations through technological development.

If there are structural deficiencies on the supply and demand side that make the implementation of the Scheme difficult or impossible, the use of measures such as training and publicity campaigns is unavoidable. The criterion by which the success of such measures should be determined is the attainment of the objects of the Marketing Act and therefore also the provision of the needs of consumers and the achievement of the aims of producers, distributors and manufacturers. In other words, it should continually be asked whether drastic controlled marketing is effective or whether corrective action would not be the ideal solution.

Information requirements for top-level decision-making

There is necessarily a connection between the nature of top-level decision-making and information requirements.

To sum up, information on the following aspects should be at the Board's disposal:

- (1) *Who* produces/distributes/processes?
- (2) *What* is produced/distributed/processed?

- (3) *How much* is produced/distributed/processed?
- (4) *When* does production/distribution/processing take place?
- (5) *How does* production/distribution/processing take place?

The answers to the questions are self-explanatory and the matter will not be explored any further. All the particulars are management information which is also (should also be) used by individual enterprises within the dairy industry. The group interests of the enterprises are represented on the Board again, so that the Board has direct access to information sources. The responsibility of the Board is therefore to process the information, form a total picture and take strategic decisions on the basis of this. This entails setting a course that will enable individual enterprises within the Dairy industry to remain profitable and grow in an orderly manner. It should be ensured through the strategic decision-making of the Board that a product or product mix for which there is sufficient demand is supplied to the selected outlet and that a share in the market can be secured. What is required of operational and administrative decision-making by individual enterprises is to determine, given the expected price, the costs at which it will be profitable to produce/distribute/process in order to comply with the requirements of the consumer with regard to place, time and form utility.⁷ Strategic and operational decision-making are interdependent, so that there has to be reciprocal involvement in the provision and interpretation of information. If individual enterprises that have a common interest, but compete among themselves, are hesitant or refuse to supply information to the Board, the question should again be asked whether the form of control is meaningful.

Definition of the problem in the primary dairy industry

The problem may be described in several ways, for example -
 an income problem;
 a price problem;
 a stability problem;
 a bargaining power problem;
 a rural poverty problem.

If the problem can be accurately described, it is already half solved. Given the fact that there are a large number of producers who provide a minor share of total milk supplies, that dairy herds are probably predominantly small (less than 150 to 180 cows in milk per year) and/or low productions are encountered (less than 15 litres per cow in milk per day) and that seasonal milk production is a well-known occurrence (with surpluses from November to January), an accurate description of the problem would be the following: *Low per capita income but mainly a skew distribution of income with resulting rural poverty and*

accompanying instability. The problem in the dairy industry is therefore an adjustment problem,^{8 9} requiring specifically an adjustment in the number of milk producers, the scale and the seasonal pattern of milk production.

Use of prices as a policy instrument

As has already indicated, the underlying problem in the dairy industry is a structural one. Therefore, the exclusive use of prices as a policy instrument to solve the problem cannot be successful because the problem of low, fluctuating income should be traced back to low, fluctuating production. There is no practical price that can translate low production into an acceptable income.¹⁰ Furthermore, the essential process of adjustment is postponed by an attempt to keep the "small" producer in the market by price increases. What is worse is the fact that the skew division of income is aggravated. It does not take great powers of perception to realise that a price increase of 10 per cent, for instance, on 28c per litre gives the producer who has an average of 50 cows in milk per year and a daily production of 10 litres per cow an increased gross cash flow after 12 months of R5 110, whereas the producer with 180 cows in milk per year and a daily production of 15 litres per cow has already exceeded this amount after 3 months. This is simple calculation illustrates that at a low level of milk supply price increases are not a solution to the problem of inadequate liquidity.

If the "small" producer is unwilling or unable to leave the dairy industry, continuous price increases will even be counter-productive in that they lead to higher land prices. This does improve the creditworthiness of dairy enterprises from the point of view of assets security but does not increase ability to repay. If credit is injudiciously granted this can further impair cash flow.

The adjustment problem can only be overcome by selective policy instruments that can be used collectively or separately during a transitional phase to supplement price policy within a total supply and demand situation.

There are two aspects that should receive attention in the process. On the one hand the adjustment, which comprises a shift in the supply curve of milk producers to the left, should be accompanied by social provision for the aged and the middle-aged who leave the industry and training for young people to improve their opportunity to obtain alternative employment. On the other hand increased efficiency (including stable production) should be encouraged by the following:

- (a) The extension of credit for purchases of land and cows (direct productive capital) under favourable conditions, such as longer redemption periods with initial interest-free payments (and not necessarily lower interest rates). Comprehensive physical records and financial statements may be made a condition for the granting of credit.
- (b) Training and extension to provide increased technical/biological and economic knowledge

or the overcoming of obstacles that impede the application of knowledge.

- (c) The payment of subsidies for the transitional period, e.g. subsidies on fertiliser and concentrates, if this is practicable from an administrative point of view. Payment of such subsidies could be made conditional on an approved rotational cropping system for the maintenance of soil fertility and an accepted balanced feed programme.
- (d) Crop insurance against drought, hail or flood for fodder crops on lands.^{11 12 13}

It is understandable that prices are attractive from the point of view of the producer interest group and that they therefore receive a great deal of attention. However, prices should be seen in relation to the efficiency of management practices in the production process (costs) and the extent or scale of production (quantities). Therefore, policy in the dairy industry cannot be uni-dimensional when the problem is essentially multi-dimensional.¹⁴

Production costs as the basis for the determination of milk prices

In a supply study any cost calculation should be aimed at making judicious production decision-making possible - the producer should be able to decide on the costs at which he is prepared or able to deliver a certain quantity of milk, given the prevailing price level. It is therefore impossible to define the cost of production independently of demand conditions. This in itself creates problems, since there is a direct relationship between prices and production costs. If the Board wishes to use a cost calculation for price determination, demand, i.e. the position of the demand schedule, and price elasticity, should be taken into account and price determinations should be in accordance with the "desirable goals" of policy in the dairy industry with regard to resource allocation and output. Strategic decision-making should therefore take account of the goals* of producers,¹⁵ regional differences with regard to combinations of branches of farming, in other words alternative uses for scarce fixed resources, economies of scale and the quality of management.

With regard to economies of scale, production capacity and the utilisation of capacity should be defined. Price determination on the basis of total

*Goals may be divided into non-operational and operational goals. Examples of the former are "to enjoy dairy farming" or "to make money from dairy farming" or "to sell milk". These formulations do not specify what action should be taken to attain the goals. Operational goals, on the other hand, are exact and (i) assign specific tasks to the management/manager; (ii) make it possible to determine whether the tasks have been carried out; (iii) provide a means of determining whether the tasks have been fully carried out and (iv) set a time limit. An operational goal, such as net farm income (an absolute sum of money), proceeds from sales or return on capital can be optimised or satisfied. In the first case efforts would be made to get as close as possible to the goal and in the second place a lower level or "aspiration level" could be set.¹⁶

costs plus a profit margin, in contrast to direct variable costs plus a profit margin, implies either constant utilisation of capacity or price increases as soon as turnover drops.

It is also necessary to distinguish clearly between price determination on the basis of costs for an industry as a whole or for an individual enterprise. In the first place, as will be shown, uniform price determination is impossible in principle. In the second place, its only attraction lies in its simplicity. Although this has merits, it should be remembered that price determination is only one aspect of the marketing of a product and should also be consumer-orientated.¹⁷

There are three approaches that can be followed in calculating costs:

- (1) An area sample survey;
- (2) a record system kept by selected producers;
- (3) a complete estimate of a "representative" production unit.

Questions that arise immediately include the following:

- (1) Which group of milk producers in which area should be taken into account in the calculation of costs?
- (2) What criterion should be used for the calculation of a representative cost, such as the mode, median or arithmetic average?
- (3) How should assets with and without a market value be appraised?
- (4) How should costs be allocated in a diversified farming enterprise, for instance?

The answer to the first question is that there should be as many calculations of costs as there are homogeneous dairy farming areas and farming systems within regions. With regard to the second question, the criterion will depend on the distribution, whether normal, positive or negative skew. There are no unassailable answers to the last two questions.

Even if a basis for calculation is accepted and certain assumptions are made, incomplete and misleading conclusions are generally drawn in cost surveys because (a) account is not taken of conditions producers encounter from an *ex ante* point of view and (b) there is a lack or complete absence of reliable and economically correct evaluations of opportunity costs of production factors already under control or possibly to be obtained.

Owing to uncertainty the problem is that actual costs in the case of (a), such as depreciation of buildings such as milking parlours, and opportunity costs in the case of (b), such as managerial remuneration and interest on own capital, are inherently subjective. The question is how accurately subjective prejudices can be measured and whether generalisations by outsiders are justified.

There is no such thing as *the* production cost of milk. Production costs differ from one area to another and among producers within an area. Furthermore, all cost calculations are estimates

because information is inadequate and there are various possible methods for quantification.

Seen as a whole, the production costs approach is invalid because in a marketing-orientated production process the starting point is not production but the consumer and the needs of the consumer.^{18 19 20 21 22}

The problem of production costs as a basis for price determination is incisively summed up by Pasour²³: "The cost of producing a commodity is meaningful only in a static equilibrium model and even then, cost cannot be defined independently of demand when resources are specialized. Under real world conditions, opportunity costs are subjective and vary widely between producers. The ... analysis does not deny that government can vary output levels by price setting. What is challenged is the contention that such an approach involves the basing of price supports on cost. In view of the problems ..., attempts to define and estimate 'reasonable cost estimates' as a basis for agricultural price supports appear to be foredoomed."

Summary

Arguments can be advanced in support of controlled marketing in the agricultural sector. The form of control exercised in South African shows a similarity in certain respects to the principles of the Institutional School, namely recognition is given to the part played by the authorities in stabilising the operation of the marketing mechanism by reconciling conflicting interests among groups within the economic system. Control legislation in the dairy industry differs in one important respect because the functioning of the market mechanism has been suspended. This places a great responsibility on the Dairy Control Board, which has to exercise this control.

In order to solve the strategic problem in regard to the relationship between the enterprise and the environment,²⁴ a supply study should be carried out so that decisions can be taken on *what type of dairy farming* in terms of the combination of branches of farming and the scale of milk delivery should be supported and *who* should be stimulated to produce milk. Decisions on a price policy and a selective structural policy in view of this, in other words encouragement to leave the industry or increase production, are only possible after a comprehensive demand study. Although the initiative for carrying out the above investigation should be taken by the Dairy Control Board, a prerequisite for the supply of information is co-operation from all the interest groups that originally requested and supported controlled marketing.

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