

SUPPLEMENTARY MINIMUM PRICES:

a production incentive?

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Discussion Paper No. 63

Agricultural Economics Research Unit
Lincoln College
Canterbury
New Zealand

ISSN 0110-7720

THE AGRICULTURAL ECONOMICS RESEARCH UNIT

Lincoln College, Canterbury, N.Z.

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PREFACE

This discussion paper addresses the objectives and effectiveness of the Supplementary Minimum Prices (SMP) Scheme introduced by Government in 1978. The paper is valuable in three respects. Firstly, it reviews the origins of the scheme, particularly with its interaction with the Producer Boards' price stabilisation schemes. Secondly, the authors argue that the objectives of the Scheme are not clear and have appeared to change over time. Thirdly, evidence is presented to suggest that, even if objectives had been consistently maintained, the SMP scheme may not be particularly effective in maintaining or increasing pastoral production.

This project forms part of the A.E.R.U. research programme associated with pastoral industry production and policy. Other recent publications by the Unit in this area include those concerning an econometric model for the New Zealand Pastoral Livestock Sector (Research Report No. 127 by M. T. Laing and Discussion Paper No. 54 by M. T. Laing and A. C. Zwart).

P. D. Chudleigh
Director

SUMMARY

The perception by Government in 1974 of a need to modify fluctuations in farm product prices resulted in the establishment of the Farm Incomes Advisory Committee (the Zanetti Committee) to investigate and advise Government on ways of reducing product price and farm income fluctuations. This Committee reported early in 1975 and recommended the establishment of price stabilisation schemes to reduce the fluctuations in farm product prices and the establishment of criteria for deciding when Government funded supplementary payments should be made to achieve adequate farm income levels.

Following this, Government entered negotiations with the N.Z. Wool Board and N.Z. Meat Producers' Board which resulted in the introduction of price stabilisation schemes during the 1975/76 season. These schemes are designed to be market orientated and are administered by the Producer Boards. The Government considered that such market orientated schemes would provide for price stability as well as an adequate level of farm income.

However, the operation of the schemes up to the 1977/78 season did not result in what the Government considered to be an adequate income level for the encouragement of increased farm production or the level of confidence considered to be necessary for farm production expansion. Therefore, the Government introduced the Supplementary Minimum Prices (SMP) Scheme at the start of the 1978/79 season in order to provide product prices to farmers at a level thought to be appropriate for income adequacy and guaranteed those prices (in nominal terms) for a total of two seasons in order to provide for improved stability and confidence.

In subsequent years (up to 1981/82), the SMPs generally rose in nominal terms from one season to the next but, in real terms, they fell considerably, tending to reflect a move toward a market price orientation and less emphasis on the income adequacy objective. Over the period from SMP introduction to the start of the 1981/82 season, the SMPs were largely ineffective with regard to producer returns as they were either exceeded by market prices or matched

by the Producer Board minimum prices (which are based on market expectations). The SMPs announced for the 1981/82 season were, however, well ahead of market prices (and the Producer Board minimums) and reflected the expressed objective of Government to provide prices which would result in farmer income adequacy. These prices have resulted in significant supplementary payments to farmers during the 1981/82 season. The price levels have been maintained (nominally) for the 1982/83 season, reflecting a fall of approximately 18 per cent in real terms and a move back toward a more market level orientation (rather than the maintenance of adequate farm incomes).

The impact of such schemes on farm production levels requires examination. Data have been presented that show increased production results from increased land investment, rather than increased total investment. Also, it is apparent that farm income levels are more closely related to other forms of investment (plant, machinery and buildings) than to land investment. Therefore, measures which alter the level of farm income received are likely to have a more significant effect on these other categories of investment than on land investment. This means that farm production levels may not respond directly to farm income changes and the SMP scheme may not result in farm production changes. Also, farm production tends to respond to the relative prices of the various products. Therefore, distortions in the market relativities, which could easily result from the use of SMPs at set product price levels, could lead to production distortions which are not related to the market.

It is therefore desirable that agricultural support of a general nature be applied over all products at a similar level either through exchange rate adjustment or the provision of a common percentage increase in market prices rather than through product specific prices. Such assistance would only provide the climate for the encouragement of production increases.

In order to ensure that Government funds were used appropriately in ensuring that production increases occurred, such funds should be channeled directly to the production land investment area.

CHAPTER 1
INTRODUCTION

During the early 1970's the questions of output price stability and income adequacy were considered to be the most pressing issues facing the pastoral sector (Zanetti, 1975). The fluctuations in real market prices over the period prior to 1975 gave rise to this concern. This resulted in the attention of the Labour Government (1973-1975) being focussed on those issues and ways of overcoming the problems caused by widely fluctuating export prices and the consequent movements in farm incomes. As a result of this attention, the Minister of Agriculture and Fisheries called for an independent inquiry to investigate the issues and the Farm Incomes Advisory Committee (the Zanetti Committee) was established (late 1974). The Terms of Reference of that Committee were as follows:

- " (i) to examine ways of reducing the pronounced fluctuations in prices received by producers of the major agricultural products;
- (ii) to examine ways of achieving a more consistent level of farm incomes and limiting the disruptive stop-go impact on the New Zealand economy as a whole, consistent with the need to maintain over time, the maximum level of returns possible to producers;
- (iii) in light of the above examinations to recommend ways of reducing the pronounced fluctuations in product prices, consistent with the need to maintain market orientation of agricultural production in New Zealand, and the incentive and ability to respond to trends in overseas agricultural policies and prices."

This Committee subsequently reported in March 1975 recommending:

- " (i) the setting of a basic price at the beginning of the season based on a moving average of recent net market returns. The difference between the basic price and market price is to be paid as a deficiency payment, or collected as a levy as a debit or credit to a buffer account. The scheme being in essence, self-funding.
- (ii) The establishment of criteria for deciding when Government-funded supplementary payments are necessary to maintain an adequate income level."

However, the Minister of Agriculture and Fisheries considered that a price stabilisation scheme operated by the Meat and Wool Boards would meet both objectives by stabilising farm prices at a market related level sufficient to provide for an adequate level of income. Following negotiations between Government and the Producer Boards, agreement was reached on the implementation of price stabilisation schemes to be administered by the Producer Boards. Consequently, legislation was introduced which brought into existence, late in the 1975/76 season, price stabilisation schemes in the meat and wool sectors.¹

Following the operation of these schemes over the 1975/76 to 1977/78 seasons, the Government considered that the Government objective of income adequacy had not been achieved by the schemes. As a result, the Supplementary Minimum Prices (SMP) Scheme was introduced at the beginning of the 1978/79 season.²

This Discussion Paper reviews the operation of the stabilisation schemes in relation to their administration (Chapter 2) and their relationship to the Supplementary Minimum Prices (SMP) Scheme (Chapter 3). In Chapter 4, a review of the implications of the SMP scheme is provided and some recommendations are made regarding its possible improvement.

¹ This Discussion Paper has focussed on the meat and wool agricultural sectors and therefore discussion of the dairy sector stabilisation and SMP schemes has not been included.

² It should be noted that research carried out in 1976 (Chudleigh and Filan, 1976; Chudleigh, Blackie and Dent, 1976) on the impact of farm price stabilisation, indicated that while stability in farm output prices has the potential to assist with macro-economic stabilisation objectives, the degree of individual farm income stabilisation was minimal.

CHAPTER 2

PRICE STABILISATION SCHEMES

The sharp decline in the income of the meat and wool industry during the 1974/75 season prompted the Government to grant the sectors \$50m to support prices. The sum was transferred to Stabilisation Accounts for the meat and wool sectors and these accounts were to form the basis of longer term Industry Price Stabilisation schemes. The Meat Board received \$35m of the grant and paid \$25m on lamb supplements and \$32.8m on beef supplements. The deficiency in the Government grant was met by the Meat Board. The Wool Board paid \$2.3m of its \$15m grant to growers as a direct supplement during the 1974/75 season and \$5.7m in the following season when grower returns failed to reach the stabilised minimum price of 124c/kg. The Meat Board was also required to continue its supplementation of beef prices during the 1975/76 season paying over \$11m to beef producers.

During the 1975/76 season, new price stabilisation schemes were introduced by the Meat and Wool Boards which formalised the previous arrangements. The following sections of this chapter describe those schemes.

2.1 The N.Z. Meat Producers' Board Scheme

The Scheme only applies to stock slaughtered for export. A Meat Export Prices Committee comprising an independent chairman, and two Meat Board and two Government representatives, is responsible for setting at the start of the season, minimum and maximum (trigger) prices for the benchmark grades of meat, after consultation with the Minister of Agriculture and Fisheries.

Four grades of meat are defined as benchmark grades, as they are considered to be representative of the market. The benchmark grades are Lamb (PM 13-16 kg), Mutton (ML 22 kg and under), Prime Beef (P1, 245.5-270 kg) and Manufacturing Beef (Cow M, 145.5-170 kg). A fifth benchmark grade, Bull Beef (220.5-245 kg), was added in the 1979/80 season. The minimum

and trigger prices (as defined below) set for each of these grades are reflected in all other export grades of each category according to their "normal market" price relativities.

The Committee, in establishing the minimum prices for each benchmark grade, has certain rules to follow. The minimum price determined has to be within a 10 per cent deviation of an average price calculated from the weighted average of the actual market price of the preceding year and the estimated market prices for the current and forthcoming seasons. The Committee must also consider the existing price levels and market prospects for various types of meat and other farm products; the desirability of expanding the production of meat in New Zealand; and the state of the Meat Income Stabilisation Account.

In setting trigger prices, the Committee must consider existing price levels and market prospects for meat and farm products; the desirability of maintaining a sufficient margin above the minimum price to allow for normal marketing; the state of the Meat Income Stabilisation Account; and any other matters considered relevant by the Committee.

Individual commodity accounts for sheep and beef meats have been established within the Meat Income Stabilisation Account held at the Reserve Bank. The Reserve Bank provides an overdraft facility if necessary at a charge of one per cent per annum and pays interest on deposits at the rate of one per cent. These accounts are supplemented by the collection of levies and drawn on if supplementary payments are made. It is intended that the accounts be self-balancing over time.

The scheme only operates when the lowest regional schedule price, as announced for the week by the Meat Board, of a benchmark grade is below the minimum price set by the Committee for the season. If this occurs the Meat Board is required to determine minimum prices for all grades of meat in the category. The Board then may intervene directly in the market and purchase at the minimum price, or supplement the schedule price to the extent necessary to increase it to the minimum price, or undertake a combination of intervention and supplementation.

When the lowest regional schedule price of a benchmark grade exceeds its trigger price, a levy is imposed on grower returns for all grades represented by the benchmark grade at a rate equivalent to 50 per cent of the excess over the trigger price.

2.2 The N.Z. Wool Board Scheme

The Wool Board Price Smoothing Scheme differs from that operated by the Meat Producers Board. In addition to setting minimum and trigger prices, the Board operates a flexible market intervention policy as part of its price smoothing operations.

In order to support grower returns, a table of minimum prices is set by the Board at the beginning of each season. The Board must consult with the Minister of Agriculture and consider the market prospects for wool, the funds available for intervention and supplementation, the maintenance of wool production, and any other matters deemed relevant. A weighted average minimum price is then calculated from the table of minimum prices based on the volumes of each type of wool sold in the prior season. In order to maintain stability in the average minimum price between seasons, the price set for the new season may not exceed the previous season's level by more than 10 per cent or fall below by more than five per cent. At each auction the Board's valuers appraise and set, for each lot of wool offered, a floor price based on appropriate minimum prices from the table of minimum prices.

An intervention bidding level is also maintained by the Wool Board. This is the level at which the Board will begin to bid for a lot to provide additional market support. The level is flexible and may be changed from sale to sale, according to market circumstances. The intervention level may be higher or lower than the floor price. If the intervention level is above the floor price, the Wool Board may purchase the lot at the intervention level. The grower will receive the intervention level return. If the intervention level is below the floor price (and the market falls below the floor price), the grower receives the intervention level plus a supplement which is paid to the grower to bring his

return back to that floor price. The supplement is paid out of the Minimum Prices Funding Account, maintained by the Wool Board at the Reserve Bank.

Funds for the account are provided by the Minimum Prices Funding levy which is applied currently at one per cent on the gross proceeds from all shorn and dead wool. However, the levy is applied in such a way as to guarantee that the net return to the grower is not less than the minimum floor price.

A short-term intervention policy, Strata Price Control (SPC), is also used when the Board wishes to cushion declines on the market without altering the intervention price level. SPC intervention is always clearly identified from the normal intervention level and is designed to provide a flexible market support through purchases at levels above the normal intervention level.

The Board also operates the Grower Income Retention Scheme, which is designed to reduce variations in price. The scheme operates by skimming off a specified percentage of the excess market return over the trigger level. The trigger price is set at the beginning of each season by the Minister of Agriculture and Fisheries after consultation with the Board. In determining the trigger price level, the Minister is required to consider the ruling price levels and the market prospects for wool and other farm products, the maintenance of a viable and expanding sheep industry, the need to contribute to the New Zealand economy, and any other relevant factors. If the adjusted weighted average sale price (AWASP) (the prices achieved at a particular auction adjusted for the national sale volumes of each grade), exceeds the trigger price, the levy is invoked.

Where the sale price, after the deduction of the minimum prices funding levy, exceeds the trigger price a grower retention levy is deducted from the return. The rate of the levy is equivalent to fifty per cent of the difference between the sale price and the trigger price.

Collections made under the levy are credited to Individual Grower Accounts within the Grower Income Retention Account. Deposits are frozen for five years, although they may be released at the discretion of the Minister of Agriculture and and Fisheries.

CHAPTER 3

THE SUPPLEMENTARY MINIMUM PRICES SCHEME

3.1 Introduction

The recommendations of the Zanetti Committee included the need for income adequacy as well as price stabilisation.

As already discussed, the producer boards assumed responsibility for the implementation and administration of price stabilisation schemes. The Meat Board declared that it was "a Government responsibility to ensure producers an adequate income after consultation with the Producer Boards." (N.Z. Meat Producers' Annual Report, 1975, p.28).

The operation of the stabilisation schemes over the 1975/76, 1976/77 and 1977/78 seasons had been viewed with concern by Government. It had been anticipated (by Government) that the schemes would provide for the stabilisation of farm product prices as well as the achievement of an adequate level of farm income based on market returns. In the opinion of the Government, neither of these objectives had been met over the three years of stabilisation scheme operation and it was therefore decided that a new scheme should be introduced with the objectives of improved stabilisation and farm income adequacy.

In the 1978 Budget, the Government expressed the opinion that there was a considerable need to induce a higher level of confidence in the agricultural sector. It was expected that such confidence would result in an expansion of output and so lead to continued growth in the export earnings from the agricultural sector. The Minister of Finance stated that the most appropriate remedy to the problem was to guarantee to farmers "prices for primary products which will give them a more adequate return for their efforts" (1978 Budget, p.16) and that this was to be achieved by establishing and underwriting new minimum prices to supplement those operated by the various Producer Boards. The Minister expressed the view that these Supplementary Minimum Prices (SMPs) would more adequately provide for farmers' reasonable requirements for living expenses, farm operating expenditure and new development than the Producer Boards' schemes. It was

hoped that in setting the minimum prices for two years ahead, rather than the single season orientation of the Producer Board Schemes, that the farmer would have an assured and realistic base from which to plan.

It was announced that the Boards would administer the scheme using Government funds. These funds, drawn in the event of market prices falling below the SMP would be provided temporarily from Reserve Bank overdraft and ultimately from Government revenue. The scheme was not designed to be self-balancing and was to be "no more than an interim measure" (1978 Budget). The desirability of changing the present structure of the price smoothing arrangements was also stressed by the Minister.

A much briefer comment was made by the Minister in the 1979 Budget: "The guaranteed prices will be moved closer to next season's expected market levels, and the scheme will continue to operate in parallel with the minimum prices scheme and price smoothing arrangements operated by the Producer Boards" (1979 Budget, p.12). This suggests that the emphasis had moved from the original idea of providing income adequacy to farmers, and been replaced by a slightly more market orientation designed to protect the farmer from short term price recessions. The Government claimed that the successful introduction of the Supplementary Minimum Prices Scheme had meant that farmers could plan and invest to increase production knowing in advance the minimum prices they will receive for the next two seasons, and that this knowledge should allow the agricultural sector to "play its full part in generating export-led growth" (1979 Budget, p.12).

A reaffirmation of the Government's intention to merge the SMP scheme with the Boards' price smoothing arrangements was also made in the 1979 Budget, but no indication was given as to the form of the final package. The Ministry of Agriculture and Fisheries expressed the view (Economic Review of New Zealand Agriculture, 1979, p.11) that a likely arrangement would involve the continuance of the Producer Boards' schemes, with minimum prices being set at "realistic" levels, and the Government assuming responsibility for support in the event of major price recessions

of the magnitude of the beef price slump in 1974 or the drop in wool prices in 1974/75.

The cautious interpretation of the role of the SMP scheme continued in the 1980 Budget announcement with the Government indicating that the SMP scheme was more intended to provide a guaranteed price to farmers for a two year period rather than including any mention of income adequacy. However, this movement was reversed with the announcement of prices for the 1981/82 and 1982/83 seasons when, in the 1981 Budget, the Government moved well ahead of the market price levels in the setting of the Supplementary Minimum Prices. This shift in interpretation can perhaps be seen as a Government return towards the income adequacy orientation of the SMP scheme. Although income adequacy had been announced by the Government (1978) to be one of the objectives of the SMP scheme, it was apparently ignored in subsequent budgets, in favour of price stability objectives, until the 1981 announcements.

It may not be inappropriate to suggest that the relatively high price levels announced for the 1981/82 season (and the subsequent season) in the 1981 Budget, may have been related to the political situation at that time, in that 1981 was an election year. It should be noted that significant payments in the dairy sector occurred in 1979, the year following an election, and it could be, therefore, that prices which reflect the need for income adequacy could be announced again in the 1984 Budget to apply for the 1984-85 season. In view of the substantial payouts during the 1981/82 season, it is not likely that the supplementary minimum prices will be increased for the 1982/83 season (recently confirmed by the Minister of Finance). This would reflect a real decline in the income provided by those prices and reflects a movement away from the adequacy of income justification for the SMP scheme. Therefore, it could be stated that the SMP scheme is intended to provide income adequacy to farmers where this reflects a probable political benefit and, where this benefit is not so obvious, the scheme is intended to provide stability for farmer investment planning.

Both the stabilisation schemes and the SMP scheme do provide a floor to the market for the various products. This could be

expected to result in increased farmer confidence but the impact of this on farmer production may vary according to the perceived adequacy of that base.

Figures 1 to 5 display the meat and wool prices for the 1975/76 to 1980/81 seasons. All prices have been deflated to a base of September 1981 (using the sheepfarmers input prices index) and are presented on a monthly basis. For wool, the market price is the average monthly AWASP (adjusted weighted average sale price) for the auction sales held in the month. The meat prices are the mid-month schedule prices for the relevant indicator grades as published by the N.Z. Meat Producers' Board. The market prices and the price index are given in Appendix 1. Details of the payments and receipts of the meat and wool price stabilisation schemes are given in Appendix 2.

3.2 Wool

The stabilisation scheme minimum and trigger prices for wool (Figure 1) maintained a slow decline in real terms over the period through to the end of the 1978/79 season (June 1979) and following that, the prices implemented by the Wool Board reflected a more significant decline (in real terms).

Following supplementary payments from Government funds of \$2.3 million in the 1974/75 season (under the informal stabilisation (subsidy) scheme operating for the 1974/75 season), payments of \$5.2 million occurred in the 1975/76 season. Over the rest of the period up to 1981/82, no further supplementary payments were made under the Wool Board stabilisation scheme. (Details of the movement of funds are given in Appendix 2).

However, the intervention activities of the Corporation/Board were important over the same period with 132,000 bales being purchased in the 1976/77 season and 122,000 bales in 1977/78. Only small purchases occurred in the 1978/79 and 1979/80 seasons. In the 1980/81 season, purchases increased to 316,000 bales (18 per cent of the offering) in an attempt to maintain prices. These activities had more influence on the return received by farmers than did the

stabilisation scheme for most of the period (except for the 1976/77 retentions and their refund in 1977/78).

During the 1976/77 season, wool income retentions of \$26.7 million were made when the trigger price was exceeded. Although this was not due for repayment until five years later, Government authorised its repayment in the 1977/78 season when wool prices fell sharply. There were, however, no supplementary payments as the Wool Board minimum price was not reached.

Reflecting Government's concern over the low level of the Wool Board minimum price, the SMP for the 1978/79 season was established at a level 20 per cent higher than the Wool Board minimum. This had a minimal impact during that season as the actual market price was in excess of the SMP for most of the season. For the 1979/80 season, the real level of the SMP was restored, to the equivalent of the beginning of the 1978/79 season, at a level 17 per cent higher than the Wool Board minimum. This was allowed to erode, through inflation, and was kept at the same actual level for the 1980/81 season (nine per cent higher than the Board minimum), a real decline of 21 per cent from the beginning of the 1979/80 season. This movement did not have any effect on the prices farmers received for wool as the SMP was below the market price. However, the real reduction in the price and its movement closer to the Board minimum price reflected a move away from the income adequacy objective towards a more market orientated approach. In 1981, the objective of income adequacy again became apparent with the raising of the SMP by 31 per cent for the 1981/82 season.

It could be suggested that the 1981/82 SMP for wool was set at a market related level given that the N.Z. Institute of Economic Research forecast an improved wool market for 1981/82. However, the raising of SMP's for all meat products to well above their indicated market levels tends to suggest a general movement towards the provision of increased income.

Up until the 1981/82 season, the SMP has been ineffective in improving price stability or ensuring income adequacy. Even during the 1981/82 season, the impact of the SMP with regard to income

adequacy may be questioned, as the real level of SMP is still lower than that at the beginning of the 1978/79 season. The impact on price stabilisation could be regarded as relevant as prices were restored to the level operating at the end of the 1979/80 season following a lower price in 1980/81. The actual market price for wool continued to fall during the latter half of 1981 and early 1982.

3.3 Meat

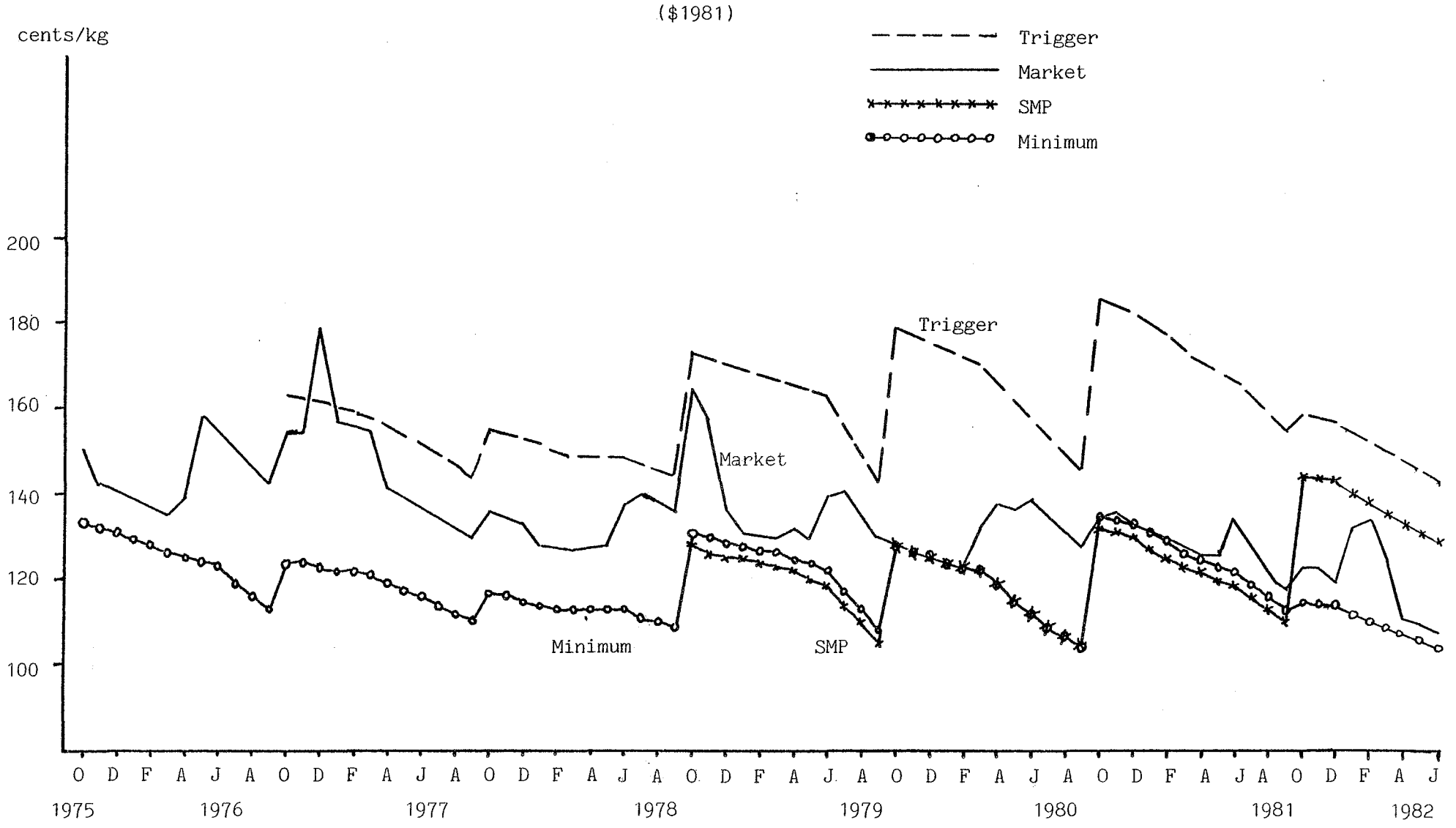
3.3.1 Lamb Over the period from the 1975/76 season to the present, the Meat Producers' Board's stabilisation scheme for lamb has been largely ineffective. With the exception of a short period early in the 1979/80 season and early in the 1980/81 season, the stabilisation scheme minimum price has been below the market price (Figure 2). Also, apart from December 1976, the trigger price has not been exceeded by the market price. During the period, reasonably large fluctuations have occurred in the schedule price for lamb, especially in December 1976, October 1978 and February 1980 and the stabilisation scheme has had minimal impact. (It should be noted that \$24.99 million was paid out under the informal subsidy scheme operating during the 1974/75 season).

The introduction of the SMP scheme at the beginning of the 1978/79 season had very little impact on the prices received by farmers. Although the SMP was well above the previous season's minimum price, the Meat Board minimum price (based on market criteria) exceeded the SMP. In the following season, the real level of SMP was maintained but this was matched by the Meat Board minimum price. In the 1980/81 season, the Meat Board minimum price again exceeded the SMP. The real increase in the minimum price was five per cent (as compared with the beginning of the previous season) while the SMP rose by three per cent. Again, neither the minimum price nor the SMP had any impact on producer returns as market prices remained above their level.

For the 1981/82 season, however, the SMP was raised by nine per cent in real terms, over the start of the 1980/81 season. This was 31 per cent over the 1980/81 season end level, a point well

FIGURE 2

Lamb Prices - Market, Stabilisation and SMP



ahead of market prices. The Meat Board minimum price remained largely unchanged from the previous end of season level. This clearly reflected a move toward providing for income adequacy rather than price stability, especially as the SMP was approximately 22 per cent above the end of season (1980/81) market price (the move could therefore be viewed as destabilising). The new SMP level exceeded the real market return over the period since March 1977 (except for October and November 1978) and clearly indicates the desire of Government to inject funds into the farming sector through the return for lamb. The maintenance of that price level for the 1982/83 season reflects a reduction in Government enthusiasm for maintaining returns in real terms as a result of the fall in real value of the 1982/83 SMP by an estimated 18 per cent over the 1981/82 season.

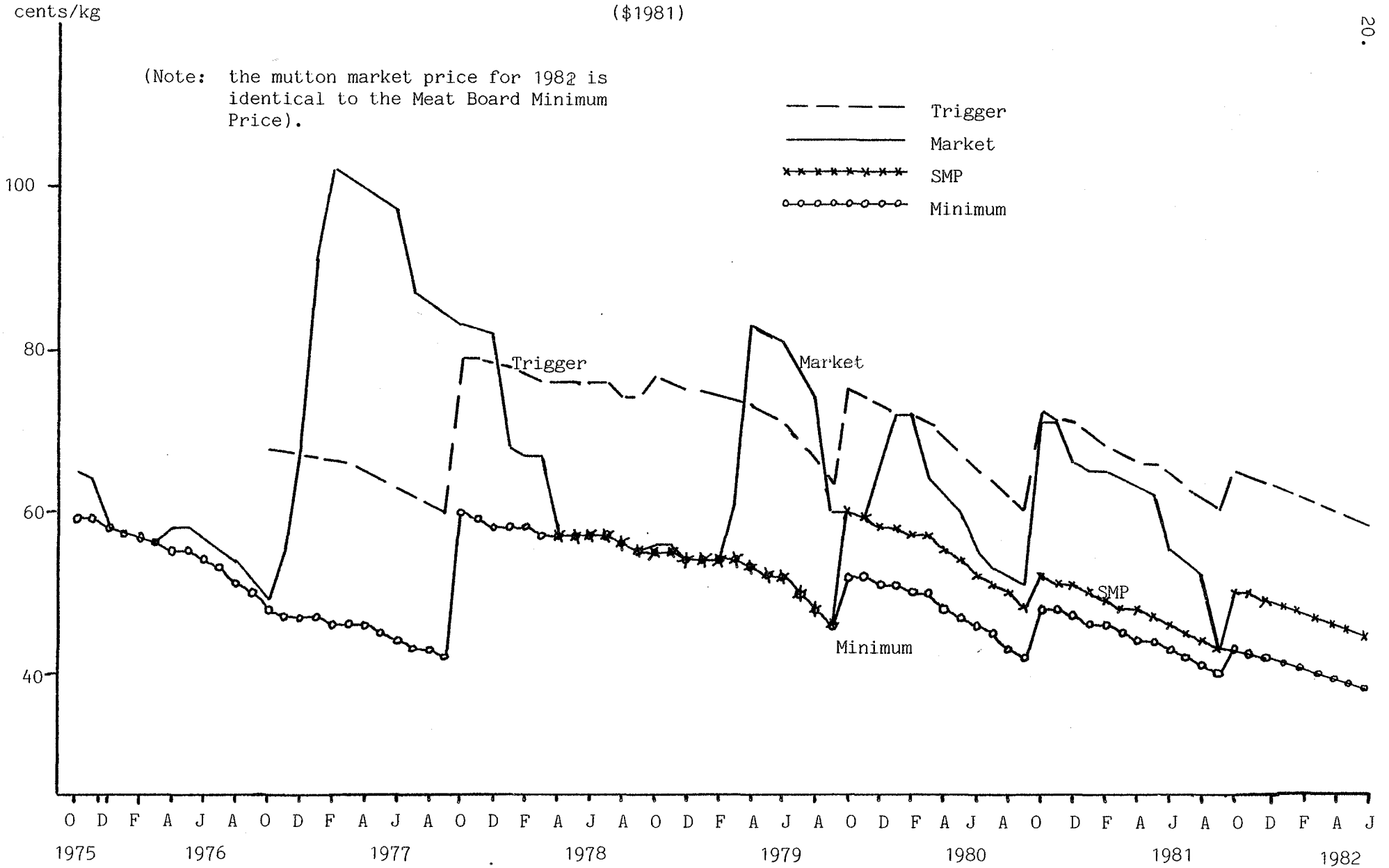
Overall, it can be observed that the SMP for lamb has had little impact on prices received up to the 1981/82 season and that the SMP level for the 1981/82 season was clearly designed with increased income objectives in mind, rather than price stability.

3.3.2 Mutton The Meat Board stabilisation prices for mutton have had more effect than those for lamb. The trigger price was effective during the 1976/77 season (and briefly in the 1977/78 season) and again during the 1978/79 season (Figure 3). Also, during the 1977/78 season, the minimum price reduced the fall in farm gate prices through the Meat Board acquiring mutton at the minimum price. Subsequent to that time, neither the trigger price nor the minimum price had been effective in reducing the price fluctuations that have occurred.

The SMP announced for the 1978/79 season was matched by the Meat Board minimum price and therefore the SMP did not have any impact on the prices received. The SMP for the 1979/80 season was increased by nine per cent in real terms (over the start of the 1978/79 season, 30 per cent over the 1978/79 season end). This was close to, but below, market prices throughout the season. A small increase was made for the 1980/81 season (eight per cent over 1979/80 season end but 13 per cent less than the 1979/80 season opening SMP

FIGURE 3

Mutton Prices - Market, Stabilisation and SMP
(\$1981)



in real terms) but market prices remained well above the SMP level. The SMP announced for 1981/82 was 16 per cent above the 1980/81 season end SMP (but four per cent below the 1980/81 season opening SMP level) in real terms and significantly ahead of market price levels. It is difficult to identify any income adequacy result from this SMP as in real terms it is below previous SMP levels and previous market prices. Therefore, the mutton SMP for 1981/82 can only be regarded as a contribution to the achievement of further stability.

3.3.3 Beef The manufacturing beef and prime beef market prices move in a similar manner as do the stabilisation prices and SMPs (Figures 4 and 5).

Prior to the 1978/79 season, the beef price stabilisation scheme had had very little impact. (It should be noted that a substantial payout from Government funds took place under the informal scheme in 1974/75). However, during the 1978/79 season, beef prices rose substantially and there were significant levy collections (approximately \$40 million). For the following season, both the minimum and trigger prices were raised substantially and payments of supplements occurred (\$9.7 million) in the latter half of the season following a fall in the market price. The minimum price was maintained for the 1980/81 season and supplementary payments of \$23.5 million were made. (These prices represented a fall of 19 per cent in real terms for manufacturing beef). The same minimum price was maintained for the 1981/82 season (a further real reduction of 18 per cent (for manufacturing beef)) and supplements have continued.

The SMPs introduced for the 1978/79 season were substantially above the Meat Board minimum prices, reflecting the Government's desire to ensure income adequacy, but they were substantially exceeded by market prices. For the 1979/80 season, the manufacturing beef (cow) SMP was the same as the Meat Board minimum price while the prime beef SMP was slightly below the Meat Board minimum. In the 1980/81 season, the situation was reversed. Therefore, over the period up to 1981/82, the SMPs have been largely ineffective in ensuring an adequate return to farmers. As well, from the beginning of the 1979/80 season to the end of the 1980/81 season, the real

FIGURE 4

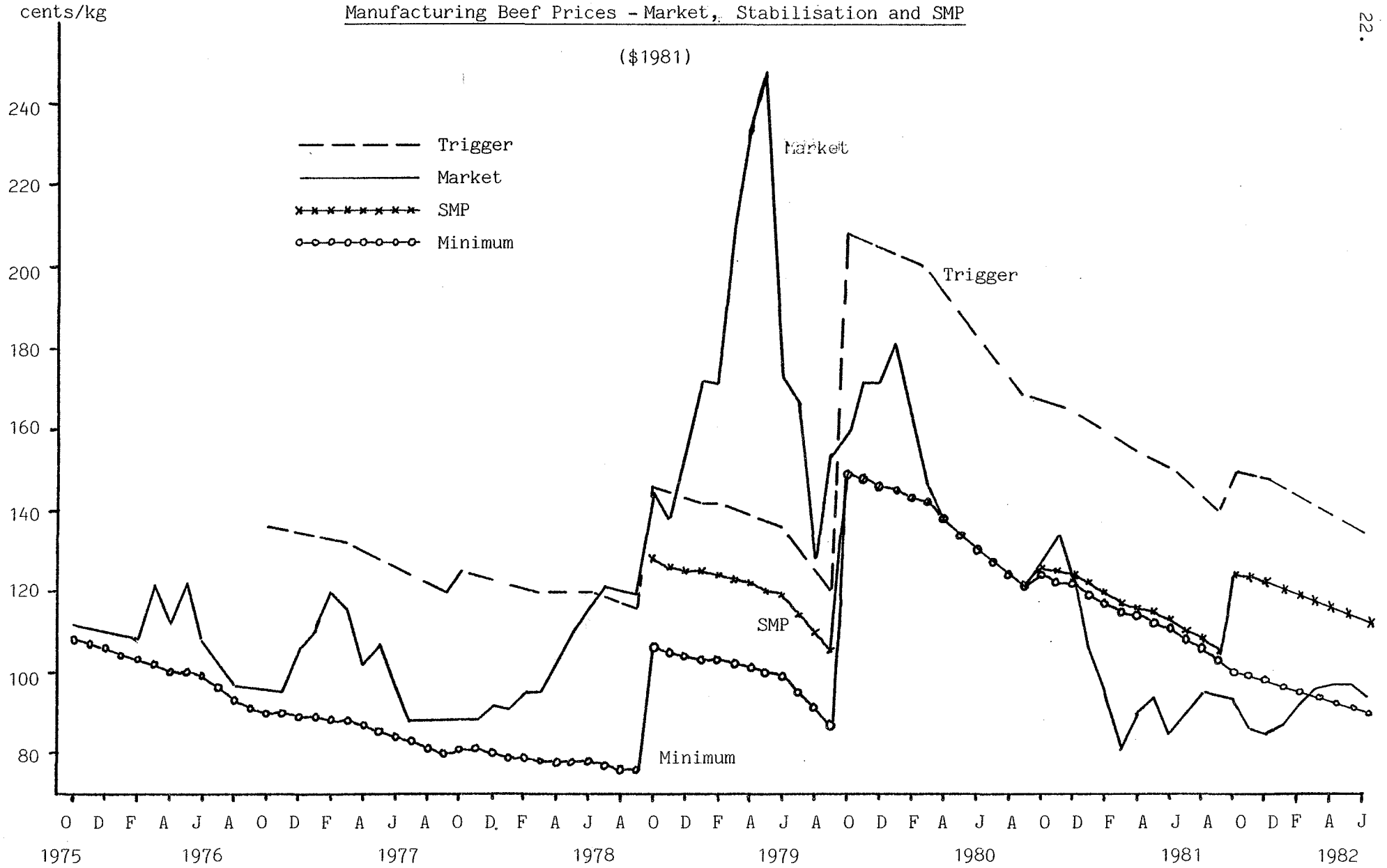
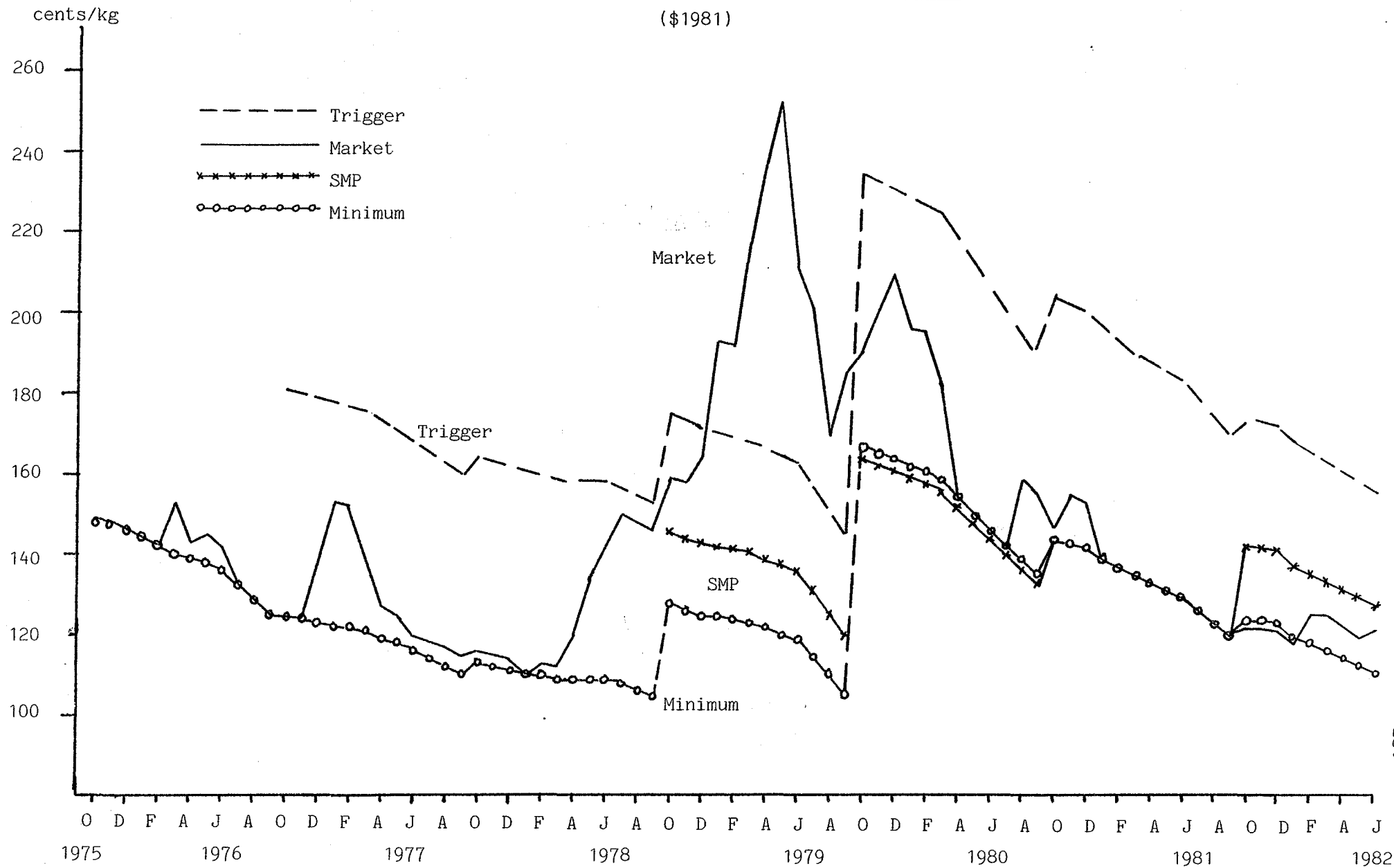


FIGURE 5

Prime Beef Prices - Market, Stabilisation and SMP

(\$1981)



value of the SMPs had declined by approximately 30 per cent as they moved down following the market price and the Meat Board minimum price (which was contributing to stabilisation). The sharp increase in the 1981/82 SMP (by 18 per cent over the previous season end) away from the market price (and the Meat Board minimum) reflected a move toward income adequacy assurance. The new SMP level was comparable with the level established at the beginning of the scheme (1978/79) and bore little relationship to current market conditions.

3.4 Conclusion

The SMP scheme was introduced to provide for income adequacy and farmer confidence following the perceived failure of the Producer Board stabilisation schemes in this area. As a consequence, the SMPs were set in 1978 at a level appropriate for the achievement of an adequate level of income. In all cases market prices, or the minimum prices set by the Boards, matched or exceeded the SMPs and therefore the SMPs were not effective in influencing incomes. Over the subsequent seasons, the minimum prices or market prices continued to exceed or match the SMP levels. The SMPs declined in real terms to reflect a more market orientated approach with a greater emphasis on the stability and farmer confidence areas. This trend was reversed in 1981 with the announcement of the 1981/82 SMPs and the return toward supporting farm incomes.

In summary, it has been observed that the SMPs have been applied inconsistently, reflecting the confused objectives of the scheme. It is probable, therefore, that apart from providing a level of market guarantee, the SMP scheme has been ineffective in encouraging increased production. Also, even if the income adequacy objectives of the SMP scheme had been achieved consistently, it is likely that this may not have resulted in increased production due to the unclear link between income adequacy and productive investment.

The usefulness or otherwise of SMPs will be judged according to the farmer production response to attempts to maintain and stabilise farm returns (incomes). Therefore the implications of SMPs for farmer production should be examined, given that in the future they are likely to have an effect on farm incomes, as they have done

during the 1981/82 season. The following Chapter of this paper discusses those aspects and examines the likely farmer response to farm return stability and higher income levels. Some suggestions are also made on areas where improvements to farmer support schemes could be made.

CHAPTER 4

IMPLICATIONS OF SUPPLEMENTARY MINIMUM PRICES

4.1 Investment, Production and SMPs

It has long been considered that in order to attain a given level of production from the New Zealand pastoral sector and to achieve a continuing increase in that level of production, certain levels of investment are required. In the past, the level of required investment has been expressed as the annual quantum of investment per stock unit carried on the acreage. Furthermore, it has been suggested that the level of investment is directly related to the overall level of income. Therefore, it would seem apparent that any mechanism which led to an increase in the income level would also lead to an increase in investment. As a result of such an increase in investment, production would be expected to increase.

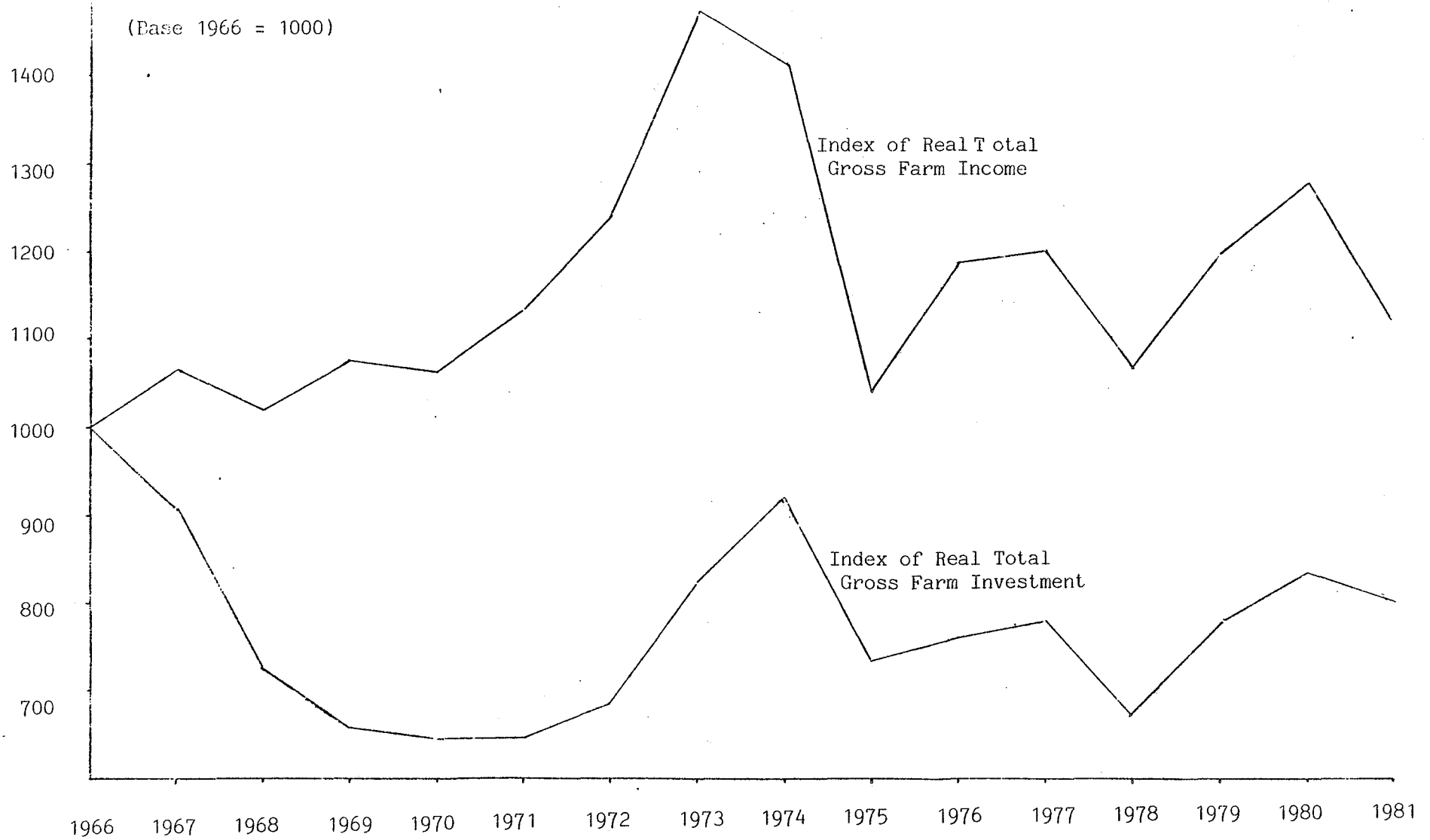
These concepts can be considered to be behind the conviction that the provision of an adequate level of income would result in an adequate level of investment. Furthermore, the provision of controlled increases in income would lead directly to desired increases in total investment. Such a relationship is reflected in Figure 6 for the period since 1971. Prior to 1971, the level of investment fell sharply although income levels rose slightly.

It should be noted that both the investment and income indices reflect the real gross levels of those parameters, rather than the net levels. These measures have been used because a high proportion of investment occurs out of gross income as it is deductible for tax purposes and, also, it is not possible to derive a true replacement level of investment from the available statistical information.

The data used to construct the indices are presented in Tables 12 to 16 in Appendix 3. The gross income has been deflated by the All Farming Costs Price Index to a 1971 base and farm investment has been calculated from the relevant capital cost expenditures for the

FIGURE 6

Indices of Real Total Gross Farm Income and Real Total Gross Investment



three components of plant and machinery, buildings and land and deflated to the same 1971 base. All the deflated figures have been converted to indices (1965/66 = 1000).

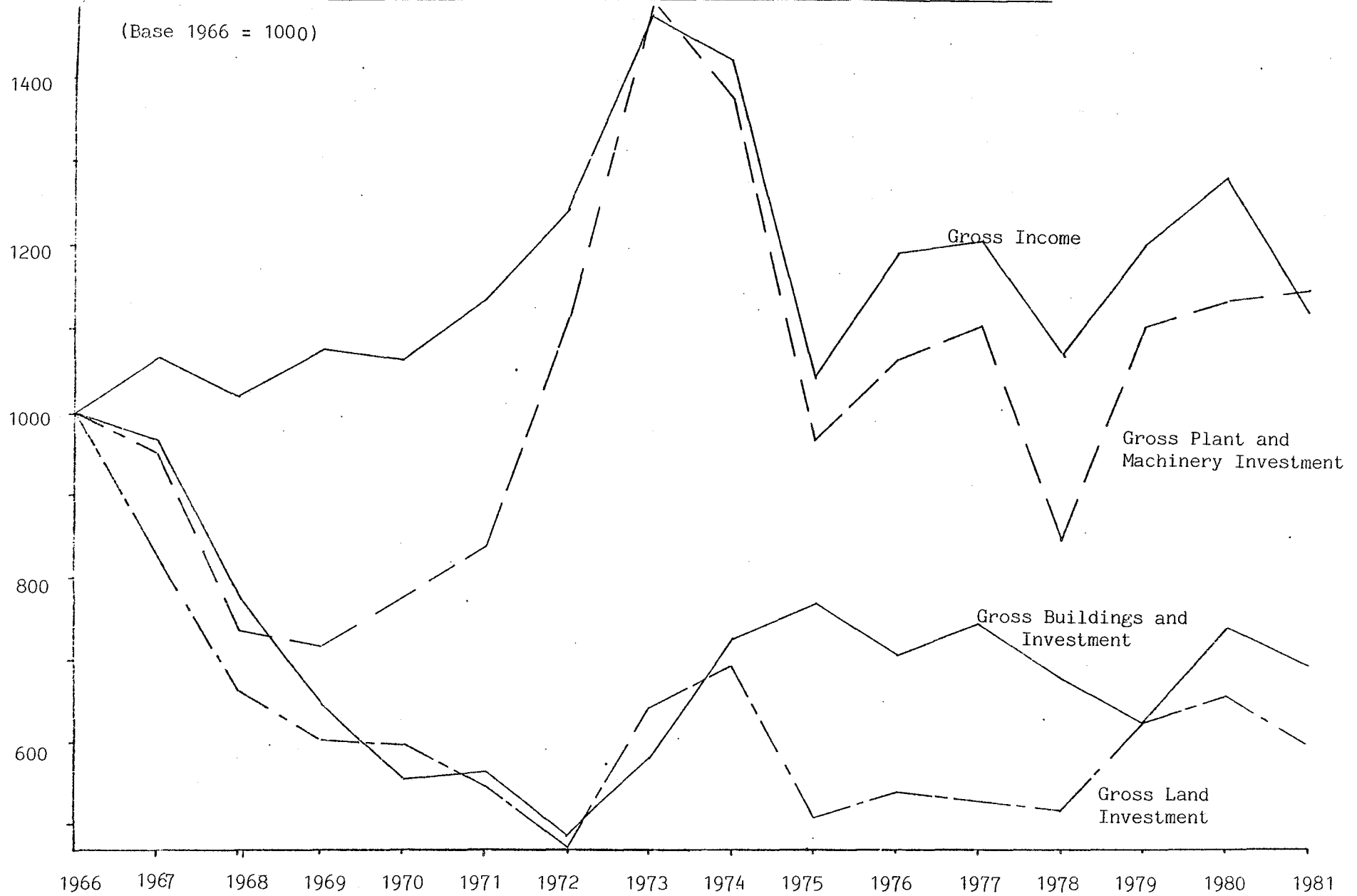
The comparison of total investment with total farm income conceals some important divisions within the investment parameter. It is possible to disaggregate total investment into investment on land,³ investment on plant and machinery and investment on buildings (Figure 7). When this is done, it is apparent that the relationship between income and investment differs according to the category of investment. Where the investment is made on plant and machinery, the relationship with income is very strong. However, this relationship becomes weaker when income and investment on land and investment on buildings are compared. Investment on buildings appears to follow a one year lagged relationship with income. It is probable that this lag reflects the time required to plan and implement a building programme. This is in contrast to the ability to invest in new plant and machinery in a very rapid manner as funds for investment become available. Therefore, although the relationship between investment on buildings and income is not as clear as that between investment on plant and machinery and income, there is still a strong link between income and investment on buildings. When investment on land is considered, however, the relationship between it and income is also less distinct when compared with plant and machinery investment. It is apparent that income does have an influence on investment on land; however, this relationship appears to be reflected in movements about a longer term trend rather than any annual response. It should be noted, however, that a portion of investment occurs directly from gross income on a "before tax" basis and therefore is not available in the statistical data.

At this point, it is useful to consider the importance of the various forms of investment in relation to the farm production level. It could be hypothesised that there may not be a clear relationship between investment on plant and machinery and increased production. This is because investment of that nature would mainly be on labour saving equipment rather than equipment which would lead to increased production levels. Exceptions to that would be where the capacity of a tractor, for example, was greater than that which it replaced and so allowed for increased cultivation and/or land development. However, such a vehicle could also be

³ Investment on land includes investments such as drainage, clearing scrub, improved pasture and fertiliser.

FIGURE 7

Indices of Real Total Gross Farm Income and Real Gross Investment



used to increase the speed at which the previous level of cultivation or development was undertaken so allowing more time for other pursuits. Where the investment is on new harvesting equipment, it is probable that this investment will also be used to increase the efficiency of the present operation rather than to increase the total scale of operation. This is also likely to apply to purchases of cultivation equipment and other farm vehicles such as four-wheel drive vehicles and farm bikes. A further reason for investment in plant and machinery is likely to be the need to soak up extra income in a rapid manner in order to achieve the tax advantages associated with increased investment on this type of farm equipment. This would tend to be supported by the close relationship between investment on plant and machinery and the level of income available for such investment.

With regard to the investment on buildings, it could also be hypothesised that this investment relates to improving the present production system rather than increasing the total production output. The erection of new implement sheds, wool sheds and feed storage areas is more likely to be associated with labour saving effects rather than increased production. With regard to feed storage areas, there will also be a component of improved production resulting from either the increase in feed supply available during months of feed shortage or an increase in feed quality. However, the increase in feed supply and/or quality may be associated with a farmer attempting to provide more flexibility in the present production system in order, for example, to overcome summer dry periods rather than leading to an increase in production. Therefore, it is likely that investment on buildings will not be highly correlated with increases in production.

Investment on land, is however, likely to be more closely related to production levels. Land investment includes the development of new areas of land for use in the production system. This is likely to be closely correlated with an increase in stock numbers. The improvement of existing utilised land through the use of fertiliser applications in excess of the maintenance level and the associated improvement in pasture growth will also be linked closely to increases in production through increased stock numbers

and/or per head performance.

Recent work at Lincoln College (Laing, 1982) which has been designed to test hypotheses concerning changes in stock numbers and production tends to confirm the suggestions put forward regarding the relationship between the different classes of investment and production. Laing has established that changes in breeding ewe numbers, wool production, milkfat production, beef breeding cow numbers, beef heifer numbers and prime beef production are all positively correlated with investment on land made two years prior to the change in the production parameter. The period over which the data were gathered to arrive at these conclusions was from 1958-80. Over that time, it was apparent that the investment on plant and machinery and on buildings was not significant in determining changes in the production statistics. Based on these econometric tests it is valid to conclude that the investment on land is the prime investment factor to consider when looking at changes in agricultural production levels.

In summary, it can be clearly established that movements in the level of total investment in agriculture are not a good indicator of potential movements in production. In order to arrive at a more adequate indicator, it is necessary to divide investment into the three relevant categories of investment on plant and machinery, investment on buildings and investment on land. Investment on plant and machinery and investment on buildings is more closely related to changes in the level of income than is investment on land. Also, investment on plant and machinery and investment on buildings is not closely related to increases in agricultural production. Production increases tend to result more from investment on land rather than investment in the other two categories. This implies that annual income changes are more likely to result in changes in the investment on plant and machinery and buildings rather than changes in the investment on land. However, the general level of income is considered to be related to the general level of investment on land (given the longer term response in production from land investment) and therefore any action taken to alter the general level of income could be expected to result in an alteration of the level of investment on land. Therefore, it could be suggested that Government policy initiatives which are designed to encourage

increased production through an influence on the level and variation in income should be related to the overall level of income rather than the removal of income fluctuations.

A further point to consider in any review of this nature is whether the use of the product price mechanism is the most appropriate method of ensuring the achievement of a desirable increase in the level of investment on land. As has been established, the relationship between income and investment on land is not very strong, there being considerable room for leakage from the income into other areas which are not closely related to increased production. In addition, it has been established (Laing, 1982) that a significant part of the change in agricultural production levels is related to the relative prices of the various agricultural products. Any movement in those relativities, therefore, will have a direct influence on the relative levels of production of the various products. The setting of supplementary minimum prices at levels which will ensure an adequate level of income may not be closely related to the actual market relativities which are appropriate over the longer term. This use of the price mechanism may therefore, result in the production of items which are not being demanded at those prices by the market. The potential for the misallocation of resources through the use of an artificial price which is not closely related to the prevailing market returns could therefore be significant. Given that this area for potential problems is apparent and the relationship between income and investment on land may not be very strong, it is important that other methods of ensuring increased production be considered and the potential problems with such methods be compared.

4.2 International Considerations

Farm product prices are formed by the translation of export market prices at the existing exchange rate and the deduction from them of the charges incurred between farm gate and overseas market. Changes in farm product returns could take place through a reduction in transport charges, an alteration of the exchange rate, or a reduction in other costs incurred between farm gate and export. With the exception of exchange rate changes, any interference in

the other cost structures would be considered to be a direct subsidy to the sector which would result in higher prices to farmers. Alterations in the exchange rate structure, which would have implications for the total economy, would, however, not be viewed by international competitors as a direct subsidy to the agricultural sector.

If supplementary minimum prices are to be used to ensure that farmers receive a higher level of income than they would otherwise receive from market returns, the SMPs can be considered to be a method of ensuring that the equivalent exchange rate facing the agricultural sector is significantly different from that facing the rest of the economy. However, the use of export incentives for manufacturing industries could also be considered to be a method of altering the exchange rate facing those sectors of the economy. Therefore, it might appear that the use of SMPs and export incentives is designed to achieve the equivalent of a devaluation of the New Zealand exchange rate. On the other hand, the use of supplementary minimum prices and export incentives could be considered as direct subsidies to the relevant sectors of the economy. If supplementary minimum prices were only to be used to reduce fluctuations in farm prices and therefore in farm incomes, where the payments from Government were refunded by levies on the farming sector, the use of such a mechanism would not result in a long term increase in the return to the sector and therefore would not be construed as a direct sector subsidy. The self-balancing nature of the producer board stabilisation schemes means that those schemes fall into this category.

Given these circumstances and the Government's apparent desire to increase the level of income of the agricultural sector through the use of SMPs, it is apparent that, on an international basis, the mechanism could be interpreted as a direct subsidy. This could result in the imposition of countervailing duties against New Zealand agricultural exports where the importing country considers that exports of products are being made from New Zealand at a cost which is less than the production cost. Also, in other international negotiations, the New Zealand Government would have to face the reality that New Zealand agriculture is subsidised and therefore they could not use the argument of non-subsidisation in their attempts

to improve New Zealand's competitive position vis-a-vis other supplying areas where, previously, the New Zealand Government has been able to claim unfair subsidisation. This could have a significant impact on access to various markets and the return which is available to the New Zealand farmer. Given these potential problems, it may be desirable to support agriculture in a less direct manner, where the need for that support is proven.

4.3 Possible Alternatives

In order to achieve an expansion in pastoral based exports it is necessary that economic conditions be conducive to encouraging such an expansion. The relevant economic conditions in this context, are those which affect the farmer's decision as to the level of production he wishes to achieve from his enterprise. Therefore, the range of conditions is very wide. Farmer motivational factors are very complex and the right combination of circumstances would be required in order to result in the desired expansion in agricultural production. At present, work is being undertaken at Lincoln College with a view to identifying the important motivational factors.

It is apparent, however, that the return from the output will be one of the more significant factors. Therefore, it would be appropriate to conclude that the price received for the various products will have a significant influence on farmer decision making with regard to the expansion of the production system. In this context, the use of supplementary minimum prices where these exceed the return otherwise available, can be identified as a positive step toward encouraging increased production levels. However, recent work undertaken by Laing (1982) indicates that it is the relative prices of the farm products which are important in determining the product mix rather than the absolute level of those prices. The artificial influence of SMPs could result in severe production distortion. Given this situation, perhaps it would be more appropriate for the supplementary minimum prices to be based on the payment of an additional incremental percentage of the market returns rather than a fixed price or level of payment for particular products. An across the board percentage increase would enable the market

relativities to be accurately reflected to farmers through the present price establishment system.

Such a system would, however, come very close to the establishment of a special exchange rate for the pastoral sector. If such an arrangement is considered to be necessary and desirable, it is probable that there is a significant need for an adjustment of the exchange rate as it affects the total New Zealand economy, rather than just the agricultural sector. As the use of export incentives indicates that there is a need for such an adjustment in the export portion of the manufacturing sector, a general devaluation could be desirable. In order to lessen the impact of more expensive imported materials which would result from a devaluation, it would be necessary to remove a significant level of the present import protection. This would enable cheaper manufactured imports to compensate for the increase in imported raw material costs, thus enabling products to be made available in New Zealand at equivalent prices prior to the devaluation.

The concept of applying an overall subsidy to the agricultural sector, or of having a general devaluation, is a step which relies upon the increase in returns stimulating increased production levels in a rational manner based on the desire of farmers to increase their income via an increase in production. One of the reasons why this may not occur is that the increase in returns available to farmers for their existing levels of production may not encourage all farmers to increase their production levels but some may maintain, or even reduce, their existing production level while capital gains are achieved through the capitalisation of the incremental potential returns to land values. This would mean that farm production would not rise to the extent desired. The possibility of such an occurrence should not be discounted. Given this, perhaps it would be more appropriate for production increases to be encouraged through the use of direct Government support in the most appropriate areas. As capital investment in land is considered to be the area from whence production increases occur, it could be appropriate for Government assistance to be directed specifically at encouraging increases in investment on land. The provision of such assistance could be linked to the achievement of specified production increases from the land development activity.

In order to encourage farmers to achieve the desired level of production increment, the achievement could be linked to a reduction in the interest payable on the development capital provided or a reduction in the capital sum owed to the State. Such a programme could be carried out through the Rural Bank. It is probable that such a diversion of the substantial amount of money that is presently available for payment as supplementary amounts on product prices would result in very considerable increases in land investment and much higher production increases than are likely to result from the support of product prices. The dilution of that support by farmers through their own decision making regimes means that only a small proportion of the support payments find their way into increased production through investment on land development.

This concept is similar to the Land Development Encouragement Loans (LDEL) Scheme which operated from 1978 and which has recently been terminated. Ministry of Agriculture and Fisheries analysis of the LDEL scheme (Askwith, 1980) (Appendix 4) indicates that the LDEL and Livestock Incentive Scheme (LIS) have contributed significantly to recent increases in farm production. The targeting of assistance directly upon the production improvement areas (land and livestock) can therefore be seen to have been very useful in terms of the achievement of the increased production objective. Concern has been expressed over the use of the LDEL scheme in encouraging the development of marginal land which has subsequently not been proven to be economic. Such concern involves the administration of the scheme (the loan approval procedures) and could be resolved through an adequate review of the loan consideration process.

In conclusion, Government can take measures in three directions. Policies can be implemented which either lead to an increase in production gross returns or a decrease in producer input costs. Such policies rely on the producer converting the extra income into the required development investment which will result in increased agricultural production. As there are reasons why such a movement of the incremental resources may not occur (such as the impact of the escalation of real farm values) it may be appropriate for other means to be considered. The use of direct encouragement in the investment field is the third alternative. Where finance is

made available to farmers to enable them to increase production with the increase in production being tied to a reduction in their financial liability, there would seem to be scope for production increases to be achieved. Such a system would mean that only those farmers with the intention of increasing their production would avail themselves of the finance offered to them and production increases would be much more likely to occur than under any system of improving product prices. Of course, such a system could not be expected to be successful if product prices were such that the production system was in itself unprofitable. It would therefore be necessary for action to be taken at both levels in order to ensure that economic circumstances were such that product prices which resulted in a profit potential were established. Such activity should be of an across the board nature, however, rather than on selected products, in order to ensure that market relativities were maintained.

4.4 Conclusion

If continued economic development of New Zealand is to be based upon the output of the agricultural sector, it is essential that the returns available to the agricultural sector be sufficient to encourage farmers to maintain and increase their production level. This means that, where necessary, Government activity should be directed toward ensuring that the production from the agricultural sector provides an adequate return to farmers; this return being the objective of the farming enterprise rather than the achievement of capital gains. In order to provide an adequate return to farmers, Government can cause the economy to be altered through the adjustment of the exchange rate and other external trade policies, it can take specific action on product prices in order to raise these to acceptable levels, or it can bring into existence subsidies which lower the internal costs of production. At the present time, it is apparent that the Government has chosen the product price policy option and has accordingly introduced supplementary minimum prices in order to raise the level of return on specified agricultural products. This adjustment of the return is, however, of a specific nature to each product rather than an across the board

improvement in producer returns. This adjustment therefore fails to maintain product market relativities. As a result of this it is possible that the direction of farm production changes may be inappropriate for future market situations. Therefore, it is suggested that if Government support is to be made in this way, the support should be for all agricultural products at a specified percentage on top of the available market returns.

It is considered, however, that the present form of support should be removed in favour of a general adjustment of the New Zealand economy in order to restore the international comparative advantage of the New Zealand agricultural sector to the level it previously enjoyed. This means that the market prices available for the agricultural sector should be sufficient to enable the production system to be employed in the provision of the level of export income necessary to maintain national economic growth. Where there are circumstances which act contrary to this position, they ought to be altered. This means that the exchange rate becomes an area of prime consideration as does the level of internal cost adjustment resulting from inflation and low productivity in the agricultural servicing sector. Adjustments in these areas would have a longer term and more beneficial effect on agricultural product prices. Such artificial supports as SMPs can only attract the attention of the international community to the subsidised nature of New Zealand agriculture and are, at best, only a palliative for the agricultural sector in order to relieve the problems caused by undue Government influence in other sectors.

A further point which must be considered is the definition of the objective of the Supplementary Minimum Prices. It has been stated that Government intended that the policy should encourage the expansion of agricultural output through the guarantee of an adequate level of income and, at other times, through the stabilisation of that income. However, past practice indicates that the level of SMPs tends to be set according to the probable political benefit to the Government in setting prices which provide for an adequate level of income in election years.

In order to assess the usefulness of the SMPs in achieving the desired level of production increase, it is necessary to establish a relationship between the SMP payments and the level of investment on land. As production increases largely result from incremental land investment, it is apparent that the impact of SMPs must be on that aspect of investment if they are to lead to increases in production. As SMPs are likely only to be used where there are sudden reductions in market returns, it is likely that they will not have a very significant impact on investment. This is especially so when it is considered that the payments will be used for farm expenses, investment on plant and machinery and investment on buildings as well as investment on land. Also, it is apparent that the expenditure on farm working expenses and plant and machinery is very closely related to the level of gross income, which is the parameter affected by the SMP payment. Therefore, there is considerable scope for dilution of the SMP payment before expenditure on land development results. It could be, therefore, that policies directed toward encouraging land investment should be applied in a more direct manner. In order to achieve the desired production increase, such assistance in the land development financing area could be tied to targetted production increases and the benefits available from Government would only be granted where targetted production increases are achieved.

In conclusion, the use of Supplementary Minimum Prices seems to be an inefficient way of achieving the desired objective of increases in agricultural production. There would appear to be other more effective methods to achieve this objective.

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A P P E N D I C E S

APPENDIX 1

PRODUCT PRICES AND SHEEP FARMING COSTS

PRICE INDEX

TABLE 1

Sheep Farming Costs Price Index¹

(Base June 1971 = 1000)

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
July	1,478	1,710	1,986	2,178	2,521	3,232	3,908
August	1,494	1,759	2,018	2,204	2,625	3,317	4,009
September	1,510	1,807	2,051	2,231	2,729	3,403	4,113
October	1,525	1,817	2,070	2,255	2,757	3,430	4,132 ^P
November	1,539	1,826	2,090	2,279	2,785	3,456	4,153 ^P
December	1,554	1,836	2,109	2,303	2,813	3,483	4,174 ^P
January	1,574	1,847	2,122	2,312	2,839	3,547	4,274*
February	1,594	1,858	2,135	2,322	2,866	3,610	4,320*
March	1,615	1,869	2,148	2,331	2,892	3,674	4,393*
April	1,631	1,897	2,149	2,360	2,977	3,718	4,466*
May	1,646	1,925	2,151	2,388	3,061	3,762	4,538*
June	1,662	1,953	2,152	2,417	3,146	3,806	4,611*

¹ The quarterly series published by the New Zealand Department of Statistics disaggregated to a monthly basis.

^P Provisional

* Estimated

Source: Monthly Abstract of Statistics

TABLE 2
Average Monthly Wool AWASP
c/kg

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
July	-	-	-	-	243.84	-	-
August	118.74	198.61	190.97	198.99	256.50	250.56	271.90
September	115.42	200.67	196.59	206.93	266.40	252.93	272.80
October	127.11	230.05	204.17	210.51	286.29	250.52	265.78
November	140.45	227.03	194.87	206.15	277.60	251.09	253.67 ¹
December	145.55	228.90	184.09	203.78	262.25	249.07	247.67
January	154.09	225.62	175.43	204.48	261.99	247.33	245.63
February	154.76	214.56	184.93	222.06	270.27	246.17	255.78
March	168.35	211.42	185.02	241.98	268.78	245.31	265.00
April	170.79	198.32	186.12	235.51	249.71	245.59	251.43
May	169.75	187.01	194.96	230.60	245.37	256.10	252.75
June	171.70	185.93	199.73	231.34	246.06	265.37	249.60

Source: New Zealand Wool Board

¹ From November 1981 to June 1982, the "Market Indicator" has been used. This excludes Wool Board supplements which became effective during November 1981.

TABLE 3
Lamb Mid Month Market Prices
 (PM 13-16 kg)
 c/kg

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
October	56.2	68.4	68.5	90.7	86.5	113.0	124.0
November	53.2	69.0	68.5	87.0	86.0	114.0	124.0
December	53.2	80.0	68.3	76.5	86.0	113.0	121.0
January	53.2	70.3	66.2	73.5	86.0	113.0	137.0
February	53.2	70.3	66.5	73.5	86.0	114.0	141.0
March	53.2	70.3	66.5	73.5	93.0	114.0	132.3
April	55.2	64.9	67.0	75.5	100.0	114.0	120.0
May	63.0	64.9	67.0	75.5	102.0	115.0	120.0
June	63.0	64.9	72.0	82.5	106.0	124.0	120.0
July	63.0	64.9	74.0	86.5	106.0	122.0	
August	63.0	64.9	74.0	86.5	106.0	118.0	
September	63.0	64.9	74.0	86.5	106.0	118.0	

Source: New Zealand Meat Producers Board

TABLE 4

Mutton Mid-Month Market Prices

(ML1 22 kg and under)

c/kg

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
October	24.0	21.5	42.0	30.5	40.0	59.0	43.0
November	24.0	24.5	42.0	31.0	40.0	60.0	43.0
December	22.1	30.5	42.0	30.5	45.0	56.0	43.0
January	22.0	41.0	35.0	30.5	50.0	56.0	43.0
February	22.0	46.0	35.0	30.5	50.0	57.0	43.0
March	22.0	46.0	35.0	34.5	45.0	57.0	43.0
April	23.0	46.0	30.0	47.5	45.0	57.0	43.0
May	23.0	46.0	30.0	47.5	45.0	57.0	43.0
June	23.0	46.0	30.0	47.5	42.0	51.0	43.0
July	23.0	42.0	30.0	47.5	42.0	51.0	
August	23.0	42.0	30.0	47.5	42.0	51.0	
September	23.0	42.0	30.0	40.0	42.0	43.0	

Source: N.Z. Meat Producers Board

TABLE 5

Manufacturing Cow Mid-Month Market Prices

(M 140 kg+)

c/kg

	1975/76 ¹	1976/77 ¹	1977/78 ¹	1978/79 ¹	1979/80 ¹	1980/81	1981/82
October	41.64	42.30	44.88	79.47	106.46	105.00	93.00
November	41.64	42.30	44.64	76.47	116.46	113.00	87.00
December	41.68	47.32	47.36	85.44	117.45	105.00	86.00
January	41.60	49.24	46.92	96.42	124.93	93.00	90.00
February	41.90	54.24	49.51	96.41	116.42	83.00	97.00
March	47.43	52.20	49.59	118.36	102.38	72.00	101.00
April	44.48	47.20	53.53	134.37	100.00	81.00	104.00
May	48.86	50.08	58.24	144.37	100.00	86.00	106.00
June	43.66	44.92	60.50	102.37	100.00	79.00	105.00
July	41.83	42.64	64.36	101.47	100.00	87.00	
August	41.68	43.72	64.48	81.48	100.00	93.00	
September	42.43	43.92	64.49	101.50	100.00	95.00	

¹ North Island and South Island mid-month schedule published by the New Zealand Meat Board were weighted for the total beef slaughter per month per island to derive a weighted average schedule for New Zealand.

Source: N.Z. Meat Producers Board

TABLE 6

Prime Beef Mid-Month Market Prices

(P1 240.5-270 kg)

c/kg

	1975/76 ¹	1976/77 ¹	1977/78 ¹	1978/79 ¹	1979/80 ¹	1980/81	1981/82
October	55.27	55.04	58.46	87.47	128.46	123.00	123.00
November	55.27	55.04	58.37	87.47	136.12	130.00	123.00
December	55.24	61.75	58.26	92.44	143.43	130.00	123.00
January	55.30	68.72	55.82	108.42	136.42	120.00	123.00
February	55.12	68.72	58.77	108.41	136.39	120.50	131.00
March	60.15	62.70	58.73	123.86	127.86	120.50	134.00
April	56.69	58.70	62.76	136.37	112.00	120.00	132.00
May	58.19	58.66	69.50	146.37	112.00	120.00	131.00
June	57.19	57.10	74.50	124.37	112.00	120.00	136.00
July	55.14	56.99	79.36	123.47	112.00	120.00	
August	55.17	57.40	79.48	108.48	128.00	120.00	
September	55.02	57.47	79.49	123.50	128.00	120.00	

¹ The North Island and South Island mid-month schedules published by the New Zealand Meat Board were weighted for the total beef slaughter per month per island to derive a weighted average schedule for New Zealand.

Source: N.Z. Meat Producers Board

APPENDIX 2

MEAT AND WOOL PRICE STABILISATION SCHEMES

- PAYMENTS AND RECEIPTS

1. Wool

TABLE 7

Wool Stabilisation and Supplementary
Minimum Prices (Cents/kg) 1976-1982

Product Category	Year Ended June	Stabilisation Minimum Price	Supplementary Minimum Price	Stabilisation Trigger Price	Market Price
		c/kg	c/kg	c/kg	c/kg
Wool (greasy)	1976	124	-	-	157.1
	1977	136	-	195	219.6
	1978	150	-	215	190.4
	1979	170	205	250	218.9
	1980	200	235	300	265.1
	1981	215	235	330 ¹	245.0
	1982	250 ³	320	400 ³	274.2 ²

¹ Applied from 1 August.

² Agricultural Review Committee

³ New Zealand Wool Board

Source: M Laing (1982)

TABLE 8

Movements in the Wool Income Retention Account

Year Ended 30 June	1977	1978	1979	1980	1981
	\$	\$	\$	\$	\$
Opening Balance	-	26,562,142	-	45,724	45,722
Levy	26,701,654	87,753	45,762	10	-
Available Funds	26,701,654	26,649,895	45,762	45,734	45,722
Refunds	139,512	26,649,895	38	12	45,722
Closing Balance	26,562,142	-	45,724	45,722	-

Source: Wool Board Annual Reports

TABLE 9

Movements in the Minimum Wool Prices Funding Account

Year Ended June	1975	1976	1977	1978	1979	1980	1981	1982 (to 31 Oct. 1981) ²
	\$	\$	\$	\$	\$	\$	\$	\$
Opening Balance	-	199,546	449,507	24,354,309	39,890,313	52,464,184	69,539,749	78,928,488
Government Grant	2,500,000	5,500,000	7,000,000	-	-	-	-	-
Levy	-	-	16,792,919	15,236,867	12,131,159	16,489,136	8,643,188	1,519,000
Wool Board Interest	-	-	-	-	346,639	163,453	550,734	-
Other Income (interest)	-	-	112,689	299,140	96,075	422,979	178,380 ₁ 16,440	249,512
Available Funds	2,500,000	5,699,546	24,355,115	39,890,316	52,464,186	69,539,754	78,928,491	80,697,000
<u>Less</u>								
Supplements	2,299,015	5,229,179	789	-	-	-	-	484,000
Other Expenditure	1,439	20,860	17	3	2	3	3	-
Closing Balance	199,546	449,507	24,354,309	39,890,313	52,464,184	69,539,749	78,928,488	80,213,000
Wool Board Borrowings	-	-	13,705,424	30,000	25,647,302	40,504,694	70,000,000	72,339,000

¹ Transfer of unclaimed money from Wool Income Retention Account

² From the Agricultural Economist V2 No. 4 p.15

Source: Wool Board Annual Reports

2. Meat

TABLE 10

Meat Stabilisation and Supplementary Minimum Prices(cents/kg) 1976-1982¹

Product Category	Year Ended September	Stabilisation Minimum Price	Supplementary Minimum Price	Stabilisation Trigger Price	Market Price ²
Prime Beef	1976	55	-	-	56.2
	1977	55	-	80	62.4
	1978	57	-	83	65.5
	1979	70	80	96	127.2
	1980	112	110	158	120.2 ^P
	1981	120 ⁴	120	170 ⁴	119.2 ^P
	1982	125 ⁴	143	175 ⁴	-
Mutton	1976	22	-	-	22.8
	1977	21	-	30	43.2
	1978	30	-	40	30.5
	1979	30.5	30	42	38.7
	1980	35	40	50	44.3
	1981	40 ⁴	43	60 ⁴	54.6
	1982	43 ⁴	50	65 ⁴	-
Lamb	1976	49.5	-	-	54.7
	1977	55	-	72	70.1
	1978	59	-	78	67.0
	1979	72	70	95	74.7
	1980	86	86	120	92.2
	1981	113 ⁴	110	155 ⁴	124.3
	1982	116 ⁴	145	160 ⁴	-
Manufacturing Cow	1976	40	-	-	42.5
	1977	40	-	60	50.6
	1978	41	-	63	55.6
	1979	58	70	80	122.7
	1980	100	100	140	103.3
	1981	103 ⁴	105	140 ⁴	81.2
	1982	103 ⁴	125	150 ⁴	-
Bull Beef ^{3,4}	1980	110	-	160	-
	1981	120	120	175	-
	1982	124	143	175	-

¹ Source: M Laing² Based on year ended June³ Included for the first time in 1980⁴ Source: N.Z. Meat Producers Board^P Provisional

TABLE 11

Meat Income Stabilisation AccountSheep Meats Sub Account

\$m

Year Ended September	1975	1976	1977	1978	1979	1980	1981
<u>Income</u>							
Lamb Levy	-	-	1.137	-	-	-	-
Mutton Levy	-	-	6.004	0.047	0.491	-	-
Interest	-	-	0.051	0.072	0.087	0.073	0.073
Profit on mutton trading	-	-	-	-	0.067	-	-
	25.017 ¹	-	7.192	0.119	0.647	0.073	0.073
<u>Less</u>							
Lamb Supplement	24.99 ²	-	-	-	-	-	-
Mutton Supplement	-	-	-	-	-	-	-
Other	-	-	-	0.697 ³	-	-	-
Interest	0.027	-	-	-	-	-	-
	25.017	-	-	0.697	-	-	-
Transferred to Meat Income Stabilisation Account	-	-	7.192	(0.577)	0.647	0.073	0.073
Plus Opening Balance	-	-	-	7.192	6.615	7.262	7.335
Closing Balance	-	-	7.192	6.615	7.262	7.335	7.408

¹ Government Grant and Meat Board Supplement.

² Includes \$12.82m retrospective payment.

³ Loss on trading in mutton.

Continued

TABLE 11

Meat Income Stabilisation AccountBeef Sub Account

\$m

Year Ended 30 September	1975	1976	1977	1978	1979	1980	1981
<u>Income</u>							
Levy	-	-	-	0.392	39.726	-	-
Interest	-	-	-	-	0.005	0.228	0.064
	32.869 ¹	-	-	0.392	39.731	0.228	0.064
<u>Less</u>							
Beef Supplement	32.833	11.064	0.125	-	-	9.7	23.453
Interest	0.036	0.352	0.393	0.149	-	-	-
Other	-	3.000 ²	-	-	-	-	-
	32.869	14.416	0.518	0.149	-	9.7	23.453
Transferred to Meat Income Stabilisation Account	-	(14.416)	(0.518)	0.243	39.731	(9.494)	(23.389)
Plus Opening Balance	-	-	(14.416)	(14.934)	(14.691)	25.040	15.546
Closing Balance	-	(14.416)	(14.934)	(14.691)	25.040	15.546	(7.843)

¹ Government Grant and Meat Board Supplement.

² Reversal of credit from Meat Industry Reserve Account.

Continued

TABLE 11

Meat Income Stabilisation Account

(\$m)

Year Ended 30 September	1975	1976	1977	1978	1979	1980	1981
Opening Balance	-	-	(14.415)	(7.741)	(8.075)	32.303	22.882
Beef	-	(14.416)	(0.518)	0.243	39.731	(9.494)	(23.389)
Sheepmeat	-	-	7.192	(0.577)	0.647	0.073	0.073
Closing Balance, at Reserve Bank ¹	-	(14.416)	(7.741)	(8.075)	32.303	22.882	(0.434)

¹ errors due to rounding

1977 was the first year in which the account was divided into the sheepmeat and beef sub account.

Source: Meat Board Annual Reports

APPENDIX 3

GROSS FARM INCOME AND INVESTMENT

TABLE 12

Gross Capital Investment on Plant and Machinery

Year Ended 31 March	Actual \$(000)	Farm Plant & Machinery ¹ Capital Price Index (1971 = 1000)	Real (\$1971) \$(000)	Real Investment Index (1966 = 1000)
1966	49,385	769	64,219	1000
1967	47,949	786	61,004	950
1968	39,599	838	47,254	736
1969	40,550	866	46,825	729
1970	45,508	912	49,899	777
1971	53,683	1000	53,683	836
1972	76,651	1073	71,436	1112
1973	111,632	1162	96,069	1496
30 June				
1974	106,814	1209	88,349	1376
1975	91,245	1476	61,819	963
1976	134,166	1962	68,382	1065
1977	173,916	2458	70,755	1102
1978	150,457	2776	74,199	844
1979	218,640	3086	70,849	1103
1980	260,674	3581	72,794	1134
1981	302,265*	4109	73,562	1145

* Estimated; based on Agricultural Review Committee estimated net figure.

¹ 1966-1970 calculated by M Laing from the New Zealand Department of Statistics Wholesale Price Index. 1971-1981 calculated from a weighted average of New Zealand Department of Statistics Farm Transport and Farm Plant and Machinery Capital Price Index (1971 base weights).

Source: New Zealand Department of Statistics

TABLE 13

Gross Capital Investment on Buildings

Year Ended 31 March	Actual \$(000)	Farm Building Capital Price Index (1971 = 1000) ¹	Real (\$1971) \$(000)	Real Investment Index (1966 = 1000)
1966	43,089	710	60,689	1000
1967	43,052	734	58,654	966
1968	36,799	781	47,118	776
1969	31,938	811	39,381	649
1970	29,450	871	33,812	557
1971	34,080	1000	34,080	562
1972	32,503	1099	29,575	487
1973	42,639	1210	35,239	581
30 June				
1974	59,624	1355	44,003	725
1975	73,268	1567	46,757	770
1976	78,668	1831	42,965	708
1977	96,739	2144	45,121	743
1978	104,097	2529	41,161	678
1979	110,463	2911	37,947	625
1980	151,760	3368	45,059	742
1981	174,137 *	4126	42,205	695

* Estimated; based on the Agricultural Review Committee's estimated net figure.

¹ 1966-1970 calculated by M Laing from New Zealand Department of Statistics Wholesale Price Index.

Source: New Zealand Department of Statistics

TABLE 14

Gross Capital Investment on Land

Year Ended 31 March	Actual \$(000)	Farm Land ¹ Capital Price Index (1971 = 1000)	Real (\$1971) \$(000)	Real Investment Index (1966 = 1000)
1966	55,182	759	72,704	1000
1967	46,563	773	60,237	829
1968	40,375	838	48,180	663
1969	39,172	892	43,915	604
1970	40,523	932	43,480	598
1971	39,827	1000	39,827	548
1972	34,973	1020	34,287	472
1973	51,783	1110	46,651	642
30 June				
1974	64,985	1289	50,415	693
1975	55,439	1504	36,861	507
1976	64,216	1635	39,276	540
1977	75,130	1957	38,390	528
1978	83,744	2234	37,486	516
1979	110,542	2436	45,378	624
1980	147,611	3079	47,941	659
1981	167,000*	3835	43,546	599

* Estimated; based on the Agricultural Review Committee's estimated net figure.

¹ 1966-1970 calculated by M Laing from New Zealand Department of Statistics Wholesale Price Index.

Source: New Zealand Department of Statistics

TABLE 15

Total Gross Farm Capital Investment

Year Ended 31 March	Actual \$(000)	Real (\$1971) \$(000)	Real Investment Index (1966 = 1000)
1966	147,656	197,612	1000
1967	137,564	179,895	909
1968	116,773	142,552	721
1969	111,660	130,121	658
1970	115,481	127,191	644
1971	127,590	127,590	646
1972	144,127	135,298	685
1973	206,054	165,595	838
30 June			
1974	231,423	182,767	925
1975	219,952	145,437	736
1976	277,050	150,623	762
1977	345,785	154,266	781
1978	338,298	132,846	672
1979	439,645	154,174	780
1980	566,045	165,794	839
1981	643,402	159,313	806

From Tables 12, 13 and 14.

TABLE 16

Pastoral Sector Total Gross Farm Income

Year Ended 31 March	\$	All Farming Cost Price Index	Real \$1971	Index (1966 = 1000)
1966	791	843	938	1,000
1967	869	869	1,000	1,066
1968	862	901	957	1,020
1969	934	927	1,008	1,075
1970	949	953	996	1,062
1971	1,064	1,000	1,064	1,134
1972	1,237	1,058	1,169	1,246
1973	1,576	1,140	1,382	1,473
1974	1,727	1,295	1,334	1,422
1975	1,409	1,479	979	1,044
1976	1,779	1,593	1,117	1,191
1977 ¹	2,109	1,865	1,131	1,206
1978	2,113	2,105	1,004	1,070
1979	2,638	2,330	1,132	1,207
1980	3,431	2,852	1,203	1,282
1981	3,634	3,464	1,049	1,119

¹ Reserve Bank series linked at 1977 with M.A.F. series.

Source: Reserve Bank, M.A.F., New Zealand Department of Statistics

APPENDIX 4

THE LIVESTOCK INCENTIVE SCHEME

AND THE

LAND DEVELOPMENT ENCOURAGEMENT LOANS SCHEME

In answer to the doubt that the current economic conditions would delay the commencement of a move towards a targetted 25 per cent increase in farm production by 1985, the Government announced a new measure intended to improve farm output levels in the form of the Livestock Incentive Scheme (LIS). Under this scheme, farmers who personally owned stock could elect to obtain either a suspensory loan of \$12 or a tax deduction from assessable income of \$24 per qualifying stock unit as an incentive to increase production by utilising idle capacity or undertaking a development programme which permanently increased the total number of stock units carried. Provided the target increase in stock units was greater than two per cent and was sustained for the following two years and all of the other conditions of the scheme were met, the suspensory loan was to be written off (Budget 1976; pp 10-11). It was envisaged that the farmer who was under capitalised would elect the first option and the farmer whose property was understocked and whose development intentions had been hindered by high marginal taxation rates would elect the tax option. However, over 93 per cent of the scheme's participating farmers have chosen the loan option, indicating that the scheme has had its greatest effect on those properties requiring additional development to carry increased stock units. The scheme expired on 31 March 1982. In the 1977 Budget, the Government retrospectively modified the Livestock Incentive Scheme in order to allow more farmers to participate by reducing the minimum qualifying stock unit increase (from 100 to 50) and by lowering the qualifying cumulative percentage increase in stock units (from four per cent to three per cent for two year programmes and from six per cent to four per cent for three year programmes) (Budget 1977; p.12).

Since the inception of the scheme in 1976, 9,923 programmes were authorised or approved to 24 June 1980 at a total value of \$91.53m. Applications were approved for nearly three times as many sheep and beef farmers as dairy farmers (Askwith, 1980).

The Land Development Encouragement Loans (LDEL) Scheme was announced in the 1978 Budget. The purpose of this scheme was to assist with the development of unimproved reverted land or low

producing hill country with the potential to carry more livestock. This was to be achieved by providing concessional loans to cover the initial costs incurred in developing the land into permanent sown pasture including expenditure on fertilisers, lime and drainage. Loans (for a 15 year term) to a maximum of \$250 per hectare were available and provided the improvements were maintained to the satisfaction of the Rural Bank, the accumulated interest was written off periodically and only half the principal sum was repayable. A development plan must have been for a minimum of 10 hectares or a large enough area for carrying capacity to be increased by at least 100 stock units (M.A.F., 1982). Farmers receiving L.D.E.L. assistance were also eligible for standard development loans for non qualifying expenditure including fencing, farm tracks, water supply and buildings, and they may also have participated in the L.I.S. The closing date for the lodgement of applications for the L.D.E.L. scheme was 31 March 1981.

From August 1978, when the L.D.E.L. scheme was announced, until the end of May 1980, 3,683 loan applications totalling \$67.87m had been granted. The total area authorised for development was 457,056 hectares, and the planned increase was 2.54 million stock units or 5.6 stock units per hectare. This area was equivalent to 700 new sheep and been properties each carrying 3,600 stock units (Askwith 1980).

In the year ending March 1980 the qualifying expenditure of L.D.E.L. programmes authorised by the Rural Bank varied between \$348 per hectare of land requiring clearing, cultivation and sowing; and \$77 per hectare for land requiring oversowing only. The average qualifying expenditure was \$198 per hectare, while the average total authorised expenditure paid by the Rural Bank was \$158 per hectare (\$29 per stock unit) (Askwith, 1980).

L.D.E.L.s to qualifying farmers did on average, contribute 41 per cent of the total development expenditure in the 1980 financial year. Where a farmer also operated a L.I.S. programme he received an additional \$12 per stock unit, contributing an additional 17 per cent thus bringing the total contribution to 58 per cent of total

development expenditure (\$41 per stock unit) (Askwith, 1980). A 7.1m increase in livestock units was expected to result from the total number of programmes implemented under both the L.I.S. and L.D.E.L. schemes.

It is clear that the L.I.S. and L.D.E.L. programmes have contributed to the recent upsurge in production by assisting farmers to increase stocking capacity by upgrading low producing unimproved or reverted land. Total stock units had actually increased by more than 9.1m from 1976 and actual gross capital investment on land had nearly doubled from 1978 to an estimated \$167m in 1981.

RECENT PUBLICATIONS

RESEARCH REPORTS

90. *A Transport Survey of South Island Farmers*, S.L. Young, T.I. Ambler, S.J. Filian, 1979.
91. *Bread: A Consumer Survey of Christchurch Households*, R.J. Brodie and M. J. Mellon, 1978.
92. *An Economic Survey of New Zealand Wheatgrowers. Survey No. 2 1977-78*, L.E. Davey, R.D. Lough, S.A. Lines, R.M. Maclean, R.G. Moffitt, 1978.
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