Current Changes in New Zealand Agriculture: A Review

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In the period under review the New Zealand agricultural sector has continued to be sensitive to changes in macroeconomic policies in the economy as a whole. This has not altered with the change of Government in October 1990. The combined forces of low commodity prices, increased costs, and government policy changes brought about a period of readjustment through 1985-86 and 1986-87 which now appears to be completed. Recovery was assisted by favourable terms of trade through 1988-89 and 1989-90. Output from the agricultural sector appears to have stabilised rather than decreased; the downturn in the terms of trade in the 1990-91 season has brought about a further reduction in investment and incomes.

1. Introduction

This review follows a previous survey in this journal of the initial impact of deregulation on the New Zealand agricultural sector (Johnson, Schroder and Taylor 1989). The aim is to cover policy developments in the period mid 1989 to early 1991. The presentation of topics starts with macro-economic issues, goes on to agricultural policy issues, and concludes with an assessment of impacts on production, income and investment. More emphasis is placed on measures of performance than previously as well as impacts of major events in the period concerned.

The major political event in the period was the election of a conservative government in October 1990. The new Minister of Finance is the Hon. Ruth Richardson and the new Minister of Agriculture is the Hon. John Falloon. In broad terms the policies of the new government follow the directions laid down by the previous Labour administration, that is one of tight monetary and budget control, lower tariffs and floating exchange rates. Consequently, the policy mix is less supportive of the tradeables sector than originally anticipated and provides little direct encouragement for the agricultural export sector. Some changes in agricultural tax provisions have been introduced but otherwise agricultural policy continues to be constrained by macro-economic policies especially fiscal requirements.

2. The Macroeconomic Environment

2.1 The Economy

2.1.1 *Growth:* the slow growth rate of the national economy has been noted earlier (Johnson *et al.* 1989). In the March year 1989 real GDP fell by 1.6 per cent and in 1990 only increased by 0.8 per cent (all statistics quoted in Section 2 are taken from Department of Statistics (March, 1991) unless otherwise noted). The sluggish economy was a result of the tight monetary policies followed by the Government combined with the consequent upward pressure on the exchange rate in spite of reasonably favourable terms of trade. The rate of unemployment continued to increase through the period covered and at the end of December 1990 stood at 9.7 per cent of the total labour force. Total employment declined through March years 1986-87 (-0.6 per cent), 1987-88 (-1.8 per cent), and 1988-89 (-4.1 per cent) but recovered slightly in 1989-90 (+0.4 per cent).

Government policy has focused and continues to focus on lowering the rate of inflation to the exclusion of other considerations. The consumer price index has steadily fallen from 9.6 per cent in calendar 1987 to 4.7 per cent in calendar 1990. A review of the Goods and Services Tax (GST) in 1988 led to a spurt in the index in 1989 (+7.2 per cent) but this has now worked out of the system.

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Assistance from reviewers is gratefully acknowledged. Writing was completed in mid August 1991.

This survey was commissioned by the Editor.
Review coordinated by Bob Farquharson.

The present Government has a target of reducing the rate of inflation to 2 per cent by 1993.

2.1.2 *Exchange rates:* the policy stance adopted has continued to maintain a relatively high set of foreign exchange rates. Compared to the position before the floating of the $NZ in February 1985, the $NZ has appreciated by 28 per cent compared with the $US, depreciated by 17 per cent relative to sterling, depreciated by 32 per cent relative to the yen, appreciated by 17 per cent relative to the $A, and depreciated by 33 per cent relative to the mark (as at 31 July 1991). In terms of the Reserve Bank trade-weighted index the $NZ has depreciated by 5.5 per cent since February 1985.

As previously pointed out, the appreciations through 1985-86 and 1987-88 had a marked effect on tradeables prices received and particularly in the latter year masked a considerable upsurge in world commodity prices. As Table 1 shows, the management of the economy since 1987-88, combined with outside pressures on exchange rates, has resulted in a slow depreciation of the $NZ up to the end of 1990. In turn this has allowed more of the recent upturn in commodity prices to pass through to the domestic economy. However, the deliberate use of the exchange rate to stimulate the economy has been resisted by both the previous administration and the present administration in spite of calls from interested parties.

2.1.3 *Monetary policy:* policies followed in the post-1984 period, combined with domestic funding of the Government deficit, resulted in very high interest rates compared with the historical record. These reached a peak in 1985 and 1986 (the weighted average of trading bank overdrafts reached 20.44 in the September 1986 year) but have since slowly come down to more moderate levels (Table 2).

Although the Government deficit before borrowing has turned positive in conventional terms there is still upward pressure on interest rates from ex-

Table 1: Annual Trend in Trade Weighted Exchange Rate

June years	Index	Per Cent Change
1985-86	64.80	
1986-87	59.56	-8.1
1987-88	65.20	+9.5
1988-89	61.13	-6.2
1989-90	60.86	-0.4
1990-91E	59.48	-2.3

Source: Department of Statistics. E = estimates

Table 2: Trends in Interest Rates

Year ending	Gov't Stock (5-7 years) (Issue rates)	Trading Bank Overdraft (Weighted ave.)
Sept 1988	12.95	16.00
Sept 1989	12.10	15.60
Sept 1990	12.90	16.30
April 1991	11.40	14.90

Source: Department of Statistics.

penditure on major projects and producer board refinancing. There is also a decline in taxation revenue associated with the slowdown in the economy which has to be financed from borrowing. These factors point to very little further easing of interest rates in the near future.

2.1.4 *Terms of trade:* these have been favourable in the period under review. Export prices lifted 28 per cent between June 1986 and June 1989; import prices only rose 6 per cent in the same period giving rise to a terms of trade improvement of 22 per cent. In the year to June 1990, export prices rose by a further 1.3 per cent in spite of the downturn in commodity prices. With small increases in import prices, the terms of trade were marginally better in the 1989-90 year. Early data for 1990-91 show falls of up to 5 per cent in export prices coming through which combined with further slight rises in import prices will cause a reversal of the terms of trade for the current year and perhaps for the year following.

These trends were responsible for a marked improvement in the balance of payments current account in the June year to 1989. The 1986-1989 period was characterised by little growth in the volume of exports and imports hence the balance of merchandise trade moved into a healthy surplus. Taking into account invisibles the balance on current account was only $253m in deficit in 1988-89 (0.4 per cent of GDP).

During the 1989-90 year there was a small economic recovery which saw the volume of imports soar by 22 per cent at a time of decline in the real volume of exports. As a result, the deficit on the current account in that year rose to $4170m or 6 per cent of GDP. Current forecasts are for a further rise in the deficit in the 1990-91 year. Currently the Statistics Department is revising the balance of payments statistics and somewhat lower absolute levels of the deficit balance on current account are envisaged.

2.1.5 *Budget deficit:* the slow growth of the economy and the resulting increase in welfare payments has continued to put pressure on the Budget deficit in the period since 1986. Since the budget of 1987-88 there has been a surplus on Government transactions on a Budget Table 2 basis; 0.8 per cent of GDP in 1987-88; 2.6 percent in 1988-89 and 4.1 per cent in 1989-90. But taking into account spending on major projects and producer board refinancing, the deficit is only barely contained. Recent Ministerial announcements suggest a further deterioration in the balance in the current year and a number of spending constraints were announced in December 1990. On July 24 the budget was presented to the House of Parliament and the surplus on the same basis for 1990-91 amounted to 1.7 per cent of GDP with an estimated deficit of 1.5 per cent in the 1991-92 fiscal year.

2.2 Commentary

From the macroeconomic point of view, the period under review has been one of continuing constraints on growth and lack of opportunities. In spite of a change in Government there has been no change in policy. It has been a period of restriction through monetary policies aimed at reaching international competitiveness through inflation reduction. A commodity boom has arrived and departed with few benefits to the domestic economy. Lack of growth has created increased burdens on the budget and caused widespread social unease. An alternative policy formulation has not been addressed.

The continuation of these macroeconomic policies has had a considerable effect on the agricultural sector. Monetary measures and exchange effects have reduced returns in the tradeables sector to a greater extent than anticipated. As discussed later in Section 4.4 agricultural output levels have reduced, investment in real improvements has come to a standstill and export volumes are static. With a reduction in other economic activity from reduced tariffs and lack of aggregate demand there is no obvious growth sector to launch the economy into positive expansion. In these circumstances it may well be that a real adjustment of the exchange rate will be the only way to get the economy into a growth phase again. Such a policy would have costs elsewhere in the economy.

The basic issue for policy makers is how to restore growth to the economy. The deregulation model adopted by the Government has been successful in controlling inflation and raising efficiency in industry. This has been achieved by a run-down in the resources employed, a reduction in consumer demand, and higher rates of unemployment. The model requires growth to emerge from efficiency gains and international cost advantages. While the factors entering the real exchange rate equation are all moving in the right direction (except for the recent downturn in export prices), investment remains at low levels and output forecasts are dismal. Confidence is lacking. The alternatives facing Government include further downward drift of the exchange rate regime, more overseas borrowing, or a return to some degree of interventionism associated with employment and export growth goals. At the time of writing, these alternatives had not been fully addressed.

3. Agricultural Policy

3.1 General Policies Relating to Agriculture

3.1.1 *Public sector reform:* the move to improved efficiency and effectiveness of major public service agencies has been characterised by privatisation and the setting of profit goals. Post Office services have been separated from Telecom services; electricity supply authorities have lost their exclusive zone arrangements and opportunities opened up for alternative generation sources. Effects on rural communities consist of reduced Post Office services through closing of small offices, improved Telecom services through efficiency gains and modernisation, and higher charges for electricity as cross-subsidisation is eliminated.

Moore (1989) found that the number of post offices closed had reached 700 but the number of facilities (retailers, agencies etc.) had actually increased. Phone charges to farmers had fallen by an average of 18 per cent as overheads had been shifted from toll calls to local calls. He found that remote consumers were likely to pay more through increased connection charges.

At the time of writing the new schedule of electricity prices has not been determined. Discussion continues on the future of the Rural Electricity Reticulation Council which administers subsidies on lines to remote rural areas. The annual subsidy is said to be of the order of $8-10m per annum. The government promised in its election manifesto not to raise rural electricity charges unnecessarily and has suggested some form of direct grant rather than a levy on all consumers.

Public sector reform also includes further changes in the arrangements for agricultural extension, agricultural inspection and science (including agricultural science).

Inspection services

Inspection services moved from two thirds to total cost recovery in 1990-91. This move was accompanied by a separation of delivery services from policy services in the Ministry of Agriculture and Fisheries. At the time of writing it was not decided whether the inspection delivery services could be formally separated from government control, if not ownership, in the form of a crown-owned enterprise.

Extension services

Extension services were also due to meet full cost recovery in 1990-91. This objective had largely been met when it was overtaken by reforms to the science sector detailed next.

Science services

The allocation of resources to science have been reviewed twice in the period under review. In 1989 a new policy for the organisation and funding of research, science and technology was introduced. A major objective of this policy change was the separation of government's involvement into three areas of activity: policy, funding and operations. Three agencies were established: a Cabinet Committee to establish priorities, a Ministry of Science to service the Minister, and a Foundation of Science to allocate contestable funds. These agencies were to exist alongside the existing agencies in the Ministry of Agriculture and Fisheries (MAF), the Ministry of Forestry, the Department of Scientific and Industrial Research (DSIR) and the Meteorological Service.

In late 1990 the newly elected government announced further changes in the way science effort would be organised. The above departmental agencies would be dis-established as corporate entities and restructured as Crown Research Institutes (CRI's). These institutes would be funded through the Foundation with a basic medium term core funding as well as contestable funds. A separate contestable pool would be set up to encourage the commercialisation of products and processes emerging from public sector research.

The implications of these changes are only emerging slowly. Some duplication of administrative services will be removed and there will be a tighter relationship between funding and results. The commercial sector will be less crowded out by government science. The extension service will probably be maintained as one crown-owned enterprise contracting to the CRI's and the residual policy operations of the Ministry of Agriculture. The traditions of science in the DSIR and MAF will be sacrificed in these changes though new entities will no doubt rise from the ashes.

3.1.2 *Market channel reform*: there have been considerable changes in both waterfront and labour market legislation in the period. These reforms are consistent with the macroeconomic objective of raising international competitiveness and reducing costs. They are not popular but have been a consistent feature of both the last two administrations.

The Port Companies Act 1988 enabled harbour boards to establish commercial companies, manage and own commercial assets and eliminated inter-port labour cost cross subsidisation. The Waterfront Industry Reform Act 1989 abolished the Waterfront Industry Commission, the organisation that operated a national pool of labour for the waterfront. The pool was thus abolished and workers were to be hired directly by stevedores and terminal operators and these employers became responsible for negotiating pay and conditions. The Local Government Amendment Act (No 2) 1989 enabled regional and district councils to take over harbour boards (but not port companies). Finally the Waterfront Industry Restructuring Act 1989 made provision for funding harbour worker redundancies through levies on harbour board land and their share portfolios.

Pomeroy (1990) categorises some of the changes on the waterfront scene. Between 1986 and 1989 the number of waterside workers had fallen by 34 per cent and payout per worker had increased by 45 per cent. Tonnage handled per worker had increased by 53 per cent and the proportion of hours worked to hours paid had risen from 58 per cent to 72 per cent. MAF (1991) gives data showing a further 38 per cent fall in workers in 1989-90 and consequent rises in productivity. Reductions in harbour workers occurred mainly in 1988 and 1989 when there was a 40 per cent fall and a further 6 per cent fall occurred in 1989-90. In 1989-90 conventional stevedoring costs fell by 30 per cent for dairy product loading and by 50 per cent for some horticultural products.

Labour market reform

Labour market reform could be expected to influence the agricultural sector less directly than the above waterfront reform. Nevertheless more flexible wage bargaining does have the potential to allocate costs more directly to specific industries and enterprises and hence contribute to marketing channel efficiency as well as other supply industries.

The conduct of industrial relations has been shaped by the Labour Relations Act 1987. The Act set out the terms of the bargaining process and identified the negotiating parties. Under the Act any settled award applied to all employees throughout New Zealand represented by the union involved. An amendment in 1990 was introduced to allow employers with more than 50 workers to initiate enterprise bargaining with the unions. Also equal pay for female workers was introduced through the Employment Equity Act 1990. Then in the last days before the 1990 election the Government negotiated a growth agreement with the Council of Trade Unions restricting wage increases to 2 per cent in the following wage round conditional on a fall in interest rates.

The new government upon election immediately proceeded to the repeal of the Labour Relations Act with a new bill, the Employment Contracts Bill and repealed the Employment Equity Act. The Employment Contracts Bill opens the way for enterprise bargaining as the norm and abolishes the trade union monopoly coverage of wage negotiations. Flexible wage bargaining will be based on the negotiation of collective and individual contracts. Anyone apart from those with criminal convictions can become bargaining agents. The intention is to encourage individual work places to adopt flexible work practices though national awards are not ruled out if all the parties agree.

This is therefore quite a profound shift in labour relations in New Zealand and the unions have used the occasion for numerous protests. It represents a major shift toward competitive pricing of labour and a reduction in the social wage concept. It has occurred at a time when firms are under heavy pressure to maintain profits and is likely to result in a holding of labour rewards for some time. In theory at least the tradeables sector should benefit from the reform and in this sense it is entirely consistent with both governments' approach to the restoration of international competitiveness.

3.1.3 *Local government and resource management reform* : the then government announced a policy of reform of local government in December 1987. This reform was intended to improve accountability and efficiency, and to separate and make more transparent regulatory and service functions. The Local Government Commission carried out a massive review and recommended that more than 600 public agencies, including pest destruction boards, noxious plants authorities, county councils, catchment boards and united councils be amalgamated into 94 new district and regional councils. The changes were approved and came into effect on 1 November 1989.

The regional councils were to have the main responsibility for soil, water and geothermal resource management, and pollution and regional pests, plus a role in managing coasts and natural hazard mitigation. District councils were to have primary responsibility for land use management, noise control and hazard mitigation beside their roading, rubbish and sewage responsibilities. Implicit in the reform is greater local responsibility for many functions and consequently a greater need for local financing.

For agriculture the reform represented a significant loss of political power as the old basis of county council representation disappeared and the rural areas were swallowed by town based councils. Not only was there a loss of status positions for the leading farmers but there was also increased competition for the local body posts that remained. Some recompense has been provided for in the formation of rural affairs committees to regional councils but these remain advisory and not voting bodies.

The present government has indicated that it is not satisfied with these arrangements and has the role of the regional councils (there are 14 of them) under review. Some rationalisation is possible.

Resource management law reform

In January 1988 the government also announced a comprehensive review of the major laws that govern natural and physical resources, replacing the Soil and Water Act 1952 and the Town and Country Planning Act 1977. A Resource Management Bill was introduced into parliament in December 1989 and was passed in July 1991. The Act outlines the decision-making process that central, regional and local government will use in resource management. The principles and purposes of the act are based on the concept of sustainability. Provisions are included for the management of land, water, geothermal, air, mineral and coastal resources. Much of the responsibility of this management falls on regional government bodies. This is another matter which remains to be clarified.

The agricultural sector will not be altered much by this legislation in the short run. The previous provisions for soil and water control and town planning are not greatly altered. In the longer run the application of the sustainability principles could see greater pressure on landholders in areas of land degradation and pollution of waterways. Control of pesticides is likely to be tighter and new rules introduced for the entry of new organisms. Miners access to agricultural land will be modified from the old C19 discovery rights but complete veto of access by landholders has been ruled out.

3.2 Sectoral Policies for Agriculture

3.2.1 *Producer marketing boards* : there have been minor changes to the legislation affecting the producer boards in the period reviewed. The Producer Boards Acts Amendment Bill 1988 contained minor provisions for wool, apples and dairy products which were subsequently split out into separate acts. These acts removed the provision for statutory access to Reserve Bank credit, removed the Government from board decision making by making the boards "a natural person" and improved the boards' flexibilty for independent decision-making. The Meat Export Control Amendment Bill 1989 introduced similar changes for meat. Further legislation is pending but it is not expected to involve major changes.

MAF (1991) state that the following issues are under consideration: accountabilty to producers, the necessity for regulatory powers, the potential conflict between commercial and regulatory functions, the size and composition of the boards, the performance of subsidiary companies, and the role of the Audit Office and the Higher Salaries Commission. For apples there is the question of the deregulation of the local market and the removal of import monopolies. For dairy products there is a proposal to develop specific criteria by which the board must assess the requests of other parties who wish to export dairy produce. For meat attention is focussed on the board's regulatory powers, which include control over meat exporters, and control over the conditions for the shipment and transport of meat from New Zealand.

Kiwifruit marketing

Since the 1989 review in this journal, the Kiwifruit Marketing Board has been established. Previously kiwifruit was marketed by the New Zealand Kiwifruit Authority established under the Kiwifruit Marketing Regulations 1977. Public debate centred on a commissioned report by Coopers and Lybrand Associates (1988) discussing the comparative failure of the commission method of selling kiwifruit in Europe and the need for more market control over the end-disposal of the crop. Johnson (1989) sets out some of the details of the debate including the evidence on price discrimination in the market. Coopers Lybrand recommended the setting up of a single seller marketing board subject to further review if the need for a second seller could be demonstrated.

The Kiwifruit Marketing Regulations 1977 Amendments No 4 and No 5 were passed in 1988 and 1989 respectively to give effect to a single board only. The board has been trading in a declining market since it was formed and questions of accountability and efficiency have largely been set to one side. However the regulations provide for a review of the board activities after two years and an external auditor was appointed in July 1991 to carry this out.

Other issues

A related issue to the role of producer boards is the introduction and passing of the Commodity Levies Act 1990. This allows producer organisations to impose compulsory levies on commodities for the general development of their industries. It particularly applies to industries without an existing avenue to levy producers generally outside the producer boards. The purpose is to stimulate the raising of funds for industry R & D activities and to facilitate claims to the Foundation for Science. It applies particularly to public good research where the benefits could not be captured by specific individuals. According to MAF (1991) the Herbage Seed Growers, the Maize Growers and the New Zealand Grape Growers Council (Inc) have applied for the compulsory levy so far.

Also in this area of policy the Meat and Wool Boards' Electoral Committee approved the setting up of a Meat Research Development Committee in 1989 to oversee and dispense funds collected by the Meat Producers Board levy. Funding of $12 m per annum was targeted. In part these funds were to be used for funding the Meat Industry Research Institute to replace funds from the Meat Industry Association (the association of processors and exporters). Part however will be available to match government funds in the contestable pool run by the Foundation for Science.

In summary, the period under review has seen increased effort to make the marketing boards more efficient and accountable, but competition for the services provided has not eventuated. The present administration does not seem disposed to radical changes in the powers of the boards and farmers have not expressed views that more freedom would be desirable. A major issue is the operation of cooperative shareholdings in both the dairy and meat industries and the effect on capital structure and equity. Without government guarantees and finance, sound corporate financial structures will probably require some action in this direction in the near future to establish appropriate equity positions.

3.2.2 *Farm adjustment*: : New Zealand has long standing arrangements for adverse climatic event relief but no system for farm adjustment as in Australia. Climatic events are assessed for their severity in terms of probability of occurrence criteria and then a set of standard assistance measures are implemented. These are relatively simple and include temporary family welfare assistance, subsidised labour programmes for immediate restoration, help with distressed livestock, and help with restoring structures that affect the operational capability of a property. Large scale disasters have to be assessed on their own merits and specific programmes of assistance approved by Cabinet. These programmes could include subsidised recovery loans through the commercial banks, family welfare assistance for as long as it was needed, grants for exiting farming and subsidised farm management consultancies.

Such programmes have recently been reviewed by Webber (1990) and Brown and Copeland (1991). Webber reviews assistance granted in the wake of Cyclone Bola which struck north-east New Zealand in February 1988. He states that immediate assistance was beneficial to the many farm families affected by the cyclone and that grants for restoration tended to be used for reduction of debt rather than better preventative measures. He concludes that the area concerned is in no better position to withstand the next climatic threat than it was before and that assistance should be more targeted to long-term prevention. Brown and Copeland assess the government programme put in place after a prolonged drought on the east coast of the South Island. They assess the impacts of family assistance, loans, exit grants and management consultancies on the 5500 farmers affected. They conclude the drought measures had little impact on the structural adjustment process because the measures all supported current management systems by removing the incentive for farmers to reduce risk. They found exit grants particularly ineffective and easily circumvented.

With the development of the Resource Management Bill there is now a need to develop the long-run adjustment framework for farming. In October 1990 the FARM (Facilitation, Action, Risk Management) Partnership Scheme was announced by the then Minister of Agriculture. This proposal involved the establishment of a three-way venture between individual land users, regional communities and central government, to accelerate progress toward sustainable land use. Funding would be shared among the partners and control and initiatives were be taken on a local basis. The new government has not followed up this proposal and clear guidelines for the future have still to be worked out.

Irrigation

A related area of government involvement has been the subsidisation and central control of irrigation schemes. Since 1975 a generous subsidisation scheme of headworks and on farm structures had provided for a marked increase in area covered of 37,400 ha to a total of 160,000 ha (Bagnall 1991). These schemes provided not only increased yields but also more consistent yields (Arthur-Worsop and Ramaratnam 1990). A feature of all the schemes was the reluctance of the authorities to keep the water charges in step with real costs of maintenance.

In 1988 the government announced its intention of selling its interest in community irrigation schemes. The aim was to place all schemes on a fully commercial basis including full operating cost recovery and to remove government from ownership and management of schemes and further losses. This asset sales programme has now run its course and recoveries have been minimal. Very few schemes have realised a significant sale price and in some schemes there has been a net payment to the new owners. Issues of equity and irrigators ability to pay are overriding any immediate economic efficiency gains in many cases. In the longer term the new ownership should see significant savings in management efficiency (MAF 1990).

3.2.3 *Agricultural pests* : for some years there has been dissatisfaction with the administration of pest control. In 1980 the matching subsidy for control boards was removed and in 1983 a ceiling of $7 m was put on pest destruction expenditure. During the 1980s the rabbit in particular developed resistance to standard poisons and started to accelerate in numbers in certain drought-prone areas. This initiated a wide debate on the introduction of the myxomatosis virus from 1985 which was refused by the government in 1987. As a result a task force was appointed to work out an alternative programme for control of the rabbit and improved land use. In May 1989 government agreed to fund a programme of $16.35 m with provision for an additional $9.12 m from regional ratepayers and landholders. The programme involved improved poisoning procedures, research on arid land management and improved land management practice. The question of introduction of the virus was again under debate in early 1991 but no decision has been taken yet.

In general, regional councils are responsible for weed and pest control of local importance while central government agencies are responsible for pests of national importance. The funding of these activities, particularly the proportion, to be funded from regional rates and the potential high charges for some farmers, is a matter of some controversy. As well as the above national programme for rabbits there is also a substantial national programme for possums. As these are TB carriers they are of particular agricultural importance; the programme is administered by MAF.

3.2.4 *The Rural Banking and Finance Corporation* : as part of the government's asset sales programme the Rural Bank was sold to Fletcher Challenge Corporation for $550 m in August 1989. Fletcher Challenge owns Wrightsons a major stock and station agency, so the sale considerably increased the market power of this company. As a result of the sale the Rural Bank is no longer available for the administration of government programmes such as drought relief loans and other soft loans. The sale has had the general effect of bringing most of the financial transactions in the agricultural sector into the market place and many concessionary financial programmes for farmers such as development loans and new farmer purchase loans have been discontinued.

3.2.5 *Farm taxation* : the period from 1985 to 1989 saw a general revision of many of the tax statutes affecting farmers. The tax base was broadened in 1986 with the introduction of the Goods and Services Tax (GST); income and company tax rates were decreased during the period to compensate for GST; livestock valuations for assessment purposes were made more market related and many special deductions like investment allowances were phased out. The general aim was to move to a more neutral tax system both between taxpayers and between sectors.

In line with this objective the government removed the tax-exempt status of primary producer marketing boards and milk treatment cooperatives. These entities became liable for income tax on income derived after the commencement of the 1989 income year, and dividend withholding tax on foreign sourced dividend from the 1990 income year.

King (1990) has reviewed the progress of the move to neutrality for farmers. He was satisfied that the regime was more neutral relative to other sectors in 1989 than in 1985; that the annual tax liability had increased under the 1989 regime due to the removal of development allowances and the more market-related valuation of livestock; that decisions to invest were more related to perceived market returns and future income; and that the system was now less favourable to boom and bust enterprises such as deer and goats. He drew attention to low rates of depreciation and suggested these could now be a disincentive to invest.

The new government has changed some of these provisions. Livestock valuation procedures have been simplified so farmers avoid paying tax on unrealised gains and any liability may be spread over three years. The deduction of capital expenditure has been reinstated to bring conformity with the forestry sector where growing costs have been returned to full and current deductibility. Attention will also be given to the need for a scrapping provision for capital assets, the need to distinguish between true capital expenditure and repairs and maintenance, and the need for more realistic depreciation rates (MAF 1991).

3.3 Commentary

The distinction between general policies affecting agriculture and specific policies is perhaps an artificial one though it does bring out the importance of general economic conditions and reform remarked on earlier (Johnson *et al.* 1989). The whole period since 1985 has seen the removal of numerous special provisions for agriculture and other sectors that characterised policy making in the 1960s and 1970s. The more market oriented approach aims at bringing costs and returns into alignment with undistorted prices and thus influencing resource allocation in a positive way. Many of the reforms have the potential to deliver more efficient services to the agricultural sector and hence improve its competitiveness over the medium term. The New Zealand experience shows this process taking place and the policy changes discussed above reflect perhaps the end of the experiment. Fresh policy perspectives are not yet fully clear, however, but it seems likely that there will be a return to the mixed economy in a form where some interventionism will be justified in the name of economic growth and full employment. For agriculture this could mean some special advantages could be restored,

Table 3: Net Subsidy Equivalents; Pastoral Agriculture 1986 to 1991 ($m current)

March years	1986	1987	1988	1989	1990	1991E
Pastoral Output	3680	3883	4250	5306	5504	4692
Prod. Assistance	147	82	42	35	24	10
Total	3827	3965	4292	5341	5528	4702
Less						
Materials (assist.)	2508	2322	2284	2781	2799	2418
Depreciation	284	265	266	305	324	281
Assisted						
Value Added	1034	1377	1741	2254	2403	2002
Total Transfers	783	1599	504	257	206	158
Protection Cost						
0.1	254	235	231	281	284	245
0.2	465	431	425	514	521	450
Net Subsidy						
Equivalents(%)						
Nil Protection	20.5	40.3	11.7	4.8	3.7	3.4
0.1 Protection	13.8	34.4	6.3	-0.4	-1.4	-1.9
0.2 Protection	8.3	29.5	1.8	-4.8	-5.7	-6.2

E = Estimates

Notes:
Protection cost represents the increased costs imposed on farming due to the protection of local manufacturing. Its level is not known with certainty. A level of 0.2 means that such costs represent 20 per cent of material costs. This is discussed in Johnson *et al.* (1989, p. 56).

Source: MAF (1991, Table 41) and author's estimates.

but the success of such policies can only be measured by the results and objectives achieved.

4. Changes in the Agricultural Sector

4.1 Government Assistance

Most of the restructuring of the agriculture sector took place in the period 1985-86 to 1987-88. As discussed in the last review the main period of agricultural support was in the years 1981-82 to 1984-85. Taking into account all the fiscal transfers to pastoral agriculture, the peak year of assistance was 1986-87 and the lowest point will be reached in 1990-91 (Table 3). Assistance to outputs has been phased right down to $10 m in 1990-91 which represents the remaining proportion of inspection costs. Assistance to inputs has also been reduced and the remaining items are subsidies on earlier Rural Bank loans and expenditure on pest control. Assistance to value adding ~~factors~~ reached a peak in 1986-87 when the advance payments to the Meat Board were written off (MAF 1991, Table 41). This was debt built up in the Reserve Bank under the Board's meat stabilisation scheme which was meant to be recovered through levies. This item was not accounted for in Tables 3 and 4 in Johnson *et al.* (1989).

In terms of net subsidy equivalents the transfers represented 40 per cent of output at the peak and have since declined to 3.4 per cent. There is still debate on the appropriate level of increased costs due to protection in other sectors of the economy; some recent work estimates the level at around 10 per cent (Chiao and Scobie 1990). In this case the net subsidy to agriculture turned negative in 1988-89 and has remained so since. In general the reforms of the 1980s have therefore been completed and the agricultural sector is slightly disadvantaged by protection still provided to other sectors of the economy.

The economic reforms undertaken since 1984 have set out to lower assistance to all sectors of the economy. On an effective rate of assistance basis pastoral agriculture has declined from 52 per cent in 1982-83 to an estimated -4 per cent in 1989-90. All manufacturing industries has fallen from 39 per cent in 1982-83 to 19 per cent in 1989-90 (MAF 1991, p. 12).

4.2 Sectoral Performance

The earlier review ended up with a forecast that changes in the economy were likely to bring about a smaller and more competitive sector than previously (Johnson *et al* 1989, p.47). Clearly this means that the analyst should be looking at changes in the size of the sector and changes in efficiency however measured. However in any agricultural situation the necessary data are usually muddied by lags in the system and various errors of measurement especially changes in livestock inventories and

Table 4: Agricultural Sector Performance 1983 to 1991 (1982-83 dollars)

March years	Real Output	Real Input	Real GDP	Output/Input
1983	4811	2842	1968	1.69
1984	4903	3069	1833	1.59
1985	5259	3459	1800	1.52
1986	5194	2902	2291	1.79
1987	5170	2773	2396	1.86
1988	5448	2580	2868	2.11
1989	5396	2834	2562	1.90
1990E	5236	2775	2561	1.92
1991E	5239	2246	2993	2.33
Growth	1.12%	-1.81%	5.45%	

Source: Department of Statistics and author's estimates. E = estimates.

sales. Nevertheless the hypothesis is that output should be shrinking given the run-down in net investment in the sector since 1984-85 (Johnson *et al* 1989).

Gross output in real terms has continued to increase throughout the period since 1981-82 with an average of 1.1 per cent per year (Table 4). There is some evidence of a flattening off of outputs in the period since 1987-88. This is associated with falls in sheepmeat and wool output particularly as dairy and beef outputs have continued to increase (MAF 1991, Table 40). In the same period there has been an average decline in the level of real inputs of 1.8 per cent per year with marked reductions of input investment in the adverse years like 1985-86 and 1990-91.

This calculation thus leads the way to the Statistics Department's estimates of real GDP earned in agriculture. Here there is the very interesting result that real GDP has increased on average by 5.4 per cent per year over the period! Partly this is the result of the method of calculation (the double-deflation method) but mostly it reflects the economy with which inputs have been used while maintaining output. This is seen in the ratio of real output to real intermediate inputs which has moved upward by some 40 per cent since 1981-82. There has been a decline in the total stock of capital in the period and labour inputs have been static or declining. This suggests that apart from normal efficiency gains there is an element of drawing down the capital represented in livestock inventories and the land and this will have effects on real output in due course.

Figure 1: New Zealand Horticultural Sector

There is a relatively large horticultural industry in New Zealand.

Some 11.4 per cent of properties were defined as horticultural in terms of income earned.

Horticultural products represent some 14 per cent of gross value of agricultural production.

Total farm gate value was $NZ1.3 billion in 1989-90; exports were worth $0.9 billion (6.8 per cent of merchandise exports).

Major export products are kiwifruit ($540 million in 1989-90) and apples ($220 million in 1989-90).

The following fruits earned more than $10 million in exports in 1989-90:
. stone fruit
. berry fruit
. fruit juice

The following vegetable products earned more than $10 million in exports in 1989-90:
. squash
. onions
. fresh asparagus
. frozen peas
. frozen corn
. frozen mixed vegetables
. frozen asparagus
. tomato products

Other horticultural exports exceeding $10 million:
. wine
. cut flowers

4.3 Terms of Exchange for Pastoral Products

New Zealand faces a different mix of export products and markets to Australia and also manages its exchange rate mechanism differently. As previously, this section traces the influence of world wholesale prices on export income, picks up the effect of changes in the exchange rate and examines the terms of exchange at the farm gate level. The emphasis is on the major pastoral sector products. For information on another major agricultural sector in New Zealand, the horticultural sector, see Figure 1.

4.3.1 *Wholesale prices*: world commodity markets were buoyant through 1986-87, 1987-88 and 1988-89. The IMF commodity price index for agricultural raw materials rose by 40 per cent, the metals index by 65 per cent and the food index by 18 per cent (IMF 1991). These changes do not affect individual countries and commodities evenly. In the New Zealand case, the best markets were beef and dairy products followed by wool and lamb in that order (Table 5). The timing for these and other commodities was quite variable with beef and wool taking off in 1987, dairy products in 1988 and 1989, and lamb through 1989 and 1990. In mid 1989 commodity markets changed direction and most New Zealand wholesale prices have fallen back considerably.

4.3.2 *The real rate of exchange for pastoral products :* apart from the years 1985-86 and 1987-88 movements in commodity prices have been allowed to move into the domestic economy. The first flush of the commodity boom was prevented from entering the country by an upward appreciation of the $NZ (Table 6). Since that year pastoral product prices improved by 22 per cent to 1989-90 but have since declined by around 5 per cent. Compared with domestic producer prices the improvement in export prices raised the real rate of exchange for the pastoral sector by 10.4 per cent. This resulted in a considerable recovery in the sheep and beef sector and a very rapid increase in incomes in the dairy sector until the world market

Table 5: Trends in Wholesale Prices 1986 to 1990

Cal. years	Beef	Lamb	Butter	Wool
	(Annual Percentage Change)			
1986	-2.8	-2.2	+0.3	-4.5
1987	+13.9	-4.7	-11.8	+12.0
1988	+5.5	+1.0	+14.0	+5.5
1989	+2.0	+4.4	+14.8	-2.0
1990E	-1.0	+8.4	-11.4	-18.3

E = estimates.

Notes on Pricing Points:

Beef: US imported frozen boneless from Australia and New Zealand, 85 per cent visible lean cow meat, import price, $US f.o.b., port of entry, average of daily quotations.
Lamb: NZ PL, Smithfield, London, sterling, average of daily quotations.
Butter: NZ Best Quality, selling price, sterling, London Provision Exchange (duty paid).
Wool: Australia-NZ 50's, UK-Dominion 50's, clean dry, combed basis, Bradford grade, sterling, monthly quotations.

Source: IMF, *Monthly Financial Statistics*, IMF, Washington.

Table 6: Decomposition of Real Rate of Exchange for Pastoral Products 1986 to 1991 (Annual percentage changes)

June years	"Foreign Price"	Exchange Index	Pastoral Index	Domestic Prices	Real Rate of Exchange
1986	-0.5	-7.1	-7.6	-13.2	-18.3
1987	+1.1	+5.1	+6.3	-10.9	-4.1
1988	+11.3	-8.5	+1.8	-7.8	-5.5
1989	+4.1	+6.6	+11.0	-6.2	+4.5
1990	+10.0	+0.4	+10.5	-4.4	+5.9
1991E	-6.7	+2.	-4.6	-4.0	-8.2

E = estimates.

Notes:

"Foreign Price": Index of Pastoral Export Prices (Dept of Statistics) times Exchange Rate Index (Reserve Bank).

Exchange Index: Reserve Bank trade weighted index at June each year; positive movement indicates depreciation.

Pastoral Index: Price Index of External Trade for all pastoral products, f.o.b. values, Dept of Statistics.

Domestic Prices: Index of Prices of non-tradeable producer goods; negative sign is a rise in the index.

Real Rate of Exchange: Pastoral Index/Domestic Price Index.

Source: Author's estimates.

turnaround finally reached these shores (Tables 7 and 8).

4.3.3 *Farm gate terms of exchange* : these price movements are reflected in the conventional measures of farm gate terms of exchange for dairy farmers and sheep and beef farmers (Table 7). For dairy farmers there was a 35 per cent improvement in the ratio in the 1988-89 season plus a small further improvement in the following season. For sheep and beef farmers the improvement was more modest but totalled 28 per cent over the same two years. Forecasts for the whole of the 1990-91 season indicate a 20-30 per cent decline in this ratio.

4.3.4 *The wool market*: incorporated in the ratio for sheep and beef farmers for 1990-91 is a downward revision of the forecast of the season's price for wool. Prices at auction have fallen substantially through the season, reflecting adverse international developments and changes to the Wool Board's market support. The intervention price was lowered at the start of the season and again at the end of October, but despite these reductions the Board continued to buy an increasing amount of wool at auction. By the end of January stocks had accumulated to levels equivalent to 34 per cent of annual wool production. During the first seven months of the season the Board also supplemented market prices by an average of 60 c/kg clean under its minimum price scheme.

In February 1991 the Board announced the suspension of both its market intervention scheme and its minimum price scheme. These moves occurred immediately after the collapse of the Australian Reserve Price Scheme. Auction prices have since

Table 7: Farmgate Terms of Exchange 1986 to 1991 (base 1976=1000)

Financial year	1986	1987	1988	1989	1990	1991E
Dairy Farms:						
Prices Received	2913	2806	2949	4149	4586	3152
Prices Paid	3492	3715	3944	4110	4416	4455
Ratio	834	755	748	1009	1038	708
% Change		-9.5	-0.9	+34.9	+2.9	-31.8
Sheep and Beef Farms:						
Prices Received	2110	2390	2446	2832	3259	2606
Prices Paid	3629	3905	4194	4265	4303	4368
Ratio	581	612	583	664	757	597
% Change		+5.3	-4.7	+13.8	+14.0	-21.1

Source: MAF (1991, Tables 15 and 24). E = estimates.

stabilised at a level some 10-15 per cent below pre-collapse levels, and for the season as a whole 400 c/kg clean is forecast compared with 614.5 c/kg for the 1989-90 season, a fall of some 35 per cent (MAF 1991, p.35).

4.4 Production, income, expenditure and investment

4.4.1 *Livestock capital*: the total number of livestock units has continued to decrease slowly (Table 8). There has been a decline in sheep numbers of 14 per cent since 1986 but dairy cattle and beef cattle have stabilised over this period (MAF 1991, Table 3). These changes are reflected in slaughter statistics which show a 30 per cent decline in lamb and adult sheep killed while the beef kill has been maintained. In addition milk production levels have fluctuated about a constant level in the period.

4.4.2 *Farm inputs* : both beef and dairy farms have been affected by higher interest rates and up to the 1989-90 season expenditure kept ahead of inflation. Dairy farms had two very good recovery years in 1988-89 and 1989-90 with expenditure levels well above the inflation rate and investment at high levels. On sheep farms there was a modest recovery in use of phosphatic fertiliser though not up to previous levels of per farm use.

4.4.3 *Incomes and investment* : in real terms sheep farm incomes have not returned to 1984-85 levels even though there was a modest recovery through 1987-88 and 1988-89. Real dairy farm incomes exceeded 1984-85 levels in 1989-90 but have since dropped considerably. In the period since 1987-88 there was thus a recovery in capital investment on farms albeit from the very low levels reached in 1987-88 (MAF 1991, Table 10). However the level in 1989-90 was only some 70 per cent in nominal terms (and 53 per cent in real terms) of that reached in 1984-85. This continues to be a major source of concern for policy makers as structures are not maintained properly and future output is jeopardised. Alternatively it could be viewed as a success for the 1985 policy of reducing the agricultural sector to a size more compatible with its relative importance to the economy!

4.4.4 *Prospects* : the data in Table 8 for the 1990-91 season are only estimates at this stage. Present forecasts are for a downturn in farm income of 35 per cent or more. In aggregate terms this could mean a reduction in farm expenditure levels of around 6 per cent and agricultural GDP of 10 per cent in nominal terms (MAF 1991, Table 6). Unless

Table 8: Trends in Pastoral Farming 1988 to 1991

Financial years	1988	1989	1990	1991E
Stock Units(million)	101.8	97.2	97.6	97.5
Livestock Slaughter(m):				
Lamb	30.4	30.3	25.1	27.0
Sheep(other)	7.9	8.8	7.7	8.3
Cattle & calves	3.1	3.2	2.7	2.8
Total Milk Prodn. (m.litres)	7551	7240	7500	7625
Fertiliser per Farm (tonnes, sheep and beef only)	29	35	38	30
Sheep and Beef Farm Incomes($ per farm):				
Gross Income:	126178	128536	138600	121500
Expenditure:				
Fertiliser	9258	10776	11900	9800
R & M	6369	7001	7900	5900
Interest	23862	22379	21600	21300
Other	58202	60100	63700	61400
Net Income	28487	28257	33500	23100
Real(base 1975-76)	6461	6127	6770	4445
Dairy Farm Incomes($ per farm):				
Gross Income	109033	144872	170908	125131
Expenditure	81022	104123	114853	101764
Net Income	28011	40749	56055	23367
Real(base 1975-76)	6350	8826	11326	4497
Investment(all farms)($m):				
Building and Construction	128	132	224	-
Tractors, Vehicles, Machinery	204	256	328	-
Land Development	59	55	83	-

Source: MAF (1991, Tables 3, 10, 12, 18, 19, and 26). E = estimates.

the terms of trade move upwards in the near future a period of disinvestment will set in for the next year or so with further consequences for maintenance of plant and structures and eventually for the level of output and exports.

4.5 Farm asset values and indebtedness

4.5.1 *Land prices* : the previous review established that land prices had been falling from their peak in 1983. In the period under review the aggregate sale price index has again moved upward in nominal terms with an increase of 20 per cent in the 1989 calendar year and 19 per cent in 1990 (MAF 1991, Table 8). The increase has been spread across all farm types with grazing properties rising the most (grazing in New Zealand terms means the larger more extensive sheep and beef properties). These changes represent a considerable revaluation of the average farmer's land asset and hence average equities.

4.5.2 *Asset values* : data are available on average sheep farm balance sheets which show a decline from average total farm capital of $721982 in 1984-85 to $564379 in 1987-88 (MAF 1991, Table 11). Total liabilities stayed remarkably constant at $185000 through these years putting all the pressure on farmer equity. In 1988-89 total capital increased by 15 per cent thus restoring some but not all of the written-off equity. Further improvements in equity are not forecast under present circumstances.

4.5.3 *Liabilities* : the sheep farm situation has been characterised by a definite effort on the part of farmers to reduce their debt load in the face of falling incomes and rising interest rates. Table 9 shows changes in mortgage financing and level of interest payments for the period following the devaluation of the $NZ in 1984.

Only in 1986-87 did reductions exceed increases in mortgage commitments and thus induce a fall in measured average farm liability. At the same time interest rates were rising and thus increasing the cost of servicing. Thus the dynamic situation is that some sheep farmers were still borrowing though at reduced amounts through the post 1985 crisis, while others were paying off debt as much as possible.

4.5.4 *Volume of land sales* : the volume of land sales provides a substitute measure for structural change in the agricultural sector. In New Zealand only farms sold on the open market subject to normal market forces are included in the official index (MAF 1991, Table 8). The low year for turnover was calendar 1986 and since that time turnover has tripled to 1765 market transactions in 1989. In 1990 the number was 1707. Turnover has been particularly active in dairy farms and fattening farms. Land sales and purchases provide an opportunity to write off debt and to re-formulate ambitions and directions. They also involve more borrowing. A low turnover suggests a backing up of needed adjustment processes of this sort and delays to making fresh plans. The pastoral sector went

Table 9: Trends in Liabilities on Sheep Farms

Financial year	Mortgage Reduction	Mortgage Increase	Net Change	Interest Paid
1984-85	$11249	$12264	+$1015	$17736
1985-86	12522	18620	+ 6098	21509
1986-87	12585	10071	- 2514	22619
1987-88	15327	6940	- 8387	23862
1988-89	12570	9035	- 3535	22374

Source: Davison (1991).

through this process in 1986 and 1987 and now seems to have emerged better adjusted to take on what comes next. Future directions in this respect are most uncertain at the time of writing and need to be followed up later.

5. Summary and Conclusions

This review confirms the previous conclusions regarding the government's focus on macro-economic policy. This has not changed with a change of government. When governments adopt monetary and fiscal measures as the main means of regulating the behaviour of the economy, individual sectoral interests are relegated to second place. The New Zealand case reflects this view of policy making. No change in this stance has been detected in the current government's approach.

One positive result of government management reform has been a willingness to pursue structural improvements to the economy that make market channels work better. The agricultural sector is a major beneficiary of this. Port costs have been reduced in New Zealand and further reform in labour markets could bring further savings in transport and processing costs.

Public sector reform has continued to affect agriculture in the area of inspection, extension and science services. Inspection and extension are now on a full cost recovery basis but may be subject to further changes as government control is reduced. Science is in the process of being completely reformed away from government control into Crown Research Institutes. The benefits of this reform are yet to be seen.

There has been a shift in political power in rural New Zealand as local government reform and resource law reform have been enacted. The consolidation of local bodies has removed many positions of influence on the old county councils and the new rateable area arrangements give urban voters a majority in most cases.

Price intervention by the producer boards has disappeared. The old arrangements for Reserve Bank credit at low interest rates have been abolished by legislation. Difficulties in the wool industry have brought about the end of market intervention and price support by the Wool Board. There are now no collective arrangements for risk management in the pastoral products area.

There have been no developments in the farm adjustment area. Adverse climatic event procedures have been reviewed with the objective of making individuals more responsible for their actions but a comprehensive policy for farm adjustment outside the disaster framework has not found favour with either government.

Central government has had to intervene on an active basis in the area of pest management. Both rabbits and possums pose threats to animal production in New Zealand and large investments by the state, the regional councils, and ratepayers are going to be required.

After the policy induced depression of 1986 and 1987 the agricultural sector staged a mild recovery in 1988 and 1989. World commodity prices recovered sufficiently to shift the terms of exchange for both sheep and dairy farmers by 28-35 per cent with consequent improvements in income. Investment recovered moderately. However the prospects for 1991 are rather bleak as far as commodity prices go and some time might elapse before the cycle builds up again.

In this period land prices recovered also by a moderate amount with consequent improvements in farm equities. Increased volumes of sales also permitted more private adjustment of debt and consolidation of holdings. Indeed it might be remarked that private adjustment probably achieved more needed changes in the agricultural sector in New Zealand that did government help and intervention.

This review has demonstrated the continued story of government's disengagement from the agricultural sector in New Zealand. The process has seen a marked transfer of the risks of farming from the government and producer organisations to agribusiness and the individual. New mechanisms appear to be slow to develop. There is no rush to fill the gap. Is it possible that theory is wrong on this one and the old mechanisms were not needed anyway, or at least have outlived their usefulness?

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