Farm Subsidy Reform Dividends

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INTRODUCTION

A great deal has been written on the subject of "Farming without Subsidies" in New Zealand (NZ). This chapter draws heavily on that work, particularly Evans et al.; Federated Farmers; Gould; Johnson and Forbes; Lattimore; Meat and Wool NZ; Rayner and Lattimore; Morrison, Johnson, and Frengley; Sandry and Reynolds; Silverstone, Bollard, and Lattimore; and Vitalis. Dalziel and Lattimore has a comprehensive bibliography of the business, economics, sociology, and political science literature on the subject.

Twenty years later, the results of the farm subsidy reforms are clear. Sufficient time has passed for technological improvements to be generated and adopted. The macroeconomic climate is much more stable than it was in the 1980s. It is now possible to confirm that there is a dividend payable from subsidy reform. Johnson and Forbes estimate that the rate of total factor productivity growth more than doubled from 0.7 percent over the high subsidy period, 1972-84, to 1.9 percent thereafter. Real farm incomes have now recovered and in some cases are significantly higher than they were during the period of high subsidies. Likewise, real (inflation adjusted) farmland prices are higher than they were under the high subsidy regime.

Nevertheless, in 2006, there are a number of cyclical problems facing NZ farmers. Incomes are down in many sectors, some key costs are rising rapidly, the exchange rate was ten to 15 percent overvalued in

[1] Rebecca Harald and Kay Cao of the NZ Ministry of Agriculture greatly assisted with data retrieval. The chapter benefited from comments from Gary Hawke, Vangelis Vitalis, Peter Gardiner, and Robin Johnson with the usual disclaimer.

2004/2005, new bureaucratic procedures abound, and what subsidies government does grant are much more likely to go to film makers, sports events, or yachtsmen than they are to farmers – yet aside from the usual antigovernment chatter at stock sales, there is no groundswell to push for renewed subsidies.

The reason for this is that New Zealand farmers now know that business life without major subsidies anywhere in the private sector is not perfect but it is "as good as it gets." Importantly, there is also now a more systematic policy framework in place to deal with the new issues that will inevitably rise. Perhaps the key element stimulating this view is the freer market environment that farmers face. New Zealand farmers now operate in an environment where they are closer to world market prices and costs than they have been for many decades. Those world market prices are, of course, highly distorted by foreign agricultural policy interventions but even given that, New Zealand farmers can make their own judgments about where to invest and where to disinvest. They face market risks on outputs and inputs including attendant foreign political risks, but they haven't faced large domestic political risks for 15 years. In other words, New Zealand farmers now operate in the same sort of general economic environment as North American farmers but without having to submit much farm policy control to the state. This increased economic freedom is obviously important to farm efficiency in New Zealand even though it is difficult to quantify.

In this more market-oriented environment, New Zealand farmers have expanded output rapidly based on accelerating productivity trends and associated higher incomes. As this chapter will show, their contribution to the performance of the national economy has increased as agricultural productivity has grown more rapidly than outside of agriculture in recent years. For example, there are only half the number of breeding ewes there used to be, but the quantity of lamb produced is roughly the same. Productivity improvements across the whole farming industry have led to record high farmland prices as farmers compete for resources for their investment plans. Their living standards exceed those of many highly subsidized farmers in other countries. It has been a painful process for some farmers getting to this point and a few colleagues have been lost along the way. However, they don't want to go back.

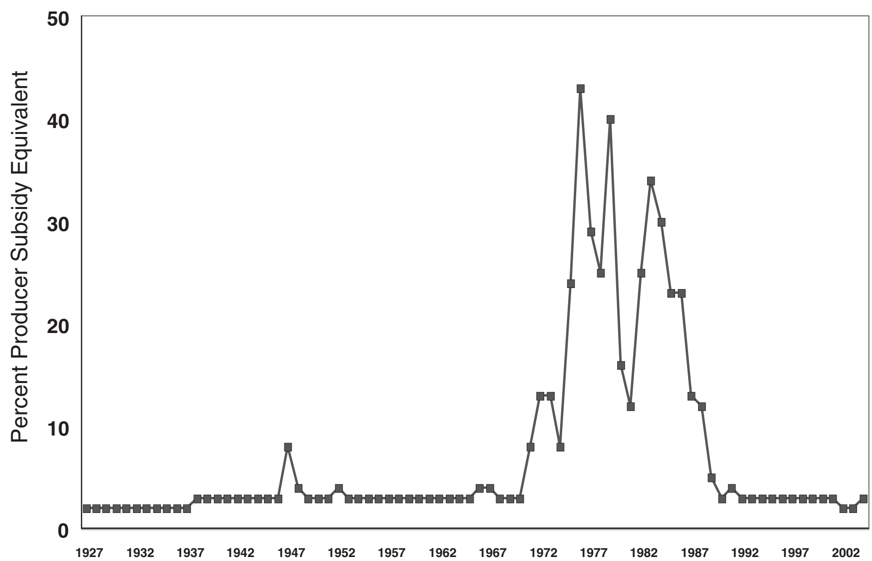
How did these subsidies arise in the first place? The New Zealand farm sector was initially granted some subsidies on inputs from the later part of the 19th century – but they were very low in producer subsidy equivalent (PSE) terms. This was done in an attempt to offset the extra costs on farming resulting from tariffs on imports of farm inputs. This "import substitution policy with farm subsidy compensation" was ramped up significantly in 1938 under the first Labor Government. An import selection policy was introduced at that time which prohibited imports of competing goods, as was occurring in many other countries. Subsidies to farmers were not high initially with the Producer Subsidy Equivalent less than five percent but overall economic growth suffered as a result.

There was a major attempt to rebalance this industry policy set in the late 1960s.[2] Initially, new export subsidies were provided for nontraditional exports in attempts to diversify the economy in the face of British entry to the European Economic Community (EEC). In the early 1970s farm subsidies on inputs gradually started to rise to counteract the negative economic impacts of British entry and increased oil prices. In the late 1970s, large farm output subsidies were added for selected goods, especially for sheepmeat and wool. The PSE in the sheep industry rose to around 45 percent in the early 1980s – on a par with EU and North American levels (figure 6.1).

Output subsidies, mainly in the form of deficiency payments, constituted the highest share of total agricultural assistance over the period 1972-84. The output subsidies tended to vary inversely with world prices so that in any particular year, the major commodities received different proportions of input and output subsidies. Table 6.1 presents the subsidy shares for

[2] There was a previous attempt, in the early 1950s, which was aborted (Rayner and Lattimore).

Figure 6.1: New Zealand farm subsidies.



Source: author estimates.

Table 6.1: New Zealand farm subsidies (PSE) by commodity, 1984.

Type of subsidy	Sheepmeat	Wool	Beef	Dairy
Output subsidies (%)	88	43	13	15
Input subsidies (%)	12	57	87	85
PSE (%)	90	19	13	13

1984. It needs to be noted that, like highly subsidized farm sectors in other countries, smaller farm subsectors (like horticulture, most other crops and pigs) received very few subsidies relative to the larger subsectors (sheep, beef, and dairying).

Farm subsidy reform in New Zealand is a very special case in the following sense. Prior to 1984, there were severe distortions in financial markets and an associated overvalued exchange rate and high inflation. So, in addition to removing farm subsidies and reducing import protection, the economic reform package involved radical financial deregulation – a floating exchange rate and the removal of interest rate controls. Accordingly, farm interest rates rose to around 25 percent (from 11 percent or less) just as subsidies disappeared. The resulting extra farm costs added considerably to farm financial stress – lowering net farm incomes and farmland prices much more than the simple removal of farm subsidies would have done.

In the next section the discussion turns to why New Zealand farm subsidies were initially raised so high, why and how they were quickly removed after 1984, and what have been the resulting effects on the NZ farm sector.

NZ AGRICULTURAL POLICY REFORMS

Pressures for Reform

The problems that led to the complete removal of agricultural subsidies had their origins in the aftermath of World War Two. Unlike most OECD countries, New Zealand continued the isolationist economic policy that had been introduced during the Great Depression. It extended wartime-like price control systems and added additional monopoly marketing boards in the late 1940s. There was no political mandate for change – growth boomed as a result of high commodity prices and the joke was told that all the unemployed were known to the Minister of Labor on a first-name basis. Around the early 1950s, New Zealand had the third highest per capita income in the world.

In this environment, industries were responding to distorted trends in world market signals and the import selection policy tended to stifle the incentive to import best practice technology, especially in manufacturing and in the service sector. The farm sector was caught in a major policy-induced cost-price squeeze – farm export prices were too low and costs were too high in New Zealand dollar terms.

With this badly structured economy, New Zealand slipped to around 24th place in the world per capita income rankings over the next 30 years (Gould). Britain's entry to the EEC hit New Zealand hard as did the first two oil shocks – harder than they needed to, because the interventions had distorted world market signals and industries responded too slowly in the right direction.

By 1984, there were also severe macroeconomic imbalances. High levels of government foreign borrowing had resulted in credit rating downgrades and attempts were being made to offset the large twin deficits with price, wage, and interest rate controls. The rate of economic growth was poor and underlying inflation was still around 20 percent per year.

Within agriculture, high sheep subsidies had led to nonsaleable surpluses of sheepmeat, farm development on very marginal land, food quality problems arising from import controls, and concern over the lack of agricultural diversification and the lack of product development for both the domestic and export markets. The US government added its stimulus by complaining about New Zealand agricultural subsidies and threatening countervailing action on exports.

There were some moves to correct policy imbalances in agriculture even as farm subsidies were being raised. For example, there were moves from the late 1970s to the early 1980s to deregulate controls on the meat processing industry and the wheat industry. However, while there is no clear date when farm subsidy removal started, the rate of removal was accelerated from 1984. It was also announced before the 1984 election that the large output subsidies would have to be removed.

However, for all this, the real stimulus for economic reform and subsidy removal was the existence of a foreign exchange crisis in 1984 just prior to the election (Rayner). The incumbents lost the election and the fourth Labor Government won in a landslide. The economic crisis led to the appointment of Sir Roger Douglas as Minister of Finance with equally market-oriented deputies in key associated portfolios.[3] Sir Roger was given a very free hand for nearly four years to initiate economywide reforms. Furthermore, it is not surprising that a Labor Government should begin reforms with a strong emphasis on removing farm subsidies because the rural community was not a key supporter of the Labor Party.

[3] Prior to the election, Douglas had not received unequivocal support within his Party for his pro-market ideas but the crisis was sufficiently grave to consolidate support for his appointment to the finance ministry (Rayner).

Overcoming Resistance

As just outlined, the high farm subsidies in New Zealand were partial compensation for the import selection policy and attendant policy interventions. After thirty years of policy analysis, the interconnected nature of the policy problem was well understood – import selection raised farm costs and farm subsidies partially compensated by lowering some costs and raising some farm revenues. In the late 1960s, the major farmer organization had initially agreed to, and then withdrawn support for, a freer import regime. They were content to continue receiving offsetting subsidies, at least on inputs. Farmers knew that the compensation was only partial – subsidies were a poisoned chalice.

With this background, the government was able to structure a set of reforms in 1984 that often provided prospective benefits to farmers in the form of lower costs at the same time as they withdrew farm revenue subsidies. The farmers union (Federated Farmers of New Zealand) strongly supported the two-sided deal, just as they had in 1968, but this time they did not renege.

The government promise of freer imports in return for farm subsidy elimination had more credibility in 1984 because moves had been underway for some years to reduce import protection. Perhaps the most important catalyst was the signing of the free trade agreement with Australia in 1983. This Australia New Zealand Closer Economic Relations Trade Agreement (ANZCERTA) includes all food and agricultural products[4] and a joint food standards authority to prevent nontariff barriers arising. This agreement resulted in the tendering of increasing quantities of bilateral import licenses across a broad range of products, and the eventual removal of these quotas. Farmers could be more confident this time that the economic reforms would go to the core of the problem.

Douglas would use this strategy of "take and give" repeatedly – with great political effect. For example, it was announced that a consumption tax (goods and services tax or GST) would be introduced and that income taxes would be reduced at the same time. There was hardly any resistance to the introduction of the new tax and, in contrast to other countries, no exemptions to GST had to be made to gain acceptance.

The government was also astute in not dismantling agricultural marketing boards in the early stages of the reforms. These boards, particularly the Dairy Board, were held in high regard by many farmers because they had been around for a long time, were cooperative in nature, and appeared

[4] A notable feature of the ANZCERTA agreement is the way a food standards arrangement embedded in the agreement can be manipulated to exclude a politically important product to Australia, namely, apples. Australia has been able to continue refusing to import NZ apples since 1983 and the disagreement seems, finally, headed to the WTO disputes tribunal.

to act as political and economic safety nets. The boards were retained (in fact, a new one was added for kiwifruit) in spite of the strong suspicion in analytical circles that the boards implicitly hindered product and market development rather than aided it (i.e., that they were export taxes rather than export subsidies).

The government also took a number of actions to assist farmers in small but important ways. A subsidy was introduced to assist in pulling out unprofitable varieties of wine grapes. In addition, the government subsidized a farm finance appraisal program to assist farmers (and banks) faced with difficult financing questions in the face of some dramatic declines in farm viability. Drought relief packages were readily agreed to, government shares in agricultural infrastructure (like irrigation schemes) were sold to farm groups at discounted prices and a government fund of past fertilizer import profits was handed over to farmer control for R&D purposes. None of these measures were costly but they began to breed a culture of farmer control using their own funds based on the Douglas principle of shifting risk to firms in the best place to manage it (i.e., circumventing government failure).

The economic reform program captured a great deal of political and popular press after 1984 because it was so extensive. Some attention was drawn away from the associated adjustment costs by the introduction of nuclear-free legislation and the high profile breakup of the Australia-New Zealand-United States joint defense arrangement. This was led by the Prime Minister, David Lange, who supported the Finance Minister politically in many ways, over the period of radical reform.

Compensation Arrangements

In the context of current international discussions regarding the fate of small farmers when (if) farm subsidies are reduced, it is perhaps helpful to understand that New Zealand agricultural policy has always made a fairly clear distinction between commercially viable farm units and farms that do not provide a significant proportion of household income. The latter are called “hobby farms” or “lifestyle blocks” even though in the aggregate, they produce a sizeable proportion of farm output. In New Zealand, most commercial farmers are full-time working owners and very little private farmland is rented. Compensation payments were limited to full-time working farmers.

Compensation for policy changes was quite modest in the New Zealand case. This was aided by the fact that private banks had a natural inclination not to bankrupt too many clients – their balance sheets were heavily skewed towards farm debt and the market for farmland was softening very quickly in the face of very high interest rates.

As already noted, the government assisted Federated Farmers with farm finance appraisals and individual farmer negotiations with banks. The government-owned Rural Bank made interest and principal concessions to selected borrowers based on the likelihood of the farm returning to profitability in the future. After the Rural Bank was sold to the private sector, the government replaced these concessions with some interest rate subsidies on private loans. The Rural Bank also assisted with seasonal finance in the tight financial market around 1986. Social welfare assistance, not usually available to the self-employed, was made available to very low-income farmers to underpin basic living expenses for a few years.

Where a commercial farmer appeared to have no hope of recovering financial viability, an exit package was provided by the government. It comprised a grant of the family car and household furniture plus a cash grant that constituted a reasonable deposit on a house in town. Surprisingly, few such packages were required. As well, redundant farm employees were able to use standard relocation subsidies provided by the central government to move to new jobs.

Immediate Impacts

The output subsidy removal impacted most acutely in 1986. Sheepmeat and wool prices fell dramatically (figure 6.2) as a result of the withdrawal of output subsidies. Input prices rose where input subsidies were withdrawn (particularly for fertilizer and credit). In that year, the real incomes of sheep and beef farmers (those with the highest output subsidies) fell 60 percent from the previous year. Dairy farmer incomes fell by 25 percent mainly as a result of rising debt servicing costs and the removal of fertilizer subsidies.

Farmland prices had been falling in real terms since 1982. In 1985, they were 30 percent lower than the peak and 50 to 65 percent lower by the time they bottomed out in 1987.[5] It is estimated that over the period 1985-89, around five percent of commercial farmers were declared bankrupt or simply left the farm.

Farm families survived the crisis by cutting costs, increasing revenue (including off-farm employment), and restructuring farm debt using the facilities created by the government. Fertilizer use dropped nearly 50 percent over the period 1985-87 without a major drop in productivity. This is possible in New Zealand because the main fertilizer is phosphate and on many soils it has a strong residual effect. Repairs and maintenance and machinery and equipment purchases were postponed. Farm employees

[5] Farmland prices were 50 percent lower for dairy farmers and 65 percent lower for sheep and beef farms.

were laid off resulting in the greater use of family labor and the adoption of additional labor-saving practices.

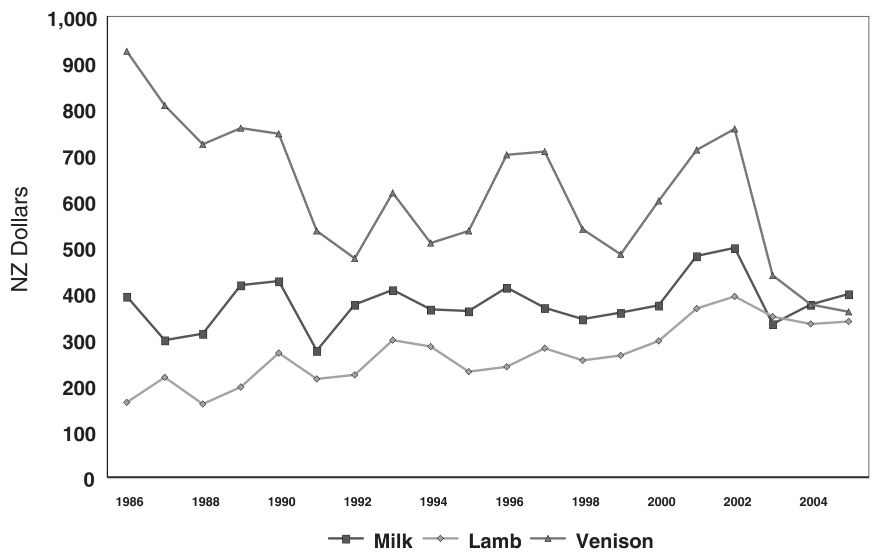
Farmers and their wives took part-time work off the farm and diversified farm enterprises where they could – given the financial constraints. "Farm Stay" accommodation blossomed at this time as farmers moved out of sheep into a wide range of other farm enterprises – farm forestry, deer, dairying, goats, wine grapes, kiwifruit, and rural tourism. Large areas of marginal land were taken out of production and some land was sold for lifestyle blocks or leased to outside investors for forestry and other enterprises.[6] Two booming sectors at the time were plantation forestry and wine (figure 6.3).

Did Retail Food Prices Fall?

The farm output subsidies in the exportable sectors of agriculture took the form of deficiency payments (Supplementary Minimum Prices). Accordingly, their introduction did not affect market prices for agricultural products in wholesale and retail markets. However, dairy products, meat, and some other food prices were also protected by import

[6] It has been interesting in more recent years to see some lifestyle blocks being bought back by commercial farmers as farm profitability recovered in the 1990s.

Figure 6.2: Real commodity prices in New Zealand.



Source: New Zealand Ministry of Agriculture and Forestry.

licensing and tariffs for a period. The removal of these import restrictions led to some retail price reductions and increasing consumer choice. To the extent that food processing firms in these sectors had monopoly power in New Zealand, prices would only have fallen to import parity rather than export parity, but this is not a large differential in the absence of nontariff barriers.

A number of New Zealand agricultural products, however, are import substitutes. Wheat and eggs are two such examples. In both cases, production and pricing before 1984 (actually 1981 in the case of wheat) were highly controlled by marketing boards with extensive powers to promote self-sufficiency. Both industries were completely deregulated and commodity prices fell (figure 6.4). This had noticeable effects on the retail price of eggs. It probably also reduced bread and flour prices though it would have been masked by the high value-added beyond the farm gate for these products.

The liberalization of imports had very noticeable effects on the variety of foods available in supermarkets. Prior to this time, margarine had only been available in New Zealand with a doctor's prescription! The varieties of dairy products, meat, fruits, vegetables, and many other food products expanded a great deal after the 1980s.

Sector Profile, Then and Now

We expect economic development processes to gradually involve a shift of resources from the primary sector to manufacturing and finally to the service sector. This path has been followed in New Zealand but in a somewhat different fashion for two reasons. First, the relative strength of New Zealand's comparative advantage in agriculture is greater than for most other developed countries. Secondly, the import substitution bias of policy in New Zealand was greater over the post-World War Two period than it was in any other developed country.

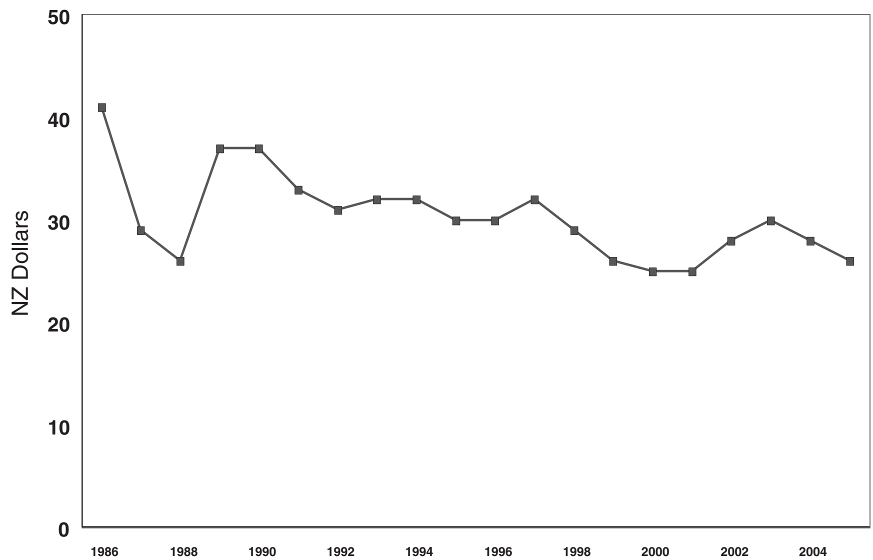
In this context it is interesting to look at agriculture's share of GDP and agriculture's share of exports. In 1966, agriculture's share of GDP was 13.9 percent. It fell monotonically to 5.7 percent in 1987 when economic reforms were being enacted. Since then, agriculture's share has risen. In 2002, it was 7.6 percent of total GDP from farming alone. These shares are confined to value-added on farms only, and do not include major contributions to GDP from the food processing sector and other industries strongly allied to farming.

In 1960, agricultural exports represented over 90 percent of total exports. This figure fell to just over 60 percent by 1986. This decline reflected the

Figure 6.3: Real wine and timber prices in New Zealand.

Source: New Zealand Ministry of Agriculture and Forestry.

Figure 6.4: Real wheat prices.



Source: New Zealand Ministry of Agriculture and Forestry.

sectoral diversification expected as a result of the development process and the bias against agriculture in industry policy. Following the removal of farm subsidies, agriculture's export share has continued to fall but at a much reduced pace – in 2005 it was fairly stable at around 55 percent of total merchandise exports. In addition, the proportion of value-added exports has significantly increased.

The number of commercial farms grew following the removal of subsidies, from 77,000 in 1984 to around 80,000 during 1986-93. Over this period, pastoral farms got larger while many farms that diversified into deer and horticulture got smaller. There are currently around 66,000 commercial farms, in part, as a result of amalgamations of farm units in the expanded dairy industry.[7]

The size of the farm labor force trended downwards to around 109,000 full-time equivalent workers (FTEs) and working owners in the early 1970s. Increasing farm subsidies resulted in an expanding agricultural labor force, peaking in 1983 at 127,000 FTEs. It has since declined to around 102,000 FTEs in 2004. Over the period since 1984, labor productivity has risen by around 85 percent. This is one of the best indicators of changes in farmers' incomes since subsidies were removed, as more than one-half the farm labor force is made up of working owners.

The land devoted to livestock and arable farming has declined from 14 million hectares in 1984 to around 12 million hectares in 2003. At the same time, livestock (overwintered) on this land has been reduced from around 110 million stock units to 100 million stock units – but they are much more productive animals. The productivity of breeding ewes has risen over 60 percent since 1991 (in terms of kilograms of lamb produced per breeding ewe) while the quantity of milksolids produced per dairy cow has risen over 20 percent. Land devoted to horticulture has risen from 87,000 hectares in 1984 to 121,000 hectares in 2003 while the area of plantation forests on farms rose by around 350,000 hectares after 1984.

The quality of food products improved in some areas as a direct result of the reforms. One example is the case of wheat. Prior to 1981, New Zealand pursued a self-sufficiency policy in wheat, with import quotas supporting a domestic price set by fiat. Each year, farmers were offered a basic price for wheat delivered to the nearest train (ensuring that wheat was not grown in the most productive regions).

Quality differentials tended to reflect the ease with which the various types of wheat could be grown and less to do with consumer preferences. Furthermore, wheat farmers were able to influence wheat breeding research ensuring that new varieties were developed to suit growing

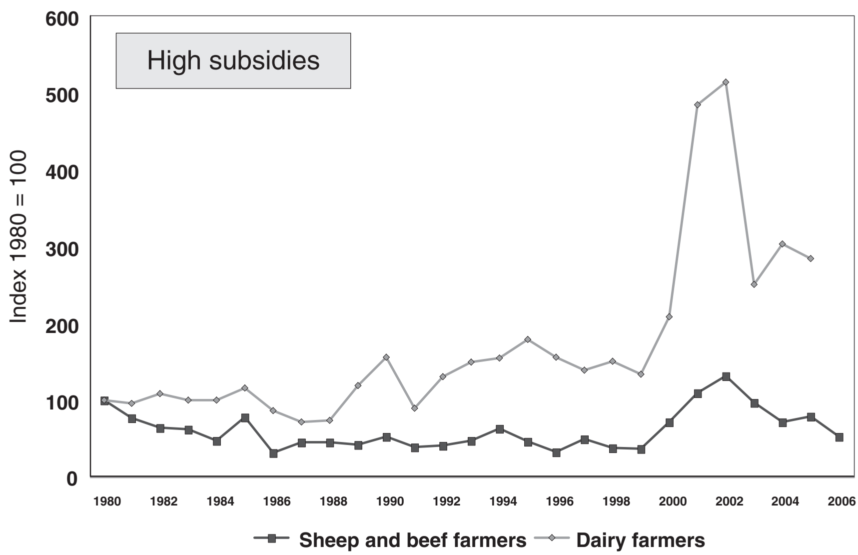
[7] Farm numbers also reduced as a result of changing statistical definitions.

conditions, rather than millers, bakers, and consumers. The result was that most of the wheat grown in New Zealand had low baking scores by world standards and this was reflected in bread quality. The deregulation of the wheat industry resulted in some reduction in New Zealand's level of self-sufficiency but an increase in the quality of wheat grown.

Dairy farmer incomes started to recover from 1988 and the improvement accelerated after 1991. Sheep and beef farmer incomes improved more slowly from 1987 (figure 6.5). Both farm types received a setback during the Asian Crisis as this region contains a very important set of farm markets for New Zealand. More recently, there have been some spectacular rises (and falls) in farmer incomes. The large rise in 2001 for dairying triggered more major conversions of sheep farms to dairy farms.

Farmland prices bottomed out in 1988 (figure 6.6), and immediately began to recover. Again the recovery was slowest for sheep farmland prices but this is not surprising given the relative trend in sheep and beef farmer incomes and the fact that many sheep farms are on the extensive margin of the agricultural sector. Around 1996 there was some speculative activity in dairy and arable farmland. This activity was sufficient to attract the attention of the central bank governor and the ensuing interest rate hikes resulted in some of those gains being lost. The falls in dairy farmland prices after 1997 are also partly the result of lower export prices around

Figure 6.5: New Zealand farmers' real incomes.



Source: author estimates based on Dexcel data.

the time of the Asian Crisis. The upward trends in farmland prices resumed starting in 2001.

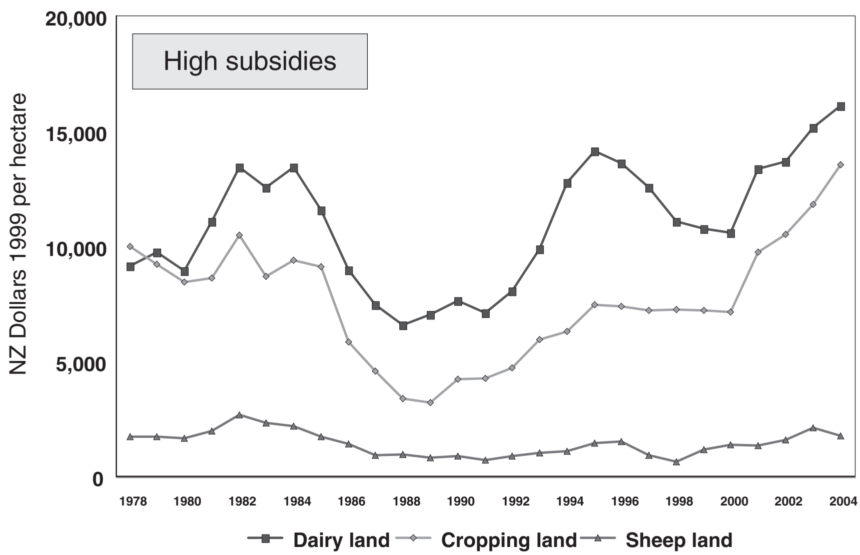
Avoiding New Income Support

The economic reforms set out to create a "level playing field" for all industries including agriculture (with minor exceptions still under discussion like textiles and apparel) and adopting a "market led approach". This was achieved by about 1997. At the same time governments have reformed monetary, taxation, competition, and fiscal policy to ensure they are more transparent and more goal-focused. With the removal of exchange rate distortions and virtually all import protection, there is now a new culture developing that sees no need to treat the business of farming any differently from any other business.[8] Accordingly, pleas for special treatment are now more likely to be subjected to objective efficiency and equity tests than was previously the case. It is a harder filter to penetrate, and discourages industry groups from trying.

New Zealand governments, like all governments, are always on the lookout for a worthy infant industry. However, the record of past poor public investments in "think big" projects and "picking winners" is still

[8] In economic terms, the foreign exchange restraint has been removed.

Figure 6.6: Real farmland values in New Zealand.



Source: author estimates based on Meat and Wool NZ data.

remembered (though the memory is probably decaying). The government over the last 15 years has redirected its fiscal efforts towards improvements in infrastructure including education and research. In agriculture, these efforts are most apparent in biotechnology research, telecommunications accessibility, international market support, international relations, occupational safety, environmental policy, training, and competition policy.

Until recently, governments have been constrained by the high fiscal costs associated with the major fallout from the economic reforms – unemployment. During the reform period 1984-91, unemployment rose from four percent to 11 percent (the level it peaked at during the Great Depression). It has taken nearly 15 years to get unemployment rates back to below four percent and at high cost in terms of education, mentoring, and training subsidies. A second fiscal constraint is that GDP per capita is significantly lower than that of the countries New Zealand emulates in health, education, and welfare standards. This puts considerable strain on government budgets and makes it difficult to gain priority for industry assistance unless it is seen to have generic or eye-catching appeal.

Finally, there is the need for growth. New Zealand cannot afford to have too many resources, in important sectors, misallocated by distorting policy interventions. If resources cannot earn a profitable return at world market prices, they must be encouraged to move. The failures of farm subsidies and import selection in this regard are reminders of impediments to growth.

Impacts on Agribusiness

The agribusiness sector was generally liberated by the broad ranging economic reforms, and for the same sorts of reasons farmers have come to appreciate (Sandrey and Reynolds p. 233). Business had been hampered by the repressed financial sector and policy uncertainty generally. They welcomed the macroeconomic stability, more neutral taxation system, and the freedom to import.

Business also benefited from labor market deregulation at the end of the reform period but the deregulation of the meat processing industry meant increased wage flexibility in that large food processing industry even before the reforms had started.

Inflation and fiscal control that gradually took hold in the 1990s created greater certainty for business. The new environment has, however, brought a new challenge in the form of fluctuating real exchange rates under the floating exchange rate regime. Farmers and agribusiness got a taste of this problem in the late 1980s when the floating rate began to appreciate just at the time subsidies were being removed.

Competition policy has had both positive and negative effects. It has provided more cover for smaller agribusiness firms but, at times, it has hampered the merger expansion plans of large firms. Large New Zealand agribusiness firms are not large by world standards and some view competition policy constraints as barriers to increasing international competitiveness. The case of the formation of the dairy cooperative, Fonterra, is illustrative. When government allowed Fonterra to be formed by merging two very large cooperatives, it required an exemption from competition law. This was granted but subject to quite restrictive behavioral constraints in New Zealand to try to prevent monopsonistic actions in the raw milk market. Given that Fonterra is only about the fourteenth largest dairy company in the world, in a country with one of the strongest comparative advantages in dairying, some view competition law as unduly restrictive.

The changing composition of farm output and general market deregulation (in wheat, for example) opened the way for significant change in agribusiness. Farmer cooperatives bought out the last remaining multinational meat processing companies in New Zealand. There were many mergers and new entrants in the bakery and cereal industry, wineries, forestry, beverages, dairy products, agricultural research, banking, the farm input supply industry, and in fertilizers. Competition policy ensured that competitiveness was not reduced, and in many instances, markets involving agribusiness firms have become more competitive.

Lessons from Providing Compensation

The compensation offered to farmers was provided in a timely and credible fashion, involving, as it did, a partnership with Federated Farmers. To the extent possible, farm subsidies were only continued (e.g., interest writeoffs and holidays) in cases where the farm was thought to be viable at world market prices. To this extent it was efficient in not blocking the transfer of valuable resources within the agricultural sector or between agriculture and other sectors. Where this criteria could not be met, exit grants which quickly freed up resources, also appear to have been efficient. No compensation was offered for the loss of quota rents (with the minor exception of tobacco).

It is always more difficult to assess the equity aspects of compensation packages in farming because farmers have traditionally been amongst the wealthiest individuals in New Zealand society. The exit package does not appear extravagant in this context. It might also be viewed as sufficient given that many of the farmers who found themselves with negative equity probably would have had to leave farming even if the subsidies had remained – the reforms merely accelerated the process. This latter argument, however, is implicitly using the relative wealth position of the nonfarming community as the comparison for horizontal equity. If one uses the relative wealth of farmers who survived the subsidy removals as the comparison, it is easy to come to quite a different conclusion. Farmer-banker negotiations led to banks making decisions on who would survive and who would not. Both groups often had negative equity at realistic market prices. The judgment must have involved strong subjective elements and the wealth outcomes today are quite different. Farmers who survived the bank negotiation have current wealth levels measured in the millions, whereas the farmers who exited have a fraction of that wealth level.

The adequacy of farmer compensation in the New Zealand case also needs to be judged in the context of the economic reforms. The reforms were a response to a crisis and while the compensation was offered in a timely fashion, the programs were put together hastily and developed as extensions of existing social welfare programs with their traditional levels of support. That, of course, may be the most equitable basis upon which to design farmer compensation.

Winners and Losers – How Well Were They Predicted?

The winners in agriculture from the economic reforms are those farmers (the majority) who withstood the short-term adjustment costs and stayed in farming long enough for farm incomes and farmland prices to recover. They won in large part because they developed and adopted new technology to boost farm productivity. This is best indicated by the acceleration in total factor productivity (TFP) illustrated in figure 6.7. TFP is the ratio of value-added in farming to an index of primary factor inputs. Here the primary factors for New Zealand farming are land, labor, farm machinery and equipment, the stock of female breeding animals, and the stock of fertilizer (the historic three-year moving average of fertilizer applied).

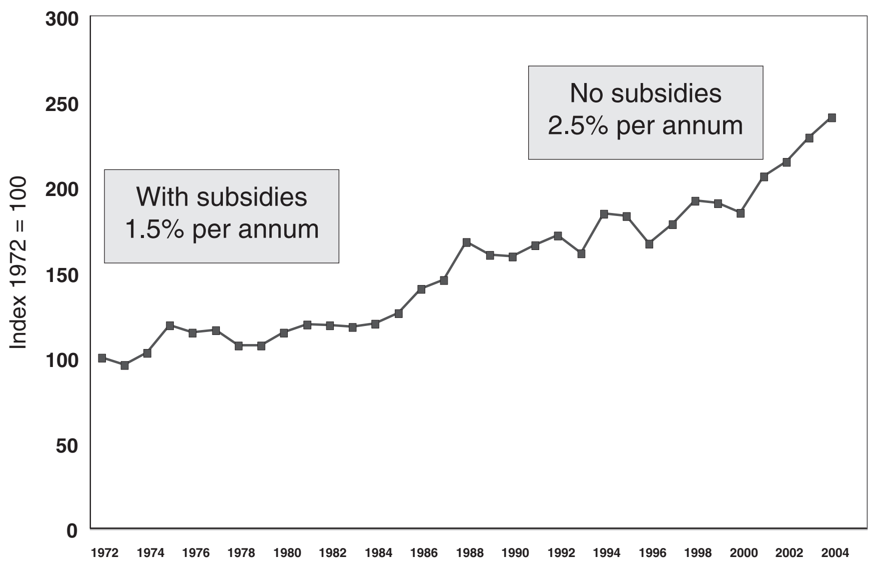
As shown in the figure, there appears to have been almost a doubling of TFP from the highly subsidized period, 1972-84, to the unsubsidized period thereafter. Some perspective on these TFP growth rates may be gained by considering that at a TFP growth rate of 1.5 percent per annum, it would take nearly two generations to double a farmer's income but at 2.5 percent, it would only take one generation.

The losers were those farmers who left or were forced out of the industry while farmland prices remained low. There were some farmer suicides and there was a high incidence of personal and social anxiety in rural areas. Farm employees who were laid off had to find alternative employment, often in other regions.

Government overestimated the number of farms that would be declared bankrupt or otherwise forced off their farms. During the reforms, the government forecast that around 20 percent of farmers would lose their farms. However, only about one percent of farmers took exit packages and about five percent of farmers left the land over the period 1985-89. These numbers are not significantly greater than the normal rate of farm bankruptcies.

Outside the farm sector, workers with lower skills bore the brunt of the adjustment costs emanating from the economic reforms. Some ethnic minorities were heavily represented in this group: as groups they were also in the process of undergoing structural social changes. It took more than 15 years for the labor market performance indicators of these groups to normalize.

Figure 6.7: New Zealand total factor productivity rates.



Source: author estimates.

CASE STUDY: THE NZ DAIRY INDUSTRY

Institutional Structure

Changes in the New Zealand dairy industry provide one example of the changes in market orientation that resulted from the reforms. Prior to 1984, the industry was controlled by a statutory marketing board with monopoly export rights. In addition, the Dairy Board administered New Zealand's bilateral dairy quotas. The industry was also protected by import restrictions on dairy products under the import selection regime. Some dairy farmer inputs (credit and fertilizer, for example) were subsidized and deficiency payments on output were provided for a short period after 1978. As mentioned earlier, the subsidies were removed quickly after 1984 but the Dairy Board structure remained until 2001. Throughout the 1990s there were large scale amalgamations of dairy cooperatives in anticipation of the removal of the Board. In 2001, only four companies remained – two very large companies and two small companies.

In that year, the government agreed to allow the two large companies to form a single cooperative – Fonterra. The Dairy Board was abolished and the bilateral trade quotas it administered were given to the three cooperative dairy companies. Westland and Tatua sold their shares in the quotas to Fonterra. In 2006, under accusations by the EU and other trading partners that Fonterra was a State Trading Enterprise, the New Zealand government agreed to phase out the company's trade quotas and institute a new allocation mechanism (yet to be decided).

In agreeing to the formation of the monopsonistic company, the government imposed a set of restraints on Fonterra in the domestic market for raw milk. Under those regulations, Fonterra is obliged to sell reasonable quantities of raw milk to competing dairy companies at cost. This was done in order to offset the market power of the company domestically.

Competitive Position

A number of new private dairy processing companies have been established since 2001, gaining a foothold by using the regulations. There has also been some threat of shareholder movement (and actual movement) to and away from Fonterra.

The industry appears to have adapted to the new structure with little difficulty. Companies are free to compete in the export market, save in the areas where New Zealand's bilateral quotas apply. Tatua dairy cooperative is a specialist producer of industrial and pharmaceutical ingredients from milk while Westland has a product range more similar to Fonterra. The new dairy companies tend to be aiming at special cheese markets at home and abroad.

There are no major competition issues in New Zealand at present and the regulations appear to be robust enough to deal with future eventualities. Furthermore, the dairy companies are in the process of cooperating on some research and development programs of common interest.

Growth Opportunities

There are growth opportunities for the smaller companies to attract dairy farmer shareholders away from Fonterra and to explore domestic and international market developments. Given that export market opportunities will likely be greatest in emerging markets like China and India (where NZ has no import quota rights), these companies will only be disadvantaged by the high cost of establishing market beach-heads. Fonterra has the size and existing market linkages to expand in these new markets but it is vulnerable to smaller companies picking off suppliers at home.

If Michael Porter is right about the existence of external economies in world markets, the New Zealand economy will benefit from this competition at home. On the other hand, if Schumpeter is right, New Zealand might still gain if the size distribution of the dairy companies doesn't change too much.[9]

On questions regarding the future of dairying, I'd like to quote a much wiser person. Chou En-Lai is reputed to have once said that "It is still too soon to tell what lessons can be learnt from the French Revolution." That seems to be a very reasonable position to take here too. More seriously, given the current world market prospects, dairying is one of the most competitive industries in New Zealand. Furthermore it has grown in competitiveness in recent years, bidding significant resources away from other sectors of the economy. If the market (international protectionism) changes and/or the rate of technological progress weakens then the dairy industry will shrink. If the opposite occurs (and the industry is working hard on that) the dairy industry will increase value-added but grow little in terms of milk output – that's what farming without subsidies is designed to effect.

[9] Schumpeter argued that one advantage of monopolies is their ability to finance research and development from economic rents.

FINAL COMMENTS

There are a number of important lessons that can be drawn out of the New Zealand experience with subsidies.

The first lesson is that, if it is imperative to subsidize farmers, the best policy instrument is an income grant or a deficiency payment – policies that do not give control of market demand to farm organizations. Protection from imports is the worst policy response because consumer welfare is lost in terms of higher prices and in terms of lower product quality and selection. Trade policies steer the sector in the wrong direction in product and market development terms and they impede the entry of international best-practice technology.

The second lesson is that the removal of subsidies does not necessarily mean a large drop in farmland prices, unless agricultural reforms are carried out in the midst of severe monetary tightening (as in New Zealand). In the New Zealand case, sheep and beef farmers had a PSE averaging 44 percent in 1983/84. Dairy farmers had a PSE averaging 15 percent. Both sets of subsidies were removed and interest rates rose from around ten percent to over 20 percent. The short-term response was a 65 percent fall in sheep land values and a 50 percent fall in dairy land values. If we equate the 29 percent differential in PSE level with the 15 percent differential in land price reduction, then it implies that a one percent fall in the level of PSE will cause a short-term decline of only 0.5 percent in land prices – with most of the land price fall in the New Zealand case due to financial deregulation and higher interest rates. This is a very rough back-of-the-envelope calculation but it may be in the ballpark given that a doubling of interest rates will halve the present value of an annuity.

A third lesson is that farmers are much more likely to survive the adjustment period if they have access to the best possible support and advice when negotiating with their bankers. If the subsidy level has been very high then radical restructuring of balance sheets will be necessary. The associated business plan has to be marketed well to financial institutions.

The fourth lesson is that farm incomes and farmland prices will recover. They will recover faster, the greater is the scope for farmers to make essential new investments – and that is very difficult during the survival phase following reform. In other words, the sooner efficient farmers can be put back into a viable commercial position (given the new market realities) the faster the recovery will be. The dividend from farm subsidy reform in New Zealand has been large, so it is worth investing in recovery to gain it more quickly.

The fifth lesson does not normally apply to developed country cases. The overall New Zealand economic reform program was technically inefficient in the sense that it imposed unnecessary costs on farmers. Net farm incomes and farmland prices did not have to fall as much as they did in the short-term. Unfortunately, for farmers, New Zealand policy generally was in crisis and the timing and sequencing of the reforms was dictated by political realities rather than good planning. Where reforming countries already have a reasonably stable macroeconomic environment, farm subsidy removal would be much less painful that it was in New Zealand.

The New Zealand case provides a cautionary note on the equity of compensation. It appears as though the exit grant for farmers in New Zealand was based on a horizontal equity rule that compared their position with citizens generally – they had access to a new home, a car, and the household furniture. This approach probably resulted in the shareholders of banks paying a higher proportion of adjustment costs than would have otherwise been the case.

REFERENCES

Belich, J. 2001. *Paradise Reforged: A History of the New Zealanders*. Auckland: Penguin.

Dalziel, P. and R. Lattimore. 2004. *The New Zealand Macroeconomy: Striving for Sustainable Growth with Equity*, 5th ed. Melbourne: Oxford University Press.

Dexcel, various years. *Economic Survey of New Zealand Dairy Farmers*. Hamilton: Dexcel Ltd.

Evans, L., A. Grimes, B. Wilkinson, and D. Teece. 1996. “Economic Reform in New Zealand: The Pursuit of Efficiency.” *Journal of Economic Literature* 34(4):1856-1902.

Federated Farmers. 2002. *Life without Subsidies*. Wellington: Federated Farmers of New Zealand.

Gould, J. 1982. *The Rake’s Progress*. Auckland: Hodder & Stoughton.

Johnson, R. and R. Forbes. 2000. “Recent Productivity Trends in New Zealand Primary Sectors: Agricultural Sector and Forestry and Logging Sector.” Wellington: Ministry of Agriculture and Forestry, MAF technical paper 2000/20.

Lattimore, R. 1985. “New Zealand Economic Development: A Brief Overview of Unbalanced Industry Growth.” Discussion paper No.94, Agricultural Economics Research Unit, Lincoln University, New Zealand.

Meat and Wool NZ. 2005. *New Zealand Meat and Wool Sector: Overview of Change*. Wellington: Meat and Wool New Zealand.

Morrison, C., W. Johnson, and G. Frengley. 2000. “Efficiency in New Zealand Meat and Beef Farming: The Impacts of Regulatory Reform.” *Review of Economics and Statistics* 82(2):325-337.

New Zealand Ministry of Agriculture and Forestry. 2005. *Situation and Outlook for New Zealand Agriculture and Forestry*. Wellington: MAF.

Porter, M. 1990. *The Competitive Advantage of Nations*. London: MacMillan.
Rayner, A. 1990. "The Seeds of Change." In R. Sandrey and R. Reynolds, eds. *Farming without Subsidies: New Zealand's Recent Experience*. Wellington: GP Books.
Rayner, A. and R. Lattimore. 1991. "New Zealand." In D. Papageorgiou, M. Michaely, and A. Choksi, eds. *Liberalizing Foreign Trade*, Volume 6. Cambridge: Basil Blackwell.
Sandrey, R. and R. Reynolds, eds. 1990. *Farming without Subsidies: New Zealand's Recent Experience*. Wellington: GP Books.
Schumpeter, J. 1942. *Capitalism, Socialism and Democracy*. New York: Harper and Brothers.
Silverstone, B., A. Bollard, and R. Lattimore, eds. 1996. *A Study of Economic Reform: The Case of New Zealand*. Amsterdam: North-Holland.
Vitalis, V. 2006. "Subsidy Reform in the New Zealand Agricultural Sector." In *Subsidy Reform and Sustainable Development: Economic, Environmental and Social Aspects*. Paris: OECD.