

**Adjustment to Agricultural Policy Reform – Issues and Lessons from the New  
Zealand Experience**

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## **Adjustment to Agricultural Policy Reform – Issues and Lessons from the New Zealand Experience**

### **Abstract**

Pressures for the reform of agricultural policies in wealthy countries are likely to increase. Current policies are expensive and inefficient. They impose substantial costs on countries that cannot afford to subsidize their agricultural sectors. A major political impediment to policy reform is the real or assumed cost of adjustment to policy reform and the difficulties that farmers might face. In this paper, we discuss the factors that influence agriculture's ability to adjust to policy reform in wealthy countries, illustrating some of the key issues by reference to the New Zealand experience.

**Key words: farming, subsidies, adjustment, deregulation, New Zealand**

### **Introduction**

The OECD Secretariat estimates that consumers and taxpayers in wealthy countries spent \$US 311 billion on agricultural support in 2001 (OECD, 2002). Support is provided through policy measures that keep domestic market prices for favored commodities above those in international markets, and through a range of direct government subsidies. While multiple objectives underlie agricultural policies in wealthy countries, the dominant and enduring objective has been to support farm incomes in the face of declining real prices for agricultural products. The decline in prices is driven by rapidly increasing supply, due to productivity growth, combined with slowly increasing consumer demand.

Previous studies have shown that many of the policy measures used by rich countries, in particular price supports, are extremely inefficient in increasing the net income of farmers (e.g., Blandford and Dewbre). Much of the additional revenue generated by government support is swallowed up in higher production costs, as farmers increase production in response to higher prices. Gross farm income does not increase by as much as might be expected because of the depressing effects of price supports on international prices – part of the government transfer simply makes up for the reduction in those prices. The real incomes of farm households do not increase by as much as expected because labor and capital that might otherwise be allocated by the household to off-farm activities are kept in farming, yielding only a marginal increase in earnings. Price supports are rapidly capitalized into land rental rates and captured by landowners, who may not be the actual users of the land. Input and marketing costs increase, since participants in imperfectly competitive markets upstream and downstream from the farm capture rents generated by agricultural support. Since the benefits realized by an individual farmer depend on the volume of production, large producers gain more from price support. Farmers with limited resources receive a limited share of the benefits.

These factors mean that farmers, who are used to government largesse, are forced to press constantly for increased levels of support. Regardless of how much money consumers and taxpayers provide, there always seems to be the need for even higher subsidies to deal with the income problem in agriculture or to “save family farms”. Farmers have

been remarkably successful in pressing for policies that result in higher support, despite their evident failure.

Support policies have a negative impact on countries that cannot afford to subsidize their agricultural sectors. At the recent (2002) United Nations summit on sustainability in Johannesburg, the negative effect of support policies in rich countries on export prices and access to markets by poorer countries was a major issue. These issues were also a major factor in the failure of the latest Ministerial meeting of the World Trade Organization in Cancun (2003).

Pressures for the elimination of support, particularly those measures that increase production and distort international trade, will increase. The European Union will find it difficult to sustain current forms and levels of agricultural support as it absorbs new members from Central and Eastern Europe<sup>1</sup>. The United States, which increased support expenditures in an environment of budget surpluses, has re-entered a period of large deficits. Increasing budgetary problems will likely lead to pressure to reform agricultural policies, particularly as the public becomes more aware of the negative implications of support.

A key impediment to reform on both sides of the Atlantic is the perceived problem of adjustment associated with the elimination of support. Farmers and their representatives argue that the removal of support would have devastating consequences. The assumption is that the elimination of \$100 of support will translate directly into a reduction of \$100 in net farm household income, and that this would lead to widespread bankruptcy and a massive exodus from farming.

#### ***Factors affecting adjustment at the farm level***

Because of the inefficiency of the policy measures employed, it is extremely unlikely that a given reduction in support will translate into an equivalent reduction in net farm household income. Furthermore, structural changes in the sources of income mean that the relative impact of a reduction in returns from farming is far less important for total household income than in the past. In rich countries, the proportion of farm household income derived from non-farm activities has been rising steadily. Households are allocating a larger share of their capital and labor to activities outside farming, where the returns are greater. As a result, the relative impact of a decline in the agricultural share of their incomes is declining. The impact of the removal of support would be greatest for large farmers, but such farmers tend to have above-average incomes in comparison to other households in rich countries.

The negative impact of the elimination of support would be further reduced through the options open to farmers to adjust to changes in prices. Lower output prices, for example, typically stimulate a reduction in the use of farm inputs and the search for greater efficiency. If measures are taken to ensure that upstream and downstream markets are

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<sup>1</sup> Recent changes made to the Common Agricultural Policy as a result of the “Mid-term Review” of earlier reforms in 2000, will limit total support payments to individual farms and to agriculture as a whole in the enlarged Union.

competitive, for example, by eliminating barriers to entry and to international competition, input prices and marketing costs are likely to fall as rent capture in upstream and downstream industries is eliminated.

Farm households are also able to adjust to a reduction in agricultural support by allocating a larger share of their capital and labor (and in some cases, land) to non-farm activities. The share of total household capital invested in farming will fall as the relative price of farm output falls. Capital will be redirected to non-farm investments. A larger proportion of household labor will be allocated to off-farm employment as the relative returns from such employment increase. Farmland use may change, for example, cropland may be converted to pasture, or farmland may be diverted to non-agricultural uses, such as forestry.

Many of these adjustments are illustrated by the New Zealand experience with the reform of agricultural policy. We now turn our attention to that experience.

### **The New Zealand experience**

Relatively little government assistance was provided to New Zealand agriculture until the mid-1960s. Following a series of balance of payments crises, the government introduced a range of support programs aimed at increasing production and, given the export-orientation of New Zealand agriculture, foreign exchange earnings. The measures included input subsidies (fertilizer and credit), taxation concessions, export incentives, stabilized and supported prices, and grants for land development and stocking. The producer support equivalent (PSE)<sup>2</sup> measure for New Zealand agriculture peaked at 35 percent in 1983 (OECD), on a par with that in the European Union at the time.

By 1984, economic problems had become acute: the government deficit had reached 9 percent of GDP and debt service accounted for 15 percent of public expenditure, the current account was in persistent deficit, the exchange rate appeared over-valued, and there was excessive monetary growth. Heavy selling of the New Zealand dollar, which threatened to exhaust the country's foreign reserves, culminated in an electoral defeat for the government in June 1984. The new administration set about a major reform program. Agricultural support was an obvious target, given its transparency, the seriousness of the fiscal deficit, and the size of the agricultural sector. Assistance was rapidly withdrawn. Farmers had benefited most from the supplementary minimum prices (SMP) scheme, which operated similar to a deficiency payment or export subsidy, depending on the commodity. That scheme was eliminated. Most other programs were phased out by the early 1990s and the PSE fell below 5 percent.

The reforms were not restricted to agriculture. Among the early actions were a 20 percent devaluation of the New Zealand dollar in 1984, removal of financial and exchange market controls, and the "floating" of the dollar. Export assistance was eliminated, tariffs were progressively lowered and import controls were dismantled – all with the objective of increasing international competitiveness. Later, the central bank was given increased

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<sup>2</sup> The PSE measures the percentage of the total value of (assisted) output that is provided by government programs.

autonomy to pursue price stability (1989), and the labor market was deregulated (1991). The public sector was downsized, and commercial activities of government were privatized (including agricultural extension).<sup>3</sup>

### ***Subsidies and farm incomes***

How did New Zealand agriculture survive the abrupt withdrawal of assistance? From its peak of 35 percent in 1983, the PSE fell to 13 percent four years later and was only 3 percent by 1994. The removal of support equivalent to 32 percent of output value might be expected to have a major impact on farm profitability. However, *this was not the case*. Farmers and others in the food system adjusted to the withdrawal of subsidies, and reforms elsewhere in the economy helped maintain profitability.

Sheep and beef farms are a major component of New Zealand's farm sector<sup>4</sup>, and were heavily supported prior to 1984. Average profits per 'sheep and beef' farm, measured at 1994-95 prices, which had been declining for almost a decade prior to 1984, soon recovered from the shock of deregulation and remained steady, before trending upwards from 1996. This occurred, despite a withdrawal of support equivalent to over 38 percent of the value of output in 1983<sup>5</sup>. Farmers, processors and marketers, in addition to government, took actions that contributed to the maintenance of farm incomes. The New Zealand experience shows that the removal of support need not lead to a permanent reduction in farm incomes. The remainder of the paper discussed what happened to allow real farm incomes to be maintained.

### ***Actions taken by farmers***

#### ***Changes in product mix and land use***

Removal of price supports and other reforms meant that production decisions were based on international prices, converted to domestic currency at the freely-floating exchange rate. Prior to 1984, price signals for sheepmeat and wool had been obscured through administered price schemes. The impact of deregulation on the product mix was rapid – the number of sheep declined from over 70 million in 1984 to less than 65 million five years later with consequent reductions in sheepmeat and wool production. The reduction in sheep numbers was partially offset by an increase in beef cattle and newly-introduced farmed deer enterprises – between 1984 and 1989, beef cattle rose from 4.5 million to 4.9 million, and deer from 0.2 million to 0.6 million. By 2002, sheep, beef cattle and deer numbered 44 million, 4.8 million and 1.8 million respectively.

The dairy sector was affected relatively less by the removal of subsidies, and dairy cattle numbers have increased steadily over the past decade. The GATT Uruguay Round (UR) Agreement was seen as favorable to international dairy trade prospects, and stimulated

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<sup>3</sup> Fuller accounts of the deregulation are given in Johnson et al (1989), Johnson (1991), Johnson (1993), Sandrey and Reynolds (1990), Valdes (1994), Sandrey and Scobie (1994), Johnston and Frenley (1994) and Johnson (2000).

<sup>4</sup> Output from these farms comprised 44 percent of the value of total agricultural output in 1984.

<sup>5</sup> Total assistance given to sheepmeat, wool and beef, as a percentage of the value of output of these products (Sandrey and Reynolds, 1990, Table 4.2)

the expansion of dairy farming in New Zealand. There were 4.1 million dairy cattle in 2002 compared with 3.1 million in 1984.

The fall in the profitability of sheep relative to other enterprises led to major changes in land use. Davison (1996b) estimates that between 1984 and 1994, the area of grassland devoted to sheep and beef cattle declined by 1.93 million hectares, or by 16 percent. Of this, 1.08 million hectares (56 percent) were changed to other grassland uses such as dairy cattle, or were converted to vineyards, other horticulture, and semi-urban 'lifestyle' blocks. The remaining 850,000 hectares went to commercial forestry or was retired as marginal land.

#### *Changes in input use*

Fertilizer is the most important variable input on sheep and beef farms in New Zealand. When output support and fertilizer subsidies were removed, and debt repayments escalated due to higher interest rates and the elimination of concessional loans, fertilizer use was one of the few areas in which farmers could reduce cash outlays. During 1980-84, sheep and beef farmers applied an average of 15.5 kg of fertilizer per stock unit - applications were more than halved from the 1985 to the 1986 season, and remained around 6-7 kg for the next couple of years. Total sales of fertilizer in 1988 were 45 percent lower than in 1985, but have increased steadily since.

#### *Changes in productivity*

Since deregulation, input use has been stable or has declined but the volume of production has continued to expand. Philpott (1995), using the Solow-Denison method<sup>6</sup>, estimated that total factor productivity (TFP) grew at a more rapid rate after deregulation; faster than in the economy as a whole. Major causes were the large decline in the growth rate of non-factor inputs, as farmers reduced expenditures. Factor inputs also declined, especially capital. Forbes and Johnson (2001), using an updated database and the Tornqvist method, reached similar conclusions. For the agricultural sector as a whole, TFP grew at an annual rate of 1.8 percent during 1972-84, but at 4.0 percent subsequently (1985-98). Productivity gains were likely instrumental in helping agriculture weather the financial stresses of deregulation, and contributed to the maintenance of real farm profits.

Partial productivity indices suggest how sheep and beef farmers adapted to increase total productivity. Sheepmeat production fell by 29 percent between 1985 and 2002, but sheep stock units declined by 38 percent. Productivity improvement reflects increases in lambing percentages and sheep slaughter weights. Beef production increased since the mid-1980s, while cattle stock units remained largely unchanged, reflecting higher slaughter weights, and increased use of cattle from the dairy herd.

#### ***Impacts of macro-economic reforms***

Macro-economic reforms had a major impact on the economic environment in which farms and other businesses operated. Prior to the 1984 election, interest rates had been

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<sup>6</sup>The growth rate of total factor productivity is the difference between the growth rate of net output and a weighted sum of the growth rates of capital and labor with the weights being the shares of each input in production.

frozen. With the removal of the freeze and the implementation of a tight monetary policy, interest rates increased sharply and, for many farmers, debt servicing became the major item of expenditure. A 20 percent devaluation of the New Zealand dollar took place immediately after the 1984 election, foreign capital was attracted to New Zealand by higher interest rates, and the dollar appreciated steadily through to 1987. Both factors contributed significantly to the short-term decline in farm incomes over the first two years of the reforms.

On the positive side, a rapid reduction in inflation was achieved through the tightening of monetary policy. This provided immediate benefits to farmers, who had seen input prices increase by over 20 percent per year during the late-1970s. The inflation rate fell steadily to 13 percent in 1985, and to between 1 percent and 2 percent per year over 1988-90. The farm input price index actually fell during 1992-94, and costs have increased by a modest 1.5 percent per year since.

#### ***Actions taken by marketing channel participants***

An important objective of the reforms was to increase competition in the domestic economy, and international competitiveness. Most domestic marketing boards were disbanded, including those responsible for fluid milk, wheat, eggs, citrus, and the domestic marketing of apples. This cleared the way for expansion of the private sector in the marketing system.

Labor market and waterfront reforms also had significant impacts on marketing efficiency and productivity. New legislation in 1989 abolished the organization that operated a national pool of labor for the waterfront (bear in mind that a high proportion of New Zealand's agricultural output is exported), and gave employers responsibility for negotiating pay and conditions. Between 1986 and 1989, the number of waterside workers fell by 34 percent, while earnings per worker increased by 45 percent. The tonnage handled rose by 53 percent per worker (Pomeroy, 1990). In 1989-90 conventional stevedoring costs fell by 30 percent for dairy products and by 50 percent for some horticultural products (Johnson, 1991).

Labor market reforms in 1987-1991 also had profound impacts in terms of processing costs and economic performance. Compulsory union membership was abolished. Employers and employees were given more freedom in negotiating terms of employment. In meat processing, agreements with the two major unions were replaced by company or plant-specific agreements; union membership dropped by a third by 1993; stoppages due to industrial disputes also declined markedly (Ellis, 1993).

The impact of reforms has been particularly noticeable in meat processing. In the decade following deregulation nearly 25 percent of the processing companies closed down as livestock numbers fell and investment was made in new technology (Walker and Bell, 1994). Older and larger plants were replaced by smaller, higher-technology plants, geared to producing to customer requirements. Davison (1995, 1996a) compared export prices for lamb and beef with those paid to farmers and concluded that gains in processing and marketing productivity translated into higher farm-gate prices. Comparing 1995 with

1983, bull beef prices in New York (in New Zealand dollars) were 12 percent lower, whereas the price paid to farmers was 40 percent higher. The export price for lamb was similar in 1995 and 1992, yet the farm-gate price was 15 percent higher. Such efficiency gains beyond the farm gate contributed to the maintenance of farm profits.

### ***Government facilitation of the farm adjustment process***

As agricultural support was eliminated, it became apparent that households with marginal or non-viable farms were not protected by existing social welfare provisions. New schemes were devised, including a Special Assistance to Farming program (1986-89) through which payments were made to farmers in a critical financial position for day-to-day living expenses. In this way, farmers and their families could receive a welfare benefit equivalent to unemployed workers (Chadee and Johnson, 1994). An Exit Grant scheme was introduced in 1988, to encourage non-viable farmers to leave farming.

Government support affected land prices - between 1980 and 1983 prices rose by 115 percent; this was matched by growth in farm lending of 83 percent. Deregulation led to falling land prices, rising interest rates and an increase in farm indebtedness. By 1987, 23 percent of sheep and beef farms had less than 50 percent equity compared with 6 percent of farms in 1984. Farm lending at that time was dominated by the government-owned Rural Bank, and this bank introduced a loan discounting scheme in 1986. Johnson (1989) notes that approved applications involved average discounting of 33 percent of the original debt to the Rural Bank by 1988. Walker and Bell (1994) note that for most, debt restructuring and debt write-off followed, although for some selling was the only option - about 20 percent of the debt owed by the farm sector was written-off, and about 5 percent of farms were sold.

Government facilitated the adjustment process in other ways (Walker and Bell, 1994). A Rural Coordinator service was partially funded by government. The Service worked with local support groups on financial counseling and the development of non-farm activities. The Ministry of Agriculture established a Rural Affairs Unit to monitor rural communities, coordinated strategic planning, funded a Rural Help Directory to provide advice on locally available resources, and funded risk management training for farmers.

### **Lessons and conclusions**

A number of lessons can be drawn from the New Zealand experience that may be of value to other countries contemplating the reform of agricultural support policies:

- Farmers can adapt to lower support and increase profitability, particularly if they and others believe that government will not make a U-turn on policy reform.
- Reforms in macroeconomic and other policies can play an important role in agricultural profitability. Agricultural policy reform may be more feasible politically if other supported sectors face reform at the same time - farmers will not be seen as the only group affected and will gain from more general deregulation.
- While agricultural deregulation is far from painless, negative impacts may be short-term and transitional in nature. Given time, profits recover as asset values adjust to lower product prices and reforms elsewhere in the economy increase farm profits.

- Increased efficiency results from greater exposure to international prices and market conditions. Resources will be redirected in line with comparative advantage.
- Adjustment is not instantaneous. Although farmers acted quickly to improve profitability in New Zealand, it took considerably longer for economic growth to return and for unemployment to subside.
- During the adjustment period, there is a role for government assistance measures, decoupled from production decisions, to support household family consumption.
- Agricultural reforms can have a positive environmental impact. Subsidies encouraged the use of marginal land, higher stocking rates and the overuse of fertilizers. With the removal of support, production has become more extensive, chemical use has declined, and marginal and easily erodable land has been taken out of production.

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