How can South Africa exploit new opportunities in agricultural export markets?

Lessons from the New Zealand experience

Report No 2006-01

September 2006

ISBN:

Published by NAMC, Private Bag X935, PRETORIA, 0001, Tel: (012) 341 1115

Layout by Interactive Reality
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Acknowledgements

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The NAMC would also like to acknowledge **Yvonne Kemp** for editing an earlier draft of this document, as well as **Christine Bothma** of Interactive Reality for doing the final document design and layout.

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1. Introduction

South Africa and New Zealand, both members of the Cairns Group, have undergone comprehensive agricultural sector reforms over the last twenty years. While New Zealand's reforms predated South Africa's by perhaps a decade, there are striking similarities in processes and outcomes. However, there are also equally striking differences, and particularly in the international trade performance outcomes to date.

More particularly, New Zealand agriculture and the economy at large benefited from the Uruguay Round of GATT negotiations and the subsequent Agreement on Agriculture and establishment of the World Trade Organisation (WTO), while there is little evidence that South African agriculture has benefited, at least to the same extent (while there is also little evidence that South African agriculture suffered as a result).

The purpose of this research is to address the following questions:

1. **Why is South Africa still exporting principally the same agricultural products as almost a century ago?**

- Is South Africa still emerging from the isolation years?
- Is the larger domestic population constraining South Africa?
- Is it a function of external factors such as the structure of world trade in agricultural products?

2. **Did New Zealand re-gear itself, or was it just lucky?**

- What have been the changes in each case?
- What was the relative influence of the Uruguay Round in both cases?
- What will more comprehensive global liberalisation mean for both parties?
- Has New Zealand's more advanced regional Free Trade Agreement policy been a factor?
- Has the reform of the marketing institutions been a factor?

3. **Given the global shift in agricultural exports to the East, what are the opportunities for diversifying South Africa's export portfolio?**

- What is South Africa going to export to China?
- What is South Africa going to export to India?

4. **What opportunities exist for ensuring that new entrants into agriculture (via land reform, AgriBEE) are able to take advantage of these new opportunities?**

To this end, this report is divided into two parts. In Part I the marketing reforms in South Africa and New Zealand respectively are reviewed. Section 2 provides the background to the deregulation of agriculture in South Africa, and looks at the consequences of deregulation; section 3 repeats this exercise for New Zealand agriculture. More detail is provided on the

latter experience, as it is less well known to local readers. Section 4 provides a précis of the lessons that can be learned from this experience in terms of the timing, sequencing, breadth and depth of the reforms in the two countries.

In Part II the experience after the adoption of the Agreement on Agriculture is examined. This is initiated in section 5 by an assessment of the impact of the Agreement on the trade patterns of the two countries. In section 6 the opportunities for diversifying South Africa's agricultural trade portfolio are examined with respect to trade with China and India respectively. Section 7 concludes.

PART I: DEREGULATING MARKETS

2. Deregulation of South African agriculture[1]

2.1 Background[2]

Four events between 1973 and 1976 created a security crisis in South Africa. These were the 'unlawful' strikes by black trade unions in the Durban region in 1973; the OPEC oil crisis of 1973; the *coup d' etat* in Lisbon in April 1974 that resulted in the abortive invasion of Angola by South Africa in 1975; and the Soweto unrest of June 1976. Desperate attempts by the ruling elite to prolong the existing order lasted for less than 20 years after these events, and were doomed to failure.

By 1976 the economy had moved into a recession that lasted until 1994. After the crisis events of the early 1970s the era of the Total Strategy was ushered in by the PW Botha regime, ostensibly to protect the continued existence of all South Africans against what was elsewhere called the evil empire. One concrete result in South Africa was a doubling of the Defence Budget from 2.4% of GDP in 1971/2 to 4.8% in 1977/78.

The shift towards urban interests that accompanied this change had important implications for agriculture. Increased Defence and Education spending resulted in a radical cut in the budget of the Department of Agriculture from 1,5% to only 0,6% of GDP. However, an increasing part of the total agricultural budget was allocated to the homeland governments, with the result that white (commercial) farmers got a smaller and smaller proportion of the available funds. The fact that the government was unable (and perhaps also unprepared) to maintain the high level of subsidies for agriculture has traditionally been regarded as an important reason for the split in the National Party in February 1982 and the creation of the Conservative Party.

The South African economy grew at above 5 per cent per annum to 1970 and above 3 per cent to 1980, both well above population growth rates during this period. Real per capita incomes declined, however, after 1974. The economy was characterised by a number of negative features, the most important of which, in terms of their impact on agriculture, were the rise in the inflation rate from the early 1970s and increasing concentration in the agro-industrial complex, largely a result of the policy of industrialisation through import substitution. By the beginning of the 1980s these influences, together with a range of farm-specific policies, had created an agricultural sector that desperately needed to be reformed.

The main structural features of the agricultural economy during this era were the mechanisation of field crop harvesting in commercial farming, increased pressure on food production in the homelands, tight control over the marketing of agricultural products under the consolidated Marketing Act of 1968, the shift away from a small-farmer friendly policy in commercial agriculture, and attempts to address the environmental consequences of agricultural policies.

1 Data in this section are drawn from the Abstract of Agricultural Statistics unless otherwise specified.
2 This section draws from Vink and Schirmer, 2002.

South African farm policy changed emphatically in the period around 1980, although some of the policy shifts were initially quite gradual. The process started outside the sector itself. **First**, starting in the late 1970s the South African financial sector was extensively liberalised. The most immediate effect on agriculture came from changes in the external value of the currency and in the interest cost of farm borrowing. As the Rand started a decade long decline in value, farm input prices, which have a relatively large import component, rose faster than farm output prices. As part of the financial sector reforms the reserve requirements of the banking sector were changed, making it impossible for the Land Bank to continue subsidising farmers' interest rates. The use of interest rate policy by the Reserve Bank saw interest rates rise to very high levels during the widespread drought of 1983/4, and interest payments rapidly became the single largest cost of production in agriculture. **Second**, many of the existing controls over the movement of labour in South Africa were lifted by the mid-1980s, setting in motion vast population movement from the farms and the homelands to the towns and cities. This was accompanied by migration of people from most parts of Southern Africa to the rural and urban areas of South Africa. **Third**, considerable microeconomic deregulation took place, also starting in the late 1970s and early 1980s and leading to a significant increase in activity in the informal economy. One of the most visible effects was the increase in informal marketing of farm products in the urban areas.

In the midst of these economic transformations farmers confronted climatic challenges that rank alongside the late 1920s and early 1930s as the most difficult in the twentieth century. Initially, the state did not leave white farmers to deal with these circumstances alone. The state provided farmers with debt consolidation subsidies that added up to R344 million between 1981 and 1987. The state disbursed crop production loans worth R470 million, paid interest on consolidated debts, issued drought relief worth R120 million and provided farmers with subsidies to convert maize fields on marginal land into planted pastures. The state also stood as guarantor of consolidated debts to the value of R900 million. It is possible that this assistance allowed almost half of South Africa's white farmers to survive on the land.

Within the existing framework of support, the state undertook policy shifts designed to improve the efficiency and viability of agriculture, largely in the interest of fiscal sustainability. The problem started in 1981 because the record maize harvests of that year meant that the government had to pay the sum of R0.5 billion to export the surplus at low prices while paying farmers the price set by the Maize Board. The drought that followed led to larger problems. At a time of increasing fiscal pressure the government thus found itself having to provide massive transfers to farmers both when natural conditions were favourable and when they were unfavourable.

In response to this situation the White Paper on Agricultural Policy issued in 1984 argued that 'orderly marketing' was a positive factor only if the forces of supply and demand were taken into consideration. It was regarded as desirable to keep a substantial number of white farmers on the land but these were to be financially sound farmers able to improve the soil and to participate 'optimally' in international markets.

In 1985, the Minister of Agriculture refused to approve a further increase in the producer price of maize and in 1987 the government stopped new subsidies to the maize price. Uniform and guaranteed prices were maintained but had to be paid for from the revenues of the Maize Board, which would therefore have to fix prices in accordance with projected market conditions rather than estimated costs of production. Producers now had to fund any losses incurred on the export of surplus grain. The reduction of indiscriminate subsidies also led, inevitably, to a

degree of decentralisation within the marketing process. State policy thus succeeded in putting pressure on farmers to become more competitive. At the same time the state gave farmers the support that allowed them to survive through difficult times.

These examples illustrate the general trend toward deregulation and liberalisation within the existing framework of the Marketing Act. Other examples include the elimination of restrictive registration of processors in the red meat industry; the abolition of most controls on domestic marketing of deciduous and citrus fruit; the abolition of production quotas in the wine industry; deregulation of the grain sorghum and leaf tobacco single channels; further envisaged deregulation of the mohair and maize schemes; and the eventual abolition of some control schemes, particularly in the banana, wool, egg and chicory industries. The main effect of these steps was to decrease the scope for micro-management in most of the subsectors in agriculture.

Deregulation and liberalisation during the 1980s was, however, characterised by change within an existing institutional structure, as the main role players involved in the sector remained in place despite the general relaxation in State intervention. This changed with the election of 1994, although in agriculture at least some direct policy changes had to wait until 1996, i.e. until after the withdrawal of the National Party from the Government of National Unity. The most important policy initiatives taken since include land reform, institutional restructuring in the public sector, the promulgation of the Marketing of Agricultural Products Act and the Water Act, and trade policy and labour market policy reforms. The purpose of these policy reforms was to correct the injustices of past policy, principally through land reform, to get the agricultural sector on a less capital-intensive growth path, and to enhance the international competitiveness of the sector.

2.2 The reforms[3]

One strong indicator of the extent to which agricultural policies in South Africa have been reformed is the declining levels of the Producer Support Estimates (PSE), a measure that can be interpreted as the percentage of total agricultural returns to the sector or sub-sector that comes from taxpayers in the form of either direct or indirect support measures. The recent OECD report shows that the PSE for South Africa averaged 5 percent in 2002/03. This is comparable to Australia, Brazil, China and Russia, above that of the extreme New Zealand figure of less than 1 percent, but considerably below that of the other rich OECD countries where rates range upwards from the US and Canadian figure of 20 percent to the obscene Japanese figure of 58 percent (and even higher for Norway). There are annual variations in this figure; from a low 2 percent in 2001 to a recent high of 8 percent in 2002. Importantly, however, these results are down significantly from the starting points of 10 percent in 1994 and 15 percent in 1995, and there are also variations among the different agricultural sectors; from zero (or even slightly negative in some years) to around 2 percent in most sectors, to 15 and 16 percent for 2003 in pig meat and milk respectively, to a high of 32 in 2003 for the sugar sector (and the anomaly of maize in 2002 that jumped to 25% with 2% either side for 2001 and 2003).

3 This section draws from the 2006 Organisation for Economic Cooperation and Development (OECD) 2006 “Review of Agricultural Policies: South Africa” study.

These reductions came about as supports were stripped from the sector from 1994/95 through to the end of the 1990s. One major reason was the deregulation of trade policies as border tariffs reduced[4] and export subsidies were eliminated, although this was balanced by the introduction of tariff rate quota (TRQs) regimes for several products[5] and a system of (largely now ended) variable import tariffs. The recent variations arise because of the way in which the floating Rand creates shifts in the relationship between domestic and international prices that are subject to adjustment lags. Remaining supports are concentrated in the general categories such as research and development, inspections services and general infrastructure.

The three other major reforms impacting upon agriculture during the late 1990s and early 2000s were (a) the reforms of marketing institutions, (b) changes to labour policy, and (c) the post-apartheid land reform initiatives, although, as was the case with New Zealand, the general macroeconomic changes such as reforms of the financial sector must also be considered.

The Marketing of Agricultural Products Act of 1996 substantially reduced state intervention in the marketplace and therefore market prices of agricultural commodities[6]. In 1970 there were 23 Control Boards administering the different schemes under the old regime; by 1998 these Boards had ceased to exist and their assets transferred to new Industry Trusts that exist to handle common-property aspects such as the administration of statutory levies for research, information provision and administration. Sugar trading was also liberalised, although there are residual controls that include intra-SADC trading in sugar, single-channel exporting and allocations for the domestic market that includes an ability to divide proceeds between growers and millers, and it is these controls that contribute to a large share of the total agricultural PSE in South Africa. This sugar market and its associated potential access to global markets is discussed later in the report, as it seems to be the main sector that can benefit strongly from international agricultural trade liberalisation through the Doha Round. There may well be an argument for keeping these controls in such a case.

Until the 1980s, farm workers in South Africa had almost no legal protection of their rights to organize and to basic conditions of employment, etc. The Agricultural Labour Act, No 147 of 1993, addressed this shortcoming to some extent, but it was only after 1994 that farm worker rights were brought in line with workers elsewhere in the economy. Henceforth, the four major labour laws in South Africa, including the Labour Relations Act (1995), the Basic Conditions of Employment Act (1997), the Skills Development Act (1998) and the Employment Equity Act (1998), also applied to the agricultural sector. One consequence was the adoption of a minimum wage, differentiated by region, for farm workers some four years ago. There is some evidence that this, and related legislation such as the Extension of Security of Tenure Act, have resulted in a decline in permanent employment in agriculture, and a substitution of permanent workers by seasonal and temporary workers.

Despite the well-formulated land reform policy and well-funded land reform programme (comprising land restitution, land redistribution and tenure reform), progress has been slow. Less than 4 per cent of commercial farmland has been transferred in the past 12 years;

4 The issue of tariffs is addressed in more detail later, where it is shown that unilateral reductions during this period went beyond any mandatory requirements imposed by the WTO under the Uruguay Round outcome

5 Note that most of these TRQ rates are set at 20 percent of the WTO bound rates, and in general appear not to act as a major constraint to imports in these products.

6 This followed a decade of deregulation within the framework of the Marketing Act of 1968.

production conditions in the communal farming areas have remained largely unchanged, or may even have worsened; and tenure forms have hardly changed in the communal areas despite attempts to provide greater tenure security. There is also no evidence that the supposed beneficiaries of land reform are better off as a result of their participation in the programme. Empirical evidence, in fact, shows that private transfers – some funded by mortgages from the Land Bank or the commercial banks – have occurred at about the same rate as state transfers. Nevertheless, there are some examples of land reform that have had local impacts, and that possibly serve as examples for future land reform:

- The best-known example of small farmer success in South Africa is in the sugar industry, with its 20 000–30 000 small-scale cane growers. While the support programme to small-scale cane growers in KwaZulu-Natal predates the land reform programme by a few decades, it has recently been expanded considerably in Mpumalanga province, where new sugar cane plantations have been established;
- During the early 1990s, a project was launched to encourage the development of a land rental market on cropland in the communal areas by encouraging the traditional authority to adopt measures that would lower the transaction costs of land rental. As expected, this experiment has had interesting efficiency and equity results;
- A number of equity share schemes for farmer workers have been set up, mostly in the fruit export industries in the Western Cape. Farm workers use the land reform grant to buy shares in an operating farm business, mostly on the farm where they work. While the financial performance of these schemes still needs to be independently assessed, these schemes have attracted significant private sector investment;
- Concerns about the vulnerability of small producers of wool led the National Wool Growers' Association (NWGA) and the government to set up a new wool marketing channel by building and equipping shearing sheds in villages throughout the Transkei and Ciskei regions. In the first phase, the focus was on the provision of material support – a shearing shed, equipment and, for some villages, a dipping tank. In the second phase, institutional support was provided to increase access to information on breeding and training for proper shearing and grading, access to and knowledge of the use of inputs, and a market outlet. The NWGA also organises contact with the brokers to market the wool. The NWGA prescribes that candidate villages should have a minimum number of sheep but, more importantly, an active farmers' association, whereby the wool farmers form a local Wool Growers' Association;
- There are a range of empowerment schemes in aquaculture and mariculture (mussels, oysters, seaweed and abalone) situated along the west and south coasts of the country. These have the potential benefit of stemming the considerable poaching that has taken place in these areas, in addition to providing new opportunities for small-scale producers;

- Similarly, there are a range of agricultural projects aimed at the production of specialty products, such as rooibos tea, honeybush tea, indigenous flowers, medicinal plants, essential oils, hydroponics and organic products. The purpose is to build new markets and to empower new producers;
- While the planned privatisation of the South African Forestry Company Limited (Safcol) has caused considerable controversy, it has been accompanied by a wide range of planned empowerment projects, either in forestry or in alternative land uses, mostly in the horticultural sector;
- There has always been an expectation that a successful land reform programme would result in a wider range of farm sizes, a diminution of the stark differences between commercial and 'traditional' agriculture, and a less marked border between the commercial and communal farming areas. At this stage, however, progress with the land reform programme has been too slow to produce noticeable effects.

PROVIDE (2005b) has quantified the inequality and large disparities between the income levels of white and black household levels, and found that not only are these inequalities within agriculture higher and more pronounced than in non-agriculture, but they can be explained to a large extent by differences in the ownership of land and productive capital. However, taking this a step further, much needs to be done to increase returns to non-commercial agriculture before it will become a poverty reduction solution.

2.3 The consequences

The consequences of these comprehensive shifts in policy have been extensively reported (see Vink, 2003). However, there are three consequences that are particularly important for the purposes of this report: the change in the agricultural production portfolio of the country, the shift in trade patterns, and the productivity impact.

2.3.1 The composition of output

Over the period 1965-67 to 2001-03 animal production (40 per cent) maintained its relative share of total agricultural production, as can be expected, given the nature of South Africa's agricultural resources with only some 17 per cent of the available agricultural land suitable for cultivation. However, the relative share of different kinds of animal products has shifted over this period: the production and consumption of red meat has stagnated, while the production of poultry meat has increased considerably. Horticulture has increased its share of production by 10 percentage points to 27 per cent at the expense of field crops (33 per cent in the latter period from 43 per cent in the earlier one). As the production of virtually all agricultural commodities has increased over the past couple of decades, this means that the production of horticultural products has, on average, increased at a faster than average rate.

2.3.2 The trade portfolio

One of the main reasons for the relatively faster growth in the production of horticultural products is the increase in exports of these products. This, in turn, has influenced the agricultural trade balance of the country. A number of important shifts can be identified from trade data:

- While agricultural exports have grown rapidly, they have declined as a share of the total exports of goods and services from the country.
- At the same time the share of total agricultural output that is being exported has increased from a quarter in 1990 to almost a third in the 2000s.
- Exports of processed agricultural products have increased faster than exports of unprocessed agricultural products – the share of processed agricultural exports has increased from around half to around 60 per cent since the 1980s.
- Agricultural imports have grown faster than agricultural exports, more than doubling their share of total imports of goods and services into the country from 2.6 per cent to 5.4 per cent over the past two decades. During this period, imports increased from 6.2 per cent of total agricultural output to almost a fifth (19.3 per cent) of output.
- As a result, import cover (the ratio of agricultural exports to agricultural imports, a measure of the ability of the agricultural sector to pay for its own imports) has declined drastically from 5.6:1 to 1.7:1, although the latter remains a healthy ratio.
- The main reason for the relatively rapid increase in imports is the emergence of animal feeds, especially poultry feed, as South Africa's main agricultural import item (resulting in Argentina being the single largest source of agricultural imports).

At the end of the 19th century, South Africa's main agricultural exports were wool, fruit, and wine, and this is essentially still the case today (these contributed 58% of total agricultural exports in 2004). However, this aggregation hides a number of underlying trends that show that the sector has been relatively dynamic. For example, within fruit, both avocados and table grapes have shown a substantial increase in their share of the total over the past decade, while wool, which once dominated the country's total (agricultural and non-agricultural) exports, has become relatively insignificant.

At the same time, however, the origin of farm exports has not shifted much: most farm exports still come from the Western Cape, with recent significant increases been seen only from the Northern Cape with table grapes.

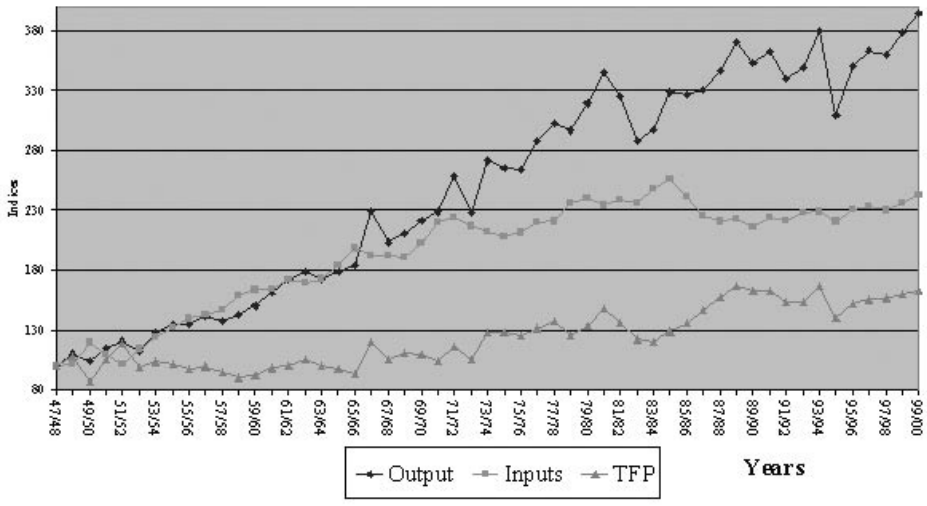
2.3.3 Productivity

Later in the paper productivity in New Zealand's agriculture is discussed and the assessment made that reforms had stimulated productivity. For South Africa, perhaps the elapsed time since the mid-1990s is too short, but there is an historical time series of productivity data. Figure 1 is from Thirtle et al (1993)[7], and shows inputs and outputs and the resultant productivity (total factor productivity - TFP) for South African agriculture from 1947/48 through to 1999/2000.

The trend in TFP (lower line) shows that before 1965, the index of outputs and inputs rose at roughly the same rate, so TFP did not grow, but from there the growth rate was 1.7% per annum, mainly due to the continued growth of output but little change in inputs. From that period employment declined as combine harvesters were introduced in field crop production, favourable tax breaks encouraged greater capital intensity, and agriculture's share of GDP decreased. From 1984/85, when the first round of deregulation commenced, there was a marked decline in inputs. Outputs recovered after the severe drought of the early 1990s, and increased through to 2000. TFP continued to grow over this period despite an increase in the use of inputs.

However, TFP growth in South African agriculture seems to be mainly the result of the reduction in the number of farm workers, as is the case in the developed countries. Yet in the developed countries labour is scarce and hence expensive, whereas in South Africa it is abundant and cheap. Therefore productivity increases in agriculture are at odds with the policy of trying to decrease rural unemployment and thus poverty. How to increase productivity in agriculture in a way that does not contradict policies to redistribute income to the rural poor is a challenge facing the bimodal and dualistic nature of South African agriculture.

Figure 1: Output, Input and TFP Indices



7 Updated to 2000 by Thirtle. The raw data are available from the authors

3. Deregulation of New Zealand agriculture

3.1 Background

By the 1950s New Zealand had become one of the richest countries in the world on a per capita basis. The United Kingdom (UK) absorbed most of the produce New Zealand could supply; in 1960 the UK was the destination of 53.0 percent of all New Zealand's merchandise exports, and such was the dominance of pastoral agriculture that wool (33%), meat (24.2%) and dairy (23.9%) comprised 81.1 percent of total global exports. New Zealand was regarded as a British farm. From there the dream started to end, and by the early 1980s New Zealand had become a highly regulated economy, with extensive government involvement in most areas of the economy. This was especially so in agriculture, where by 1984 assistance to the sector had doubled over a very short three to four year period to reach 30 -34 percent of the final value of most pastoral farm output. Since then the economy in general has evolved to one of the most open in the world, and the agricultural sector is held up as the classical 'farming without subsidies'[8] example.

By the late 1960s, faced with growing balance of payment problems, successive governments sought to maintain New Zealand's high standard of living and full employment rate with increased levels of overseas borrowing and increasingly protective economic policies. The government introduced controls (quotas) for manufactured goods, increased tariffs, and undertook a huge capital works programme, building roads, houses, hospitals, power stations and telecommunications. The inevitable result was an inefficient manufacturing base, economic stagnation and increased government management of the economy. With export markets for agricultural produce guaranteed, increasing production became the name of the game. A turning point came around 1973 when the UK entered the Common Market and the cosy agricultural market arrangements ceased and the first international oil crisis hit, a crisis that New Zealand did not respond well towards, to its medium-term detriment.

By 1984 there was wide acceptance that a change in direction was required, and a number of acute problems had to be addressed:

- The fiscal deficit, which had reached nine percent of GDP;
- A growing public debt problem, with borrowing often being used to support consumption. Government net debt as a proportion of GDP had risen from 9 percent in 1976 to 41 percent by the mid 1980s;
- A persistent current external deficit, which was complicating overseas debt management and putting pressure on the exchange rate;
- Persistent inflationary pressures, with the consumer price index (CPI) reaching almost 20 percent before price controls were imposed in 1982;
- A lax monetary policy, which, because of the government's suppression of interest rates, had led to excessive monetary growth;

8 With reference to the seminal book (Sandrey and Reynolds, 1990) that describes in detail the background, the policy shifts and the consequences of New Zealand's agricultural reforms.

- A growing unemployment rate, which had reached 7 percent by 1983; and
- A real GDP per capita growth between 1976 and 1984 that averaged only 1.15 percent per annum.

A 'snap' election in 1984 brought to power the Labour Party, with a Finance Minister committed to a less interventionist approach and with strong support from his senior colleagues. For a traditionally left-wing democratic party this approach was inconsistent with their general policy stances, and this contradiction demonstrated how far the previous government had drifted into intervention, the general disenchantment with intervention and the need for radical reform.

The real feature of the reforms from that point was their dramatic nature; attention focussed on stabilisation of the inflation rate, government deficit and overseas debt, and deregulation through reforms of commercial policies, the taxation system and the financial sector, and government trading policies. Agriculture became a central part of these reforms, partly because of its importance to the economy and partly because it was such a visible target and its reform enjoyed political support from the Labour Party's traditional worker base. However, reform of the agricultural sector also had many supporters within the sector itself, as the situation was regarded as unsustainable and farmers expected compensation through reforms elsewhere in the economy. They also expected that the newly-floated exchange rate would closely follow the agricultural terms of trade, given agriculture's importance in the economy. On the latter they were somewhat mislead; the reforms to agriculture took place much faster than many reforms elsewhere, and, contrary to conventional wisdom, the nominal exchange rate (and consequently the real exchange rate) actually appreciated strongly. Both accentuated problems for the sector and delayed its eventual recovery.

3.2 The reforms

The New Zealand dollar (the 'Kiwi') was immediately devalued, and then a few months later floated. Export assistance was discontinued, import protection was lowered, the tax base was widened and made more indirect, government trading activities were privatised and the public sector was reformed.

In the agricultural sector, subsidies were withdrawn and by 1991 their value had reduced to around 2 percent of output from the 1983 figure of 33 percent, and from then until the present time that level has prevailed, with the remaining minimal support concentrated upon research and extension, animal health and quarantine, and assistance in times of adverse events; concessionary farm loans were progressively brought into line with market rates for the government-owned Rural Bank (although some compensatory debt write-off was introduced by way of compensation, the only real compensation provided to the sector); user fees were introduced for most government services; and farm input subsidies were terminated. In addition, the reform of domestic marketing regulations resulted in complete deregulation of the wheat and egg sectors and a partial deregulation of the town (domestic) milk sector (the export milk sector deregulation proved to be a much harder nut to crack). All of this happened over a short two to three year period, and a notable feature was that very limited compensation was paid.

3.3 The consequences

3.3.1 General consequences

The brief euphoria of a devalued currency lasted for a year or so, and was followed by the pain of a sharply appreciating dollar for the next three or four years. As world commodity prices were volatile, the reforms immediately placed stress on onshore processing industries, which were forced to reduce their margins. And of course the subsidies were being removed. Table 1 shows the effects over the decade of the 1980s to put the reforms in perspective, using the farm gate returns for lamb as the example[9].

Labour market reforms such as the abolition of compulsory union membership and greater flexibility in the labour negotiation process saw a transfer from the traditional large and inflexible plants to newer more flexible ones that were able to adjust to seasonality and other changes much faster. Freedom of exit, which had not been a feature in the past, took place concurrently with the new-found freedom of entry in the processing sector, although the consequences for farmers as shareholders in some of these plants was rather mixed as the adjustment process worked its way through.

The worst year for lamb was 1985/86, when all the contributions were negative and the farm gate price fell to under half of that of the previous year. The next year farmers were rescued by increasing international prices of meat and skins, as well as the end of the subsidy withdrawals. The patterns for mutton (older sheepmeat) were somewhat similar, while dairy, not being as highly supported, did not suffer the same subsidy withdrawal symptoms. Both wool and beef were intermediate between the two extremes of sheepmeat and dairy, although wool was more heavily supported and that support was withdrawn more quickly.

To fully appreciate the nominal exchange rate picture it is necessary to analyse the real exchange rate (RER) over the period. RER was remarkably stable from 1976 to 1984 as the currency was managed, then improved in 1985 as the nominal dollar depreciated sharply, deteriorated (from the farmers' perspective) from 1986 to 1988, and then recovered in 1989 as the inflation rate finally came under control and the New Zealand dollar stabilised.

9 The skins prices are introduced as these (at the time valuable) by-products masked some of the changes. Note that the reference point is the actual 1979/80 farm gate price for lamb (86.0 NZc/kg), and also note the huge increase in onshore (slaughtering and processing) costs during the period, as the supports to farmer was escalated in the early 1980s in part as compensation for increased militancy and worker power in the processing sector.

Table 1: The relative influence on farm gate returns for lamb, NZc/kg

June Year	1 + Net overseas price	2 + Exchange rate effect	3 + Onshore processing margin	4 + Skins	5 = Assistance	6 Final farm gate price
	% change per year					
Annual change						
1981	28	5	-10	-17	0	6
1882	-13	6	15	10	23	41
1983	16	6	-87	0	67	3
1984	-4	1	-19	7	23	8
1985	17	10	-4	27	-35	15
1986	-20	-4	-19	-13	-27	-83
1987	67	5	-15	48	-49	57
1988	-30	-14	28	-19	-6	-41
1989	29	9	-10	-7	0	22
Averages						
1981-84	7	5	-25	0	28	15
1985-89	13	-1	-4	7	-23	-6

Source: Sandrey and Reynolds, 1990: 149.

There are three main areas where it is useful to track the consequences for agriculture. These are farm incomes, land prices and the composition of farm production, although all three have complex and often lagged interrelationships. By 1987 nominal farm land values had reduced to below 1981-82 boom prices, and in real terms were only about 40 percent of their peak values. Prices increased in subsequent years, and by 1995 the price of most categories of farm land had recovered to around 86 percent of their 1982 value in real terms. The price of most categories of farm land is now higher than the pre-reform peak.

These initial declines, coupled with higher interest rates and lower incomes, placed stress upon farmer equity and debt levels. Despite these adverse conditions, few farmers were forced to exit the land, as most confounded expectations and stayed on by a combination of tightening spending, drawing on reserves and seeking outside employment (along with spousal support on all three). Although accurate figures are not available, it is thought that perhaps only 1 percent of farmers were forced off the land rather than the predicted 10 percent. Table

2 gives an indication of the relationship between farm incomes for sheep and beef farmers and for dairy farmers and farm land values. This shows clearly the split emerging between the heavily supported sheep and beef farmers and the lightly supported dairy farmers as the subsidies were withdrawn.

Table 2: Farm income/Land value index

Year	1983	1985	1987	1990
Land values (1982 = 1000)	908	702	462	445
Sheep and beef income (1976 = 1000)	663	832	475	506
Dairy income (1976 = 1000)	837	969	592	1308

Source: MAF, 2005

Initially the reforms had little effect on farm size. However, subsequent to the implementation of the reforms some of the most fertile farm land has been converted into horticulture and there has been a growth in the number of farms producing horticultural products, which typically are smaller in size than other land uses. Additionally, areas of marginal land were converted to forestry and the most marginal of land was withdrawn from agriculture production and retired into native bush. Ballingall and Lattimore (2004) report that the distribution of farms has become more bimodal, with sheep and beef farms becoming fewer but larger and a number of smaller, diversified farms emerging, although official data on this is hard to interpret, as the definitions seem to change over time

Perhaps the real story is in stock numbers. While a relative comparison between livestock numbers has become more complex as the productivity from a breeding ewe or diary cow thirty years ago has changed through technology, it does appear that rather than a major reduction in overall livestock equivalents over time there has been a movement around the composition of these units. The most striking feature of Table 3 is the reduction in sheep numbers as the move away from that highly subsidised sector took place. The beef sector in New Zealand is split between traditional beef cattle and cull dairy cows for the US market of largely so-called manufacturing or hamburger beef. The deer sector is a fascinating case study that will be examined in more detail later, while the mohair goat industry came and largely went. Overall, agricultural production did not decline following the reforms in the decade though to 1984, and indeed has steadily increased since then as dairy, deer and fruit production replaced the traditional sheep and beef sectors. Part of this was due to production lags, and in particular the fruit sector that was stimulated by export incentives through the early 1980s.

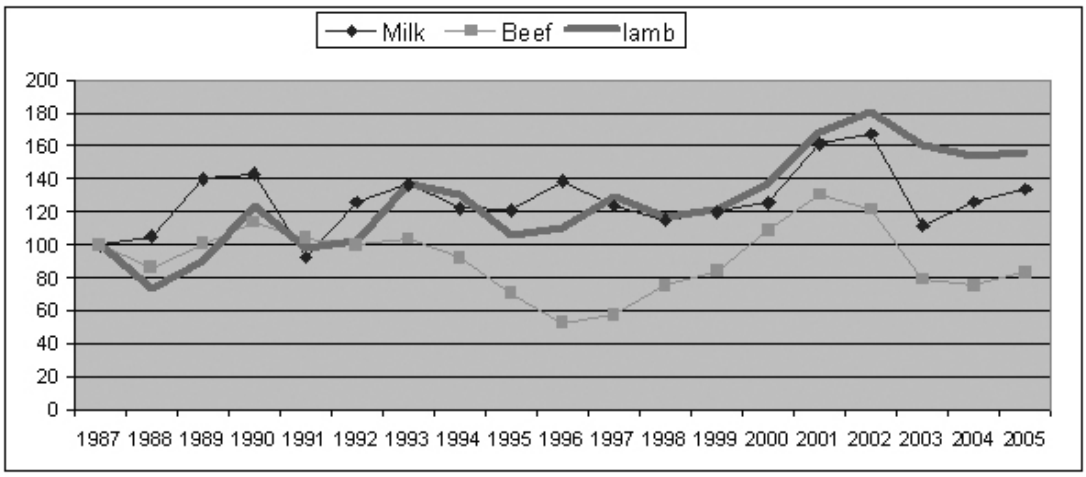
Table 3: New Zealand's stock numbers

Year	Sheep	Dairy cows	Beef cattle	Deer	Goats
	million				Actual
1950	33.8	2.9	2.1		
1960	47.1	3.0	3.0		
1970	60.3	3.7	5.0	200	
1980	68.8	3.0	5.2	104,359	52,000
1985	67.9	3.3	4.6	319,908	426,887
1990	57.9	3.4	4.6	1.03m	1.06m
1995	48.8	4.1	5.2	1.22m	336,812
2000	42.8	4.6	4.7	1.49m	173,400
2005	39.5	5.3	4.4	1.61m	154,500

Source: MAF 2005 and earlier editions

Production since the reforms has been driven by market prices, although the role of production lags and the inter-linkages between dairy and beef output that comes from around half of the beef output being cull dairy cows cannot be ignored. Figure 2 shows the real price changes since 1987 for dairy, beef (represented as manufacturing cull cows from the dairy herd) and lamb through to 2005. The data are presented in real terms, anchored to 1987 for comparative purposes.

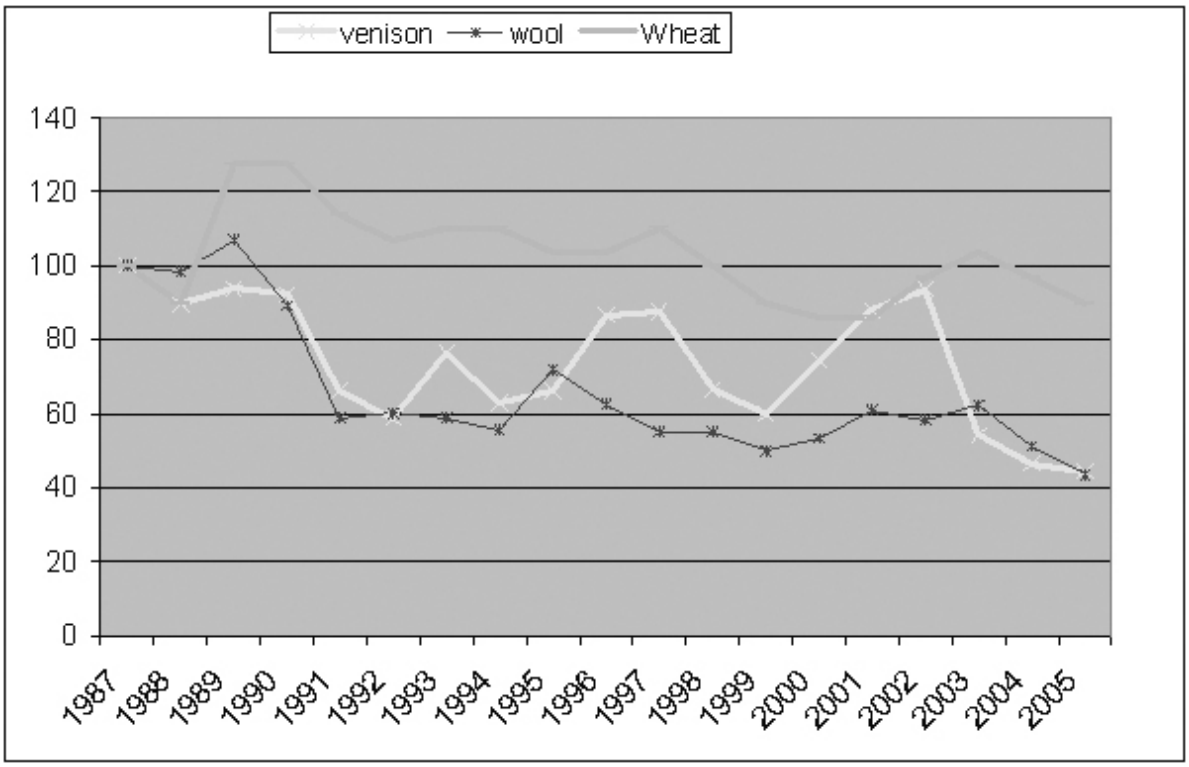
Figure 2: The relative price of milk, beef and lamb



Source: MAF, 2005

The commodity boom of the early years of this decade can be seen for all three products. Dairy has consistently been above the reference point, while lamb recovered from its 1998 lows and beef has struggled. Not shown is that dairy and lamb (and both wool and apples, shown later) are consistently below their levels of the 1960s and 1970s. To complete the picture, Figure 3 shows the same analysis for wool, venison and wheat prices.

Figure 3: The relative price of venison, wool and wheat



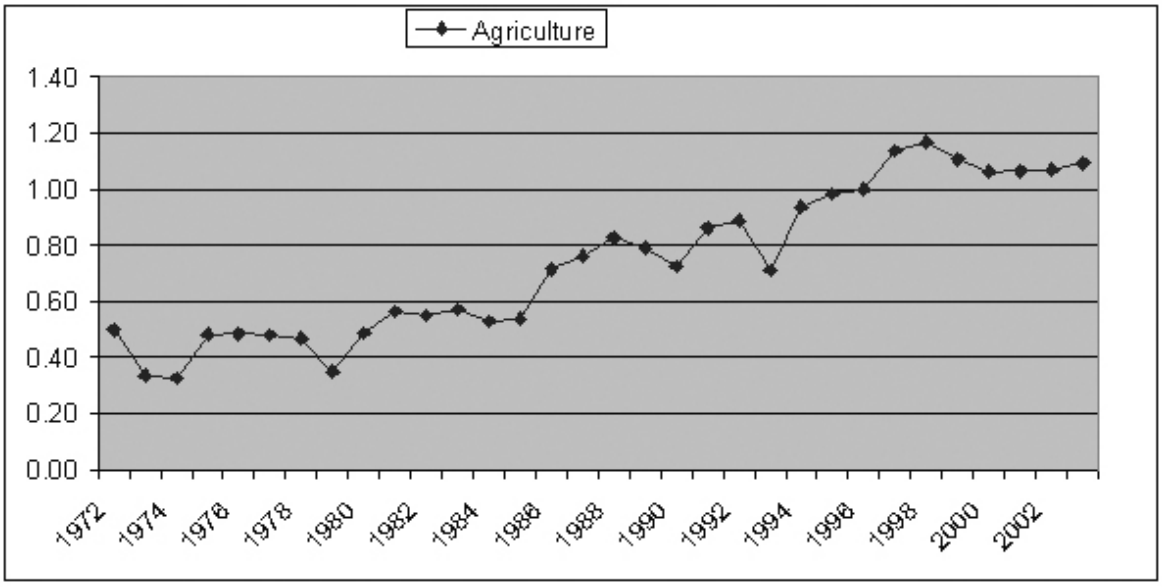
Source: MAF, 2005

Wheat has been the most consistent performer, and largely at or above the 1987 reference point. Venison reacted to the increasing supplies coming onto the market, and fell to around half of the reference price before recovering in that same boom of the early 2000s. Wool has continued to perform poorly, and by 2005 was at a level of only around 15 percent of that in 1956 (and 1953 rather than 1956 was the real boom year).

3.3.2 Productivity

The productivity story is interesting, as the reforms seemed to force enhanced productivity changes in the sector. Hall and Scobie (2006) report examples that show spectacular gains in productivity in sheep breeding, with the export revenues generated from around 40 million sheep in 2002 exceeding that generated from 70 million sheep in the 1980s. This is largely because of increased farm productivity in the sector and more processing and value adding taking place in New Zealand. In 1986/87, around 72 percent of lamb was exported as carcasses. Today, around 95 percent is exported as processed (higher value-added) products. They also found that lambing percentages have increased by over 20% since 1990, that the amount of lamb sold per ewe has increased by over 60% in the same period, and that the dairy industry has seen very strong productivity growth, with milk solids per cow increasing by over 30% since 1990.

Figure 4: Agricultural productivity in New Zealand



Source: Harrington (2005): 13

Figure 4[10] shows the estimated productivity changes in New Zealand agriculture from 1972 through to 2003. There appear to be three periods that are consistent with the hypothesis that the reforms induced these productivity changes:

1) Modest but uneven growth from 1972 to 1985;
2) An almost linear increase from 1985 to 1995, except for the 1993 year; and
3) An evening out or even a decline since then.

3.3.3 The role of marketing changes[11]

Until the reforms the essential link between farm gate and the final marketplace for the major agricultural products were largely controlled by producer marketing boards. For dairy products, apples and kiwifruit these boards had exclusive export powers, while for meat exporters were licensed and their activities regulated by the Meat Board (from October 1982 to December 1985 the Meat Producers Board took exclusive control of meat exporting). The only real exception was wool exports, as most of the product was auctioned. In addition, town milk (the domestic fresh milk market) and eggs were subject to supply controls under the umbrella of their respective boards. These sectors, along with wheat in the arable sector, will be examined separately. In most sectors the marketing boards either directly or indirectly operated price smoothing mechanisms for farmer returns as well. The crucial question is the extent to which these marketing arrangements were reformed and their consequential impact upon the sector's performance.

10 Lattimore shows a similar pattern through to around 2000, but from there to 2004 he shows TFP increasing dramatically over the four years through to 2004. Lattimore's breakdown shows an average from 1972 through to 1984 ('with subsidies') of 1.5 percent per annum but a significantly higher average from 1984 through to 2004 ('no subsidies') of 2.5 percent.

11 This section draws heavily from Sandrey and Reynolds (1990), Harrington (2005), and Evans and Meade (2005)

Given the large percentage of agricultural produce that is exported, this relationship is pivotal, and arguments ranged freely on the extent that the marketing boards were able to enhance returns through single desk selling or market coordination on the one hand versus adding a burden through bureaucratic inefficiencies on the other. Interestingly, some members of the WTO have targeted the New Zealand Dairy Board (and its successor, Fonterra), as State Trading Enterprises (STEs) that must have their powers reduced under any WTO settlement, thus suggesting that at least some believe the former is true and market power does exist.

The **dairy** sector has faced the fewest adjustments; partly because fewer subsidies were directed to this sector and partly because the vexing question of the control of and economic rents associated with international quota markets has been difficult to resolve. The processing industry has been almost exclusively a cooperative-based one, with a steady process of mergers and amalgamations from the 168 dairy companies in 1961 through to 42 in 1981, 9 in 1998 and only 4 in 2001. At this latter date the two major companies and the Dairy Board merged into Fonterra, a cooperative company that processes around 95 percent of New Zealand's milk supply and controls at least one third of the world trade in dairy products. The statutory powers of export monopoly were removed, although a mechanism for allocating quota to the lucrative EU and other markets remains, and the almost-complete dominance of cooperatives in the New Zealand dairy sector remains a feature of the market, along with the strong international processing and marketing linkages of Fonterra. Another feature is that an analysis of exports of New Zealand's dairy produce shows that 24 separate individual countries were the destination of at least one percent each of these total exports during 2005, demonstrating both the wide global connectiveness and marketing of the industry and, although not specifically proven but alluded to, product innovation through an extremely diversified product mix that comprises over 1,000 different products.

The **meat** sector went through dramatic changes. At the time of the reforms it had complete control of the beef and sheepmeat (but not venison) export market (but not processing), and the changing profitability of the sector that led to declining sheep numbers also led to a significant industry restructuring that had considerable animal and corporate 'blood on the floor' as this restructuring worked through in the face of considerable overcapacity and newer technologies. Cooperatives were relatively new to this sector, a sector traditionally dominated by overseas interests, but Evans and Meade (2005) report that cooperatives now account for around half or more of the current processing. It was interesting that during the 'procurement wars' of the late 1980s and perhaps early 1990s in response to declining stock numbers many farmers showed little loyalty to their own processing cooperatives but rather sold to the highest bidder, thus suggesting that the farm gate to final market chain of cooperatives may not be that strong in many cases – a sharp contrast to the dairy sector. The once-mighty Meat Board now operates as two shells; one the Meat Industry Association to allocate and monitor the lamb supply for the EU quota, the other the combined Meat and Wool New Zealand body to coordinate the industry (but without any powers of enforcement) and collect and disburse the compulsory industry levies for functions that include research and development. Otherwise, the market where New Zealand holds a 50 percent and 8 percent global share of the sheepmeat and beef trade respectively remains an open and competitive one. It must be reported also that around two-thirds of both New Zealand's lamb and beef are exported under quota to the EU and the US respectively, and that these quota rents are, especially in the case of EU sheepmeats, substantial. Any change either in market access for competitors or to the administrative mechanisms through a WTO settlement, and consequently the loss of economic rents from the EU, would be costly to New Zealand.

Since accounting for one third of total exports in 1960, the importance of **wool** has steadily declined in tandem with its relative prices to become largely a by-product to the meat sector. Marketing has traditionally been through the auction floor, and this has remained important as around 80 percent of the clip is sent overseas with limited further processing. Recent developments have included the setting up of a grower-controlled private company to market the premium fine merino wool and the rise of wool brokers operating as commissioned agents between growers and final buyers. In effect, little has changes since the reforms except the continual decline in prices and perhaps the slow emerging of some more sophistication in the marketing of the product.

No analysis of New Zealand's recent farming performance is complete without looking at the **deer** industry. An early history of this sector and the associated projected time-path for its development is contained in Sandrey and Zwart (1986). Deer were introduced into New Zealand by the white settlers, and by the early to mid part of the 20th century they had become both a recreational hunting facility but more importantly a pest in the bushlands. In the late 1960s commercial hunters started harvesting the feral animals for venison to supply the European market and velvet for the lucrative Asian market. In the 1970s this evolved into capturing the feral breeding stock for commercial farm production as the animals were domesticated, and by the early 1980s the industry was generating economic rents to owners of female animals, who were able to take advantage of disequilibrium prices that fuelled the industry as new entrants clamoured to get in. At this stage the by-product velvet was supplying returns to owners of stock, as few animals were being slaughtered for venison. Around the end of the 1980s the high prices for female animals collapsed and reverted to breeding rather than speculative values as the herd began an orderly transition to a new domestic livestock industry. This saw the end of feral capture and the start of the marketing of venison globally as a premium meat. Breeding numbers have stabilized at around 1.5 million head in recent years as the industry has matured (Table 3).

Technological innovation has been a feature of this industry at all stages of its progression; from the helicopter harvesting techniques through to innovative farming practices and marketing developments. Government assistance was limited to some tax advantages in the early stages of the sector's growth and the usual research and development contributions (although most of the practitioners were ahead of the scientists in the early days).

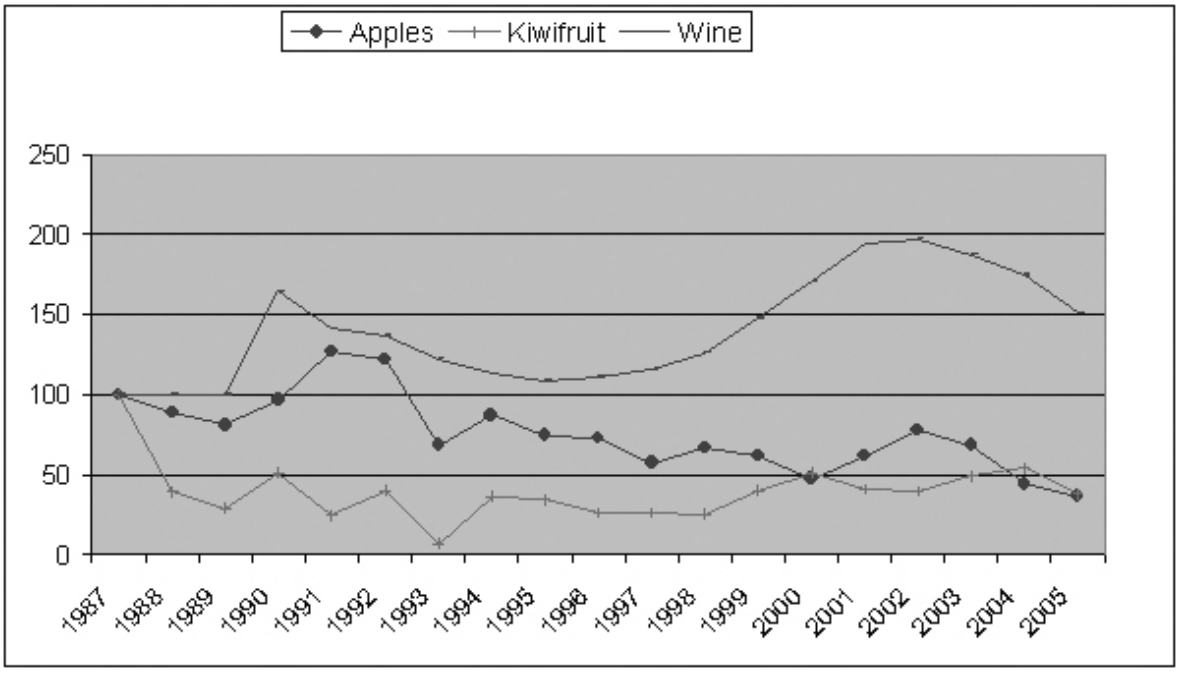
Why New Zealand and not South Africa? New Zealand had excellent access to the European Red deer and this animal may be more conducive to commercial farming than its African counterparts. Perhaps the industry, like the kiwifruit industry, could conceivably have been developed in South Africa as well as or instead of New Zealand. In both cases entrepreneurial skills and innovation were the keys, as South Africa lacks neither deer (antelope) to commercialize nor the climate to grow kiwifruit, although we do consider that South Africa's lack of good quality land and assured summer rainfall may be a constraint.

We must, however, acknowledge the role of small antelope such as impala as vital cogs in the fuel chain for both big game hunting and viewing in South Africa, with the former estimated to be a R500 million a year industry and the latter probably the dominant attraction of the South African tourism industry. Also, South Africa does have an ostrich industry[12], although exports were voluntarily banned to the main EU market in 2004 following the avian flu virus on some farms. At that time the industry generated R1.2 billion a year from exports, of which 30

percent came from the sale of ostrich meat and the balance from leather and feathers. South Africa has long dominated the world ostrich industry, although the early boom was a century ago in feathers. In 1964 the first abattoir was opened and in 1970 the first tannery was established but meat production didn't really expand until the mid 1980's, a similar timing to that of New Zealand's venison as international consumers sought a healthier alternative to beef. From some 770,000 birds at the height of the feather craze to just 23,000 in 1930s the total number of birds in South Africa has risen to roughly 300,000.

Exports of apples and kiwifruit dominate the **horticulture** sector, with New Zealand holding a global trade share of around 5 and 25 percent respectively, and around 55 and 95 percent of the domestic production respectively being exported. Wine should also be included in this category, a horticultural product that is both riding and creating the so-called new world wine industry wave along with, inter alia, South Africa. Figure 5 below shows their respective price indices relative to the same the common base of 1987 as used above. Kiwifruit has fared the worst, with apples little better while wine has boomed despite dramatically increased supplies, both domestically and on the world market.

Figure 5: The relative prices of apples, kiwifruit and wine in New Zealand



Source: MAF 2005

Production of the two fruit sectors has followed different time-paths; apples are a traditional but declining export crop, while kiwifruit was the darling industry of the early 1980s that has matured. Wine production (and quality) increased significantly from the mid 1970s, and this export market has been based around the Sauvignon Blanc flagship. These time-paths are shown in Table 4, and they raise interesting questions as to 'why New Zealand' and 'did the reforms play a part' for the kiwifruit and wine sectors in particular.

12 Based on http://ostrichblog.blogspot.com/

The glamorous kiwifruit sector benefited from marketing and input subsidies, and particularly taxation subsidies, during the 1978-82 period that fostered the growing boom and led to high returns to early entrants, while, except for a grape pull-out scheme in the mid 1980s, wine has 'gone it alone'. The marketing structures for these three sectors have varied, and the comment must be made that in the case of both wine and kiwifruit product differentiation and astute marketing in the face of increased global supplies has been a major factor in the success of these two sectors.

Table 4: The export of New Zealand horticulture, NZ $m

Product/Year	1975	1985	1995	2000	2005
Apples	19.3	108.2	343.6	404.5	387.0
Kiwifruit	2.9	171.9	320.8	462.0	720.2
Wine	0.1	3.0	42.0	169.8	432.7
Other*	11.2	198.1	595.6	662.4	763
Total	33.5	481.2	1,302.0	1,698.7	2,302.9

Source: New Zealand Hort Research, 2005. Where "other" in 2005 included fresh vegetables ($200m), processed vegetables ($264m), and processed fruit ($100m).

The restructuring of the old Apple Board was completed in the early 2000s. Earlier, an independent regulatory board had been stripped out, and this was abolished, and the merger of the marketing arm with a private company signalled the end of monopoly exporting. This has led to a situation where almost 100 exporters currently operate, and whether the current poor returns are a function of too much competition in the market place or not is a moot point. In either case these reforms lagged the 'big bang' of the mid 1980s, and the heterogeneity of the different varieties and the associated price differences between 'old' and 'new' varieties has always been a feature of apple marketing, with the oversupply of the 'old' varieties contributing to industry woes.

Kiwifruit was marketed by companies operating under the New Zealand Kiwifruit Authority, and New Zealand enjoyed a dominant global market share. In 1989 the Authority became the Board with single-desk selling powers. Contrary to the trend in other sectors, growers were happy with this arrangement, and despite some changes the restructured Board (now a grower controlled company called Zespri) still has monopoly powers to non-Australian markets that purchases product from a variety of packhouses and coolstore facilities.

The wine industry benefited from a subsidised vine pull scheme to reduce the wine glut in New Zealand and replace the older, unwanted varieties with the more commercially viable ones. This scheme was regarded with askance by economic purists, but it possibly was a big catalyst in setting the industry on its modern path. Concurrently with this supply-side activity were the deregulation and liberalisation of imports of wine into New Zealand, through both the CER trade agreement with Australia and more generally unilateral border protection liberalisation. This gave a major incentive for the New Zealand sector to enhance quality, and until relatively recently imports and exports of wine were somewhat in balance. A few large firms dominate the sector by value, but they operate alongside the medium to smaller ones,

and the industry has became an excellent case study of brand naming and niche marketing undertaken within a relatively cooperative manner that has had little or no government involvement. In a sector where New Zealand enjoys outstanding success on world markets with a price to match but produces only 0.3 percent of global wine output, marketing must have played a major role.

There are three case studies of lesser agricultural products that were classical case studies during the 1980s deregulation. These are wheat, eggs and town or market milk for domestic consumption. All three were heavily regulated leading into the 1980s; the first two were completely deregulated while the town milk sector was partially deregulated. Sandrey (1990) provides the sequence of events for this and the results through to early 1990.

The **wheat** and its associated milling and flour industries returned to the free market after the abolition of the controlling Wheat Board in January 1985. The adjustment process coincided with difficult financial conditions for producers as the Australian (world) price and quality became the benchmark. The market responded by growing more wheat nearer to the main demand centre of the North island, and quality improvement was a definite plus. This all flowed through to flour and bread quality, and a restructuring of flour mill locations, operations and management structures took place. Producers now fully operate on a world market that is benchmarked to Australia, with New Zealand producing around half of its domestic wheat consumption, with most imports going to the North Island as the inter-Island freight costs are similar to trans-Tasman costs. The South Island is largely self-sufficient.

Similarly, the **egg** marketing arrangements 'took a cold shower' as the highly regulated sector was partially deregulated in April 1986 as pricing and marketing controls were lifted and a pathway to production freedom was instigated through a transferable bird entitlement program. Remaining product control and the old Poultry Board were consigned to the dustbin of history in 1988. The immediate result was a rapid decline in producers to little more than half of the pre-reform numbers although some of the wealth transfers to producers from consumers still remained in 1988 but that rent was evolving downwards.

Reform of the **domestic milk** market was more complex.[13] The major players in the game were producers and processors (with a strong interrelationship between these two through the cooperative nature of the processors) on one side and milk vendors on the other. These vendors delivered milk literally to consumer doorways and small 'corner' groceries in legislated milk bottles, and fiercely regarded themselves as independent operators and not employees of the processing plants. Minor players were the supermarkets who had strict marketing constraints, and the end consumers. In the middle was the Milk Board calculating margins at all stages of the chain to several decimal points and allocating vendor territories.

Through a series of 'strategic withdrawals' the Milk Board dissolved itself in late 1987 and left a small administrative shell to gradually hand over the remaining pricing regulations to industry. By late 1989 the milk vendors had declined in numbers and had a new role that entailed less consumer door delivery and more direct supermarket supplies as supermarkets took over a greater role, bottles had been replaced by the now-universal cartons, the producer pricing regimes were restructured and the consumer was paying more for milk as the latter exercised

13 One author of this paper (Dr Sandrey) was directly involved in the latter stages of the reform process as government representative on the New Zealand Milk Board during the year of its dissolution (1987) when he actively participated as conduit between the Minister and the Board in engineering that dissolution.

their powers through their dual producer-processor role. This sector was a classic example for following the strategies of industry participants as regulation was swiftly replaced by market powers, and in this case those market powers had the shadow of the New Zealand Dairy Board controlling all of the domestic seasonal milk production but not directly the year-round smaller town milk sector cast upon them. Figure 2 shows that the real price of export milk rose dramatically in 1989, and this clouded the picture as the producer price paralleled this increase to the detriment of consumer prices as the export and domestic sectors started to merge.

In summary there is a large diversity in the marketing structures and their evolution in response to deregulation. The successful evolvers have been the dairy and kiwifruit sectors, the disasters have been the meat and apple sectors, while the wool and wine sectors have really stood on the sidelines. Is it a coincidence that the evolvers have been the successful industries following deregulation? Perhaps, but then wine has been very successful as well, and, conversely, the sheepmeat industry went through the largest structural changes at both the farm and off-farm levels. Overall, Zwart and Moore (1990) considered (in 1989) that despite New Zealand's reputation for sophistication in its marketing structures, the value of its major commodity exports was not higher than that of comparable countries. Evans and Meade, concentrating upon the role of cooperatives, found the policy implications included the following:

1) Cooperatives do not arise in New Zealand to a greater degree than they do overseas, although there are variations;
2) The relationship between cooperatives and performance seems to be slightly positive; and
3) There is the necessary flexibility in their structures.

3.4 The New Zealand experience: overall conclusions

Table 5 shows how New Zealand's export profile has changed since 1960. How much of this can be attributed to the reforms of the mid 1980s is of course a moot point, as many of the changes were already in movement at that time. Noticeable is that dairy has not even regained ground overall since the 1960s, but of course this is partly due to the increase in non-traditional exports. Wool has been on a steady decline to obscurity as the world price has declined, but otherwise there has been little change from 1992 in the meat, fruit and vegetables, fish, forestry and aluminium export shares. This reaffirms that much of the response to the reforms had been competed by 1992, and more recent changes (not withstanding lag responses) have been from global market returns as agriculture has actually maintained its overall share in New Zealand's exports.

Table 5: Main exports from New Zealand, % share

Product/Year	1960	1970	1980	1992	2005
Wool	33	18.8	18.1	6	2.7
Meat	24.2	33.5	23	16.8	15.8
Dairy	23.9	19.7	15.9	15.7	20.5
Fruit & Vegetables	1.2	2	2.5	6.5	5.2
Agriculture	79.3	74.0	59.5	45.0	44.2
Fish	0.2	1.4	2.5	6.5	3.8
Forest	1.3	5.8	8.5	10	9.6
Aluminium	0	0	3.2	3.7	3.7
Non-Commodity Man.	1.2	5.7	12.8	17.0	

Source: Author calculations

In many ways Sandrey and Reynolds were too close to the 'action' to give a final report mark. Others have done so later, with more hindsight benefits. We would agree with the New Zealand Institute of Economic Research (NZIER) in that a number of lessons can be concluded from the New Zealand experience. Crucially, farmers have the scope and ability to make changes in reaction to the reduction in assistance, therefore raising business profitability above what it would have been had such a reaction not occurred. Importantly, they do not bear all the adjustment costs, as they do not face perfectly inelastic supply or demand curves and as a result the burden of adjustment is shared across the markets. Given time, profits recover from the initial shock as asset prices adjust to lower product prices, outputs change and demand grows: resources will be redirected towards those products with comparative advantage. Macroeconomic stability plays an important role in re-establishing agricultural profitability, but adoption and innovation in the sector are by far the most important factors in re-invigorating the sector post-reform.

Similar conclusions were stated closer to the reform period by Sandrey (1991), who wrote that the important lesson emerging from New Zealand's experience is that changes in broad economic policies can adversely effect the agricultural sector, and especially so if it is export dependent. He also considered that whether or not the overall impact could have been reduced by a different sequencing of policies was unclear, as (a) a longer reform period may have lacked the credibility to sustain those reforms and (b) such a statement begs the question of what is the optimal sequencing. Overall, the main feature of the reforms was their comprehensiveness and speed, and in this situation sequencing becomes somewhat of a sterile debate.

In a speech to Federated Farmers Alan Bollard, the Governor of the Reserve Bank of New Zealand[14], examined the new relationships between agriculture, monetary policy and the New Zealand economy. Against expectations, the role of the agricultural sector has increased in

14 Bollard, 2006

recent years, with much of this being due to the enhanced technological change (as discussed in this paper) that a market approach has brought to the sector and global 'shocks' in recent years that have been benign to New Zealand. These shocks have included the foot and mouth outbreak in Europe increasing sheep meat prices and North American mad cow outbreaks increasing demand for Australasian beef in Japan at a time when Australian droughts reduced beef exports from that country. In particular, farmers have learned to become more sophisticated in handling volatility, and this has in turn increased the demand for farmland to the extent that agricultural lending now represents around one third of all registered bank lending to the corporate sector in New Zealand. In a true central banker fashion the Governor warns against the downside of this exposure for both bankers and their clients, but he does temper this by concluding that the sector is in a much better position to handle the looming 'rebalancing' than it was 'in the turbulent 1980s'.

Support that the liberalisation programme has enabled New Zealand to increase its prosperity since 1980 is given by Borkin (2006), who examined developments in New Zealand's terms of trade. Volatility in the terms of trade had a negative effect upon New Zealand's economic growth from 1950 through to 2005, but rather than the level of the terms of trade it has been the export prices that had a significant positive effect upon this growth. In particular, the terms of trade have shown an increasing trend since 1974, and given that the country is largely an exporter of primary commodities this is a surprising find and runs counter to the usual hypothesis that commodity exporters will face terms of trade that trend downwards over time. This increase in export prices exceeded the terms of trade relative to world commodity prices, and he finds that the change in the composition of New Zealand's export basket and the recent 'de-commodification' of these exports through new value-added approaches and global marketing has contributed to this. He also points out that the liberalisation in New Zealand's border protection has enabled import sources to move towards the low cost manufacturing countries in East Asia, and this has been a factor in enhancing terms of trade as well, although this effect seems to be minor.

A question posed at the beginning of this paper was 'did New Zealand re-gear itself, or was it just lucky', and Borkin attempts to answer this analytically. He finds that it is difficult to test empirically how the compositional change in exports have contributed, as there are complex feedbacks and endogeneity effects, but concludes that an economy that is more dynamic is able to adjust faster and the reforms of the mid 1980s certainly enabled just that. However, he also finds that holding the bundle of export goods constant at their 1980 share would have resulted in a slightly lower terms of trade index value over the 2003-2005 period than they actually were, thus posing some doubts on the reforms as assessed from this perspective, but this results because both dairy and meats were enjoying a boom over the last three years and their overall rather than agricultural share of exports was higher in 1980. This analysis is also dependent upon the choice of base year, as using 1960 gives a result that is significantly better currently for New Zealand.

But perhaps we should give the final word to farmers themselves. Federated Farmers of New Zealand (2005) report on 'Life after Subsidies'[15] in a glowing testament to an agricultural sector operating in the absence of subsidies and urges international reform with a missionary zeal. They glorify the better life after subsidies, stress the productivity growth that exposure to market forces has dictated and relish being 'more in charge of their own destiny'.

15 This short note is not to be confused with Sandrey and Reynolds's 'Farming Without Subsidies'.

4. The gathering of the threads

There are both similarities and differences between the New Zealand and South African agricultural sectors that have to be taken into account in any comparison of the impact of policy shifts between the two countries:

- Both share a relatively recent white colonialist past that was superimposed upon indigenous peoples; however, in New Zealand the minority indigenous peoples have largely been integrated into agriculture, while this is not the case for the majority in South Africa as that country emerges from the troubled years and seeks to address the injustices of the past.
- Both share a generally similar southern hemisphere climate and potentially can and do compete in some products internationally, although New Zealand is blessed with more reliable rainfall and better soil conditions overall. However, New Zealand, with its smaller domestic population is more export-oriented.
- Both underwent dramatic reforms of both their economies and their agricultural sectors; New Zealand in the mid 1980s and South Africa a decade later, and in both of these cases economic reason either partially or wholly drove these reforms although the political motivation in the case of South Africa may have been equally or even more important.
- Both now are Cairns Group members that lead the world in having an unsubsidised agricultural sector, although the New Zealand sector has adjusted to this regime better than the South African sector has to date. That last 'to date' qualification is important, as the New Zealand experience shows that times lags can be longer than expected.

As a result, the impact of marketing deregulation in South Africa and New Zealand is difficult to assess, as the discussion in Sections 2 and 3 above also shows that marketing reform was, in both cases, part of a broader package of agricultural-sector reforms that included:

- A reduction in general support to agriculture in South Africa, but not in New Zealand;
- A reduction in commodity specific subsidies in both countries;
- Deregulation of agricultural markets in both countries; and
- Trade liberalisation as a result of the Agreement on Agriculture in 1994.

There are some similarities in the process of deregulation of agricultural markets between the two countries. Marketing reform was triggered by external macroeconomic factors in both. In New Zealand, unsatisfactory macroeconomic performance and economic stagnation resulted in a change in government in 1984, and a subsequent drive to liberalise the economy. For various reasons (see p10), agriculture became a central part of these reforms.

In South Africa, the trigger also had macroeconomic precedents, as attempts to stabilise the economy, starting in the late 1970s, resulted in a rapid increase in interest rates to farmers, which had an immediate and strong impact on agriculture, triggering a long period of piecemeal deregulation in agricultural markets throughout the 1980s.

Thus, both countries embarked on the reform of agricultural marketing at about the same time. However, the process from that time onwards was markedly different. To understand these differences, and their consequences, it is necessary to compare the reforms in terms of their timing, sequencing, breadth, and depth.

4.1 Timing of the reforms

Most of the New Zealand agricultural policy reforms, including the reduction in subsidies, the removal of 'soft' interest rates, and the introduction of user fees for government services, were implemented within three years of the 1984 elections, i.e. by 1988. The result was that New Zealand's PSE declined to below 5% after 1988 (Helm, 1994), and has since declined to below 1% (OECD, 2006).

In South Africa, the reduction in general expenditure on agriculture and the reduction in commodity specific subsidies took place over a longer period (from the early 1980s to the mid-1990s). However, marketing reforms were accomplished in a 'big bang' process that lasted for the statutorily-defined 12 months starting in January 1997. Hence, the New Zealand reforms preceded the South African reforms by a decade. As a result of the South African reforms, the country's PSE remained at above 10% until 1995 (Helm, 1994; Kirsten *et al.* 2000) after which it declined to below 5%, a level which it has maintained since (OECD, 2006).

4.2 Sequencing of the reforms

The deregulation process in New Zealand had two distinguishing features with respect to the sequencing of the reforms:

- The domestic part of the reforms was accomplished over a very short period of three years, with no apparent pattern in terms of the sequencing;
- These domestic reforms preceded international trade liberalisation as sanctioned under the Agreement on Agriculture.

In South Africa, on the other hand, the sequencing was a bit more complex, as the piecemeal reforms of the 1980s and early 1990s preceded trade liberalisation after the Agreement on Agriculture. This in turn preceded the radical 'big bang' deregulation of agricultural markets that took place during 1997. Furthermore, new policy initiatives with respect to labour, land and water were introduced between the time of the implementation of the Agreement on Agriculture and 1997.

However, there is no evidence that policy makers followed any deliberate sequence of reforms. In the case of New Zealand the reforms were so rapid that the issue of sequencing seems less relevant. In South Africa, on the other hand, external (political and/or macroeconomic) factors seem to have had a stronger influence on the agenda of reform, and there is little evidence that any prior thought was given to their sequencing.

4.3 The breadth of the reforms

Virtually the entire New Zealand agricultural production was subject to statutory intervention before deregulation. This included sheep meat, dairy, wool, beef, apples and kiwifruit, as described in this report. Commodities that were excluded from control included deer and wine. As in the case of South Africa, there is much evidence that such industries have, in the long run, been the most successful. New Zealand also implemented labour market reforms, which resulted in more flexible labour markets.

In 1995/96, the year before deregulation, some 80% of agricultural products in South Africa were marketed through 'controlled' markets, as measured by the gross value of agricultural production. This included those commodities that fell under marketing schemes promulgated under the Marketing Act, as well as commodities that were controlled under their own legislation (e.g. sugar, wine) or under the Cooperative Societies Act (ostriches, wattle bark). Uncontrolled products included poultry meat (13.4% of gross value of production) and vegetables (4.1%) as well as smaller commodities such as tea, nuts and flowers and commodities that had already abolished their control schemes (bananas). By the end of the 'big bang' period, the only commodity where there was still a measure of control was sugar (6.4% of the gross value of agricultural production in 1998/99). Therefore, deregulation covered virtually the entire range of agricultural products in South Africa.

4.4 The depth of the reforms

The most fundamental difference between the processes of marketing reforms in South Africa and New Zealand are to be found in the depth of the reforms. In the case of South Africa, all statutory powers were removed, with two exceptions:

- The protection that is still afforded the sugar industry;
- The powers that exist under the Marketing of Agricultural Products Act that allow industry bodies that qualify to implement statutory levies in order to raise funds to finance the provision of information, industry-relevant research, generic product promotion, and 'transformation' initiatives.

In the case of New Zealand, the end result of deregulation was more nuanced. This report has highlighted the following results for the more important commodities:

- **Dairy.** While the industry lost the monopoly powers as sole exporter, it still controls the quota allocation into the EU and USA markets, giving it a 95% export market share.
- **Meat.** The industry body allocates and monitors the supply of New Zealand lamb for the quota allocation into the EU and USA markets, and is able to collect compulsory levies.
- **Kiwifruit.** The industry is currently able to operate a single desk, with monopoly export powers to all markets other than Australia.

Nevertheless, all other industries (including apples, wheat and eggs) were completely deregulated, while industries that had never been regulated (wine, deer) remained so. Yet in these three key export-oriented industries, characterised in the case of meat and dairy by preferential access to the EU and US markets, the state allowed some measure of market control. It is interesting to note that this did not result in a higher PSE for New Zealand, largely because import controls are not necessary to maintain such control, hence domestic prices and the price gap between domestic and world prices, the key to the measurement of PSE, is unaffected.

Experience shows that the ability to coordinate exports confers economic rents on those who have access to the market, and hence is favoured by such producers. However, this comes at a cost: to individual producers who do not have access to the market and who do not have the freedom to sell what they want in the markets they wish to serve; and to society as a whole in the form of 'rent-seeking activities', attempts to control supply and a general lack of innovativeness in the long run.

These latter factors were taken into account in the Kassier Report (1993), but in South Africa the main problem lies with the former: the barriers to access for new producers.

4.5 The implications: market access for emerging farmers in South Africa

The dualistic nature of South African agriculture means that particular efforts should be made to allow new entrants into agriculture to gain access to markets. In the interests of transformation and the long run economic health of the sector, this means access to markets for black farmers. Because of their historically poor position, however, they will be more vulnerable to exclusion in the face of market access barriers. For this reason, the reintroduction of market controls, even if to favour black farmers only, will be counter-productive: there is every reason to believe that it will favour only the few with the better access, and that it will result in all the other costs of interference in the market.

For this reason, transformation should focus rather on direct support to new farmers, which also has the advantage of being WTO compatible, as such direct support can be designed to be 'green box' compliant, and/or will fit the description of special and differential treatment. It is in this respect that the reforms in South African agriculture were wrong: while market reforms have had a positive result for agriculture and for the economy as a whole, the removal of direct support to farmers came at the wrong time, i.e. just when emerging black farmers gained *de jure* access to agricultural markets.

PART II: THE AGREEMENT ON AGRICULTURE

5. The influence of the Uruguay Round on agriculture in New Zealand and South Africa

The purpose in this second part of the report is to assess the impact of the Uruguay Round (UR) of trade negotiations on New Zealand and South African agriculture respectively, and then to establish what opportunities arise in the emerging Chinese and Indian markets for agricultural exports from South Africa and New Zealand.

5.1 New Zealand

In a comprehensive and detailed examination of the impacts of the UR, Sandrey and Smith (2003) examined that country's agricultural exports pre- and post- the Agreement on Agriculture (AoA). It was estimated that as a consequence of the UR agreement to lower tariff barriers, all New Zealand exporters, both agricultural and non-agricultural, could potentially be NZ$3.1 billion better off than they otherwise would have been over the period 1995-2004. Note that this analysis only reviewed markets in member countries of the WTO at the time of its inception after the UR, and not those in countries that have subsequently joined the WTO, or New Zealand's main trading partner Australia where an FTA with duty free access for all trade exists. It also excluded changes to tariffs in countries such as Chile that, like New Zealand itself, unilaterally liberalised their tariff schedules much further than they were required to do so under the AoA. This means that the gains accruing from China's accession to the WTO are not factored in, and these are likely to have been important (although China will be examined in detail later).

In addition, using the best available comprehensive, sector-specific global computer models, the study estimated that the UR increased New Zealand agricultural export receipts by NZ$6.13 billion over the 1995-2004 period through greater market access using the TRQs in lamb and beef products and WTO members being less able to use trade-distorting export subsidies in the crucial dairy markets of the world. Therefore the overall estimate of UR gains was in excess of NZ$9 billion, most from the agricultural sector. Gains will continue to be generated long after this, as UR commitments cannot be reversed.

While there is not a one-for-one mapping between the agricultural sectors and policies in New Zealand and South Africa, there are enough similarities to draw some conclusions from the New Zealand experience that suggest its relevance. The main one is that after a comprehensive liberalisation a decade before South Africa's, New Zealand's unsubsidised agriculture was in a position to take advantage of the changed market conditions offered by the AoA. It also highlights that the pain from liberalisation occurs before the gain, and this is often one of the factors acting against global liberalisation. We do note, however, that while both countries are temperate climate agricultural exporters, the export product mix is not quite similar and the New Zealand gains were largely in the dairy and meat sectors rather than the common fruit sectors.

Prior to the UR, New Zealand's beef exports to the important United States (US) market were subject to the US Meat Import Law. New Zealand often entered into annual Voluntary Restraint Agreements to avoid the introduction of more draconian import measures. This led to an unstable export market because access levels were being determined by domestic factors within the US. Under the UR agreement, the US abolished the Meat Import Law and restraint agreements and increased global beef import levels under tariff quotas. New Zealand was then able to negotiate a 213,402 tonne tariff quota, 15.7 percent higher than the 1994 restraint agreement level.

It is estimated that with the certainty of access to the US market for New Zealand beef exporters, additional export revenue of NZ$168 million was generated between 1995 and 2004. The UR also provided increased access opportunities for New Zealand to other markets such as Japan and Korea.

The sheep meat industry similarly benefited through an increased tariff quota - effectively an increase in New Zealand's tariff quota access into the European Union (EU). Although New Zealand exports had a zero tariff rate prior to the UR, the EU agreed to bind the in-quota tariff rate at zero, along with a higher quota volume. This meant the access level couldn't be reduced as it had prior to the conclusion of the UR. Of further significance was the termination of the quantitative restriction on the volume of chilled sheep meat that could be exported to the EU. Prior to the UR, New Zealand had been restricted to an increase in total chilled sheep meat exports of just 1,500 tonnes per year.

As a result of the change in trading patterns due to the increase in quota access, it is estimated that additional revenue of NZ$1.46 billion over the 1995-2004 period will have been generated than would have been the case without the UR. As with the beef sector, the UR also increased New Zealand's ability to access other restricted sheep meat markets such as the US.

The agreement to impose ceiling levels and reduction commitments on export subsidy use was a major outcome for New Zealand's dairy industry. It also gained from the EU's agreement to increase New Zealand's existing butter quota, albeit at a higher tariff rate. The certainty of a greater market access level outweighed the cost of paying higher import duties, especially as the access level had decreased over the years leading up to 1995. New Zealand also benefited from greater levels of access to other dairy markets. Estimates suggest overall dairy export revenue generated during 1995-2004 will be NZ$4.5 billion higher with the UR conclusion, which highlights the trade-distorting nature of export subsidies and the benefits from a more open world market. These gains come as world dairy prices are estimated to be 10-15 percent higher for butter, cheese and WMP and approximately 3 percent higher for SMP as a result of the UR than they otherwise would have been. This in turn induced increased milk supply and thus production of dairy products in New Zealand.

Gains in other sectors were more muted, and generally resulted from small declines in applied tariff rates in the few cases where the UR reductions in bound rates actually forced a decline in these applied rates. Outside of the dairy, sheep meat and beef sectors, TRQs and export subsidies are not an issue for New Zealand.

Why then did New Zealand gain so much, and did the reforms of the 1980s set the sector up to take advantage of these opportunities? The answer is unquestionably 'yes', as the expanded dairy sector was well placed by the late 1990s to gain from both milk products directly and beef products indirectly, while the productivity increases since deregulation helped both the meat and dairy sectors.

There is one common theme that ran through almost all of the pre and early post Uruguay Round analysis world-wide, namely that the dairy sector stood to gain the most and New Zealand, as the world's reference price provider, stood to gain the most from global reforms in this sector. This general condition still largely applies, indicating that a similar outcome could be expected from the current WTO negotiations[16]. It is also interesting to hypothesise that the sheep meat sector in New Zealand has little to gain from more liberalisation but could face a downside as its privileged position in the EU is eroded and the value of preferences is reduced.

5.2 South Africa

There are several different channels through which the AoA may have impacted upon the agricultural sector in South Africa. These include domestic policy (with tariff policy as sub-set), and offshore market access conditions. While, of course, consistent with the spirit of the AoA, and having largely taken place over a time period that is similar to but lagging the case in New Zealand, South Africa's tariff reforms went beyond anything mandated by the AoA. Thus, market access and related gains globally become the focus just as they do for New Zealand.

Indeed, as the official WTO schedule on South Africa reports:

> "As a result of the substantial inflation rate experienced by South Africa during the period under review, together with the marked reduction in the value of the South African rand over the same period and the widely fluctuating crop harvests as a result of the weather, the AMS has been calculated in real terms, in US dollar terms and in percentage terms. In all three cases the reduction from the base period to 1991 has been significant and well beyond the 20% reduction discipline. South Africa has also unilaterally undergone significant changes in agricultural policy in the spirit of the Uruguay Round … South Africa agrees to reduce its AMS by the agreed 20% over 6 years with the understanding that the factors indicated above are taken into consideration."

Similarly for tariffs, as during the 1990s South Africa fast-tracked the liberalisation of its (and SACUs) tariff schedule; from 1990 to 1999 the maximum rate fell from 1,389 per cent to 55 per cent, while the average (unweighted) rate fell from 27.5 per cent to 7.1 per cent over the same time. Within this band agricultural tariffs were a lesser 4.6 per cent unweighted and an even more insignificant 1.9 per cent weighted (Lewis, 2001).

16 It was however interesting to hear the New Zealand Fonterra (the major dairy company) representative at the Hong Kong Ministerial of the WTO in December 2005 state that they would be happy to maintain or even slightly lose market share internationally as a trade-off for higher prices. Given that New Zealand is the bench-mark lowest cost producer, this implies that Fonterra must consider that they have the market power to restrict new entrants into the sector in New Zealand to control that market share. This would seem to be contradictory to their claim that they do not act in a monopoly manner.

That these cuts are beyond those mandated by the AoA is confirmed by a reconciliation of the UR Schedule against the current South African (SACU) tariff schedule. In the first instance most of the bound tariffs are significantly below the base rates, and, more importantly, the actual applied MFN current rates in turn are significantly below the bound rates in most instances. Although an accurate one-for-one mapping is difficult, exceptions where the applied rates are similar to the bound rates appear to be restricted to dairy and related products, eggs, honey, isolated vegetables lines, citrus fruits, liquorices and ginseng, cocoa and products, some bakery products, some hides and skins, and some minor natural fibres.

While South Africa has TRQs for a large range of products that include at least some components of meat, dairy, eggs, vegetables, dried fruits, grapes, tea and coffee, grains, oil seeds, vegetable oils, sugar, food preparations, wine and spirits, soybean meal, tobacco and cotton, an analysis of imports in these TRQs for the most recent year (2004) suggests they are not binding. MFN tariffs on most of the significant lines appear to be at or below the blanket 20 per cent AoA scheduled maximum rate for TRQs, and consequently many are filled several times over.

5.2.1 The impact on South African exports

Hence, it is difficult to see where the AoA may have had any impact upon South African domestic agricultural policies. Did it have any influence upon exports, as was demonstrated to have been the case for its fellow Cairns Group member New Zealand? The following arguments can be made:

- During 2004 exports of South African agricultural products (as defined by the WTO) totalled some US$3,577 million, and represented 7.8 per cent of total exports. While the US$ figure is subject to currency fluctuations, the percentage share figure is not; this 2004 figure was the lowest since a value of 7.5 per cent registered in 2000 (all others values over the last nine years since 1996 have consistently ranged between 8.8 per cent in 2001 to the 2003 high of 9.8 per cent). Since the dominant exports from South Africa are products from the mineral sector, products where the UR had virtually no impact, a sweeping generalisation could be made that the AoA may have had a limited impact upon the export profile.
- These global exports were dominated in 2004 by exports of fresh fruit (32.8%), beverages (20.6%), processed fruit and vegetables (8.5%) and sugar (6.9%). By markets, these were the EU (46.8%), Japan (4.9%), the US (4.6%), and Mozambique (4.2%) in 2004. The relative shares for 1996 were 35.5, 8.7, 3.8 and 4.7 per cent for these markets respectively. Thus, the EU, while remaining the main market, has increased its dominance to nearly one half. While some exports may, in the future, face lower tariffs at the EU borders as a result of the TDCA agreement between the EU and South Africa, limited impact would have been apparent by 2004, as many of the negotiated access concessions were not phased in by that time as the GSP access was superior to the TDCA until around this period (Kalaba *et. al*., 2005).

- South African exports of **fresh fruit** face a complex regime into the EU, where a seasonal tariff regime is coupled with TRQs, although the maximum tariffs for grapes, oranges and apples of 14, 16 and 9 per cent is not that high by EU standards, and these reduce further (when seasonal variations and concessions are considered) to 3, 6 and 2 per cent respectively. Other markets are also mainly low-tariff markets. Impacts from the AoA are hard to assess, but these duties are lower than the EU bound rates and therefore not subject to AoA tariff reductions in general.
- **Wine** is a fast developing export from the Republic, with around 81 per cent of the exports currently directed to the EU where, under a bilateral agreement, there is a binding TRQ that allows access with zero duties. Out-of-quota exports enter at an average duty of around 6 per cent. The next most important destinations are the US (duty free) and Canada (2%). Thus, wines are not subjected to meaningful duties, and since the AoA did little or nothing to reduce these duties there were no gains from that agreement to South Africa.
- **Sugar** is a more complex situation. Although the sector is heavily protected domestically at domestic prices that are currently nearly double world prices[17], South Africa is an important global exporter.[18] During 2004 these exports went to a variety of destinations. African markets included Mozambique (17% of the total), Kenya (7%), Madagascar (5%) and even Mauritius (4%). The AoA would have done nothing to open these markets. Other markets included Japan (13%), Korea (10%), the US (4%) and the EU (2%). For the latter market South Africa has no access under the quota, and faces tariffs of 93 per cent for refined sugar. Japan's tariff is zero, while Korea maintains a minimal three per cent duty.

The disruptive polices of the EU, the US and Japan cause most of the problems by heavily subsidising their sugar producers. In 2000 the world reference price for sugar was around US$ 220 per tonne, but the US, EU and Japanese producer prices were around $410, $510 and $800 per tonne respectively. These levels of protection are made possible by domestic support in all three areas, limited quota access and very high out-of-quota tariffs to maintain these regimes. Accentuating the problems for competitive producers are the export subsidies that the EU uses to sell surpluses onto remaining free-world markets.

The Australian Centre for International Economics (CIE) estimates the value of these economic rents to have been almost one billion US dollars annually: $300-million from the US and $560 million from the EU. While there are no gains to Southern African countries into the US, Mauritius (nearly $200-million), Swaziland ($75-million), and Zimbabwe ($25 million) are three of the six main beneficiaries from access into the EU market. Simulations of the liberalisation of production and trade show the predictable results of reduced production and higher

17 This has changed over the last couple of years, as in 1999-2000 the PSE was a much lower 15%, although imports remain protected by TRQs.

18 Ranking 7th during the 2000-02 period with a 2.9% share, behind Brazil at 29%, EU, Thailand, Australia, Cuba and India but ahead of Mauritius in 11th place with 1%. During 2004 South African sugar exports (HS 1701) were some R 1.4 billion, and during 2005 they increased to R 1.7 billion.

consumption in the protected markets as prices are reduced, balanced by increased global prices, production and trade from the largely developing countries in response, although the extent of these changes varies. A study by the OECD confirmed this, and estimated that South Africa production would increase by around 40 per cent with exports doubling while ACP countries as a group reduced production by around 25 per cent and halved exports in response to world price increases of around 20 per cent[19]. Consequently, African preference and non-preference exporter countries are pitted against one another, with those losing preference rents feeling aggrieved. The WTO challenge to the EU sugar regime as a result of the AoA dispute settlement process and not the AoA per se has set this battle in motion.

The Western Cape PROVIDE (2004) programme has undertaken modelling research on this sector. They combine analysis of global liberalisation both from the impacts of assumed global prices increases and, more unusually but possibly more importantly, the impacts of domestic liberalisation and consequential efficiency gains in the domestic processing chain. In the small country case of South Africa not influencing the world price and with technical change introduced into the processing sector, GDP raises by some 0.078 percent. This is a significant change for reforms in one sector[20]. However, introducing the large country assumption (South Africa has some impact upon world prices through its exports) most or even all of these gains are wiped out. But in the event of global price increases the largest gainers are in the KwaZulu-Natal area, and by household across the country there is some evidence of the gains being biased towards the lower income families as they are concentrated in the African and Coloured households. The final paragraph in the paper reinforces that, as sugar cane land is particularly favoured for redistribution, the coordination of growing, cutting and milling is important to maintain the profitability of these land reform farms.

In summary, the AoA per se did little or nothing to assist the South African sugar sector, although the dispute settlement regime case as discussed above may have set in place a movement towards the freer global trade regime that should benefit the Republic notwithstanding its domestic protection. The OECD concurs with this judgment, and considers that the AoA had little substantive impact on world sugar markets, other than for export subsidies. At the conclusion of the UR implementation period in 2000 for OECD countries, the world sugar trade continued to be distorted by average bound tariffs, special safeguard measures and TRQ tariff-quotas that are amongst the highest of all agricultural products. Although export subsidy use was disciplined by the AoA, market access for sugar into developed markets was essentially unchanged by the AoA.[21]

- The PROVIDE team also analysed the welfare and distributional impacts of increasing tariffs in **maize and summer cereals** (PROVIDE 2005a) and **wheat** (PROVIDE 2005c) respectively. This is, in effect, analogous to the mirror of examining the benefits or otherwise of reducing these tariffs in the first place. Increasing the tariffs for summer cereals will result in little effect as South Africa does not import much maize, while, producers will benefit should the

19 OECD. 2004. This analysis conflicts a little with the 2006 OECD survey of South African agriculture where (page 135) they consider that "this suggests that South Africa has little comparative advantage in exporting sugar, but exports are actually made possible due to price discrimination between production destined for exports and for the domestic consumption". Both of course may be correct, with the latter referring to the presently distorted global market and the former a liberalised global regime.

20 It is around 50 percent greater than tralac's (2006) estimates of the welfare gains to South Africa from an FTA with China, for example

21 OECD. 2001.

world price increase for summer cereals through global liberalisation. However, these benefits are largely offset by increased costs to other sectors (such as livestock producers) in the economy. Similarly, imposing a 25 percent tariff on wheat imports increases producer welfare but the loss to other sectors such as low income consumers through higher food prices is greater, with a net result of reduced overall welfare to South Africa.

Overall, there does not seem to be a compelling case that the AoA cemented in significant economic gains as seemed to be the case in New Zealand. There are, of course, avenues that have not been explored, such as any gains from the reductions in export subsidies, but given the agricultural product mix it is not intuitively obvious where these gains may have come from.

5.2.2 Future global liberalisation: implications for South Africa

A notable feature of the December 2005 WTO Hong Kong Ministerial was the use and citation of models, and the more recent ones are showing a considerable reduction in global welfare gains from trade liberalisation, and in particular an almost-disappearance of the gains to developing countries. Why are the gains shrinking? Part of the answer is that some of the assumptions are being re-visited (employment, for example), while the newer version of the GTAP model and its associated database enables analysts to use better trade and tariff data and incorporate both the EU expansion and China's WTO accession into their now-updated base work. These combinations are making a huge difference, and it is only by using Version 6 of the GTAP data base that we now can get a better idea of these more accurate gains from liberalisation.

Using the Version 6 database, the World Bank has revising the potential benefits downwards to a miserly $3.13 per head in the developing world (in contrast to the $79.04 per head in the developed world)[22]. This work acknowledges the difficulties associated with anticipating an outcome for the Doha Development Agenda (DDA) and recognises some of the issues such as sensitive products, the bound versus applied tariffs, problems of quota rates and preference erosion and that of defining and disciplining reductions in agricultural supports in OECD countries, but nonetheless the model has South Africa as a separate country (although Australia and New Zealand are aggregated). The scenarios focus on cuts to agricultural protection, and include scenarios where different exemptions for sensitive sectors are allowed. Results are expressed as dollar and percentage changes in real income at 2015 from what they otherwise would have been.

Globally the results for possible agricultural outcomes are modest: from only $13.4 billion or 0,03 percent of world income under a situation where special products are allowed to be exempted, to $74.5 billion where they are not[23]. High income countries are the winners, and in some instance where special products can be exempted the developing countries as a group actually lose out. For South Africa the gains are very modest but always positive: from

22 Anderson, K. and Martin, W. (2005), and Hertel, T. and Winters, A. (2005)

23 Using increases in agricultural trade rather than aggregate welfare recent Australian modelling also using Version 6 database for their GTEM model finds a similar ratio of fu 'more market oriented' liberalisation increasing trade by $30 billion and 'less market oriented' liberalisation by a much lesser $6 billion. (Australian Commodities, 2006)

$0.01 to $0.03 billion under the agricultural scenarios (0.05 to 0.17 percentage change in real income at 2015). Looking at the extreme position of complete global liberalisation in all sectors (including non-agriculture) South African gains for agriculture increase to $9.3 billion, of which $3.4 billion comes from agriculture (with $2.5 and $0.9 billion of this latter from primary agricultural products and processed foods respectively). Limiting the changes to some sensitive products in markets such as Japan, Korea and Taiwan results in gains of only two-thirds of this level, indicating just how sensitive both the models and the DDA is to scenario changes. The big gainers overall from full agricultural liberalisation are the Latin American countries of Brazil and Argentina, and New Zealand and Australia (with the latter as a grouping so we cannot give a figure for New Zealand, but we might assume that it is likely to be perhaps the highest globally in percentage terms for agricultural reforms, with the possible exception of Brazil).

Another source of information detailing the potential benefits to South Africa from liberalisation of OECD agricultural policies is the recent OECD review of South African agriculture (OECD, 2006). Here they use the OECD version of the GTAP model, but we must caution that it is based upon Version 5 (1997 base year) and not Version 6 using the 2001 base year data. In addition, the different assumptions make it difficult to compare results, but with partial global liberalisation in both agriculture and non-agriculture the global gain is some $45.6 billion, with $251 million of this accruing to South Africa (and $1.58 billion to Brazil). Around one-third of the South African gains ($88m) come from agriculture, with $63 million resulting from changes to OECD regimes and the remaining $25 million resulting from changes to non-OECD regimes. For South Africa the most import contributions are from global reforms in wheat, fruit and vegetables, dairy products, processed sugar and other processed food sectors.

Polaski (2006), using a very detailed approach based upon the GTAP model's database, found that agricultural liberalisation benefits only a relatively small subset of developing countries. Global gains range from an insignificant $2.9 billion with a limited agricultural liberalisation and $5.4 billion under the current DDA agriculture-only liberalisation through to a maximum of $168 billion for comprehensive liberalisation. Those benefiting from agricultural liberalisation include Brazil, Argentina, most of Latin America, South Africa, and some Association of Southeast Asian Nations (ASEAN) member countries, notably Thailand. Accounting for this is the "Special Products" (SP) scenario, where this was an "outer bound" of any agreement that might be reached in which least developing countries are to shelter *all* their agricultural products from liberalisation as SPs.

For South Africa, modelled as a separate country, gains are some $57 million from the DDA agricultural-only outcome (New Zealand is modelled in the 'rest of OECD' category and therefore we cannot report on the gains here). Sugar prices increase by 1.94 percent, grains by 3.53 percent and meat and dairy combined by 5.53 percent; in response, South African net exports increase by 62 percent for sugar, 39 percent for grain and 110 percent for meat and dairy. Land prices increase by 5 percent and the demand for unskilled labour by 0.26 percent (but a greater 1.4 percent for agricultural labour) in South Africa with a DDA scenario. Oilseeds and sugar show the greatest increase in both value-added and production.

Polaski (2006) found that these overall results for South Africa appear to be consistent with more recent international studies that are directly comparable and use the latest version of the GTAP database. This includes the World Bank study discussed above, which is the 'outlier' in the studies that she examined in that it shows the highest gains for agricultural liberalisation

globally. We would note that the OECD study reporting specifically on South Africa uses the older version 5 of the GTAP database, and that has several limitations when compared with the recent version 6 database. Results of full global liberalisation are unfortunately not reported by country in the Polaski study.

6. What are the opportunities for diversifying South Africa's export portfolio?

Even though it is possible to conclude that the AoA had little impact on South African agriculture, and specifically on the export portfolio, it remains important to identify opportunities for the diversification of this portfolio. In this section, the opportunities in the two most important emerging markets, namely China and India, are explored.

6.1 China

6.1.1 Introduction

During 2005 China imported agricultural goods, as defined by the WTO, to the value of US$26,269.84 billion, a value that represented some 3.98 percent of the total Chinese imports. Of these imports, $637.7 million were from New Zealand, but only $46.9 million were from South Africa. To show how the pattern of these imports is changing over time and set the scene for evaluating the relative performance of both New Zealand and South Africa, in 1995 agricultural imports were 8.85 percent of total Chinese imports. Over this period the total increased by 14.6 percent[24], while agricultural imports increased by a lesser 7.4 percent. The respective data for South Africa is 14.6 percent overall and 10.5 percent for agriculture, while for New Zealand it is 12.3 percent overall and 9.3 percent for agriculture.

In 2005 New Zealand held a market share of 2.43 percent in Chinese agricultural imports, compared with South Africa's much lower 0.18 percent. Both countries have increased their shares from 1995, the earliest period for which comparable data are available: New Zealand's from 1.96 percent and South Africa's from 0.13 percent. South Africa's market share of overall imports into China was 0.52 percent during 2005 (the same as for 1995[25]) while New Zealand's share was a lesser 0.20 percent, a fall from the 1995 market share of 0.26 percent. China is therefore more important to South Africa for non-agricultural trade in contrast to the New Zealand situation, although in both cases New Zealand and South Africa have increased their non-agricultural trade faster than their agricultural trade.

To narrow the analysis down to a manageable size we selected the HS 6 lines where imports into China were at least $100,000 during 2005. This gave some 592 lines in total, but only 150 of these had combined imports from New Zealand and South Africa of at least $10,000. For both New Zealand and South Africa this accounted for 100.0 percent of their agricultural

24 Percentage increases in this section are expressed in log form, using the formula LN(last observation/ first observation)/Number of observations.

25 See Sandrey, 2006 for a full discussion of the South African performance in the Chinese market.

imports into China. Interestingly, these same lines accounted for 97.8 percent of the agricultural imports from New Zealand during 1995, but only 10.7 percent of the imports during that year from South Africa. An examination of the data shows that imports of barley of $11.7 million in 1995 and $5.1 million in 1996 dominated agricultural imports in the early years. These imports have not been repeated since.

South Africa's major imports into China in 2005 are provided in Table 6, which shows that:

- Waste products for animal feed were the main import, followed by oranges and cane sugar;
- Only two products (oranges and ethyl alcohol) have a market share above 10 percent;
- New Zealand is a competitor in food wastes, oranges, wool, ethyl alcohol and fish oils.

Table 6: Imports into China from South Africa and New Zealand, 2005

Product	RSA$m	Market share (%)	Increase in RSA imports from 1995 (%)	Increase in total China imports from 1995 (%)	NZ$m	Increase in NZ imports from 1995 (%)
All agriculture	46.88	0.18	10.50	7.36	637.7	9.29
Animal feed waste	10.82	1.00	na	10.86	17.03	24.14
Oranges	7.25	20.58	49.60	36.05	5.15	45.29
Cane sugar	5.92	1.83	na	-7.97	0.0	na
Raw wool	3.86	0.35	na	10.23	85.70	3.72
Ethyl alcohol	3.68	52.45	na	14.37	0.41	na
Raw cotton	2.23	0.07	35.39	7.64	0.0	na
Fish oils	1.77	8.71	na	12.77	0.42	3.63
Plants	1.47	5.47	na	na	0.0	na
Wool	1.45	3.70	17.43	-2.04	2.84	-11.37
Tobacco	1.13	0.35	na	34.64	0.0	na

Not shown is that in 2005 these top 10 imports accounted for 84.4 percent of the agricultural imports, and the top 20 accounted for 95.3 percent. A similar profile for New Zealand gives the respective figures of 73.7 and 88.5 percent for the top 10 and top 20 imports by value during 2005. An analysis of the New Zealand top 10 imports shows these imports are concentrated in dairy, wool and meat, and only in meat imports does South Africa offer any competition whatsoever for the top 10 (although waste foods and oranges are both in the

New Zealand top 20). In nine of the top 10, New Zealand holds a market share above 20 percent and in seven of these the New Zealand market share increased from 1995. Also, in seven out of ten cases the overall increase in these imports into China was above the Chinese average for all agricultural products, showing that New Zealand is doing very well in the product lines in which it competes. By contrast, in only two out of the South African top 10 are imports increasing faster than the agricultural average, although in all cases the South African increase is greater – perhaps South Africa is doing well in the wrong products? Another indication of the relative strength of New Zealand is that South Africa has a market share above 5 percent in 14 individual lines; New Zealand's comparable figure is 73 lines.

6.1.2 The trade 'chilling' effects of Chinese tariffs and priority sectors

Both quantitative and qualitative analyses and projections of the welfare effects of tariff liberalisation traditionally focus on current flows of trade, but such approaches are unable to estimate where new opportunities might lie. It is conceivable, for instance, for South Africa to have relatively concentrated flows of trade in specific product categories, with one reason for this level of concentration being that the tariff structure outside of those specific product lines is relatively high. In short, as a consequence of these tariffs, trade may have been 'chilled'. Note also that we are, in effect, conducting a trade reconciliation exercise here to in part compare the Chinese import data with South African export data, as earlier tralac analysis shows this to be a major issue in trade between China and South Africa[26]. South Africa reported exports of agricultural products to China during 2005 of US$ 55.0 million, and this difference would be accentuated as imports into China include the costs of freight and insurance in getting them there.

The trade 'chilling' effect has already been identified in New Zealand's trade with Australia prior to the closer economic relationship (CER)[27], where analysis found that New Zealand's trade widened rather than deepened as a consequence of CER, i.e., as a consequence of trade liberalisation opportunities for increased New Zealand trade were expanded beyond those products that were not heavily traded prior to the agreement. This is a significant finding. It confirms that the benefits of a free trade agreement are likely to go beyond existing trade and offer possibilities for expansion beyond the traditional (to that market) export sectors.

In order to establish if South African agricultural trade into the Chinese market may be 'chilled' it is necessary to identify where there is evidence of South African export activity. Consequently, South African global trade is analysed and compared with the trade into China. If it is found that the global trade in a particular product line is extant, but that trade in that same line with China is limited or non-existent and that China does import from others, then it may be possible to argue that there is (a) evidence of a chilling effect; and (b) potential for more trade with that country. A more elegant way to undertake this analysis is to benchmark exports to China against a similar country, for example, the duty-free destination of Hong Kong. This option has been eschewed, as Hong Kong and China have such a close trading relationship that this comparison would become meaningless. There really is no similar country to China in world trade!

26 For a fuller discussion of the South African trading relationship with China that includes a trade reconciliation exercise, see Sandrey, 2006

27 Sandrey, 2004

Recognizing that this analysis is rather open-ended, we have concentrated upon the most recent 2005 trade data, but keeping an historical perspective at times. Analysis was undertaken on a combination of (a) the HS 4 (and not the more detailed HS 6 lines as used until now) tariff lines where global imports into China were at least $1 million during 2005 to represent the demand side, and these were then compared with the respective HS 4 tariff lines exported to global markets from South Africa during 2005 to represent the supply side. From there, 6 categories were examined. These categories are[28]:

1) Where South African imports held at least a 1 percent market share in China;
2) Where at least 1 percent of South African exports went to China;
3) Where South Africa records positive exports to China in 2005 but China does not record positive imports from South Africa;
4) Where positive imports are recorded into China from South Africa but no exports from South Africa are reported;
5) Where there is at least $5 million exported from South Africa globally but no reported imports of this trade into China from South Africa; and

The key results of this analysis (by category as above) are:

- **South Africa has at least a 1 percent share in** citrus fruits, sugar, ethyl alcohol, plants, processed fruit and nuts, wool, live animals, and fats and oils. There are nine HS 4 lines, and these imports accounted for 49.5 percent of the total imports from South Africa into China during 2005. The average market share into China was 4.2 percent.
- **At least 1 percent of South Africa's exports go to China** – the main products here that do not feature in category 1 above (i.e., do not feature as much in Chinese imports as they do in South African exports) are animal by-products ($2.5m), hides and skins ($7.5m) and cotton ($8.6m). This category accounted for 62.3 percent of the agricultural exports from South Africa to China.
- **Positive exports from South Africa that may or may not be reported as imports** – this is a small mix where South Africa could possibly be doing better. Lines of interest concentrate on hides and skins, and overall this group is 7.2 percent of South African exports to China.

28 At present, China administers Tariff Rate Quotas (TRQs) on the following agricultural products: wheat, corn, rice, edible vegetable oil (bean oil, palm oil, and rape seed oil), sugar, wool, wool tops and cotton. Analysis of the trade data shows that there are some TRQ products interspersed among these six categories. As these sectors represent sensitive sectors into China, it is important to consider current and potential access for South Africa in these products. The first point is that there are products of interest to South Africa in this list. In particular, these are wool and sugar, but potentially wheat, maize, rice, soya bean oil and cotton have all been exported from South Africa globally in the last three calendar years. These TRQ products therefore represent potential opportunities for South African trade negotiators to concentrate upon, with sugar probably the priority. Here the in-quota tariff is 15 percent, while the out-of-quota rate is an almost prohibitive 50 percent. In earlier analysis of agricultural products, tralac (2006) found that, except for sugar, the tariffs may not necessarily be the limiting constraint into the Chinese market from South Africa.

- **Chinese imports but not reported as South African exports** – these are all very low values of the Chinese imports and they represent only 0.7 percent of the total. There are some lines where South African global exports are significant, namely corn (maize) nuts, and water, but for these products there may be good reasons why they are not traded with China.
- **Where China imports these goods and South Africa exported at least R5 million globally during 2005 but the twain did not meet** – this is potentially the important category for examination, as it clearly shows there are both supply and demand factors that are not, for whatever reason, meeting. By value the main export items from South Africa include apples, apricots, pineapples and avocados, the recurring hides and skins, chocolate products and processed foods (including processed meats).

Wine imports into China provide an interesting case study. This is a new and therefore 'neutral' market where both South Africa and New Zealand compete on a footing that slightly favours South Africa (in the EU market around 20% of South Africa exports enter at TDCA preference rates of zero rather than the MFN rate of 6%, while in the US, South Africa's second major market, wine enters under AGOA with a 1.5% preference). The wine sector in New Zealand was detailed earlier as an example of a new growth sector, while the South African sector has had a longer tradition but only fully re-entered into the global market in the mid 1990s. For South Africa, wine exports in 2005 were the top individual agricultural export, with exports of R3,808 million (US $596m). Of this, some 77.3 percent is destined for the EU, with a further 10.5 percent to North America.

In 2005 China imported some $75 million in wine, with the market dominated by France and Spain (a combined 46% share) followed by New Zealand and South Africa's fellow 'new world' suppliers of Chile and Australia with around a 16 percent share each. Trailing in 10th and 11th place were South Africa and New Zealand, with imports of $0.6 million each. New Zealand's growth rate since 1996 has been the fasted of any of the majors, while South Africa's has been just above the overall average.

The interesting feature has been the average value per litre of these imports. Since 1997 the average values of imports from the different sources has been relatively consistent, so therefore these ratios between the different suppliers can be compared to glean some indication of quality differences for the top 11 suppliers. The highest average value has been New Zealand, at 4.0 times the overall average. Next is Australia (2.5 times) followed by Germany (2.9) and France, the usual global benchmark and main supplier to China, at 1.8 times the average price per litre. South Africa's average price consistently averages around half of the comparable New Zealand figure. Spain, Chile and Argentina, with a combined market share of 38 percent, are the lower-valued suppliers. An examination of South African export data shows that in 2005 China was the destination of wine valued at $0.69 million, and the average price was $2.99 a litre. This latter figure is almost double the South African export average of $1.70 per litre during 2005. These figures are confirmed by Anderson et al (2002) who show that, based upon an index of average world export prices, New Zealand topped that list in 1999 with an average price 90 percent above the global average, followed by France (70%) and Australia (40%). Below the global average line is South Africa (-30%) and Argentina and Italy (-40% each). More worryingly for South Africa, it is the only new world supplier losing ground since 1988 – 90 on the value index, in complete contrast with Chile, which moved from -55 to a plus 8 or 10 percent over the same period.

As an aside, these data are confirmed by examining wine imports into the UK, the major market for both New Zealand and South Africa. The United States Foreign Agriculture Service[29] report that during 2004 New Zealand 'had an exceptional year', with its average price per bottle higher than any other country producer. South African imports were some 993 hectolitre, compared with New Zealand's 176, but the New Zealand price per bottle was 2.4 times that of South African wines over the 2003 and 2004 years, and 2.5 times during 2002. Thus, New Zealand is consistently outperforming South Africa in the price stakes – better wine or better marketing?

Other than wine there are few products where New Zealand and South Africa compete head-to-head in the Chinese market. Two where they are both significant suppliers are in wastes for animal feeds and wool. The former cannot really be considered a differentiated product, while the latter also has many aspects of a traded commodity and therefore is not a good candidate for performance comparisons. That leaves selected citrus products, and oranges (HS 080510) and lemons and limes (HS 080550), where South Africa and New Zealand vie for second and third place behind the dominant US suppliers. In oranges, South Africa's second major export to China, they have displaced New Zealand from second top supplier rather conclusively with a market share of 20.6 percent in 2005, up from 5.8 percent in 2003 (with New Zealand dropping from 40.8 to 14.6 percent). During 2004 the average prices were almost identical; South Africa $0.71/kg, New Zealand $0.72/kg), but South Africa had slightly undercut in 2005 ($0.66/kg versus $0.71/kg) and both very close to the US price. These minor differences may suggest that price is not a factor, and that the recent growth from South Africa may be related to either supply factors or a more concerted marketing programme. In the significantly smaller lemon market South Africa, from a zero base in 2003, is making small inroads on New Zealand's second place in a challenge that does not seem to be based upon price differences.

In looking to the future and visualising a FTA between China and SACU/South Africa there appear to be some sectors where South Africa may gain, but these are limited to possibly wool, meat and some other crops, certainly sugar and processed fruits that contain sugar, and possibly some other relatively minor sectors. But these are not likely to be major. Conversely New Zealand agriculture can expect to gain from an FTA with China; for example, dairy exports to China increase by a substantial amount, and this is important as dairy exports to China are already large (dairy products were the largest merchandise New Zealand import into China during 2005 at 18% of the total).

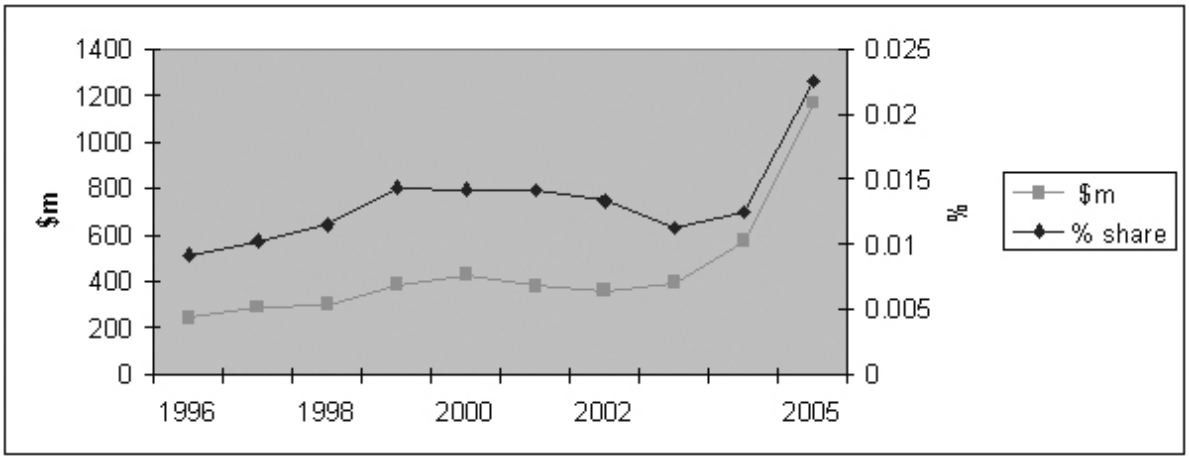
29 USFAS GAIN Report – UK6002

6.2 India

6.2.1 Introduction

Since the early 1990s India has undergone considerable economic policy reform (and economic growth), although agricultural reform has lagged those in other sectors. The general pattern of agricultural protection (as measured by the PSE) is for support to rise when world prices are low and decline when they are high, making analysis very complex. Mullen *et al* (2005) show positive supports during the 1985 to 1989 period, followed by a series of negative PSE calculations through to 1997 and then positive ones through to the most recent 2002 data. Depending upon the method used to calculate these PSEs, they were near their highest in 2002 at 11.0 to 19.2 percent overall, while in 1996 they were negative (i.e., taxing the sector) at similar rates.

During 2005 South Africa exported merchandise worth $1,169 million to India, almost doubling the 2004 figure of $574 million. This represented some 2.3 percent of South Africa's global exports during 2005, a figure that similarly doubled from the previous year (and basically the ten year average). This is shown in **Error! Reference source not found.**, with the big increase in 2004 very obvious. Not shown is that India ranked as South Africa's 14th most important export destination; just behind Italy and Zimbabwe but ahead of France, Mozambique and Korea.



Source: World Trade Atlas and author calculations

The increase in 2005 was mostly aircraft ($248m), virtually a new export line as only in 2003 ($4.8m) had aircraft previously featured at all. Other main exports at the HS 2 Chapter level were inorganic chemicals ($179.7m), iron and steel ($170m), precious stones (168m) and fuels (also 168m). Other than inorganic chemicals, all of these exports more than doubled from their 2004 values. Of particular importance are the exports of HS 28, inorganic chemicals. These exports are shown as predominantly HS 2809, diphosphorus pentaoxide; phosphoric acid etc, and they comprise 91.2 percent of the total exports of these chemicals from South Africa.

Agricultural exports are a very minor part of South Africa's exports to India. During 2005 they were some 1.8 percent of the total exports, a similar figure to 2003's 1.9 percent but below the 2004 figure of 3.5 percent when a larger export of sugar was made. Indeed, some 87 percent of the agricultural exports during 2005 were either sugar (50.2%) or wool (36.8%), while fresh fruits and cotton provided another 4.7 percent and 2.0 percent respectively. This pattern has changed little over the last ten years.

6.2.2 Indian imports from South Africa and New Zealand

During 2005 India imported agricultural goods, as defined by the WTO, to the value of US$5,490 million, a value that represented some 3.97 percent of the total Indian imports[30]. Of these imports, $43.4 million were from New Zealand and a lesser $28.2 million from South Africa. To show how the pattern of these imports is changing over time and set the scene for evaluating the relative performance of both New Zealand and South Africa, in 1995 agricultural imports were 8.47 percent of total Indian imports. Over this period the total increased by 13.4 percent[31], while agricultural imports increased by a lesser 5.8 percent. The respective data for South Africa is 7.6 percent overall and 6.05 percent for agriculture, while for New Zealand it is 13.1 percent overall and only 2.0 percent for agriculture.

In 2005 New Zealand held a market share of 0.79 percent in Indian agricultural imports and this can be compared with South Africa's lower 0.51 percent. Both countries lost market shares from 1999, the earliest period for which comparable data are available: New Zealand's from 1.09 percent and South Africa's from 0.90 percent. South Africa's market share of overall imports into India was 1.92 percent during 2005 (down from 3.96% for 1995) while New Zealand's share was a lesser 0.14 percent, also down from the 1999 market share of 0.21 percent. India is therefore more important to South Africa for non-agricultural trade in contrast to the New Zealand situation, although in both cases New Zealand and South Africa have increased their non-agricultural trade faster than their agricultural trade.

To narrow the analysis down to a manageable size we selected the HS 6 lines where imports into India were at least $50,000 during 2005. This gave some 373 lines in total, but only 64 of these had combined imports from New Zealand and South Africa of at least $5,000. For both New Zealand and South Africa this effectively accounted for 100.0 percent of their agricultural imports into India, but overall it only accounted for 3.5 percent of the global agricultural imports into India thus indicating that neither South Africa nor New Zealand are serious players in the Indian agricultural import market. These same 373 lines have accounted for most of the agricultural imports from both New Zealand and South Africa since 1999, with only one line of wool, wool grease and sheep skins the major additions.

30 Note that this 3.97 percent share of agriculture in the total imports is almost exactly the same as China's 3.98 percent share

31 Percentage increases in this section are expressed in log form, using the formula LN(last observation/ average of observation prior to that)/Number of observations.

South Africa's major imports into India in 2005 are provided in Table 7, which shows that:

- Cane sugar dominated imports, followed by wool;
- South Africa's market share is respectable given its modest overall performance;
- New Zealand is a competitor only in wool.

Table 7: Imports into India from South Africa and New Zealand, 2005

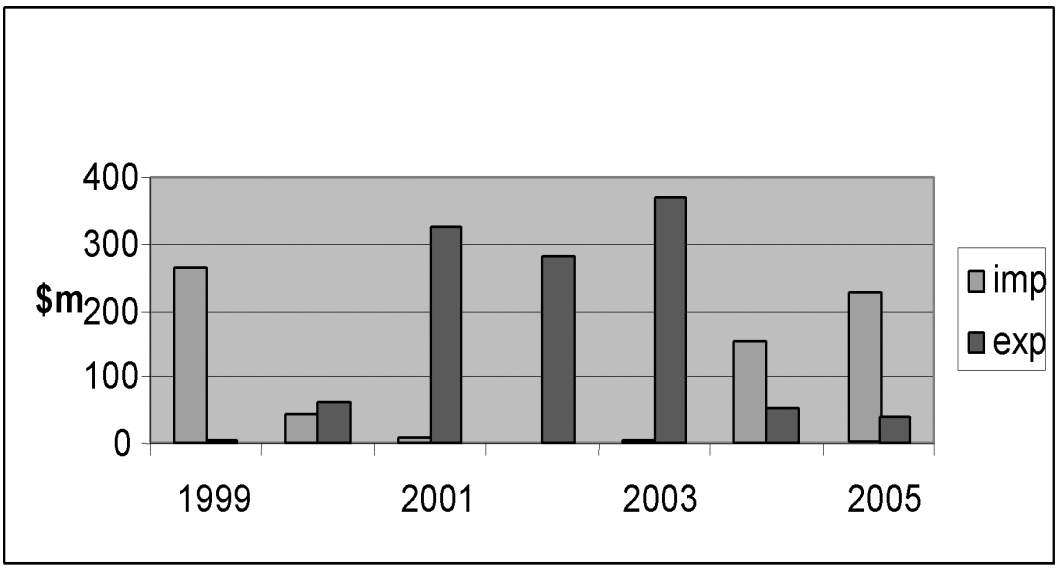
Product	RSA$m	Market share (%)	Increase in RSA imports from 1999 (%)	Increase in total Indian imports from 1999 (%)	NZ$m	Duty (%)
All agriculture	28.24	0.02	6.0	12.4	43.4	78.6
Cane sugar	20.38	9.16	31.1	26.3	-	100
Wool	3.31	3.41	25.4	5.3	3.68	15
Wool	1.09	1.09	19.1	6.7	27.1	15
Ethyl alcohol	0.53	0.35	1.5	35.0	-	30
Pears	0.36	18.2	22.2	18.6	-	35
Mohair	0.35	29.11	26.1	25.4	-	15
Wool	0.27	5.99	17.8	1.4	-	15
Fruit juices	0.23	9.15	23.6	2.2	-	30

Source: World Trade Atlas

In 2005 these top eight imports accounted for 93.9 percent of the agricultural imports from South Africa, and a lesser but still significant 70.6 percent from New Zealand. A similar profile for New Zealand shows that its top eight lines accounted for 89.1 percent of agricultural imports from New Zealand. These lines were wool (2 lines), sheep skins and hides (3 lines), apples, potatoes and vegetable seeds. South Africa held a market share above ten percent in three lines of wool and four lines of fresh fruit (peaches, pears, plums and oranges). Next comes sugar, and then a 9.15 percent share in the imports of fruit juices as shown. In five of its top 10, New Zealand holds a market share above 10 percent. In summary, neither South Africa nor New Zealand are major players in India other than in wool and sugar and perhaps fruit for South Africa and wool, sheep skins and hides for New Zealand. There are few products where the two countries compete. Not shown is that the big agricultural imports are dominated by palm oil from Indonesia and Malaysia, oil seeds from Argentina and Brazil, nuts from Ivory Coast and Guinea-Bissau and then sugar from Brazil and South Africa in the last two years.

Sugar appears to have potential for increased imports from South Africa under a less distorted regime, notwithstanding the fact that India is the world's second largest producer of sugar after Brazil with around 15 percent of the global production. This is shown in Figure 6 on the following page.

Figure 6: India's sugar trade



Source: World Trade Atlas

Between 2001 and 2003 India was a large exporter of sugar, but in 1999, 2004 and 2005 it has been an importer. Mullen *et al* (2005) say this continues the see-sawing between a net exporter and net importer since 1985, but they consider that in order to export, India sugar subsidies in the order of 35 to 85 percent are needed to compete globally. Meanwhile, India's sugar regime is highly regulated, with an import duty of 100 percent plus a possible countervailing duty of another 850 rupees per ton, the sugar levy obligations, the sugar release quota system and other domestic regulations.

6.2.3 The trade 'chilling' effects of Indian tariffs and priority sectors

This section follows the same analysis as used for China above in that we have again concentrated upon the most recent 2005 trade data. Analysis was undertaken on a combination of (a) the 149 HS 4 tariff lines where global agricultural imports into India were at least $100,000 during 2005 to represent the demand side, and (b) these were then compared with the respective HS 4 tariff lines exported to global markets from South Africa during 2005 to represent the supply side. From there, five categories were examined. These are[32]:

1) Where South African imports held at least a 1 percent market share in India;
2) Where at least 1 percent of South African exports went to India;
3) Where South Africa records positive exports to India in 2005 but India does not record positive imports from South Africa;
4) Where positive imports are recorded into India from South Africa but no exports from South Africa are reported;
5) Where there is at least $1 million exported from South Africa globally but no reported imports of this trade into India from South Africa; and

32 Note that, in a direct comparison with China, India does not administer any Tariff Rate Quotas (TRQs) on agricultural products.

Analysis of the data showed that there were only two classifications of interest, 1 and 5, as almost all the current trade was in category 1 and there was effectively no trade in categories 2, 3 and 4. The results therefore are:

- **South Africa has at least a 1 percent share in** all the major import lines into India. There are 13 HS 4 lines, and these imports accounted for 94.8 percent of South African agricultural exports to India and 95.8 percent of the total imports from South Africa into India during 2005. This also highlights that there is a reasonable degree of trade reconciliation between South African exports to India and Indian imports from South Africa.
- **Where India imports these goods and South Africa exported at least R1 million globally during 2005 but the twain did not meet** – this is potentially the important category for examination, as it clearly shows there are both supply and demand factors that are not, for whatever reason, meeting. However, a careful analysis shows that there are virtually no potential trade items in this category. Tobacco and tobacco products are one reasonable possibility, and at a stretch maybe sunflower oil. The only other possible products are milk powders, soya flour and corn maize, although South African global exports of these products are all under $10 million and Indian imports are even lower at below $1.4 million in each case.

In looking to the future and visualising a FTA between India and SACU/South Africa there appear to be some sectors where South Africa may gain, but this seems likely to be based entirely upon tariff preferences in a few selected lines only (with sugar the main one).

PART III: CONCLUSIONS

Reforms of agricultural marketing structures have been a major feature of agriculture in New Zealand and South Africa over the past two decades. The reforms in New Zealand varied, and were often very measured and considered, with export control either officially or *de facto* existing in some sectors while others were cut adrift very quickly. Not surprisingly, the results have been mixed. In South Africa all controls were effectively cut adrift, and the jury is still out on the results.

A feature of the New Zealand experience has been both innovation and the adoption of technologies and even new farming sectors, although in the case of deer and kiwifruit, these industries had their beginnings prior to deregulation. Productivity in New Zealand agriculture shows a distinctive break at 1984, the year of the reforms; up to that date an average of 1.5 percent, past that data an average of 2.5 percent. A similar analysis of productivity in South Africa shows that increases seem to be the result of labour shedding only.

One 'new world' sector where both countries compete on a head-to-head basis is the wine export market, and here, while South Africa is a larger exporter, New Zealand has a distinct advantage in prices and therefore at least perceived quality internationally. This is confirmed from analysis in both China (a minor wine market) and the UK, the major market for both New Zealand and South Africa. Whether that is a function of the relatively new growth of New Zealand's industry (and a subsidised vine pull scheme that enabled the planting of new varieties in the late 1980s) or more astute global marketing is a moot point. Perhaps South Africa, in emerging from global isolation in the 1990s, set its pricing structures at too low a level and is now finding that it is difficult to move up the value chain in this fickle sector. On a similar note, New Zealand's adoption of both the new deer and kiwifruit industries could, conceivably, have taken place in South Africa. But they did not, although arguably South Africa may be making higher returns from its indigenous antelope herds through big game hunting and tourism than it would from venison exports.

On the global stage New Zealand did very well out of the Uruguay Round of the WTO, and it similarly is poised to do well from further reforms of the dairy sector in particular. Agriculture is the focal point of concern from almost all of New Zealand's bilateral partners in FTA negotiations as its reputation and abilities to supply from what is becoming an increasingly constrained land base becomes almost mythical in the eyes of these partners. Importantly, the dairy sector has seized its opportunities and become a major global player at all levels, thus at least giving some credence to this situation. South Africa has no sector that comes even close to this situation, except possibly in sugar and then indirectly the processed fruit sectors.

South Africa's potential for increasing exports of agricultural goods to China and India seems to be muted, either with or without an FTA. Sugar is the one major exception. Conversely, New Zealand seems to have much more to gain, and especially in dairy products.

The results of this analysis do not bode well for South African agriculture. The sector is hamstrung by poor physical resources; hardly benefited from the Agreement on Agriculture, either because of South Africa's relatively weak negotiating position, or because opportunities were not identified and exploited by the negotiators; seems to be hampered by a lack of

innovativeness on the part of farmers and the agribusiness sector; and has to contend with the transformation of the sector. On the other hand, reasons for optimism include the fact that the sector as a whole has benefited from deregulation of agricultural markets, and the prospect that new entrants will bring a new sense of innovation into the industry.

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