CHAPTER 2

TRENDS IN FOOD PRICES IN SOUTH AFRICA

2.1 Food demand

Any investigation of the impact of food price rises in South Africa has to take into account the nature of the consumer market in the country. In 2000, South Africa's total personal disposable income was estimated at R603 601m, with a per capita value of R13 502. Since 1960 total personal disposable income has grown at an average rate of 3.6% per annum, while per capita income has grown at a much lower rate, namely 1.1% per annum.

A key feature of the South African economy is its extremely skewed distribution of wealth and income. Table 11 shows the distribution of personal monthly income by population group. 37% of all South Africans fall in the low-income group of whom 83.06% are Black, 10.57% are Coloured, 1.55% are Indian/Asian and 4.81% are White. In the case of the high-income group more than 80% are White, while fewer than 14% are Black. This racial income distribution pattern is, however, becoming less distinct. More than two thirds of all personal disposal income is found in the metropolitan areas of the country. Gauteng province is the country's commercial centre and it has the largest proportion of high-income consumers. The poorest quintile in each of the main metropolitan areas spends between 30% and 40% of their income on food, while the richest quintile spends in the region of 10-15%.

Table 11: Distribution of personal monthly income by population (% of group)

Income Group	African/Black	Coloured	Indian/Asian	White	Total
Low	83.06	10.57	1.55	4.81	37.29
Low-Middle	67.62	13.88	4.27	14.23	42.45
Middle	34.65	10.08	6.32	48.95	15.18
High-Middle	14.89	4.25	5.20	75.66	4.38
High	13.04	2.62	3.95	80.39	0.71
					100.00

Source: Census 96

The South African retail sector can be categorised into a formal and an informal component. Since the 1980s the informal retail component, which include hawkers or street markets, spaza shops, shebeens and tuck shops has been gaining market share. Nevertheless, four retail chains dominate the formal South African food retail sector. Table 12 shows their level of turnover as well as changing market shares between them. The stores are arranged in ascending order of penetration in the A-income category, where turnover has been growing faster than among lower income categories.

An important development within the South African retail sector is its increasing investment in SADC regional operations. For example Shoprite-Checkers operates 16 stores in Zambia. This trend has implications for the SA agro-food sector in that many of the goods retailed in these regional branches are South African in origin. In the case of Shoprite-Checkers (Zambia), approximately 40% of its product is sourced from South Africa.

Table 12: South African retail chains: turnover and market share

	Rm 1998	Market Share 1998	Market Share 1992
Shoprite Group	16100	42.6	49.2
Shoprite	14400	38.1	23.5
OK Stores	1700	4.5	25.7
Pick 'n Pay Group	10900	28.9	32.1
Pick 'n Pay	9900	26.2	29
Score	1000	2.7	3.1
Spar	8900	23.5	15.8
Woolworths Food Division	1900	5	2.9
Total	**37800**	**100.00**	**100.0**

The data in Table 13 provide an indication of the prices charged in these stores. The basket of goods described here is around 50% more expensive in Mozambique and Zambia compared to South Africa, and twice as expensive in Malawi. The highest price premiums are found in processed products such as cooking oil, flour, rice and cheese.

Table 13: A comparison of grocery retail prices in the SADC region

Product	Description/Notes	South Africa Price[1] (R)	Zambia Price[2] (R[3])	Malawi Price (R[4])	Mozambique Price (R[5])
Eggs	6 x Large (cardboard tray packaging)	3.19	5.20	7.10	4.71
Cooking oil	750ml plastic bottle	5.69	8.60	12.35	8.56
White sugar	2kg bag – paper bag packaging	8.63[6]	10.50	12.35	14.12[7]
Flour	2.5kg all purpose –paper bag packaging	7.99	18.96	30.87	10.59[8]
Chicken	Whole fresh chicken per kg – packaging = polystyrene tray and plastic	14.99[9]	20.50	21.61	17.11
Tomatoes	Grade 1 per kg – loose sell	8.79	3.88	10.80	3.64
Potatoes	Grade 1 per kg –loose sell	3.49	5.00	10.19	5.13
Milk	Litre - plastic bag	3.39	5.15	7.72	5.34
Bread	Standard brown loaf	2.79	3.50	4.63	1.28
Cheese	Per kg – cut from block –plastic wrap	33.90	87.53	73.64	58.61
Tea	100g loose tea – silver foil pack	3.20[10]	2.00	12.35	13.90
White Rice	1kg bag –sealed plastic bag	3.59	7.25	7.72	6.63
Maize Meal	12,5 kg breakfast (roller meal – cloth bag)	29.99[11]	23.96	57.88	42.78
Soap	250g body soap – sealed plastic package	1.49[12]	3.88	5.71	3.20
Total		**131.12**	**205.91**	**274.92**	**195.60**

[1]Prices collected from Shoprite Stellenbosch on 13/11/2001; [2] Prices collected from Shoprite Manda Hill on 9/11/2001; [3]1 ZAR=399.864 ZMK (13/11/2001); [4]1ZAR = 6.47899 MK (13/11/2001); [5]1 ZAR = 2,337.31 MZM (13/11/2001); [6]SA sugar sold in 2.5 kg paper bags, converted this to 2 kg; [7]Price per kg; [8]No equivalent packaging, average price for 1 kg price and 5 kg price; [9] Thick plastic – no polystyrene tray; [10]Teabags – loose tea not available 62,5 g converted to 100g; [11] Converted this to 12,5 kg – SA product 10kg in paper packaging; [12] Paper packaging

Thus, while the South African consumer market is still segmented, inequality is decreasing, and the purchasing power of the wealthiest part of the population is increasing. As a result, the largest impact of food prices will be on poor people, most of who live in the rural and peri-urban areas of the country.

2.2 Inflation and food price inflation

It has become apparent in recent months that the increasing inflation rate in South Africa is largely the result of an increase in food price inflation. However, it is necessary, first, to take a longer-term perspective on food price inflation. The trends are shown in Figures 6 and 7 below, which show the trends in food price inflation in conjunction with the process of deregulation of agriculture. These data show that deregulation was characterised by a lowering in the rate of food inflation (i.e. during the period when the general rate of inflation in the country was brought to below double digit figures for the first time in two decades), and by a reduction in the variability of food price changes. This is a key finding that serves as a warning against attempts to reintroduce the control measures that existed prior to the promulgation of the Marketing of Agricultural Products Act in 1996.

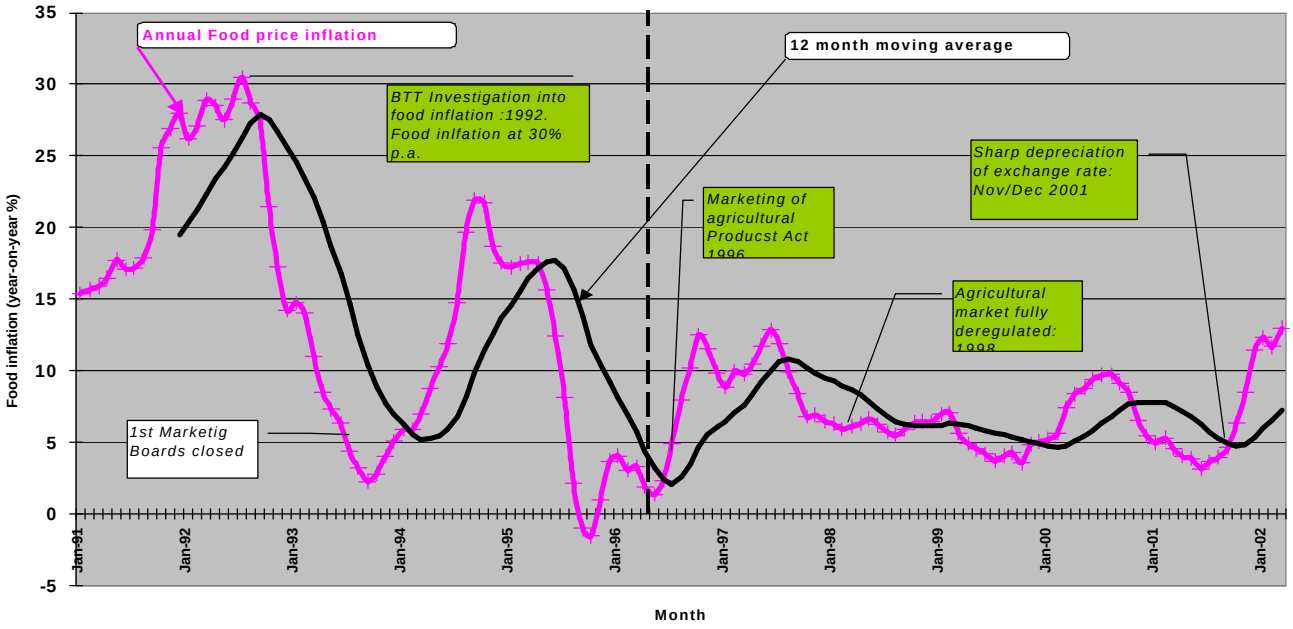


Figure 6: Food price inflation and deregulation

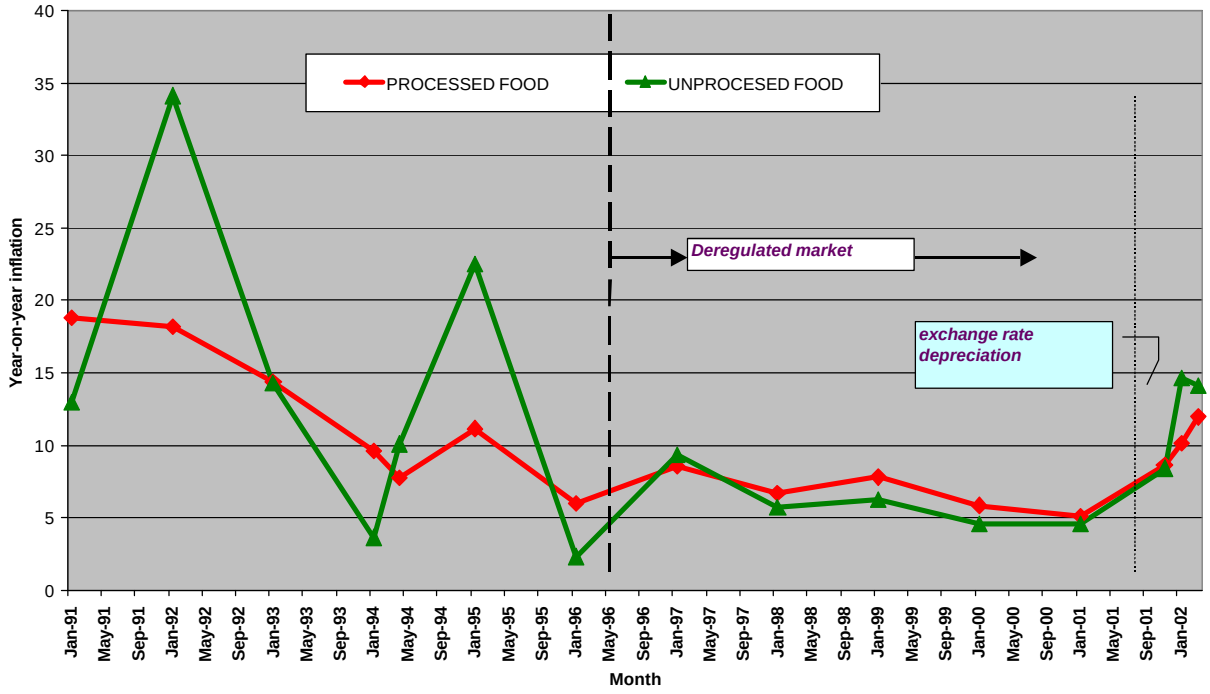


Figure 7: Inflation in the prices of processed and unprocessed agricultural products

As far as the short-term situation is concerned, the April Statistical Release of StatsSa states the position clearly:

> "The headline inflation rate at April 2002 … is 8,0%. This rate is the highest since February 1999 when the rate was 8,6% … The official inflation rate … is 1,4 percentage points higher than the corresponding annual rate of 6,6% at March 2002 …, mainly due to larger annual contributions … in the price indices for food (with a contribution of 2,9 percentage points to the 8,0% official inflation rate) …

The trend since 1998 is shown in Figure 8a below. Here it is evident that when CPI-food was growing at a relatively constant rate (up to the end of 1999), the overall inflation rate was declining. However, between the end of 1999 and the middle of 2000, and again from the middle of July 2001 it is clear that the increase in CPI-food has preceded an increase in the overall rate of inflation. The interpretation is emphasised by Figure 8b, which shows the difference between the CPI and CPI-exFood thus illustrating the important contribution of food inflation to total inflation over the last few months. The reason for the relatively large increase in the price of food is shown in Table 14 below.

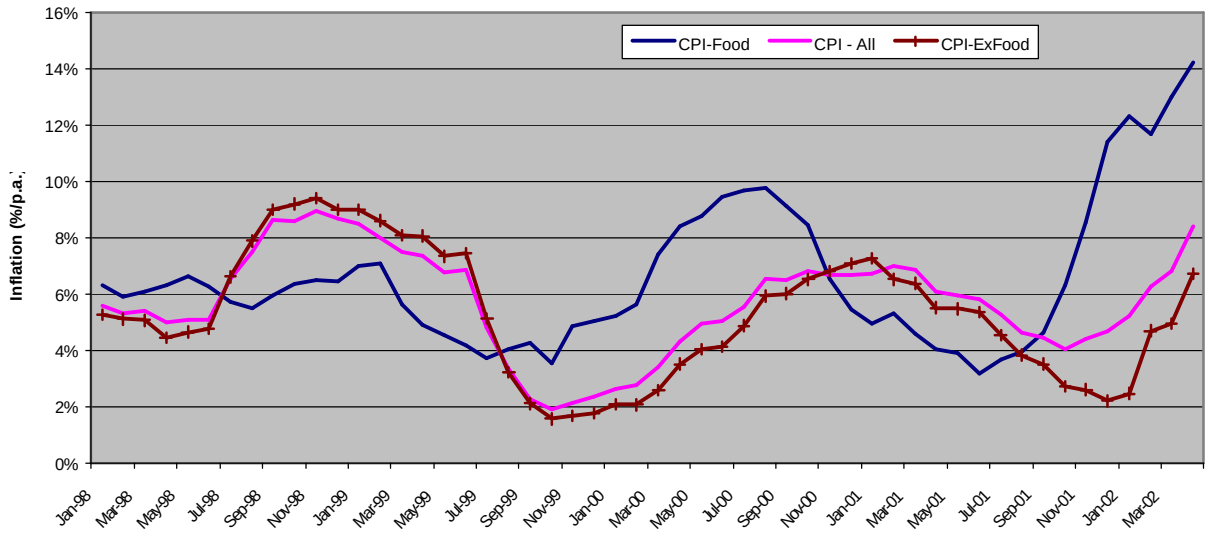


Figure 8a: Annual increase in the CPI for food, Jan 1998 to April 2002

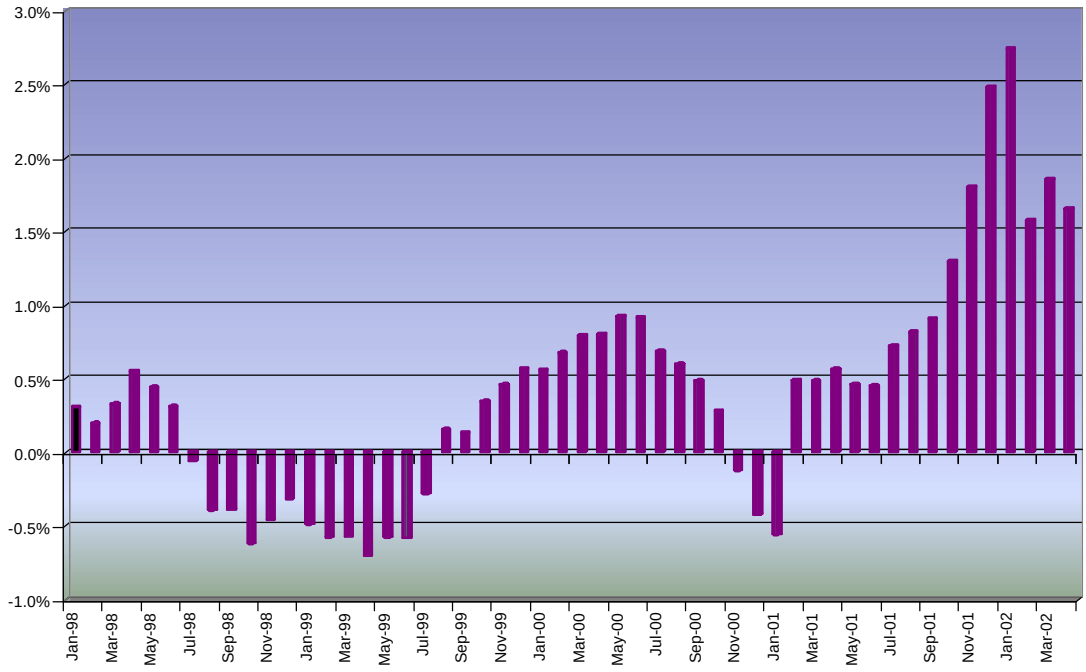


Figure 8b: Difference between annual increase in CPI-all and CPIex-food, 1998 – 2002 (percentage points)

The data in Table 14 show that the main reason for the increase in the Consumer Price index for Food over the period March to April 2002 was the increase in the price of grain products, of milk, cheese and eggs, and of fats and oils, fruit and nuts, and coffee, tea and cocoa, which all increased at a rate higher than the average for all food products.

Table 14: The contribution to CPI Food, April 2001 to April 2002

		Percentage change between	
Product	**Weight**	**March 2002 to April 2002**	**April 2001 to April 2002**
CPI		1,8	8,0
CPI Excluding food	79,01	1,8	6,3
Food (total)	20,99	1,5	14,2
Grain products	3,81	2,4	14,3
Meat	5,66	0,9	15,1
Fish and other seafood	0,69	1,3	12,9
Milk, cheese and eggs	1,96	2,0	16,0
Fats and oils	0,76	2,6	19,1
Fruit and nuts	1,09	1,7	6,2
Vegetables	2,00	0,6	23,5
Sugar	0,50	1,1	8,8
Coffee, tea and cocoa	1,07	2,3	11,3
Other	3,45	0,5	7,6

Source: StatsSa

The food products that had larger than average increases for the period April 2001 to April 2002 are vegetables, grain products, meat, milk, cheese and eggs, and fats and oils. The hypothesis is that these price increases are related to the weakening of the exchange rate in the last six months of 2001. As will be shown below, the exchange rate directly influences the price of products that have to compete with imported goods, hence the increase in the price of grain products. Grain products are also the single largest input in the production of meat, and of milk, cheese and eggs, hence the increases in the prices of these products. The exchange rate will also directly influence the price of imported products such as fats and oils, and coffee, tea and cocoa. Increases in the price of fruits and nuts, and of vegetables, are expected to be unrelated to the exchange rate and mainly influenced by the normal seasonal effects.

2.3 The maize price increase of 2001/2002

The motivation for this study came largely from concerns raised over the steep increase in the producer price of maize at the end of 2001. The public outcry was unsurprising, as white maize is the staple food in the country, and yellow maize is the single most important input in the dairy, pig, beef, and poultry industries. Thus, an increase in the price of maize implies that the price of maize meal as well as of all the major sources of proteins such as milk, milk powder, butter, cheese, eggs, poultry and pork will increase.

The analysis of pricing behaviour in the market for grains is, therefore, the key focus of this study, following from the hypothesis that the sharp increase in the price of maize has been the most important driving force behind the recent increase in food price inflation. Thus, the first question to be addressed is **why did the price of maize increase?**

The working of the market for grains

The discussion in Chapter 1 showed that the Marketing of Agricultural Products Act of 1996 paved the way for a new marketing order in the South African grain industry. Grain producers, traders and processors are now able to trade in a 'free' market, responding to the forces of supply and demand in setting prices. In practice, they all look to the prices generated through the formal commodities market that was established following deregulation, namely the Agricultural Markets Division of the South African Futures Exchange (SAFEX) as the benchmark for the prices they ask or offer in the 'spot' market of daily trading in maize. SAFEX was formed in 1996/1997, and introduced the trading of derivatives (futures and options) for white maize, yellow maize, wheat, sunflower and beef (the contract for beef was later cancelled). The prices for future contracts and options are generated on the exchange through 'bids' and 'offers' and reflect the views of market participants on the prices of the specific products at different dates in the future. These instruments are also used to hedge price risk. By using the SAFEX market effectively, market participants can minimize their price risk, which in turn lowers their cost of doing business. These savings can then be passed onto the consumer in the form of lower prices for food and other commodities. Later in the chapter we show that retail prices of food and maize in particular has not increased in the same way than producer prices.

SAFEX prices come about as a result of the views of different participants in the market about the direction that prices are going to take, thus the market is driven by their assessment and interpretation of information regarding the future level of prices for the different agricultural commodities. The supply and demand factors that affect the prices of products in the future include weather conditions, consumer preferences, government policy, trade agreements, changes in living standards, and technology. In a free market producers compete with each other and also with foreign producers in order to maximise their own profits. Consequently, individual producers have no alternative but to take the best price possible – be it the local price or the international price.

The technique used to calculate the prices at which producers can sell their product locally or internationally is known as an import/export parity calculation. For example, if grain millers can buy imported maize (including the cost of transport, insurance, the tariff, the exchange rate, etc.) for cheaper than locally produced maize, they will do so until local producers are able to supply maize as cheaply. This is called an **import parity price**. On the other hand, if South African maize producers can sell their maize to foreign millers at a better price than local millers are prepared to pay, South African maize will be exported until local prices have increased to the level of the export price. This is an **export parity price**.

The result is that the price of maize on the domestic market will normally go no higher than the import parity price, as millers will merely increase imports at that point. Thus, the import parity price is a maximum price. In the same manner, the export parity price is the lowest possible price, i.e. it is a minimum price. Therefore, the domestic price of maize will fluctuate between these two levels. This is illustrated in Figure 9. For example, if the exchange rate depreciates, South African maize producers will be able to sell at a higher price in foreign markets. If this price is high enough to cover the cost of exports, there will be an increase in exports of maize, a decrease in local supply and thus an increase in the domestic price, until the domestic price equals the price received from exports. The opposite result will arise if the local price rises above the ceiling price and the product can be imported for a lower price than it is produced locally. The actual level of the domestic price between this minimum and maximum level will depend on local (Southern African) supply as well as demand in the local market, recognising that the latter is relatively stable in the short to medium term. A more practical illustration of how the domestic price of maize comes about is provided in the next sub-section.

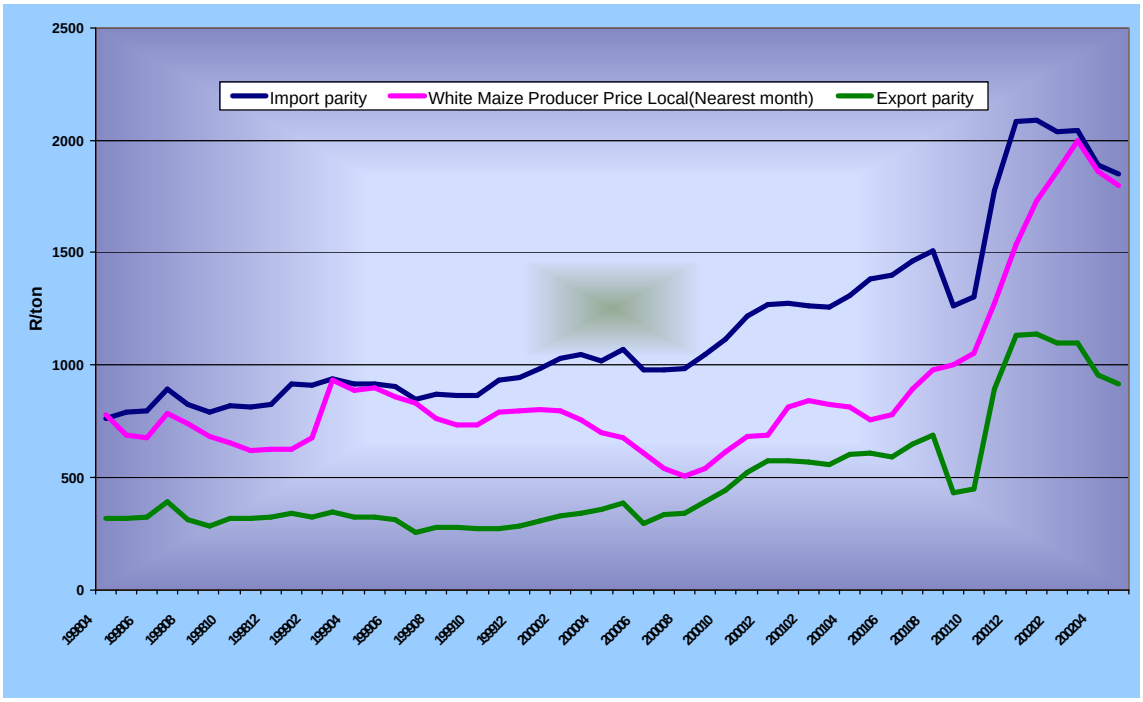


Figure 9: Illustration of how SAFEX spot prices fluctuate between import parity and export parity (April 1998 to May 2002)

The determinants of the domestic price for maize

The illustration above shows that the main influences on the price of maize that a South African buyer pays is the world price for maize, the exchange rate[8] and the relative size of the domestic (Southern African) maize crop. The mechanism for reaching the domestic price of white maize can be illustrated with reference to actual prices ruling in the South African market between 2000 and 2002. The data are provided in Table 15 below.

Table 15: Calculation of import parity prices for white maize

Year	Area Planted	Crop	Fob Gulf Price	CIF Randfontein price (import parity price)	Exchange Rate	Safex
	Mil Ha	Mil Tons	$/t	R/t	ZAR/$	R/t
1999	3.227	6.71				750
2000	2.708	8.97	79.980	1239.992	6.960	519
2001	2.84	7.225	94.170	1559.563	8.450	1022
2002		??	90.720	2000.56	11.610	2008

Note: All data for 1st of September except for 2002, which is at 1 February 2002

Maize that is physically located in the United States does not have the same value to a South African buyer as does maize that is physically in the EU or in South Africa. Hence, the price of maize in different markets must be adjusted to take account of the differences in transport costs, exchange rates, etc. in order to make comparisons possible. Such an adjusted price is called a **reference price,** and must be calculated with respect to a **reference point.** In the case of grains in South Africa the commonly used reference point is Randfontein.

[8] The other costs (foreign currency costs of freight, insurance, etc; as well as the domestic costs) are important, too. Evidence shows, however, that they are more stable than the world price and the exchange rate.

In order to adjust all prices to this reference price, the international commodity price ('free on board' or fob Gulf price[9]) has to be adjusted to take account of all the costs incurred in bringing the maize to Durban. This price, called the CIF price[10], is adjusted into local currency using the current exchange rate. Once this is done all local Rand based costs (off-loading, losses, interest, local transport costs) can be added to result in a final landed (local) price per ton at the point of consumption or the reference point.

During this period the dollar price of white maize increased by $10.74/t (from $79.98 to $90.72, or by 13.38%). During this time the exchange rate also weakened, by 66.67% (from R6.96 to R11.61, or by R4.65). According to the explanation provided thus far, this should cause the import parity price to increase, and hence the domestic price of maize will also increase. Maize buyers in South Africa, e.g. millers, have to buy maize from producers who can sell their produce overseas at the higher world price and with a more favourable exchange rate. Hence, they will bid up the domestic price of maize.

Whether the domestic price of maize, as a result, goes up to the maximum level of the import parity price depends on the relative scarcity of maize in the domestic market. If there is a domestic shortage, due for example to drought, prices will move to import parity and if there is excess supply prices will go down, but no lower than export parity. To illustrate, in 2000 the import parity price of white maize was R1239/t but producers only received R519/t, largely due to the good harvest in South Africa and the neighbouring countries. This caused a drop in the area planted to white maize (from 3.227m ha in 2000 to 2.708m ha in 2001) as producers switched to more profitable enterprises. This caused a decline in output (from 8.97m tons in 2000 to 7.225m ton in 2001).

An additional factor that has to be taken into account in that period is the effect of the political turmoil and farm invasions in Zimbabwe, which resulted in a large drop in area planted to food grains such as maize in that country. Within two years Zimbabwe changed from a surplus producer and exporter of maize to a deficit producer and importer. The combination of these two factors plus reports of crop failures in Zambia and Malawi changed market sentiments from the surplus in 2000 to a predicted deficit in the whole SADC region in 2001. The predictable result was that the domestic price increased to the level of the import parity price within a year. At the same time import parity prices increased by 73% for white maize and 75% for yellow maize between September 2000 to February 2002.

Thus, the rapid increase in the price of maize came about as a result of the effect of the weakening in the exchange rate and the increase in the world price on the price band within which the domestic price moves. Within this band, the domestic price then increased as a result of the perceived shortage on the domestic market, fuelled by the irresponsible actions of the Zimbabwean government.

The argument thus far has been based on a comparison of the international price with the SAFEX price. However, the latter is a price based on a promise of future delivery. Hence, the logical next question is the extent to which the SAFEX price is an indication of the actual market price or spot price for a particular commodity.

[9] This means that the supplier delivers the maize at a price that is equivalent to loading the maize onto a ship in the Gulf, i.e. the buyer will pay for the transport, insurance, etc. to get it to where they need it. The world price for maize is conventionally quoted as fob Gulf.

[10] Cost, insurance, freight.

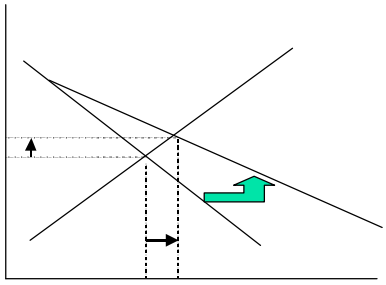
Futures prices and spot prices

At any given point in time there will be more than one contract listed on SAFEX for the same commodity. The only difference between the various contracts is the date of expiry. For example an April 2002 expires on 20 April 2002 and a March 2003 contract expires on 20 March 2003. The contracts will trade at different price levels with the contract with the latest expiry date trading at the highest price (Note: This applies only to the current crops. With the new season commencing contract prices for the new season crop might differ completely). The difference in the price levels will equate to all costs (storing and financing costs) from one period to the next. For example, the September 2002 will trade at R1900/t and the December 2002 at R1950/t, the difference being R50 per ton. The amount of R50/t will be roughly equal to costs involved in storing maize from September to December.

BOX 1: The Free Market and Total demand

In a free market farmers, traders and processors make decisions as rational players in a competitive market. In such a market one would therefore expect that international arbitrage drives prices. If millers could get imported maize to South Africa cheaper they will do so and this will drive local prices down. But when the landed price goes up and supply is just sufficient to meet local demand local prices will be on par with the 'import prices'.

Total Demand: In an open market with little to no trade restrictions demand for a commodity implies not only local demand. Total demand for the commodity includes local demand plus export demand – i.e. the demand by importing countries such as Zimbabwe, Malawi and Zimbabwe (The new demand curve to the right in the figure below). For a commodity such as white maize the total demand will thus include the demand from neighbouring countries. When these countries experience shortages they will demand more maize from South Africa thus shifting the total demand curve to the right putting a further upward pressure on the maize price. When total demand is outstripping local supply (implying thus South African production) additional supply will have to come from imports outside the region. This is then when the import parity calculation will indicate the prices at which maize will be landed here.



One of the contracts being traded on SAFEX will always have an expiry date equal to the current month. For example, if it is now the month of April 2002 there will be a contract with an expiry date of April 2002. This continued existence of a contract ready to expire creates the constant delivery month contract. In other words, there will always be a contract that is ready for delivery, which implies that a producer can always find a contract on SAFEX against which he can deliver immediately. If a producer happens to have maize ready for delivery in April 2002 he/she can take an April 2002 contract position on SAFEX and delivery can proceed within a matter of days. For all practical purposes the price of the deliverable contract (or delivery month contract) thus represents the current market price or spot price for SAFEX.

However, contrary to the days of the Control Boards, there is no longer any pan-seasonal or pan-territorial pricing[11] or one single spot (producer) price for the country as a whole. There are as many different spot prices as there are points of delivery. An adjustment for transport cost is, therefore, done for each delivery point. Since all SAFEX prices are Randfontein based, this means that if a producer can deliver or a miller accept delivery at Randfontein, they will receive or pay the SAFEX price for the delivery month contract (the spot price). Since delivery usually takes place at points across the various producing regions, all spot prices will be a SAFEX adjusted price. For example if the transport costs between Randfontein and the silo where a producer chooses to deliver is R80/t, the delivery price for the producer will be equal to the Randfontein price (the delivery month

[11] The Maize and Wheat Boards set a buying price for the product regardless of when or where it was delivered. The result was that the transport cost of farmers further away from the market was subsidized by those closer to the market, while no producer had an incentive to store the product. This had an enormous impact on liquidity management by the monetary authorities when the entire crop was purchased within a couple of weeks every year.

contract price) minus the R80/t transport cost. The buyer will now collect the maize from the relevant silo at the SAFEX price minus the R80/t. These transport cost differentials are calculated every year and are available from SAFEX. Thus, the SAFEX futures prices are indeed the true market or spot prices for every delivery month.

Testing for the causes of the maize price increase

The discussion so far and the analysis of price trends in Section 2.4 below suggest strong arguments and evidence for showing that there is a close correlation between farm gate prices and the R/$ exchange rate in the case of every commodity analysed. However, these results should be interpreted with care and need to be **tested statistically** to prove beyond reasonable doubt that the exchange rate has been one of the major factors contributing to the producer price increases.

Although the evidence suggests a strong correlation between the movements in the exchange rate and the SAFEX spot price, correlation does not necessarily imply causation in any meaningful sense of that word. The econometric graveyard is full of magnificent correlations, which are simply spurious or meaningless. As a result, the analyst has to test for causality to answer the question whether the exchange rate depreciation **caused** an increase in grain prices.

The Granger (1969) approach to the question of whether x (e.g. the R/$ exchange rate) causes y (e.g. the spot price of maize) is to see how much of the current y can be explained by past values of y and then to see whether adding lagged values of x can improve the explanation. Y is said to be Granger-caused by x if x helps in the prediction of y, or equivalently if the coefficients on the lagged x's are statistically significant[12].

The Granger test for the white maize producer price shows that we can say with 99% confidence that changes in white maize prices were preceded by changes in the R/$ exchange rate, with a lag that is usually not more than 10 days or 2 working weeks. In the case of yellow maize a similar result was found, but the lag was much shorter at as little as one working week or 5 days.

In the case of sunflower and wheat the results of the test were not that clear and no conclusive evidence could be found that prices were affected by the exchange rate changes. In the case of these commodities, there could have been other factors that influenced the prices.

Apart from the Granger test we used a regression model to determine the effect of exchange rate fluctuations and import costs on the SAFEX white maize spot price. In this model the SAFEX spot price for white maize was modelled as a function of the exchange rate, exchange rate lagged one month, c.i.f white maize price Durban port in U.S. dollars, and the cost of discharge, tariff, and transport of the maize to Randfontein as a single variable, namely import costs.

All the variables, with exception of the import costs, were statistically significant at the 90% level. The R-squared of the model indicates that 96% of the variation in the real SAFEX white maize price was explained by the independent variables. The elasticities of the different variables are as follows:

Box 2

Variable	Elasticity with real SAFEX white maize price
Nominal exchange rate	1.05
Exchange rate lagged 1 month	0.51
Nominal c.i.f white maize price Durban port	0.54
Import costs	0.25

[12] Note that two-way causation is frequently the case; x Granger causes y and y Granger causes x. It is also important to note that the statement 'x Granger causes y' only means that x comes before y, and not that y is the effect or the result of x. Granger causality measures precedence and information content but does not by itself indicate causality in the more common use of the term. Nevertheless, it provides stronger evidence of causality than a simple correlation.

The elasticity results show that a 1% increase in the current exchange rate will cause a 1.05% increase in the white maize SAFEX price, while a similar increase in a 1-month lagged exchange rate will cause a 0.51% increase. It should however be noted that the high elasticity for the exchange rate probably also reflects the fact that the market is much more sensitive to an exchange rate depreciation when the crop is short and when stocks are low or when the regional market is short as is the case in 2001/2002. The high exchange rate elasticity (and thus the large change in price levels) is also a consequence of the fact that the market had some ground to make up from far below import parity levels. This explains the large response in terms of the SAFEX price when reports of the short crop in the region became known. A 1% increase in the c.i.f. Durban port white maize price in U.S. dollars will cause a 0.54% increase in the SAFEX price. Similarly a 1% increase in import costs will cause a 0.25% increase in the SAFEX price. This shows that world prices and the exchange rate make a statistically significant contribution towards the level of producer prices quoted as the price of the near month SAFEX contract.

This discussion has, therefore, shown that the domestic price of maize reacted in a predictable fashion to the change in the exchange rate and the international price of maize, to market perceptions of the relative scarcity of maize in Southern Africa and to the food crisis in Zimbabwe at the end of 2001. There is, therefore, clearly no evidence of price manipulation or of unfair price policies in determining the price of the basic commodity.

2.4 Trends in farm gate prices

In this section the trends in nominal and real farm gate prices in South Africa are analysed for a wide range of commodities[13]. The seasonal and cyclical nature of farm prices, and thus their variability, is also illustrated. This will be contrasted with the more consistent increases in retail prices later in the analysis. The factors driving these price trends are also identified and analysed.

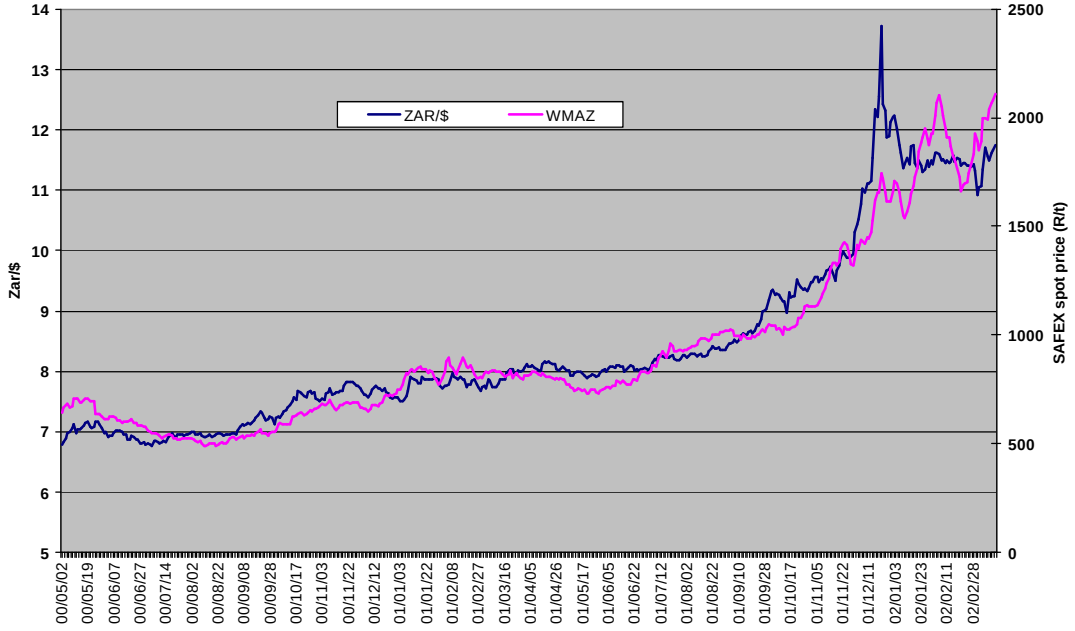
2.4.1 Cereals and grains

Chapter 1 provided an overview of the process of deregulation in the agricultural market and illustrated that South Africa's agricultural economy is now 'open' and susceptible to changes in the world market and other exogenous factors. South African farmers are now operating in a free market. It has taken more than 5 years and many casualties for farmers to adjust to this 'new game'. This process of adjustment has been more difficult for farmers from disadvantaged communities, who are now entering the mainstream agricultural economy.

Maize

Figure 10 depicts the trend in the producer price of white maize plotted against the trend for the R/$ exchange rate since May 2000. The data show a remarkably strong correlation between the two variables. Figure 11 provides the trend over a longer period (since 1999), showing a weaker correlation in the years prior to 2000. This is largely the result of other factors, such as the large crop and low prices in 1999/00, leading to lower plantings in 2000, as explained above. This analysis is repeated for yellow maize in Figures 12 and 13.

[13] Maize meal, Cooking oil, Bread, Wheat flour, Dry beans, Fresh milk, Cheese, Butter, Mutton, Beef, Eggs, Chicken, Potatoes, Tomatoes, Pumpkin, Apples, Oranges, and Bananas.



Source: SAFEX/AMD and Reuters

Figure 10: White maize producer price vs. the R/$ exchange rate, May 2000 to March 2002

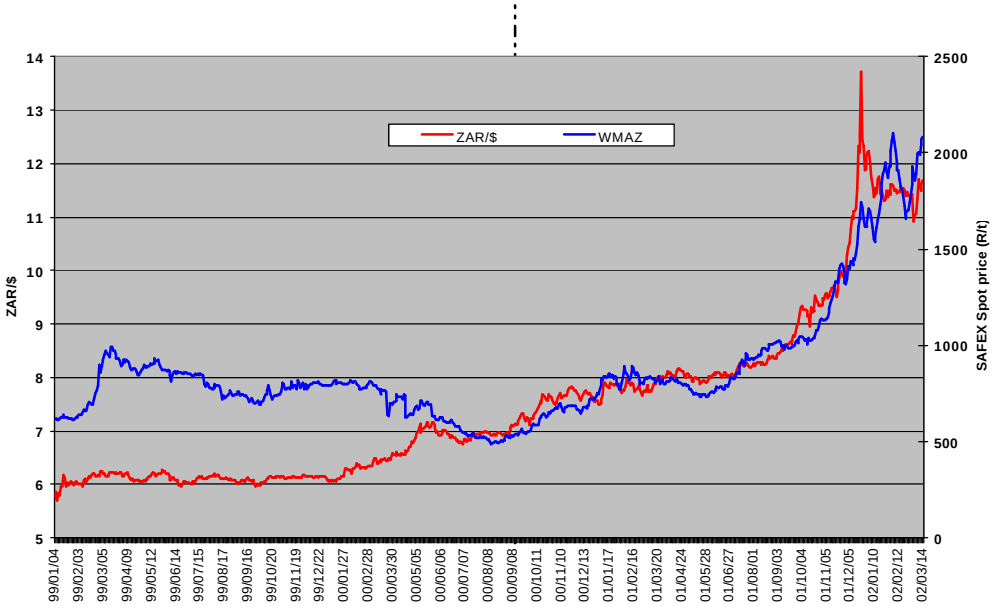
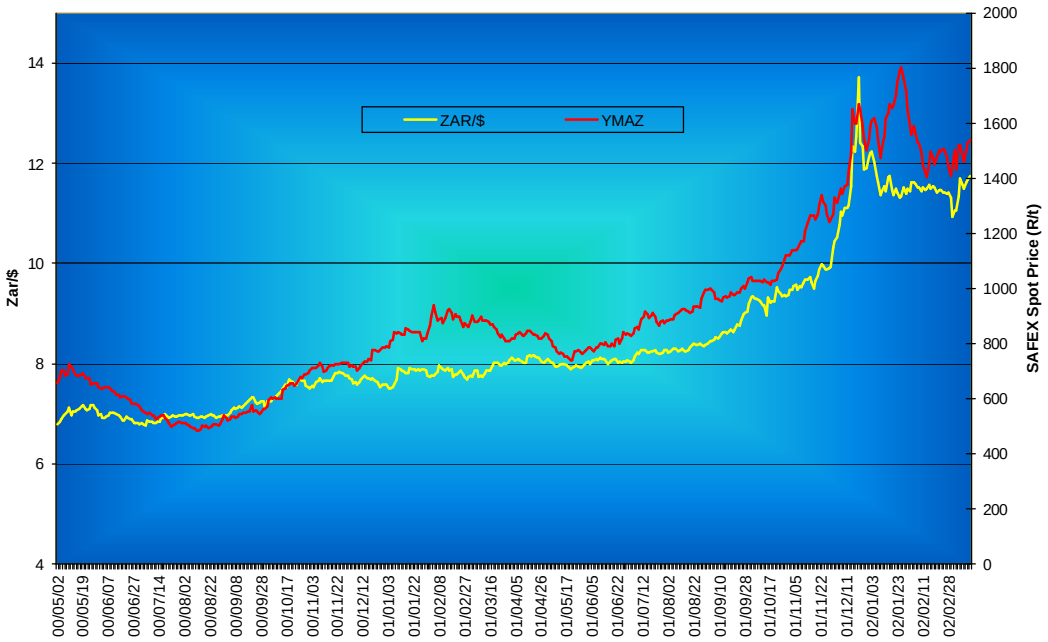
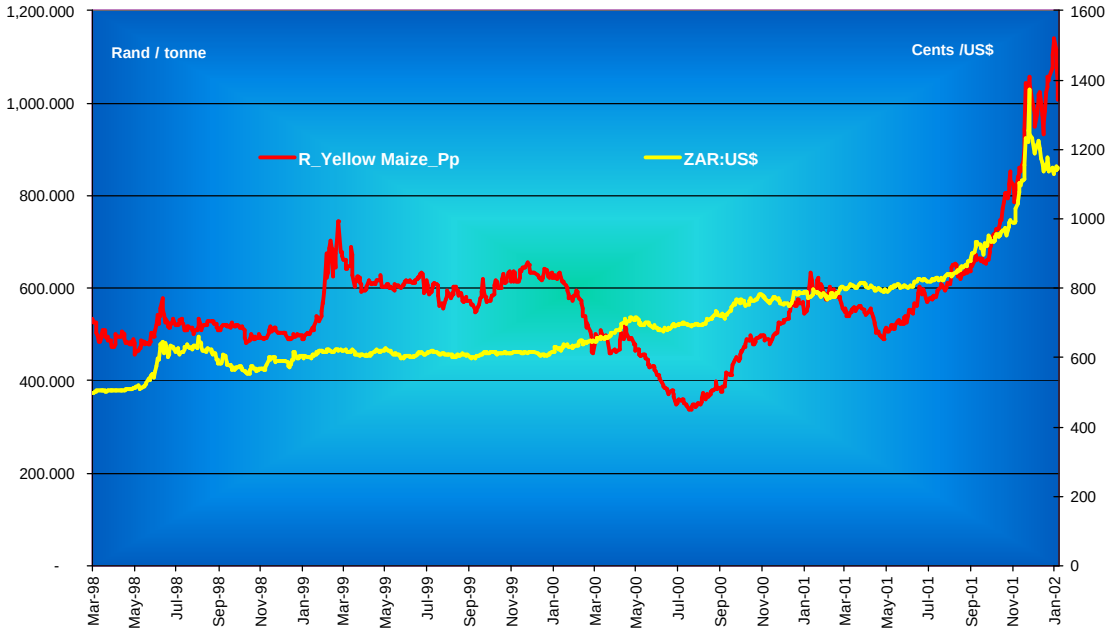


Figure 11: White maize producer price vs. the R/$ exchange rate, 1999 – 2002



Source: SAFEX/AMD and Reuters

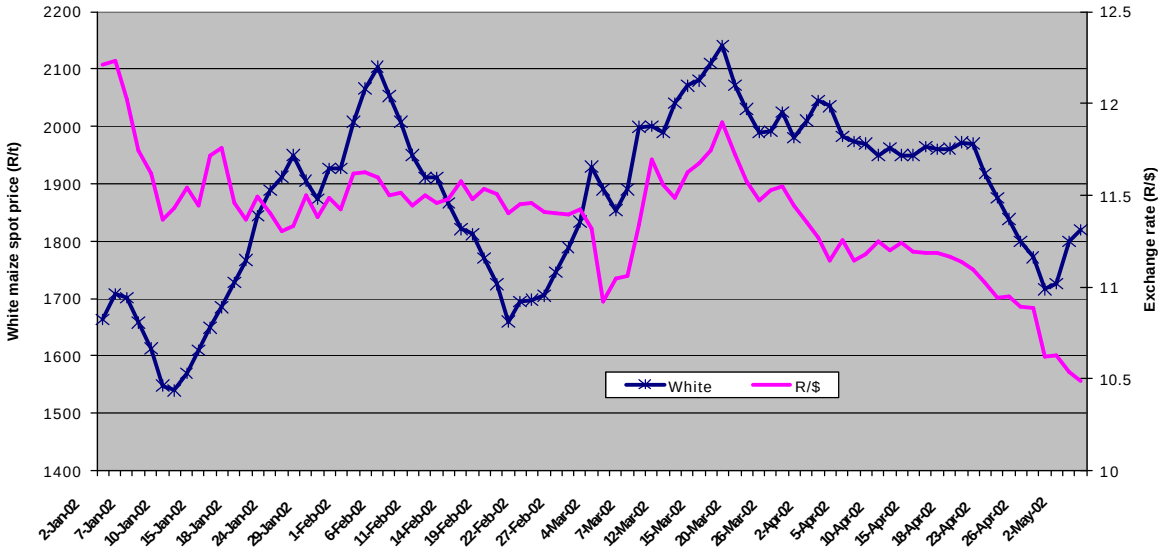
Figure 12: Yellow maize producer price vs. the R/$ exchange rate, May 2000 to March 2002



Source: SAFEX/AMD and Reuters

Figure 13: Yellow maize producer price vs. the R/$ exchange rate, 1998 – Jan 2002

Further evidence that the short-term movements in the spot price for maize are driven largely by the exchange rate is provided in Figure 14, which shows that the post-February improvement in the exchange rate has led to a drop in white maize prices.



Source: SAFEX/AMD and Reuters

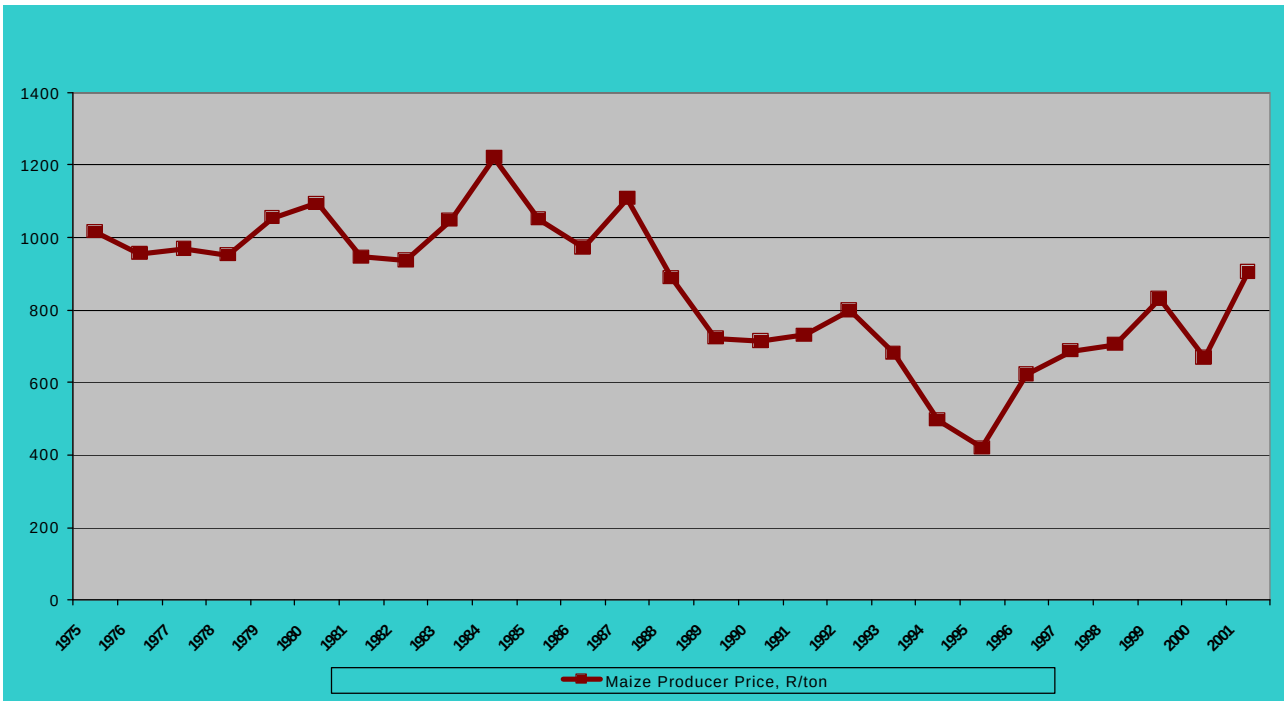
Figure 14: Short term movement in the spot price for white maize, January to May 2002

The discussion thus far has reflected trends in nominal prices, largely to show the correlation between the nominal price and the exchange rate. However, any sensible interpretation requires consideration of the real producer prices. These are shown in Figure 15, which depicts the trend in the annual weighted average for real maize producer prices since 1975. The real farm gate price of maize was more than 40% lower in 1996 than its level in 1975-1985 – declining on average by 7% per annum between 1985 and 1990 and 10% between 1990 and 1995. The introduction of the tariff started a trend of increasing real prices that has continued since, and that accelerated at the end of 2001 with the sharp weakening in the exchange rate (Between 1995 and 2000 real prices increase by 9.7% per annum but since 2000 by 35% per annum on average).

However annual averages distort reality somewhat and when one considers weekly prices we find that it is only since September 2001 that producers could earn more in real terms relative to 1975. This is reflected in the following real weighted average prices:

Box 3

Year	Maize producer price: (R/ton in constant 2000 prices)
1975	R1 016
1984	R1 220
1987	R1 108
1995	R 419
2000	R 668
September 2001	R1 200
January 2002	R2 500



Source: Abstract, 2000 and SAFEX/AMD

Figure 15: Real maize producer prices, 1975 – 2001 (2000 prices)

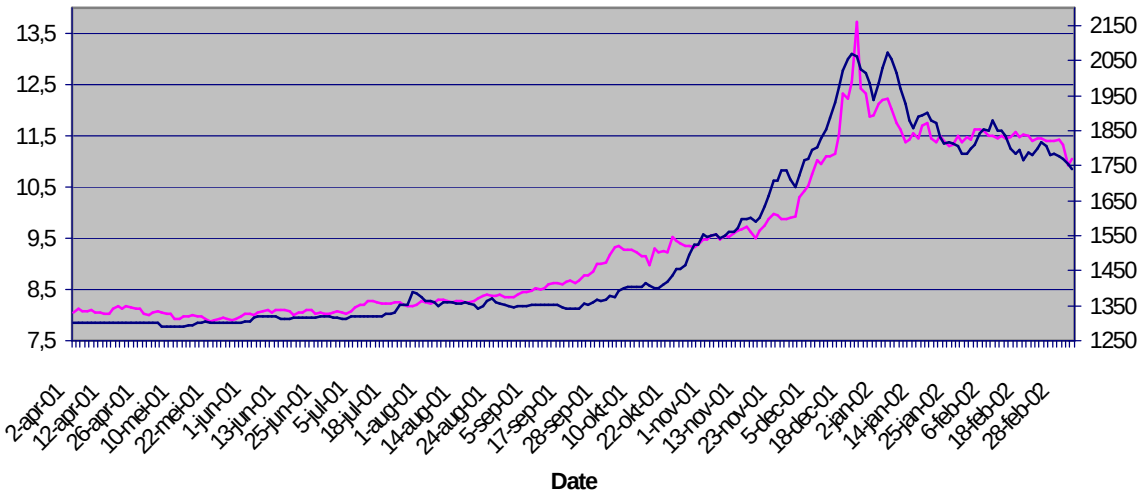
The outlook for the next 2 to 3 seasons in the maize market is driven largely by the situation in southern Africa, the reports of another El Nino weather event likely in the 2002/03 and 2003/04 cropping season plus the fact that a smaller than expected commercial crop will be realised in South Africa. With a major shortage of maize already being reported in the region it is projected that Southern African countries will have to import maize over this period, and that maize prices will thus remain high for the next 2 to 3 seasons. Thus, it is likely that the exchange rate and the world price will drive local maize prices in the near future. It is therefore important to look at the medium term outlook for world maize prices.

An analysis of the recent trends in international grain prices indicates that the maize price usually reaches a minimum of around $95/t during the periods December to March. In some years it actually overshoots the $95/t level depending on climatic conditions of the preceding planting period. Currently the international spot price is at $92/t, which is fairly high for this time of the year. It is therefore expected that for the year ahead until March 2003 the international price is likely to increase by at least $3/t to reach the minimum of $95/t around March. With current weather conditions persisting it may even overshoot $95/t, and the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri has already predicted a price of $98/t for the 2002 season, with projections of $101 and $103 for 2003 and 2004. The USDA's baseline projections for US farm prices vary from $82 to $88 per ton for the same seasons. Taking into account the transport differential to the Mexican gulf these projections seem to be more or less on par. Obviously these are only **baseline projections** (i.e. projections given the current situation), which will adjust as world supply and demand factors change. The net effect of these prices on South Africa will obviously depend on the direction of the exchange rate and the crop outlook for SADC for the next 2 seasons.

Wheat

Figure 16 provides an overview of the average trend in wheat producer prices as reflected by the price of the near month wheat contract. Figure 14 shows that the strengthening of the Rand in the past few months has brought about a decline in wheat producer prices, again confirming that the relative movements in the exchange rate have an important influence on producer price trends.

In April 2002 the landed price for wheat in Randfontein was R2103/t (Dollar price of $110.30). The landed price includes a duty of R196/ton, which is equal to 9.3% of the landed price. Given the continuous decline in world wheat prices it is likely that a tariff of R335/ton could be realised in accordance with the import duty formula. This would increase the landed price by 6.7%.



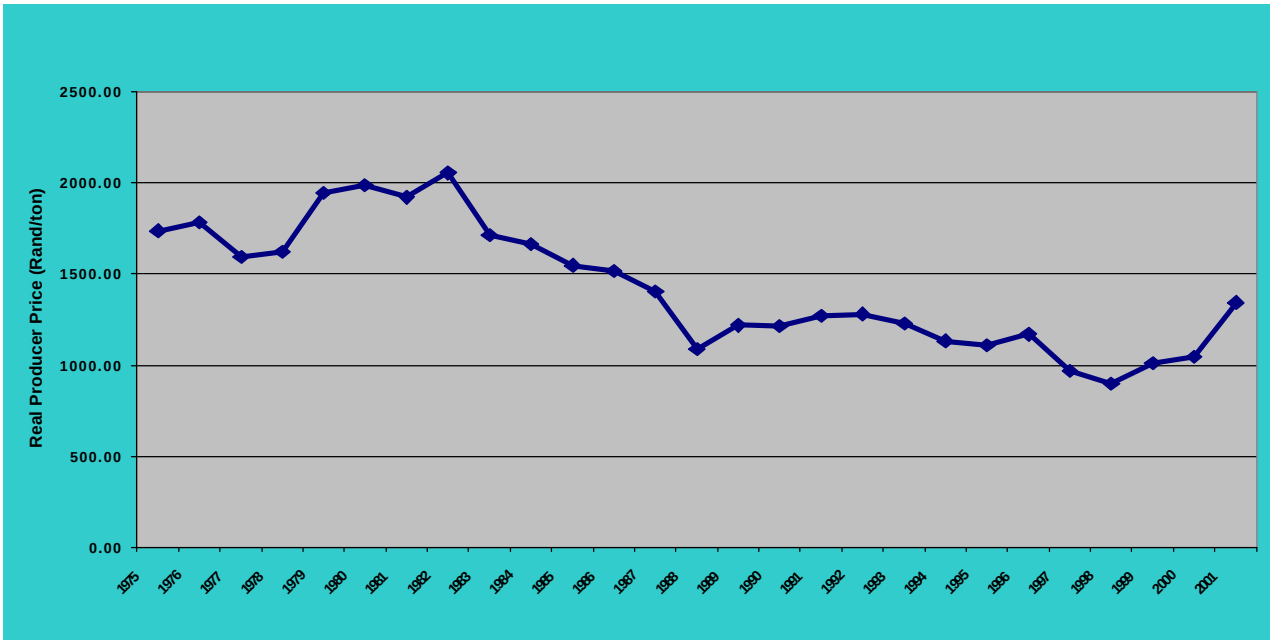
Source: SAFEX/AMD and Reuters

Figure 16: Wheat producer price vs. the R/$ exchange rate, April 2001 to March 2002

The figures above reflect the trends in nominal prices. As in the case of maize, it is also necessary to reflect on trends in the real producer prices of wheat. These are presented in Figure 17 below. These data show that the real price of wheat in South Africa reached an historical low by 1999, when the tariff was introduced. Since then, the annual average real price has continued to increase, but was still considerably lower than its historical highs in 1975 and 1982 until December 2001. The annual averages however hide a number of facts and when weekly prices are analysed we see that it is only since December 2001 that producers have received prices, which were comparable with the price levels in 1982:

Box 4

Year	Wheat producer price: (R/ton in constant 2000 prices)
1975	R1 738
1982	R2 055
1988	R1 085
1995	R1 108
2000	R1 044
December 2001	R2 181
January 2002	R2 157



Source: Abstract, 2000 and SAFEX/AMD

Figure 17: Real wheat producer prices, 1975 – 2001 (constant 2000 prices)

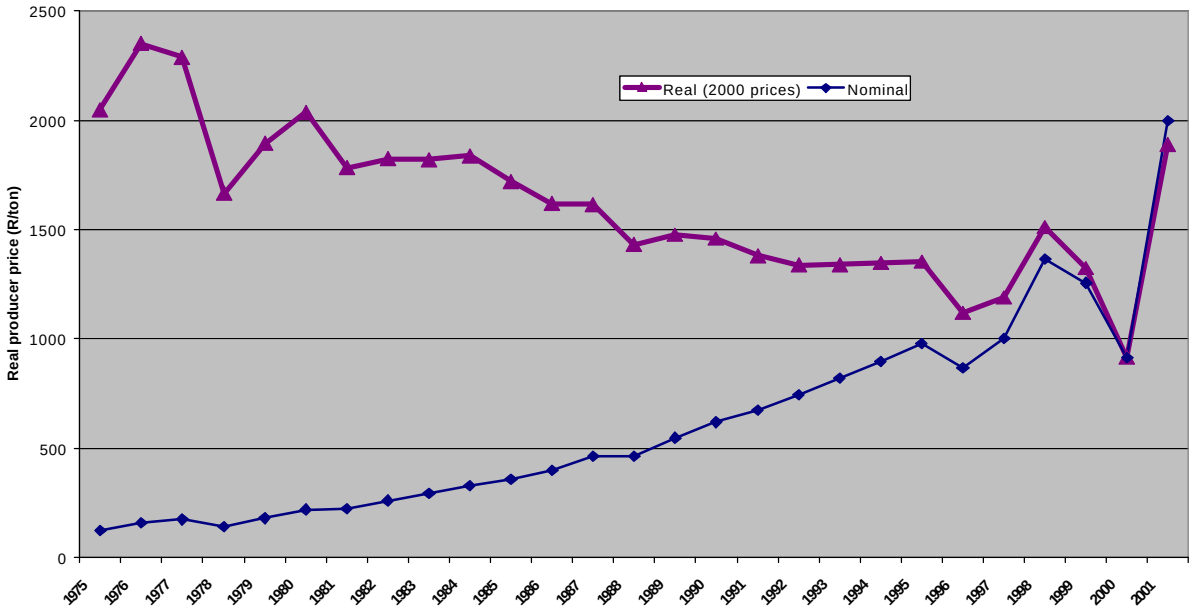
South Africa remains a net importer of wheat, despite a relatively large expected wheat crop of 2.4 million tons for the current production season. Imports of around 300 000t will therefore continue. It is further anticipated that high maize prices and better gross margins in maize will shift land out of wheat production into maize production. In May 2002 the National Crop Estimates committee has already reported a drop in wheat plantings, which could result in a much smaller wheat crop in 2002/03 (around 2,2 million tons) implying that the international wheat price and the exchange rate remain the key factors influencing domestic wheat prices.

The International Grains Council (April 2002) forecast that total world production of wheat would decline marginally, but that exporters' supplies should be more than sufficient to meet importing countries' commercial needs. Mounting evidence of damage from dry weather in winter wheat areas in the United States has, however, led to a reduction of 3.5m tons in the forecast US total crop to 55m tons, only 2m more than last year.

The International Grains Council (April 2002) also forecast world wheat **trade** to be unchanged at 105m tons, 2m less than in 2001/02 when unusually large EU imports boosted the total trade, and by a rise in the feed wheat trade. EU purchases may remain above average if third-country grain is competitively priced. Pacific Asia and North Africa may import larger amounts, but the import needs of the CIS and Near East Asia countries should be lower. China's imports are currently projected at 4m tons, on the assumption that milling wheat inventories might otherwise fall to very low levels. While US exportable supplies may be less than expected earlier, the outlook for renewed large surpluses in the CIS, Europe and South Asia should ensure that global export availabilities remain ample.

The International Grains Council's forecasts for consumption and closing stocks in 2002/03 remain constant at 600 million tons, 4m more than this season. World wheat ending **stocks** are projected at 132m tons, down 4m tons from 2001/02, while stocks in the **five major exporting countries** are forecast to increase by 2m tons to 46m. Stocks in the EU could rise by 5m tons to 19m tons, the highest for 10 years, but a reduction is expected in US carryovers.

In the current season several countries have continued to offer unusually large surpluses of wheat at attractive prices, some taking measures such as reducing internal transportation costs in order to compete more effectively on the international market. Somewhat lower wheat prices, especially the sharp drop in US Soft Red Winter wheat, have triggered buying by a number of key importers, but the overall volume of new business has been relatively subdued. Concerns about northern hemisphere wheat crops, particularly in US Hard Red Winter areas, first increased but subsequently ebbed with the onset of rains, although total US production is unlikely to rise much from 2001.



FAPRI predicts a world wheat price of $133.61 per tonne for 2002 and then $138 in 2003 and $141 in 2004. This is again in line with the USDA baseline projection, which suggests that prices could strengthen from the current low prices to somewhat higher levels, as suggested here.

Sunflower Seed

Although sunflower seed is one of the major oil seeds (the raw material for most cooking oil), it is also one of the main substitute products in the grain producing regions, thus producer prices followed a similar trend to that of wheat and maize (See Figure 18).

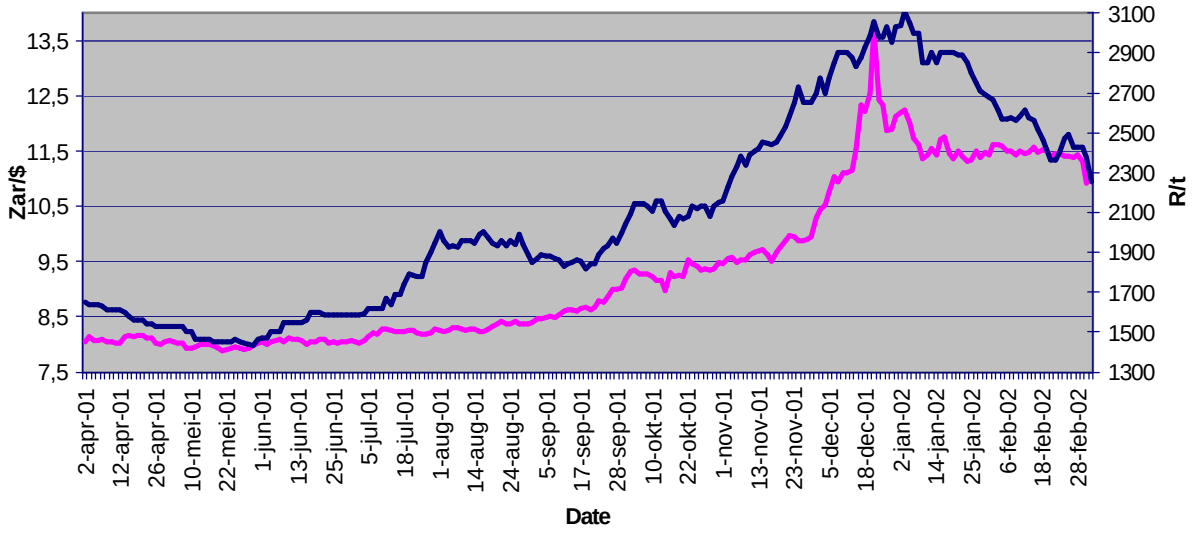
Low world stocks of sunflower oil and delays in planting in Argentina contributed to a sharp rise in prices of sunflower oil on international markets. South African prices have recently tended to move below import parity because of a relatively large domestic crop. The depreciation in the exchange rate has nevertheless had a similar effect on producer prices, as has been the case for maize and wheat. This is shown in Figure 18. In Figure 19 the trends in the real producer price are shown. It is again evident that the real producer price has returned to the levels of a decade and more ago with the recent weakening of the exchange rate.

Source: SAFEX/AMD

Figure 18: Sunflower seed producer prices vs. the R/$ exchange rate, April 2001 to March 2002

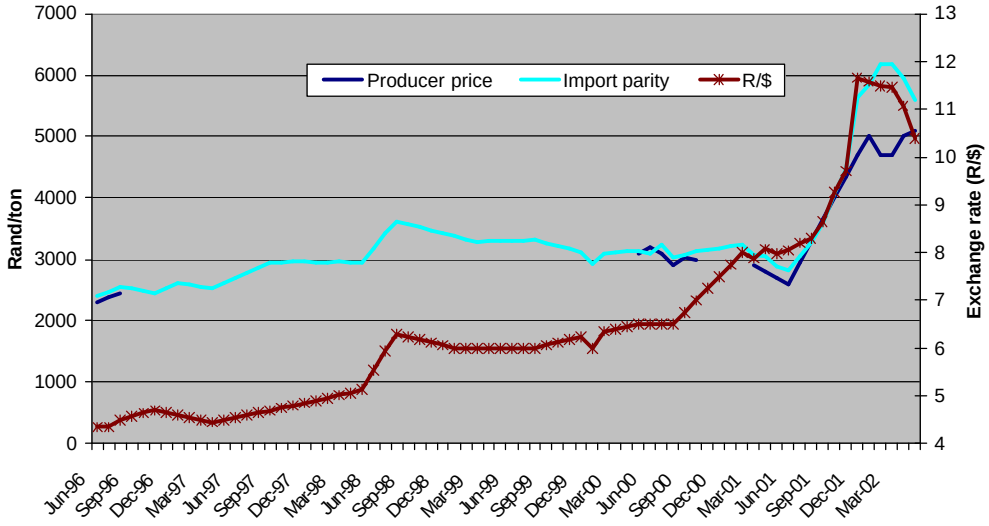
Source: SAFEX/AMD

Figure 19*:* Real sunflower seed producer prices, 1975 – 2001 (2000 prices)



Dry beans

Since 1993 South Africa has imported between 40 000 and 60 000 tons of dry beans annually, a substantial increase on previous years. This could be a direct result of the abolition of marketing controls in the dry bean industry in 1993. Since then producer prices have also more or less followed import parity prices, as shown in Figure 20 below. Locally produced dry beans have been selling at a discount to imported prices, where the discount was as high as 23% in Feb 2002 but dropped to 8% in May 2002. As data on dry bean producer prices are only available for the last 15 months, it is not possible to show real price trends. However, the available information shows that real producer prices for red-speckled beans were 44% higher in May 2002 than in May 1998. From March 2001 real producer prices increased on average by 48% per annum or 3.3% per month over the 15-month period up to May 2002

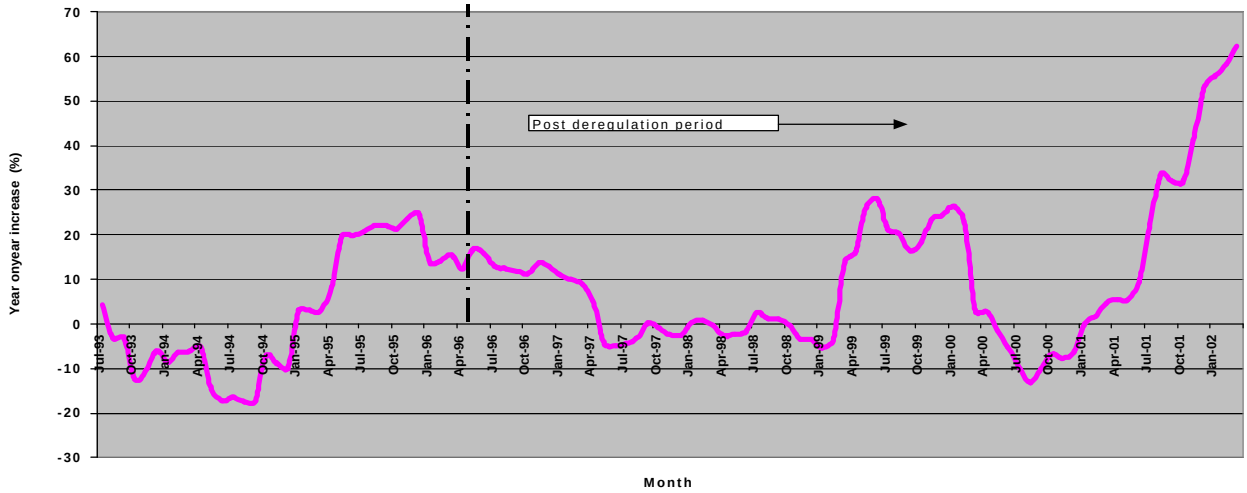


Source: Dry bean producer organisation, 2002

Figure 20: Producer prices and import parity for red-speckled dry-beans, 1996 – 2002

PPI for grain products

Figure 21 below provides an overview of the year on year increase in the producer price index (PPI) for grain products since July 1993, showing the seasonal nature of the trends. Nevertheless, the rapid increase of 63% between March 2001 and March 2002 is the most striking feature of this trend, which has largely been the result of the weakening in the exchange rate.



Source: Calculated from STATSSA PPI time series

Figure 21: The annual increase in the PPI for grain products: July 1993 – March 2002

2.4.2 Dairy products

A comprehensive discussion of a specific industry is used here to illustrate how industry structure can influence price behaviour, and thus the general trend in food prices. The dairy industry is a large and complex industry, and provides an ideal case study to unpack the structural factors that could influence food prices.

The primary industry is undergoing a number of structural changes at present. The total number of commercial milk producers in South Africa has been declining (see Table 16), there has been a reorganisation of milk production between the coastal and inland areas of the country (see Table 17), and the balance between small and large producers has shifted (see Table 18).

As is the case in most agricultural activities, producers range from a small number of large commercial farms using the most modern production technology and industrial management systems to an amazingly large number of smaller farms using more rudimentary technology. The South African dairy industry is, however, in the process of structural change that is reminiscent of the changes taking place in other industrialised agricultural economies such as the USA, Australia and New Zealand. The most important manifestation of this 'industrialisation' process is the decline in the number of smaller producers along with a decline in their share of production. The data are shown in Table 18. The number of small producers (those delivering less than 1000 litres of milk per day) declined from 79% of the total number of producers in 1995 to 62% in 2001, while their share in total production declined by more than half, from 39% to 18% over the same period.

Table 16: Number of commercial milk producers per province, 1997 and 2001

	December 1997	December 2001	% change
Western Cape	1577	1088	-31
Eastern Cape	717	514	-28
KwaZulu-Natal	648	446	-31
Northern Cape	133	73	-45
Free State	1204	1360	+13
Northwest	1502	987	-34
Gauteng	356	279	-22
Mpumalanga	866	537	-38

Northern Province	74	63	-15
Coastal areas	2942	2048	-30
Inland areas	4135	3299	-20
Total	**7077**	**5347**	**-24**

Source: Milk Board 1995 and MPO 2002

Table 17: Geographical distribution of milk production per province, 1994 – 2001

Province	**Production**			
	1994 %	**1995 %**	**1998 %**	**2001 %**
Western Cape	23,1	22,9	25,1	24,3
Eastern Cape	10,0	13,8	14,3	20,1
KwaZulu-Natal	7,7	15,7	18,9	17,5
Free State	24,2	18,0	16,3	13,6
Northwest	18,4	12,6	12,5	10,6
Mpumalanga	10,2	11,0	7,5	9,3
Gauteng	3,8	4,4	4,4	3,5
Northern Cape	1,6	1,2	0,7	0,8
Northern Province	0,9	0,4	0,3	0,3
Coastal areas	40,8	52,4	58,3	61,9
Inland areas	59,2	47,6	41,7	38,1
Total	**100,0**	**100,0**	**100,0**	**100,0**

Source: Milk Board 1995 and MPO 2002

The coastal regions of KwaZulu-Natal and the Western and Eastern Cape are more suitable for low cost milk production systems on natural and irrigated pastures, and are closer to imported animal feeds. This is reflected in the shift in production to the coastal provinces (Table 18), and probably a faster reorganisation into larger production units in these areas. Another important benefit from this shift is the savings in transport costs, an important variable in the dairy industry. The data in Table 19 show the density of milk production per square kilometre in different parts of the world, and in the interior and coastal regions of South Africa. The 'density' of milk production in the coastal areas of South Africa, while still low, compares more favourably with other parts of the world than does that of the inland areas.

Table 18: Size distribution of milk producers, 1995 and 2001

Daily production (Litre/day)	**Percentage of producers**		**Percentage of production**	
	1995	**2001**	**1995**	**2001**
<500	58	45	19	9
501 – 1000	21	17	20	9
1001 – 2000	13	17	24	19
2001 – 4000	6	11	22	24
4001 – 6000	2	5	5	15
> 6000	0	5	10	24

Source: MPO estimates

Structural changes are also occurring in the processing industry responsible for the manufacturing of dairy products. In the aftermath of deregulation there has been a marked increase in the number of small milk distributors (producer-distributors or PDs) using non-traditional distribution channels, including bulk milk tanks in greengrocers, butcheries, bakeries, etc., at volumes and qualities, that are difficult to estimate.

Table 19: International comparison of milk production per km² per day

Country	**Litres/km^2 per day**
France	125
Germany	308
Netherlands	892
UK	257
New Zealand	94
South Africa:	5
-Interior areas	25
-Coastal area 1	103
-Coastal area 2	96

Source: Hermann, 1997

At the end of 1997 milk was bought and processed by some 350 milk processors and manufacturers in South Africa (Table 20). Apart from regular processors and manufacturers, approximately 522 producer distributors (PD's) were actively involved in the marketing of liquid milk and fresh dairy products. There is a general perception in the industry that the number of PD's grew substantially after deregulation, while the volume of milk processed by medium sized processors increased both nominally and relatively[14].

Table 20: The number of buyers and producer-distributors registered with the Milk Board, 1997

Province	Milk buyers		Producer-distributors	
	Number	%	Number	%
Western Cape	42	12	59	11
Eastern Cape	29	8	62	13
Northern Cape	9	3	33	6
KwaZulu-Natal	29	8	72	14
Free State	39	11	75	15
North West	32	9	49	9
Gauteng	122	35	64	12
Mpumalanga	37	11	64	12
Northern Province	10	3	44	8
Total	**349**	**100**	**522**	**100**

Source: Milk Board

Approximately 88% of processors and producer-distributors account approximately for 3,5% of total milk processed. These processors are mainly small entrepreneurs involved in processing liquid milk and to some extent fresh dairy products in rural areas. Individually they process less than 2 000 litres milk per day. The Agricultural Research Council (Keller, 1999) and Agrelek (1998) are prominent in supporting small dairy processors.

The four largest dairy companies process between 74% and 78% of total commercial milk delivered to dairies (Theron J, SA Dairy Foundation, March 2000). Competition Commission South Africa's (CCSA) 1993 and 1996 calculations support Theron's figures (see Table 8). The CR4 and CR10 values calculated for 96 and 113 dairy product firms have decreased from 0,76 to 0,68 (CR4) and from 0,89 to 0,80 (CR10), and the HHI from 1763 to 1598. All these concentration indicators are less than their critical levels and decreasing. This runs counter to international trends in the dairy industry, where fewer and larger firms are responsible for the manufacture of dairy products (Baas *et al*: 1998). The decreasing values of the concentration indices in the RSA are indicative of increasing competition in the dairy processing industry.

While the structure of the dairy products processing industry is changing, and becoming more competitive, it remains oligopolistic, given the relatively large market share of the largest 4 firms, while there is little evidence that it has become more efficient (Scorey, 1999). In this latter respect, the National Productivity Institute (NPI) has noted that 'Without exception …the assignments confirmed that the scope of opportunity was large for improving the productivity of all resources (capital, labour, equipment)' (Scorey D, 1999). This is supported by the size of this industry's multifactor productivity (MFP)[15], which was 0,81 (CCSA, 1993). Based on this information, the productivity of the dairy processing industry is not conducive to narrowing the gap between the farm gate and consumer price.

Thus, the scene is set for intense competition in the primary and secondary dairy industry. At the top of the log are a few equally balanced competitors. Rivalry among existing competitors takes the familiar form of jockeying for position,

[14] Exact numbers are not known, as the participants are no longer compelled to register.

[15] The size of MFP values indicates the change in output that cannot be explained by the change in factor inputs. A MFP value less than unitary is interpreted as a decline in productivity.

using tactics such as price competition, advertising, new product introductions and increased customer service or warranties (e.g. 'use by' dates). In the short run consumers might benefit from such competition, but over the long run companies will recoup 'losses' by increasing wholesale prices or offering primary producers less if they can gain market power. Both these actions broaden the gap between producer and retail prices.

An interesting aspect of the dairy industry has been shifting rivalry following deregulation when a large well established Italian dairy company Parmalat entered the South African Dairy industry at high cost and fierce rivalry. The immediate effect of Parmalat's entrance was an intensification of competition by way of a price war in cheese and butter from beginning 1998, lasting until the first quarter of 2000. The sharp, exponential increase in consumer prices since March 2000 (discussed in Section 2.5) can be to recoup "losses" encountered during the battle for market share and position. During this same period the real producer prices at first dropped sharply (-28%) and then increased on average by 1% per year to stagnate from January 2001.

Parmalat has a leading research system and has available technology and products "from the shelf". As such it is stepping up competition with a wide variety of products, appealing to young and old but with relation to South African consumer and market conditions, it is on a strong learning curve. Mediums sized dairy processors, knowledgeable of such conditions and with excellent products are at present growing their market share via strong competition and at the cost of all large dairy processors.

In the long run large dairy companies might revert to their standard tactic of growing market share in a slow growing national market by buying out medium sized processors well established in niche markets. This option is unlikely as the dairy market and companies are at present under financial duress. The long-term effect of Parmalat's entrance can be that competition will move from intense to less intense price battles, with more focus on novel and quality dairy products. Medium sized dairy processors will endeavour to firm their position in their immediate market domain, expanding slowly into other areas, as high transport cost is a negative growth factor for large and small firms.

Price trends

There is no uniform payment system on which producer price of milk is based. The inclusion of for instance butterfat and protein in the payment system depends on the type of milk buyer. A milk buyer who processes butter and cheese will include butterfat and protein in the price they offer, while a buyer that processes and distributes fresh milk is only interested in milk volume.

The disadvantage is that market signals are not clearly transmitted. The effect can be illustrated by the reaction of producers to an attempt by processors to enlarge their share in the raw milk market during 1996 – 1997, in the aftermath of milk shortages in '95 and '96. Processors offered dairy farmers high prices, which resulted predictably in a large milk surplus in 1998. However, the result of such actions could be short-term gain at the expense of longer-term stability. The expansion of dairy herds, depending on the production elasticity, or an increase in milk production, as during 1998 – 1999, usually end up in a decline in raw milk demand and, as from 1999, a slower increase in producer prices.

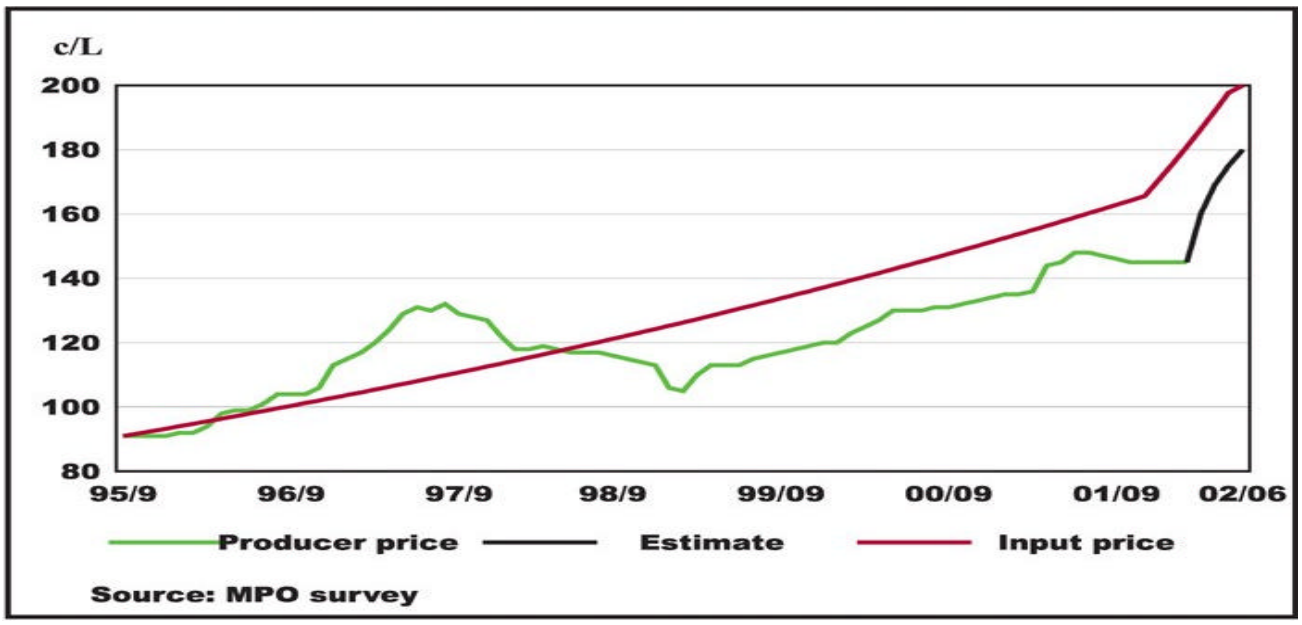
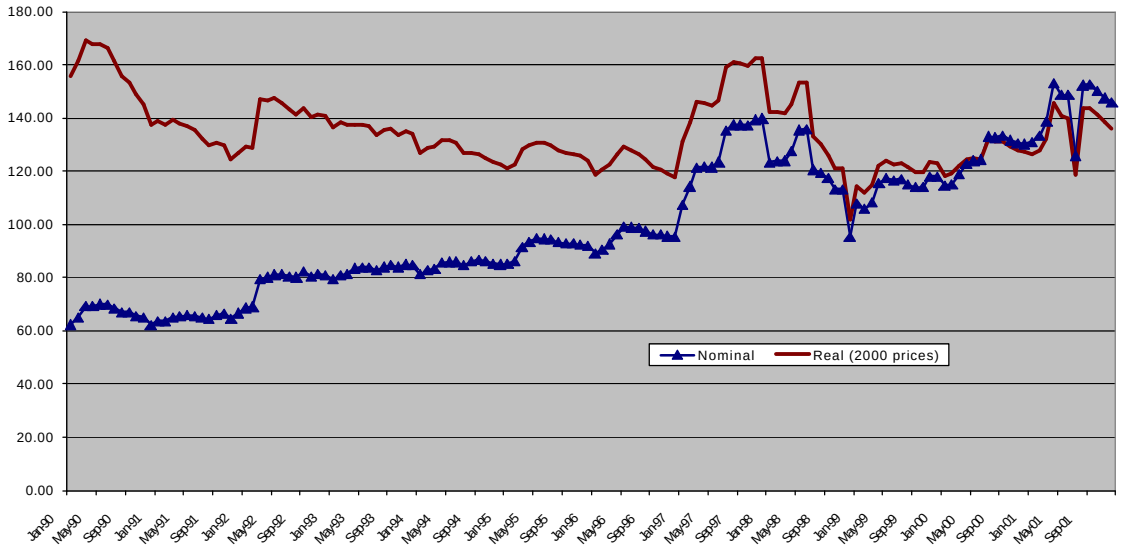


Figure 22: Monthly average producer and input prices for milk, 1995 – 2002

At the macro level, commercial producers' direct input cost in 1998 was estimated at R2 194m, and investment in infrastructure at R7 360m, to produce a raw milk volume of 2 620m litres which was sold for R3 405m (SAMFED, 2000). In general monthly average milk producer prices increased from September '95 until September '97. The post '97 downswing was arrested early in '99 and since then it has been on a slow upward trend (Figure 22), although the real price has been relatively stable, falling between R1.20 and R1.60 for most of the past 10 years (Figure 23). The price of farm requisites increased steadily at nearly 10% per year over the period September 1995 to July 2001. Since then, the weakening of the Rand has resulted in an accelerated increase in input prices (MPO, 2002). Due to increasing input costs and a decrease in annual milk production (Figure 24) there remains some doubt about the international comparative position of the industry.



Source: Calculated from MPO statistics

Figure 23: Real producer price for fresh milk (2000 prices), 1990 – 2001

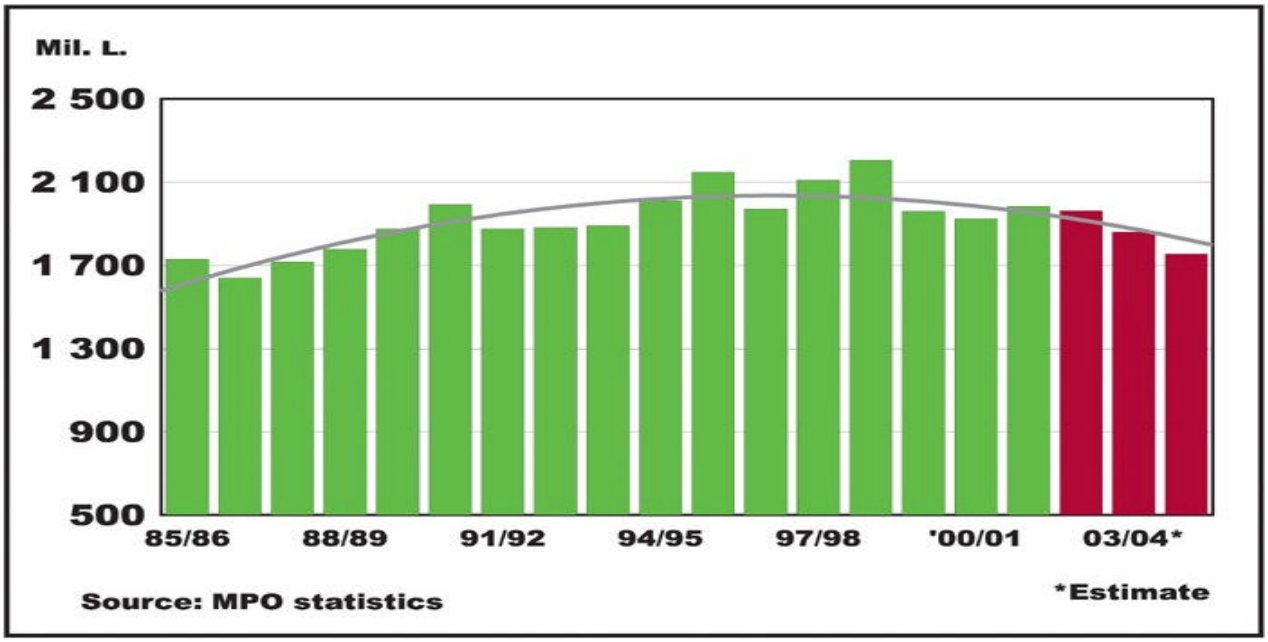


Figure 24: Annual milk production, 1983/84 – 2003/2004

2.4.3 Red meat[16]

The red meat industry is one of the most important in the agricultural sector, and contributed 12.7% to the gross value of agricultural production during 2000/01. In this section the broad trends in producer prices for beef cattle and mutton are presented. Market prices for red meat are determined through the interaction between supply and demand at various auctions, with factors such as the quantity of imports and the 40% tariff on imported meat influencing the level of prices.

Beef

South Africa has traditionally been a net importer of beef, mainly (duty free) from Botswana and Namibia, and is expected to remain an importer for the foreseeable future. Imports will, however, become more expensive due to higher world market prices as well as the exchange rate effect. This, coupled with problems in controlling animal diseases in a number of exporting countries, will lead to a lower import demand in South Africa, supporting higher domestic producer prices for some time in the future.

Commercial slaughtering volumes and production costs also influence domestic producer prices for beef cattle. Slaughtering volumes have been increasing over the last few years, from 1 750 000 in 1998 to 1 907 785 in 1999 and 1 927 357 in 2000. Further increases in slaughtering volumes are expected in 2002, but this will largely compensate for lower import volumes. With a large proportion of beef slaughtering originating from feedlots, which are vertically integrated, it is possible for costs to be passed through the supply chain to retailers. Because yellow maize and imported oil cake are the major components of animal feed, it is logical to expect higher maize and oil cake prices to also be transmitted through to higher beef prices. In a sense this is already happening, with the price of Class A beef increasing from an average of R10.08/kg in 2001 to R12.35 in April 2002. The import parity price for beef in April 2002 was quoted at R18.95 (Agrimark Consultants), indicating that domestic producer prices are still below import parity levels. Margins in the feedlot industry will, however, come under tremendous pressure as the full effect of the higher grain prices is felt. This is illustrated by the declining meat price/maize price ratio shown in Figure 25 below. The number of kilograms of maize that a kg of beef could buy declined from 26 in 2000 to 9.3 in March 2002.

[16] These data should be interpreted with caution, as it is notoriously difficult to estimate the amount of red meat sold in the informal market in South Africa, and hence the prices paid. Estimates of the proportion of informal sector sales range as high as 50% of industry turnover.

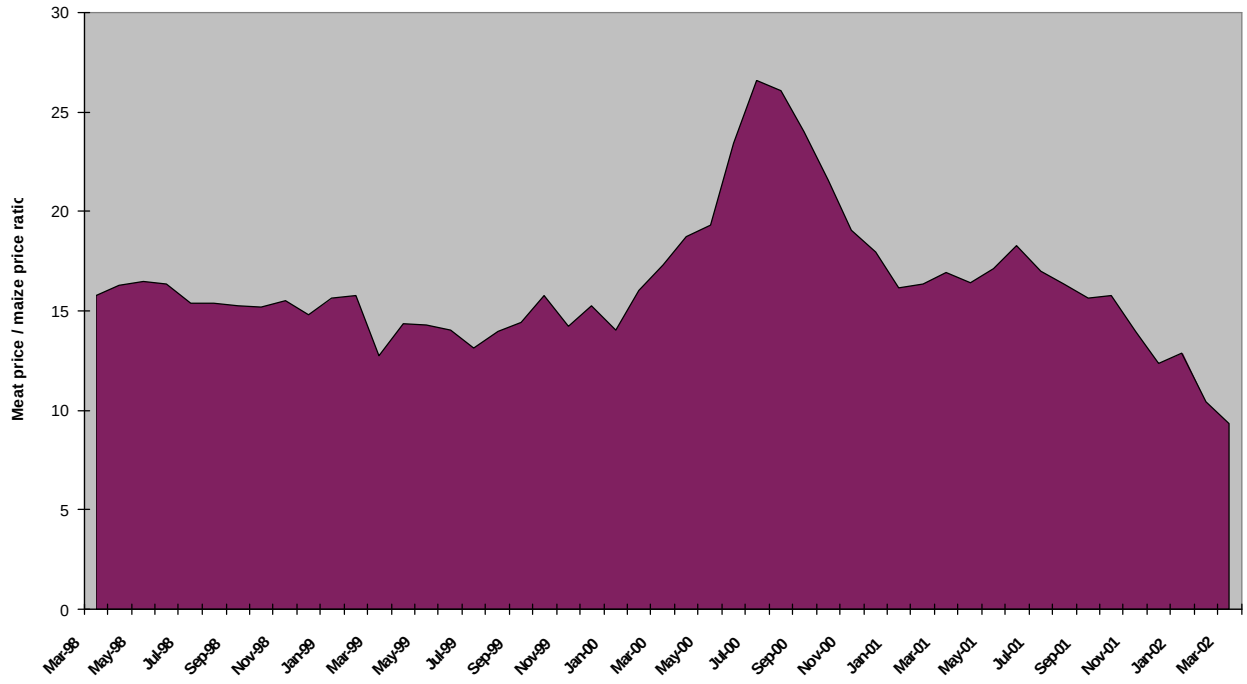
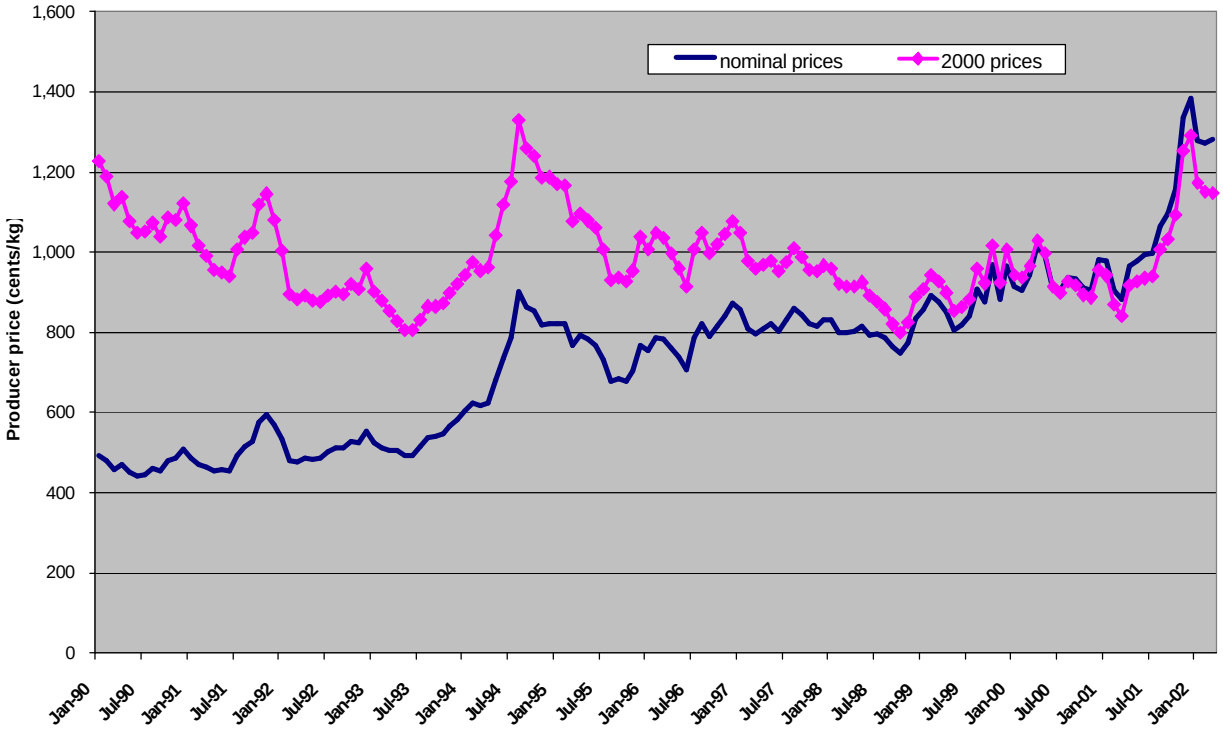


Figure 25: The relative price of maize and beef, 1998-2002

The trends in the nominal and real monthly prices for class A beef for the period 1990 to March 2002 are reflected in Figure 26. Producer prices have been declining in real terms since July 1994, and it is only since July 2001 that a sharp increase in real terms was experienced, with real beef prices reaching the level of 1994 in January this year. This trend is confirmed by data on the growth rates in real producer prices shown in Table 21. The only period in the past decade where real growth in producer prices was positive has been in 2001/02.

Table 21: Average annual growth in real producer prices for beef, 1990-2002

Period	Growth rate (%)	Year	Average real producer price (2000 prices)
1990 - 1995	-3.31	**1990**	R11.04/kg
1996 - 2000	-1.01	**1996**	R10.12/kg
2001 - 2002	6.04	**2001**	R10.03/kg



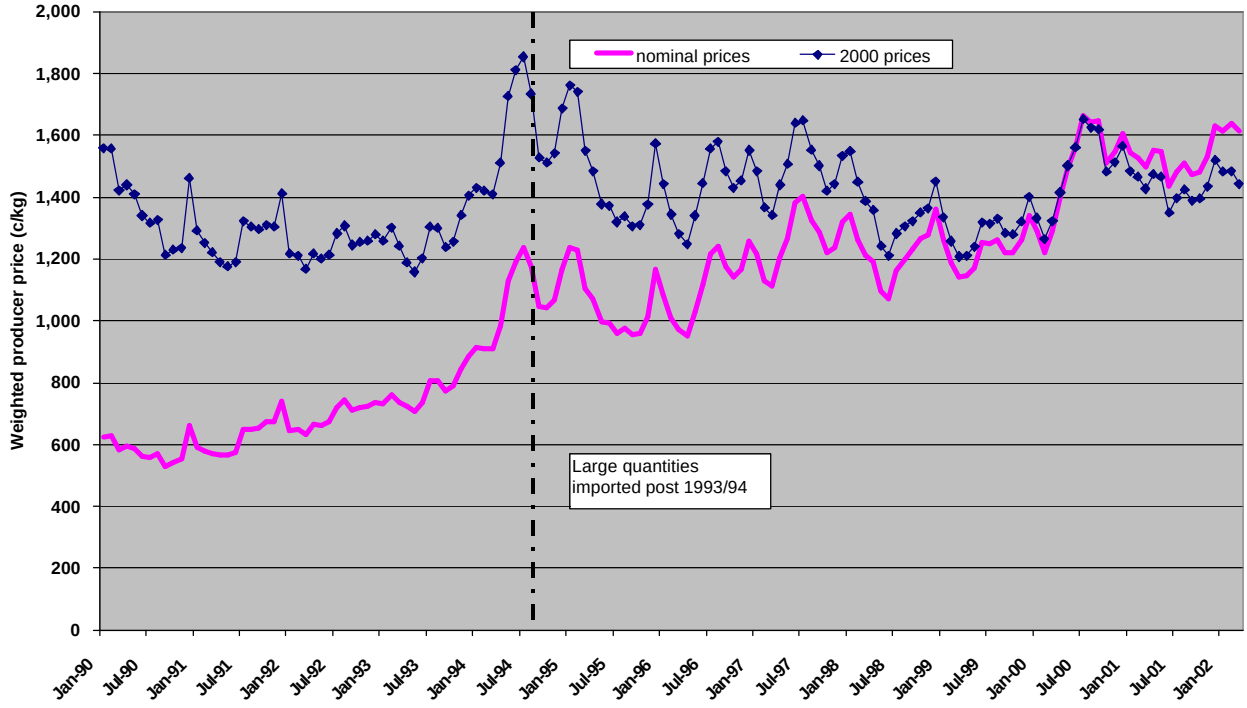
Source: Calculated from data provided by AgriSA/Samic

Figure 26: Nominal and real weighted average producer prices for beef, 1990 – 2002

Mutton and lamb

Sheep numbers in South Africa have declined rapidly since 1992, partly as a result of the increase in stock theft, where sheep farmers have been particularly hard hit, while sheep farmers had to compete with cheap imports of Australian mutton in the aftermath of the first steps of deregulation. As a result, the supply of animals for slaughtering has declined from 8 million to around 4.5 million between 1992 and 2001 (Agrimark consultants, 2002), while imports increased from virtually zero in 1991 to a high of 50 000 tons in 2000 (Agrimark consultants, 2000). This kept domestic producer prices low. Figure 27 below shows how real producer prices declined following the increased imports. For most of the period 1994 to 2001, real producer prices for were below the levels of the early 1990s, and have only recovered in late 2000 as a result of high prices in Australia and the declining exchange rate.

Since 2000/01, Australian meat prices increased by around 93% and the Rand lost 30% of its value against the Australian dollar. These changes saw the import parity prices of imported sheep meat from Australia rising from an average of R23.83/kg in early 2001 to R40.19/kg in April 2002. This resulted in an immediate drop in imports and an increase in domestic producer prices, where the price of Class A meat increased from R15.09/kg to R18.00/kg over the same period. Agrimark consultants (2002) predict a producer price for class A in October 2002 of R18.28.



Source: Calculated from data provided by AgriSA/Samic

Figure 27: Nominal and real producer prices for mutton and lamb, 1990 – 2002

Few mutton and lamb producers rely on maize and grains for feeding, thus it is safe to assume that this market is mainly influenced by normal seasonal and cyclical factors. The seasonal demand over the Christmas season is clearly visible throughout the trend, with the normal drop in prices during January to March that contributed to the negative growth in real prices over the last 15 months.

2.4.4 Poultry

The poultry industry consists of three main branches, namely the day-old chick supply industry, the broiler industry and the egg industry. In the broiler industry a small number of producers (less than ten) is responsible for approximately 77% of total broiler production in South Africa. Many small production units and the informal sector are responsible for the remaining 23%. The number of broilers slaughtered by commercial producers during the 12 months up to 30 June 2001 is estimated at 523 million. These industries generate output to the value of R6bn annually and are the single most important contributor to the value of agricultural production in South Africa.

The broiler industry has undergone a number of phases of structural change. The first phase can be described as a movement away from a luxury Sunday afternoon product to a general everyday affordable meal. The industry could buy technology at affordable prices overseas and it developed into a high-tech high-capital intensive and vertically integrated industry producing low cost, high quality protein. Although the industry started revolutionising during the sixties, its rapid growth since 1980 is evident from Figure 28.

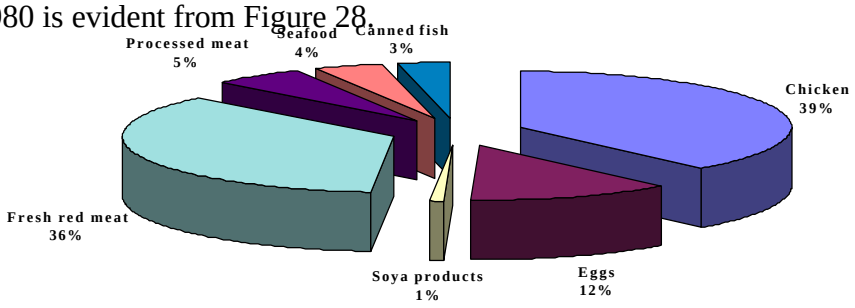
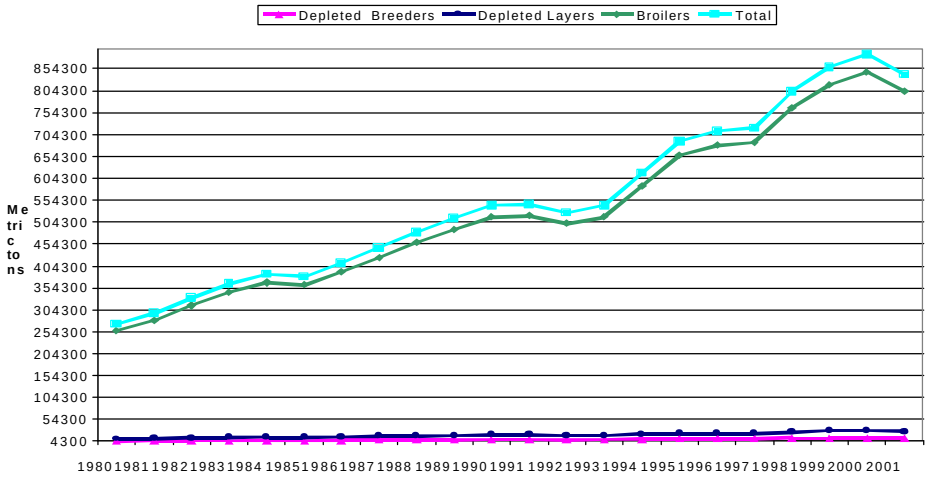


Figure 28: Broiler production, 1980 – 2001

The second phase was more in the marketing field when it challenged the red meat industry for a larger share of the consumer's food budget. The main broiler feed ingredients, namely maize and fishmeal, were relatively cheap and easily obtainable in South Africa. The broiler industry followed a strategy of passing the benefits of technology development to consumers, ensuring an affordable product at competitive prices. For example the time taken to produce a broiler of specified slaughter weight has decreased from 84 days in 1950 to 36 days in 1999. Such progress contributed to a 5% annual growth in world production and price decrease of 4% annually from 1990 to 2000 (M^{c} Guigan and Nieuwoudt, 2002). The result is that by 2000 poultry captured 38,4% of the protein market (BMI Foodpack, 2002) and per capita consumption of white meat increased to roughly 28kg per capita against 20kg per capita for red meat (Abstract, 2000).

Figure 29: Contribution to the total protein market (2 105 844 ton) in South Africa, 2000



The broiler industry involves activities from the parent stock, through the climatically and disease controlled houses to the abattoirs and packing plants in a capital intensive industry that must concentrate on high hygiene standards. From the moment packaging of broilers and the different cuts, e.g. wings, thighs, etc starts, the cold chain must be maintained throughout the process into retail outlets. The high perishability of broilers requires high retail turnover. Chicken portions are easily marinated or spiced during the pre-packing stage and can also be cooked in-house in retail outlets. It is thus part of the fast food emporium. This is an on-going trend and it is expected that the farmer's share of the consumer rand will decline over time (Figure 30).

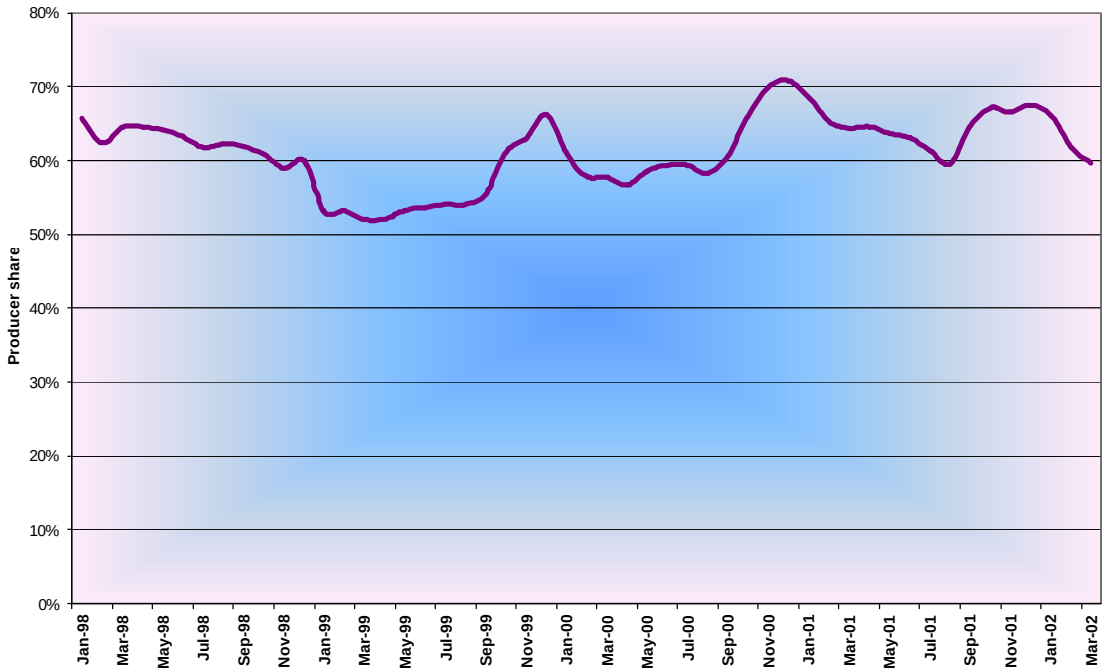


Figure 30: Producer's share in consumer rand for broilers, Jan 1998 to March 2002.

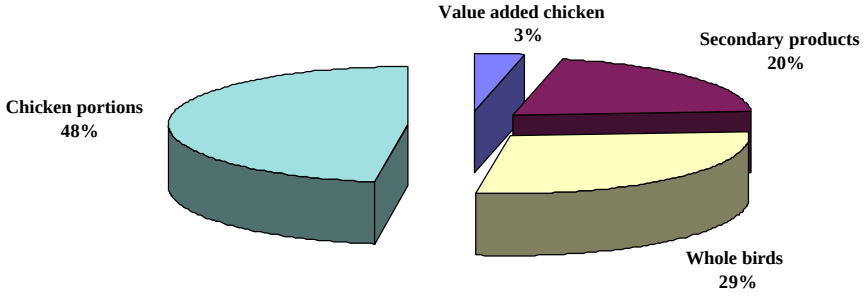


Figure 31: Breakdown of different broiler end-products (807 967 ton) for 2000

The broiler industry was never subject to statutory control under the Marketing Act, but was protected from imports by quantitative import controls. These were abandoned as an industry initiative in January 1988, and replaced by a tariff on prepared or preserved chicken.

A charge of dumping of chicken meat was investigated by the BTT for the period 1 August 1998 to 31 July 1999 as a result of a complaint by the South African Poultry Association. As a result, frozen chicken cuts and prepared or preserved chicken meat imported from the USA became subject to anti-dumping duties, which were imposed with retrospective effect from 5 July 2000 when the provisional payment was imposed. The definitive anti-dumping duties were imposed on 22 December 2000.

The decline in real producer prices of broilers by an average of 17% between January 1998 and August 1999 can largely be attributed to the dumping activities. During the same period real retail prices decreased by only 7.4% per annum on average. The provisional anti dumping payments started retrospectively on 5 July 2000 and contributed to higher producer and consumer prices. Real retail prices have increased by 9,2% per annum since July 2000 and real producer prices by 9.11%. The aggregate marketing margin (Figure 32) remained largely constant.

One must however be careful when interpreting the data as the broiler industry is very much supply and demand driven and has an 18-month lead-time[17].

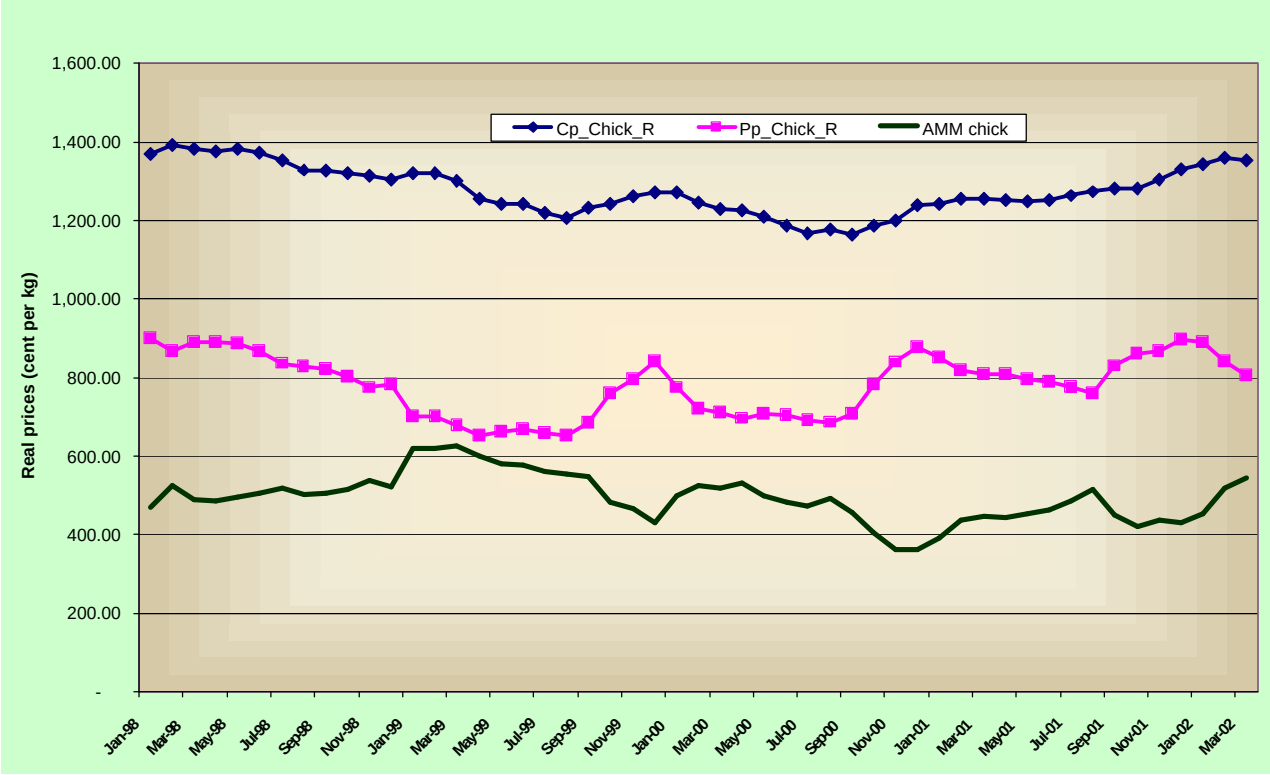


Figure 32: Real consumer and producer prices of poultry in c/kg, January 1998 – March 2002

Eggs

The South African egg industry has experienced realignment with regard to the average size of production units over the past decades. In 1975 75,4% of egg producers had flock sizes less than 30 000 hens. By 1995 the two largest corporate producers and two co-operatives were responsible for marketing 63% of all eggs sold in South Africa.

The egg industry is to a large extent subject to the same production and market peculiarities as the broiler industry. Both have long lead times, and the products are highly perishable, factors that make producers particularly sensitive to changes in supply and demand conditions.

Most eggs (56,6%) in South Africa are sold through retail outlets, while distributors/wholesalers take nearly 36% (Figure 33).

[17] Lead time is the time from the decision to expand is taken until the broiler is ready to be marketed.

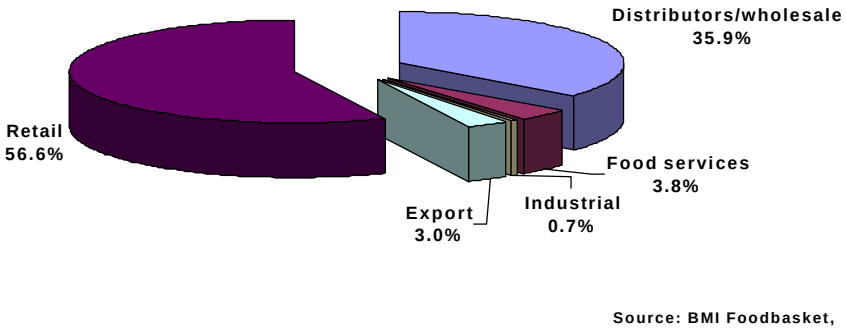
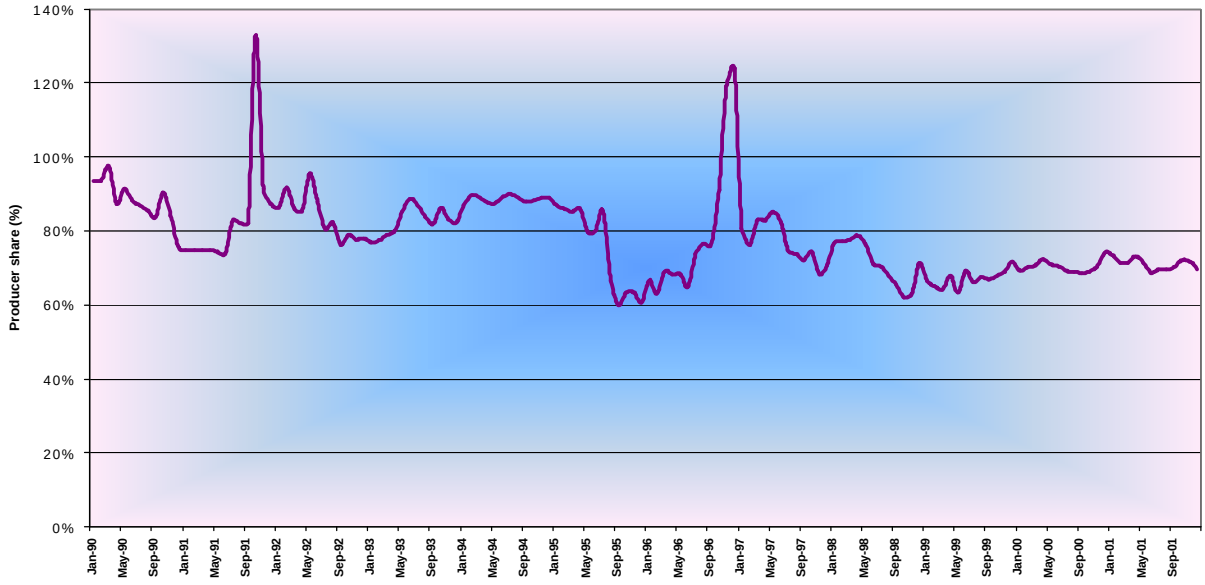


Figure 33: Fresh egg consumption (428 050 000 dozen) for 2000

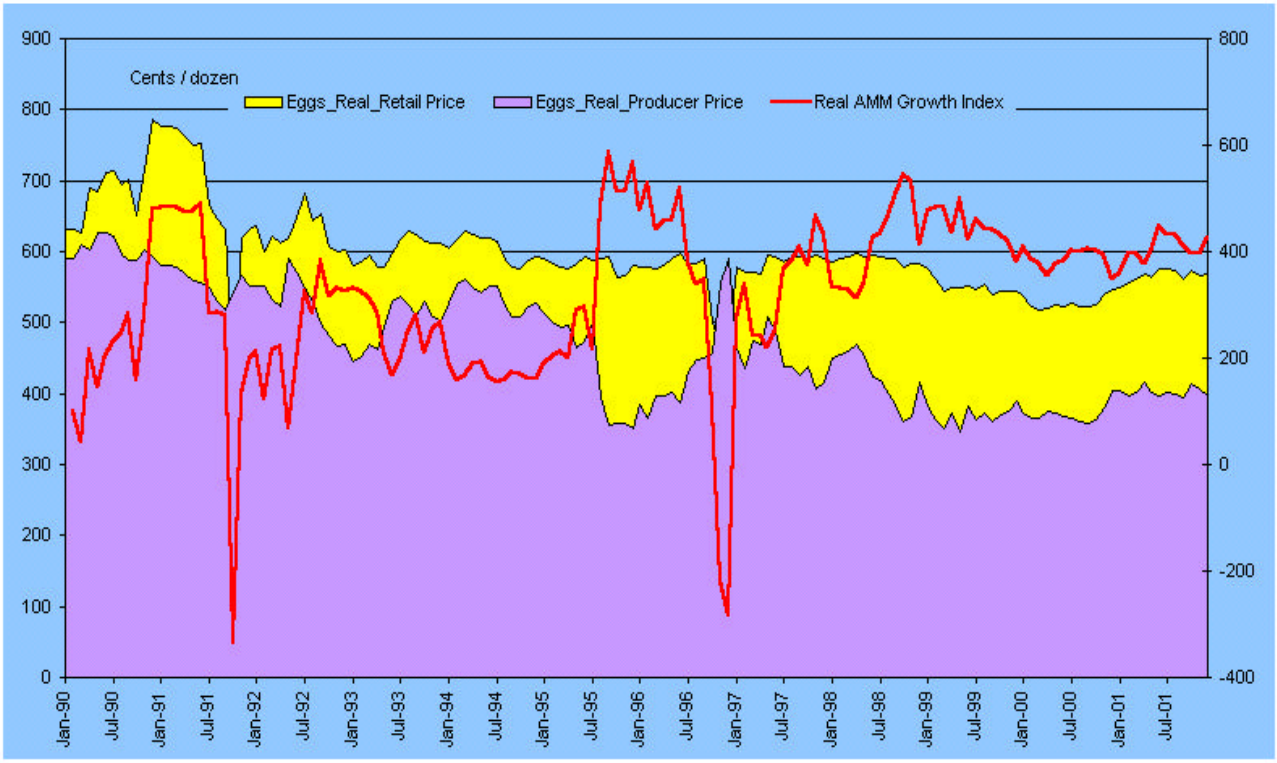
Egg producer prices have declined as percentage of the consumer price (Figure 34), although, as one would expect, at a much slower rate than in the case of products that are processed. The price trend shows two spikes that could be the result of a price war when consumer prices were actually lower than producer prices. However, in general it seems as if the producer's share of the retail price has stabilised at around 70% with a slight increase since March 2000.

The real producer prices and consumer prices are illustrated in Figure 35. The close relationship between the real consumer and producer prices is illustrated by the AMM, the growth of which has declined since January 1998 (Index value of 583) to December 2001 (454 Index value).



Source: National Department of Agriculture, 2002

Figure 34: Producer share of consumer rand for eggs, January 1990 - December 2001



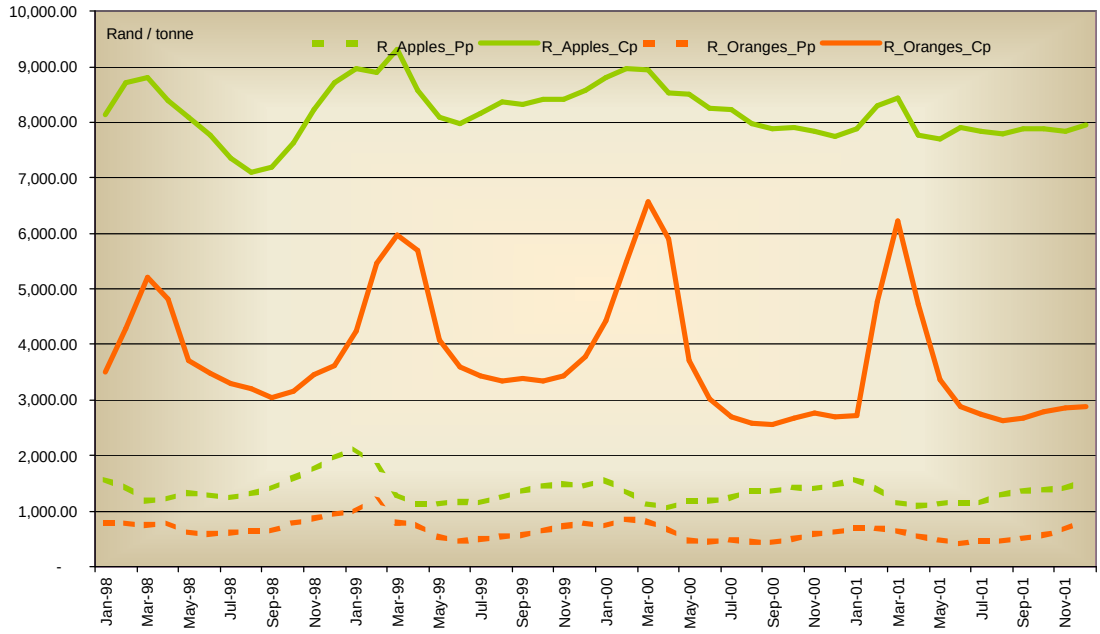
Source: National Department of Agriculture, 2002

Figure 35: Real producer and consumer prices for eggs (constant 2000 prices), 1990 – 2001

2.4.5 Fruit and vegetables

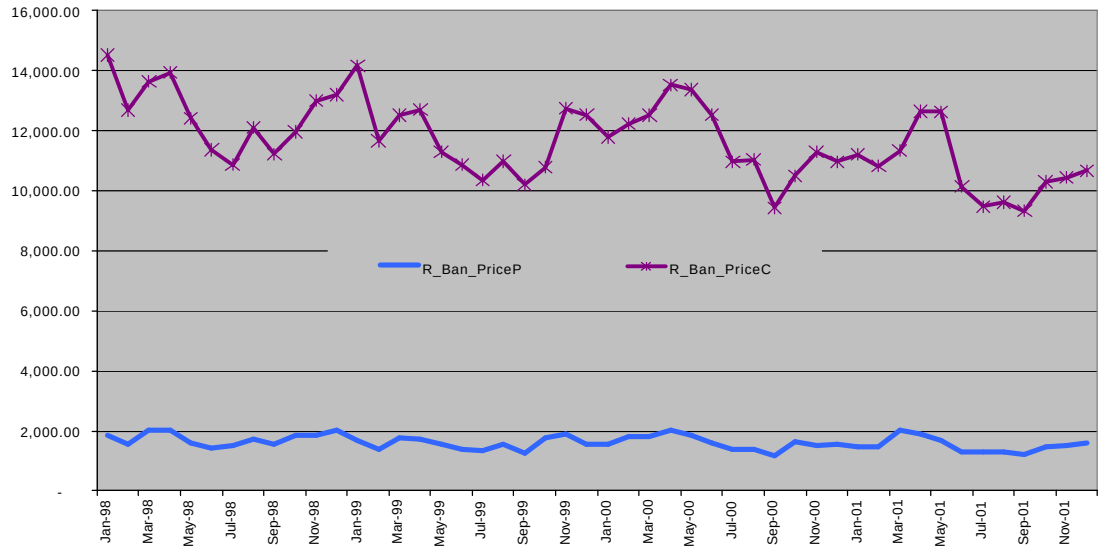
In this section we provide a few selected price trends in the fresh produce markets to highlight the fact that prices on the domestic market have largely been isolated from any of the developments in the currency market. The series of graphs below show clearly the normal seasonal trends but also highlight the fact that the real prices (in 2000 terms) have been virtually constant for the last 4 years. The argument that the potential for increased export earnings could have led to increased exports and lower availability on the local market is not supported by these data. In the first instance, South Africa exports less than 3% of its vegetable production. In the case of fruit, there is also a large difference in the quality of fruit that can be exported and that sold on the domestic market, thus the two are hardly substitutes.

The analysis of producer and consumer price trends for the most important fruits and vegetables are presented below only in graphical form and includes: apples, oranges, bananas, potatoes, onions, tomatoes and pumpkins.



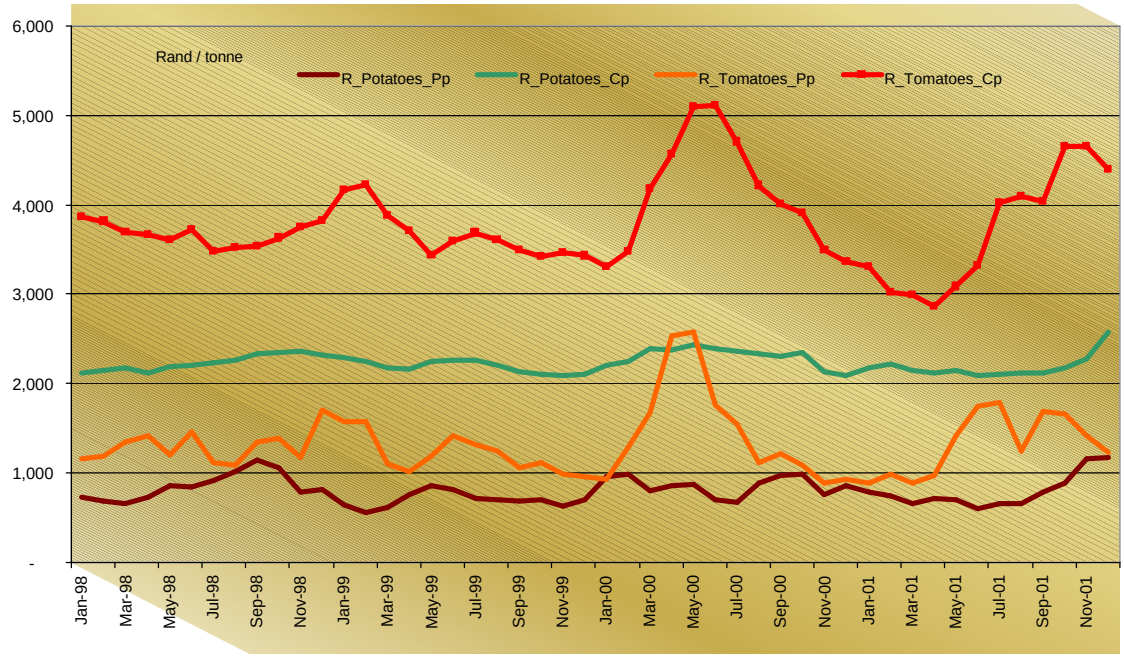
Source: Abstract, 2000

Figure 36: Real producer (Pp) and consumer prices (Cp) for oranges and apples, 1998 – 2001



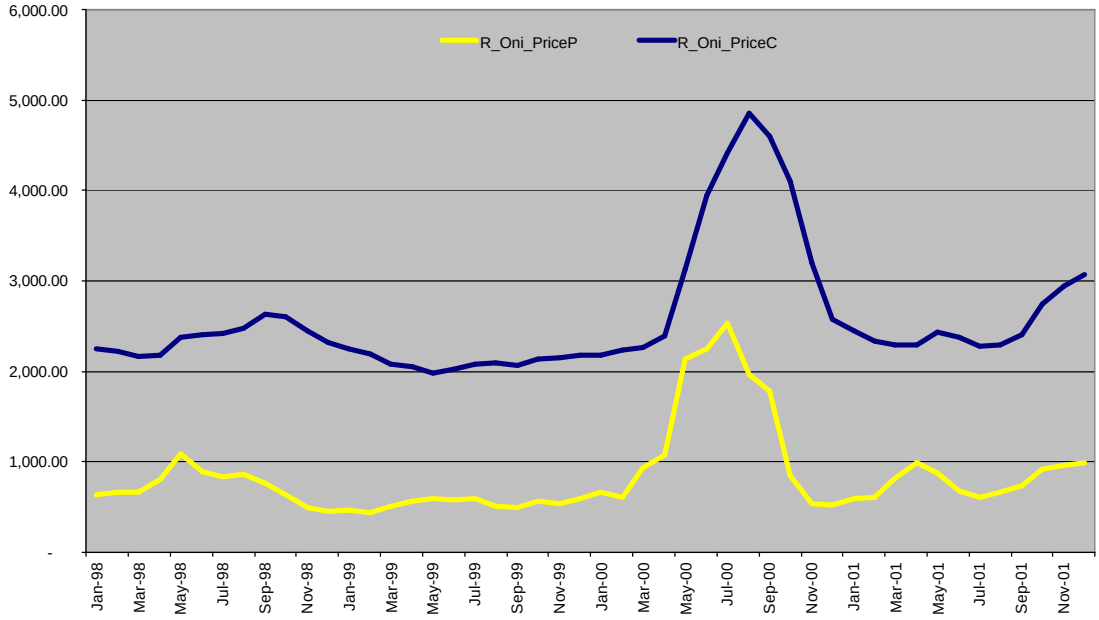
Source: Abstract, 2000

Figure 37: Real producer (Pp) and consumer prices (Cp) for bananas, 1998 – 2001



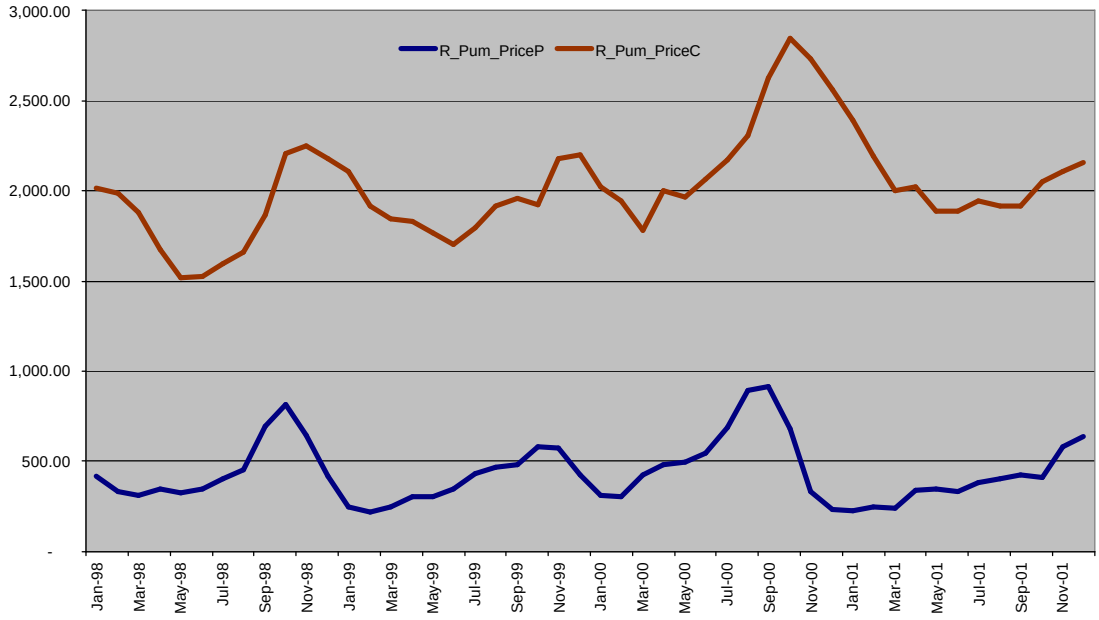
Source: Abstract, 2000

Figure 38: Real producer (Pp) and consumer prices (Cp) for potatoes and tomatoes, 1998 – 2001



Source: Abstract, 2000

Figure 39: Real producer (PriceP) and consumer prices (PriceC) for Onions, 1998 – 2001



Source: Abstract, 2000

Figure 40: Real producer (PriceP) and consumer prices (PriceC) for pumpkins, 1998 – 2001

2.5 Trends in consumer prices

In this section the broad trends in consumer prices are reviewed as a supplement to the discussion in Section 2.2 above. The data in Table 22 show the trends in the real consumer prices for selected food items over the past. While the sharp nominal increases in food prices over the last 10 months

are cause for concern, the evidence suggests that some prices (beef, mutton, fresh and condensed milk, eggs and potatoes) have in actual fact decreased in real terms from their 1988 levels.

Table 22: Real average consumer prices for selected products, 1988 - 2002

Item	Unit	1988	1992	1995	2000	2001	Mar-02
Chicken	Cents / kg	1,354.69	1,369.39	1,564.57	1,202.86	1,478.77	2,797.85
Pork	Cents / kg	2,060.68	1,765.56	1,839.43	1,664.84	1,884.86	2,897.31
Beef	Cents / kg	2,739.32	2,138.99	2,405.62	2,109.11	1,985.54	1,814.35
Sheep	Cents / kg	3,327.60	2,610.11	3,117.75	2,774.28	2,511.66	1,346.19
Bread (brown)	Cents / 800g	256.25	285.46	295.58	320.00	285.91	283.41
Cake flour	Cents / kg	413.75	552.66	514.04	519.78	497.64	496.86
Maize meal (sifted and granulated)	Cents / kg	270.31	353.53	338.97	301.78	286.38	285.20
Full Cream Milk powder	Cents / kg	3,110.94	3,242.37	3,535.22	3,533.17	3,719.50	3,266.37
Low Fat Milk powder	Cents / kg	2,809.90	2,448.38	2,606.01	2,968.75	3,117.07	3,224.22
Fresh milk	Cents / litre	346.09	373.28	300.76	326.67	340.24	329.15
Condensed Milk	Cents / kg	1,296.82	1,237.58	1,307.88	1,285.89	1,310.84	1,280.91
Eggs	Cents / dozen	591.08	611.91	576.66	523.00	552.84	535.43
Potatoes	Cents / kg	371.88	434.47	313.54	325.00	312.62	361.43

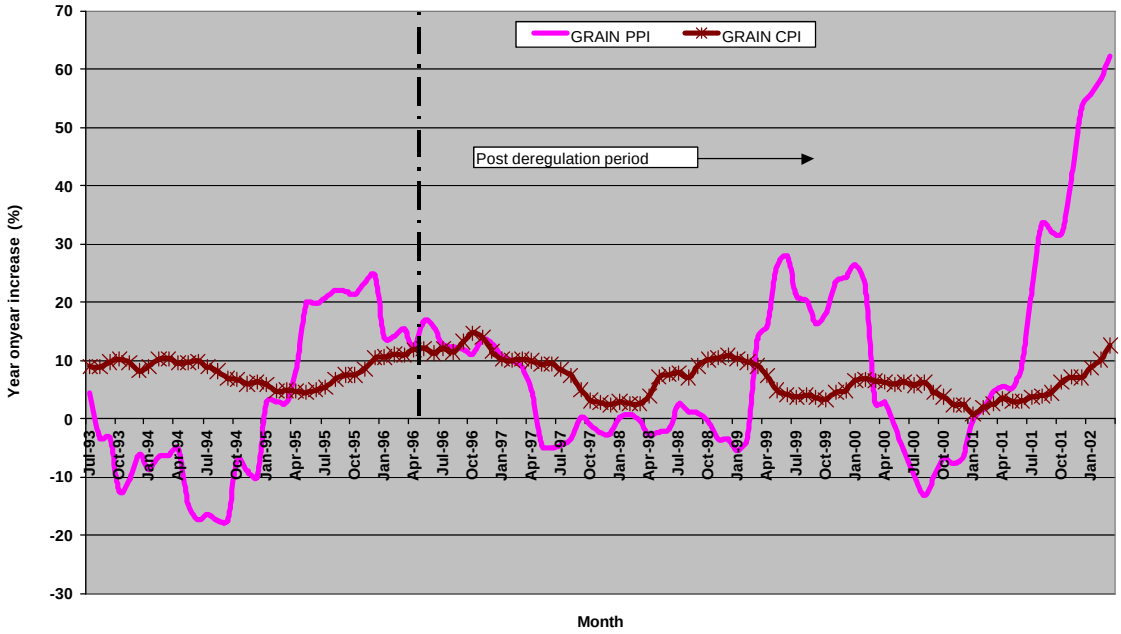
Since Table 22 provides us with a broad and sufficient overview of consumer price trends we will not be discussing each market in detail. Given the importance of maize meal, bread, dairy products and cooking oil in the consumer's basket we will only discuss these products in some detail in the following sections. Some elements of consumer prices in the other markets such as fruit and vegetables were included in the section on producer prices and are therefore not repeated here.

2.5.1 Grain and cereal products

The aggregated consumer prices for maize meal, wheat flour, bread and rice for the periods 1990-1995, 1996-2000 and the most recent available 4 months are shown in Table 23. These data show that consumer prices have increased throughout this period, although at a slower rate between 1996 and 2000. Figure 41 shows the trend in real consumer prices relative to real producer prices. It is evident that there is little direct correlation between these two price series. Real producer prices fluctuate more than real consumer prices, and in some cases these prices move in the opposite direction.

Table 23: Average annual and monthly growth rates in CPI for grain products

Period	Average monthly increase (%)	Average annual increase (%)
1990-1995	1.16	14.87
1996-2000	0.49	6.09
2001-March 2002	0.88	11.03



Source: Calculated from STATSSA, time series

Figure 41: Monthly increase in the PPI and CPI for grain products, 1993 – 2002

The data in Tables 24 and 25 below show the trends in the composition of the margin between the farm gate price for wheat and the retail price of bread. This comparison is instructive, as the degree of processing required to transform wheat into bread is relatively negligible when compared to products such as wine, sugar or ready-to-eat meals, hence the margin should be relatively small. However, this logic is immediately negated by the fact that the producer's share in the price of a loaf of brown bread (which requires less processing) is smaller than the share for white bread, and has become even smaller through the 1990s. Overall, producers lost half of their margin for both white and brown bread between 1990 and 1998.

The millers have not fared much better, and bakers have fared somewhat better. However, the real winners in this game have been the **retailers**. Retail margins for white bread have quadrupled during the 1990s, while for brown bread they increased more than five-fold.

Table 24: Percentage share in the retail price of white bread

	1990/91	1996/97	1998/99
Producer	33.3	24.2	17.9
Infrastructure	6.7	3.3	4.4
Miller	16.7	10.8	9.8
Baker	40.0	42.0	43.9
Retailer	3.3	7.4	11.8
Government	0	12.3	12.2
Total	**100**	**100**	**100**

Source: NAMC Section 7 committee: Wheat to bread value chain (1999)

Table 25: Percentage share in the retail price of brown bread

	1990/91	1996/97	1998/99
Producer	32.4	23.4	16.7
Infrastructure	6.7	3.8	4.1
Miller	20.9	15.7	12.6
Baker	36.2	46.0	46.3
Retailer	3.8	11.1	20.3
Government	0	0	0
Total	**100**	**100**	**100**

Source: NAMC Section 7 committee: Wheat to bread value chain (1999)

The trend in the real price of white bread is reflected in Figure 42. The comparison with real producer prices for wheat makes for interesting reading. Real retail prices increased quite rapidly – at 2.3 % per annum on average – between 1989 and 2000. This is largely the consequence of the abolition of the government subsidy on bread in 1991. The period of fastest growth was between 1990 and 1995 when real bread prices increased by 3.6% per annum.

Source: Calculated from NDA food price database

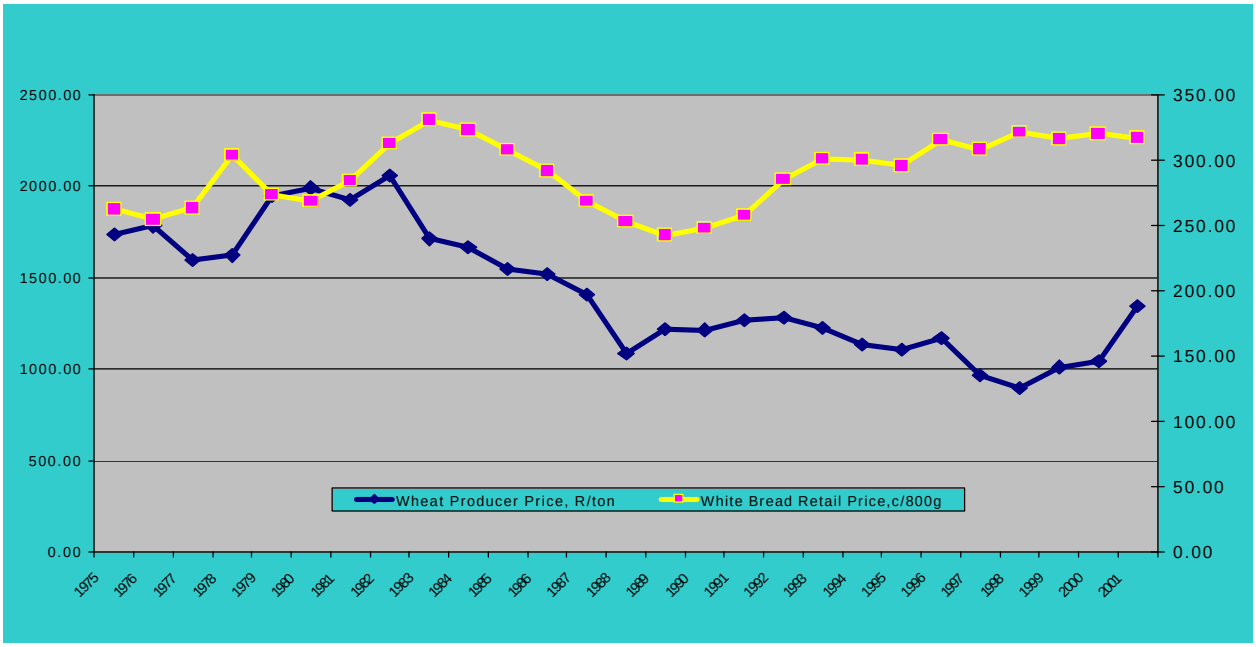
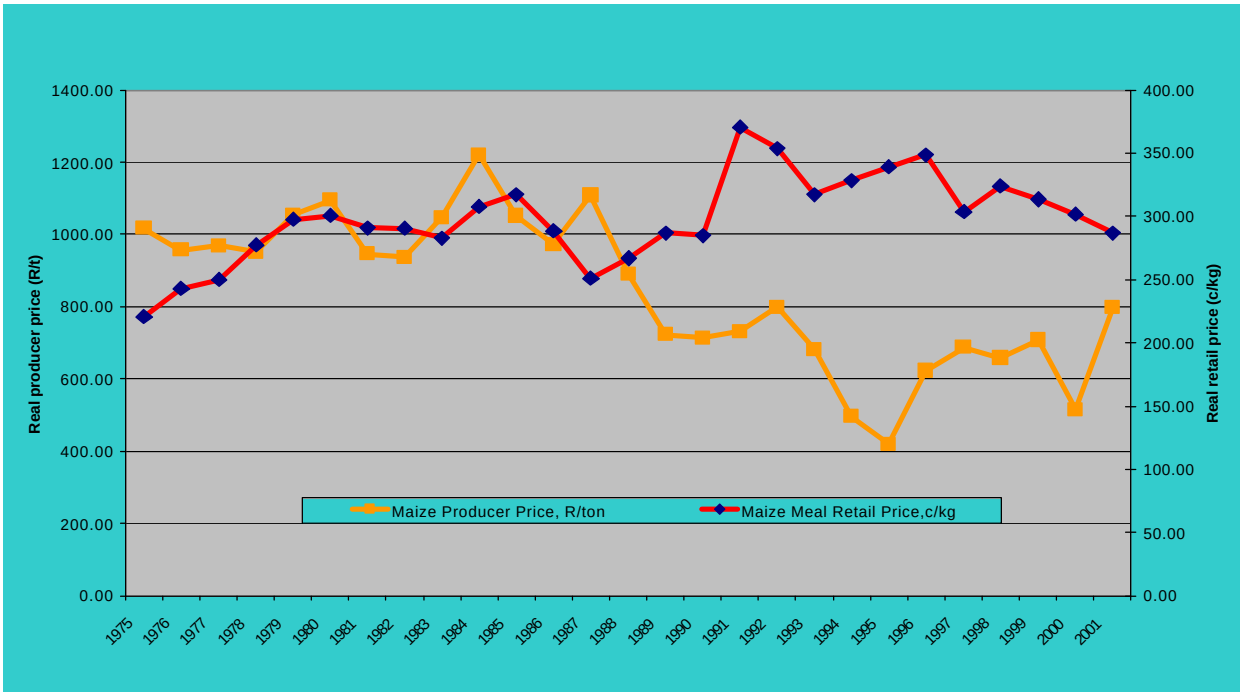


Figure 42: Real consumer prices for white bread, 1975 – 2001

The retail price of white maize meal is a key aspect of the whole debate on rising food prices and for this reason it is important to briefly reflect on the annual trend in the price of white maize meal. Again we compare it with the trend in the producer prices for maize. It is interesting to note from Figure 43 that in the period 1990 – 1995 real producer prices of white maize decreased on average by 10.6% per year, but retail prices of white maize meal increased by 3.5% per annum over the same period. However the reverse scenario applied in the 2000-2001 period when retail maize meal prices declined on average by 5% per annum and real producer prices increased at a rate of 54% per annum. The more recent increase in producer prices has, however, been transmitted through to retail maize meal prices in early 2002.

Modelling the cause and effect relationships between the producer and consumer prices is no easy task. Nevertheless, the anecdotal evidence provided here lends credence to the argument that millers, wholesalers and retailers of grain products have more power to influence prices than the farmers have.



Source: Calculated from NDA food price database

Figure 43: Real retail price for white maize meal (constant 2000 prices), 1975 – 2001

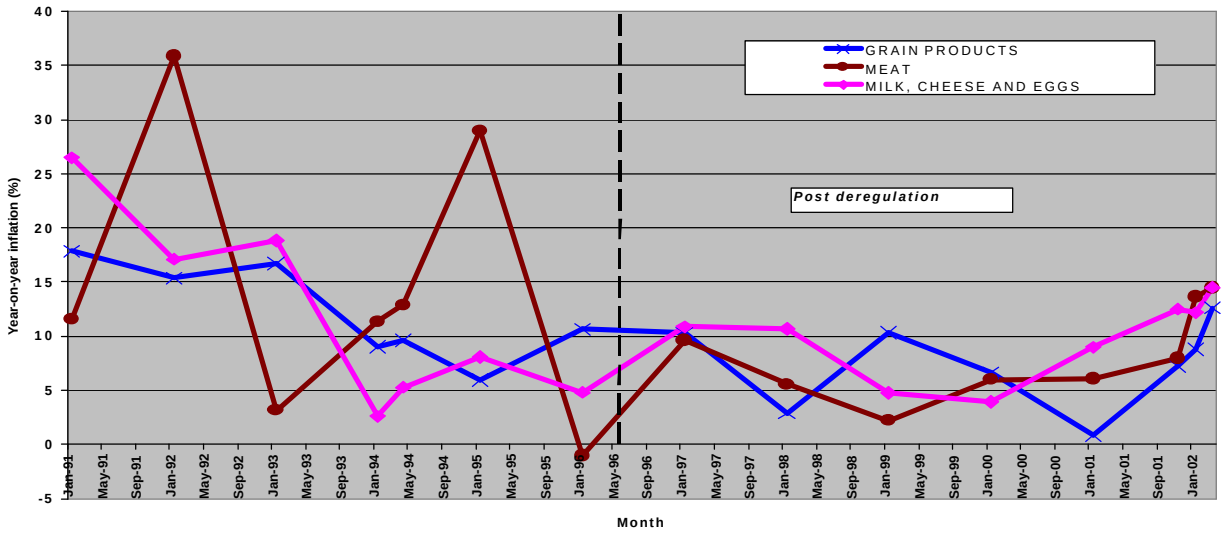
In trying to determine the causes of the increase in maize meal prices the real maize meal price was modelled as a function of real maize meal price (lagged for one month), the real SAFEX white maize spot price (lagged for three months), the real retail potato price (lagged for four months) and the producer price index of milled grain products (lagged for three months). All variables are significant at the 90%, or greater, level of significance except for the real potato retail price which is significant at the 75% level. All the variables met our *a priori* expectations with respect to economic theory. The model successfully explains 87% of the variation in real maize meal price through the inclusion of the mentioned variables. The Durbin-Watson statistic is 2.19 indicating that there is no serial correlation. The model shows that the transmission from producer price to retail price takes approximately 3 months and corresponds to the evidence obtained from the major millers in terms of their procurement and stock policies. The elasticities amongst the explanatory variables are listed below:

Box 5

Variable	Elasticity with real maize meal price
Real white maize SAFEX price lagged 3 months	0.067
Real potato retail price lagged 4 months	0.095
Producer price index milled grains lagged 3 months	0.422

The elasticities indicate that a 1% increase in the real SAFEX white maize spot price 3 months ago will cause the current real maize meal price to increase by 0.067%. The same holds for the lagged real potato retail price and the lagged producer price index of milled grains, which will increase the maize meal price by 0.095% and 0.422% respectively. It seems that the impact of milling costs and marketing costs is far greater than the spot price itself. This could be the result of the use of historic data, i.e. the effect of the recent increase in producer prices has not yet been fully transmitted through to retail level due to the procurement (e.g. buying on contract where prices are fixed) and hedging strategies followed by the millers. In addition the deliberate efforts by retail chains to keep prices of major staple foods low through locking suppliers into 6-12 month price deals could also explain part of our result.

The annual increase in the CPI for grain products, meat, and dairy products is shown in Figure 44 confirming part of the discussion immediately above. In addition the data conform to the trend described in relation to Figures 6 and 7 above.



Source: Calculated from STATSSA CPI database

Figure 44: Annual increase in the CPI for grain, meat and dairy products

2.5.2 Dairy products

The South African consumer market for milk and dairy products is well developed, and a comprehensive range of milk and dairy products in a variety of pack sizes is freely available.

Table 26: The market for dairy products, 1996

Product	Unit	Production	Estimated Consumption	Imports	Exports
Pasteurised liquid milk	m litre	860	860	-	-
Ultra pasteurised milk (UHT)	m litre	225	225	3,466	7,112
Yoghurt, maas, buttermilk	m litre	125	125	0,068	0,750
Cheese – all types	t	60 000	65 000	3 783	1 258
Milk powders	t	20 110	27 837	4 810	11 162
Condensed milk	t	18 100	17 400	263	3 922
Butter	t	8 100	11 410	5 757	1 571
Whey & buttermilk powder	t	n.a.	n.a.	7 449	1 343

Source: SA Dairy Foundation, RSA-market. Customs & Excise: imports & exports

The market for dairy products is conventionally divided into drinking and concentrated products, with the first three rows in Table 26, including also blends and cream, representing drinking products, which make up approximately 60% of the total volume sold. Most dairy products are distributed through hypermarkets and supermarkets (Table 27). The size of the informal trading sector with thousands of small spaza shops is difficult to quantify. Available data (ESKOM, 1998) show that of the 9,1 million households in South Africa, 2,4 million support shops in size and smaller than spaza shops for occasional and 410 000 households for their main grocery shopping.

The retailer is the primary outlet for dairy products to the consumer and this puts it in a position of strength and accounts for the struggle in which both retailer and processor are engaged to secure custom, margins and authority. This echoes the general trend in the international food sector (Baas *et al*, 1998). The larger retailers dictate the delivery times and merchandising is at the cost – generally 3% of wholesalers' in-store turnover - of the processor/wholesaler. Retailers do not ordinarily accept responsibility for shelf losses and their mark-up on white drinking milk is on average 18% and on by-products (e.g. yoghurt) 28%, while the chains demand a 10% rebate on the wholesale price and the dairy companies have to pay for shelf space.

Table 27: The division of the formal trade in dairy products, 1996

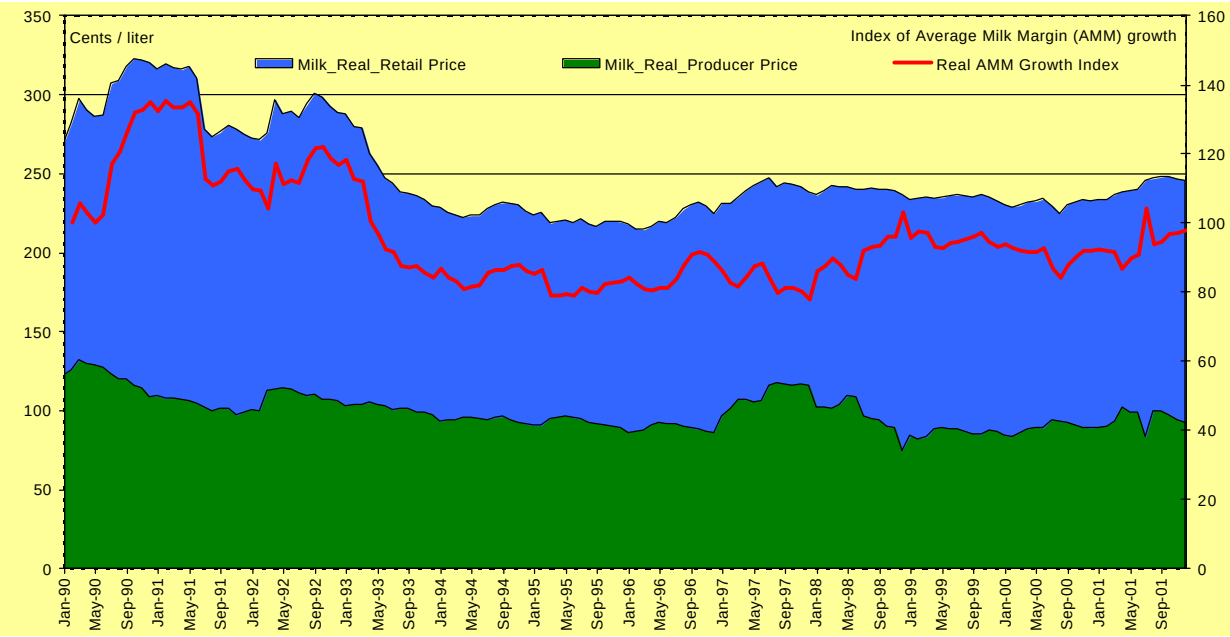
Store types	**No. of stores**	**% Outlets**	**Turnover (Rm)**	**% Value**
Hyperstores	26	0.1	2 174	9.1
Supermarkets	765	2.3	10 115	42.4
Subtotal	**791**	**2.4**	**12 289**	**51.5**
Superettes	1 107	3.4	3 258	13.7
Subtotal	**1 898**	**5.8**	**15 547**	**65.2**
Urban Grocers	11 418	34.8	3 545	14.9
Rural Grocers	10 916	33.3	2 946	12.5
Café/Confectioners	8 572	26.1	1 798	7.4
Total	**32 804**	**100.0**	**23 836**	**100.0**

Source: Hermann, 1997

The relationship that manufacturers and distributors of dairy products have with retailers is often ambivalent. Where dairy companies attempt to win consumer loyalty by producing attractive and successful brands, retailers compete with 'no-name brands' in pursuit of repeat shoppers. On the other hand, retailers are obliged to co-operate with dairy companies in approaching the consumer and can benefit from working with them on decisions regarding the product range composition, promotional activities and product development (Baas *et al*, 1998). Food processors' and retailers' success in competing for consumer loyalty increasingly hinges on the differentiating value of cost-increasing services such as advertising, trading stamps, coupons, and elaborate merchandising. These activities may or may not represent 'true' consumer desires, but there is no doubt that they have added significantly to the cost of food marketing.

The structural changes in the dairy industry discussed earlier have had an ambivalent effect on the gap between producer and consumer prices of dairy products, and the relationship between producer and consumer prices is not clear. To illustrate this, the prices of a range of dairy products are analysed relative to the price of processed milk (i.e. the 'drinking products' identified above), which comprises roughly 60% of all dairy sales. In 2001 the fresh milk consumption was 1 202 million kilograms expressed in milk equivalents (SAMFED, 2002).

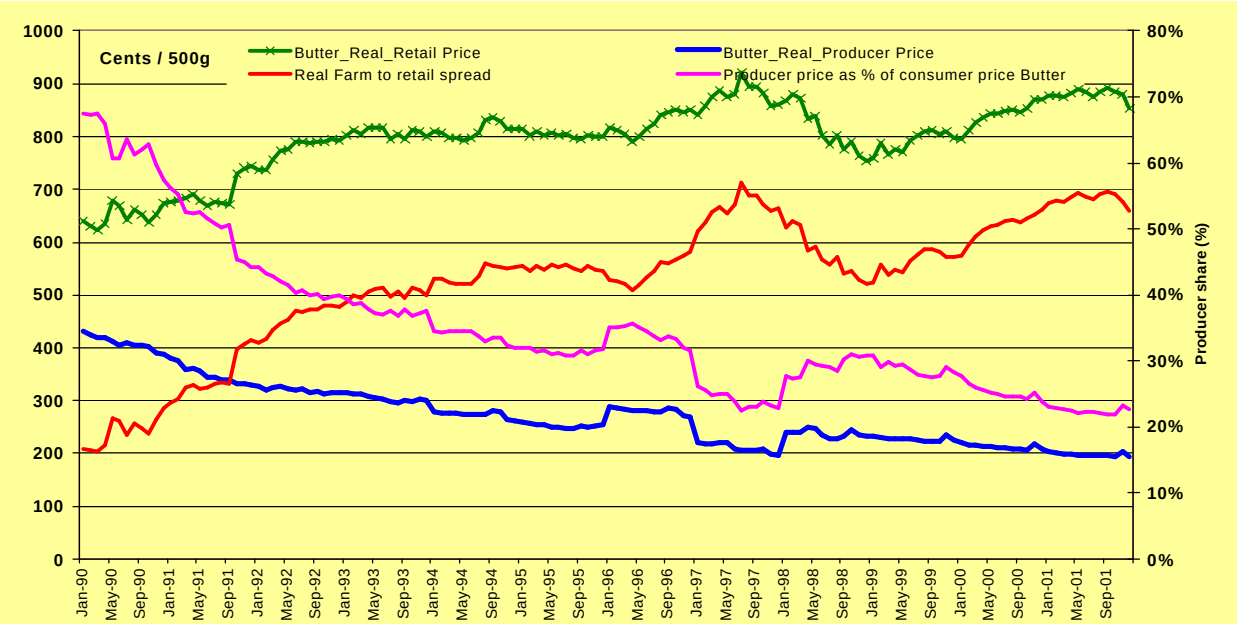
The first of these analyses (Figure 45) illustrates the relationship between the price of raw and processed milk. These data show that the real price of raw milk increased for most of the past decade, excepting for a period during 1998. Retail prices, on the other hand, have increased throughout the entire period, and at a rate faster than the farm gate price. This is reflected in the growing margin between these two prices. The industry believes that the increased margin can largely be attributed to value adding via long life milk (UHT) and a consumer preference for more expensive plastic containers and sachets that have largely replaced carton containers. Long life milk consumption increased from 18% to 28% of total consumption from 1991 to 1999, while milk sold in carton containers declined from approximately 38% (1992) to 23% (1999) (Tetra Pak, 2000). However, it is clear that these developments cannot explain the entire increase in the margin, especially the sharp increase since 1997.



Source Abstract, 2000 and MPO

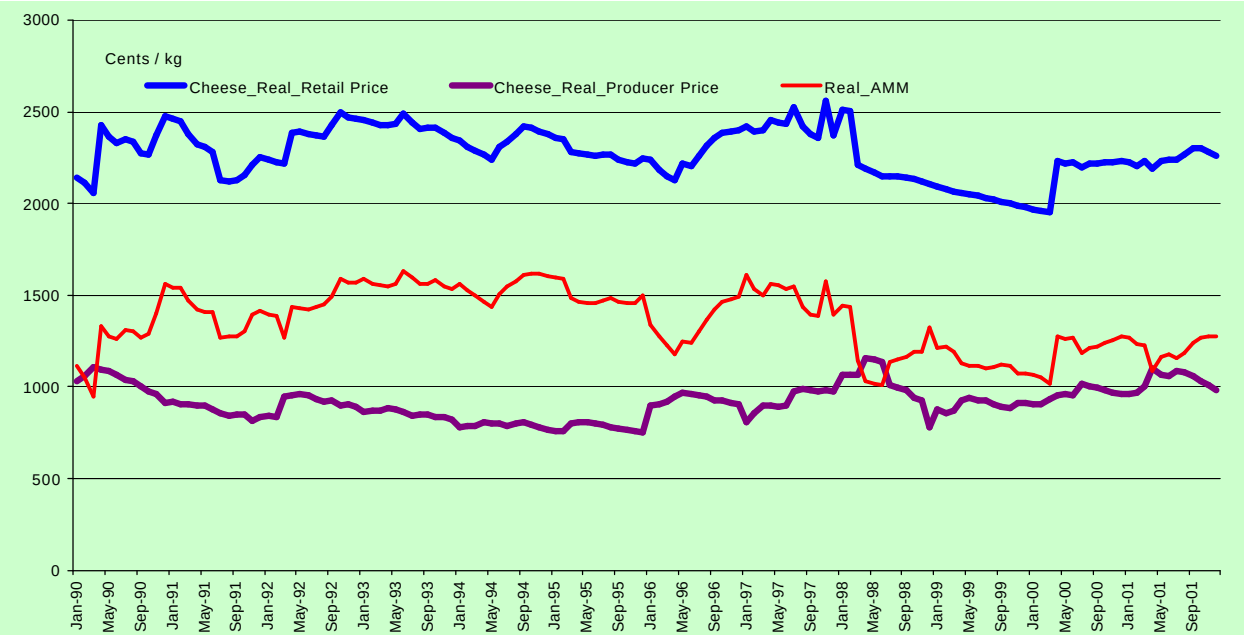
Figure 45: The real price of and the growth in the marketing margins, 1990- 2001

Figure 46 shows the relationship between the price of milk sold for the production of butter and the retail price of butter. Here the data show that the margin between the farm gate and the retail price has increased by more than threefold (from 200 cents/500g in 1990 to 700 cents/500g in 2001) despite the fact that the real producer price of butter declined throughout the decade. The reason is the sharp unexplained increase in the retail price of butter, starting in the beginning of 1999.



Source: Abstract, 2000

Figure 46: Real producer price of milk for butter and real retail price of butter: 1990 - 2001

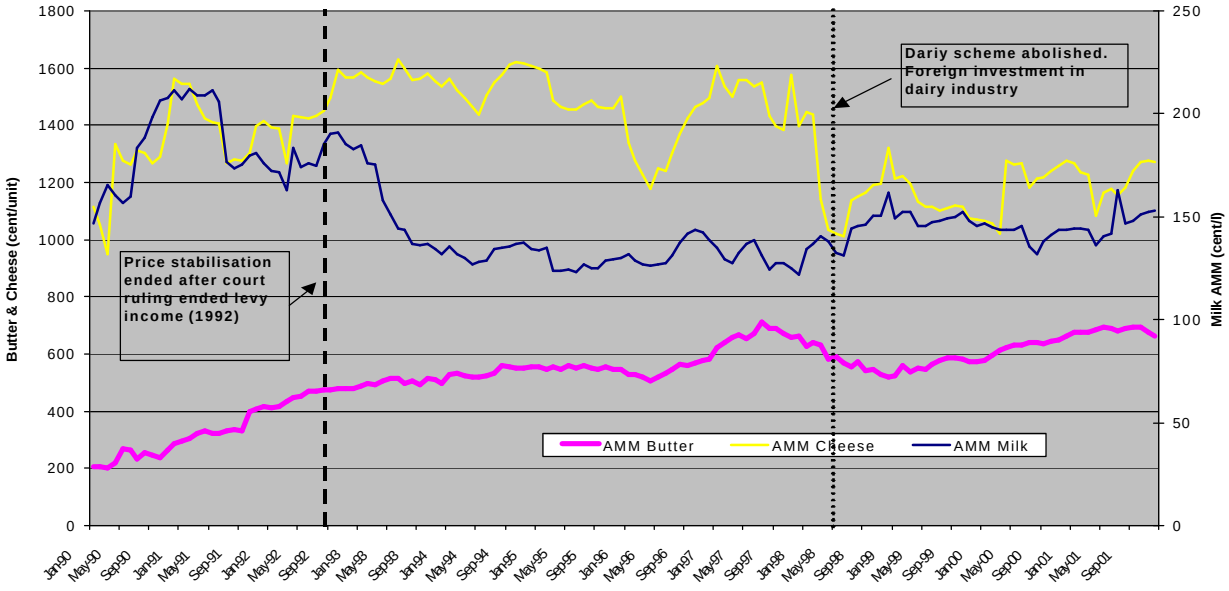


Source: Abstract, 2000

Figure 47: The real price of cheese, 1990 – 2001

The marketing margin for cheese, on the other hand, has declined since the beginning of the 1990s (Figure 47). The explanation may lie in the fact that cheese, milk powder and butter are balancing products[18]. The over zealous import of dairy products and the increase in milk production following the rise in producer milk prices culminated in a build up of cheese stocks, and hence suppressed increases in retail prices. As these stocks have largely been worked off, partly through exports, the margin in expected to increase again. Figure 48 provides a comparison of the farm-retail spread for the 3 main dairy products. Deregulation seems to have had a positive effect on real marketing margins through increased competition, as discussed above.

Figure 48: Real farm-retail spread for milk, cheese and butter, 1990 - 2001



2.5.3 Sunflower Oil

One of the other major food items for our poorer households is cooking oil. Having discussed the

[18] When raw milk supply is in surplus, the surplus is processed as cheese, butter or powder. The latter two can be reconstituted as milk in case of a shortage of raw milk.

producer price of the main raw material, sunflower seed earlier it is now necessary to consider the trend in consumer prices of cooking oil. Figure 49 below illustrates the nominal and real price (constant 2000 prices) of 750ml units of cooking oil between March 1998 and January 2001. Real prices increased from R4.50 in 1998 to around R5.00 per unit in January 2002. A brief survey of supermarkets in Gauteng and Limpopo provinces during April 2002 showed retail prices of these units to be around R7.50 – equivalent to a real price of R6.59. There has been a rather dramatic increase since the low of R4.20 around October 2000 – thus an increase in real terms of 57% between October 2000 and April 2002.

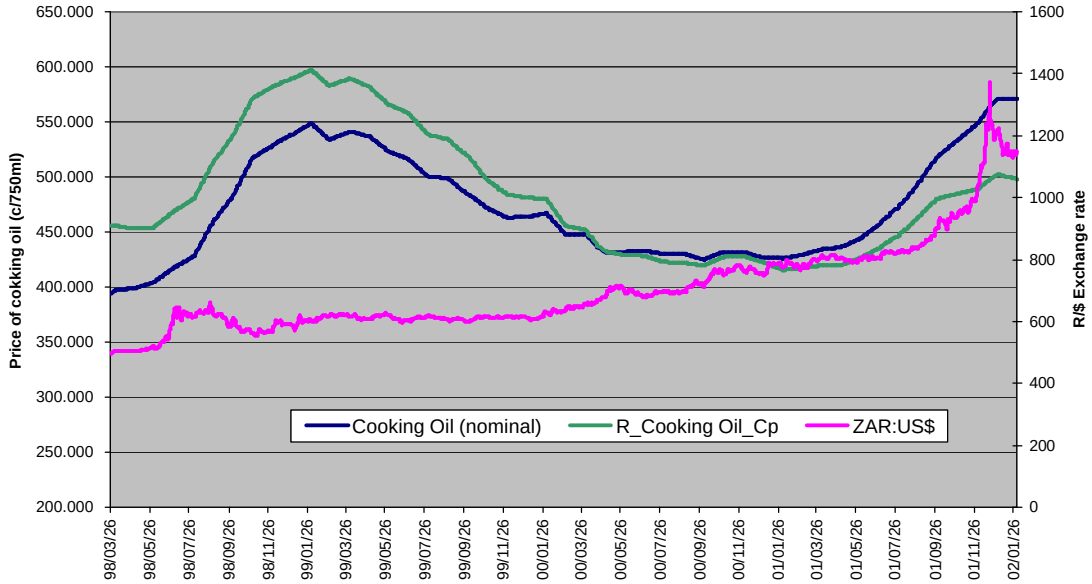


Figure 49: Nominal and real retail prices of 750ml cooking oil versus the exchange rate

Figure 50 compares the trend in real producer prices of sunflower seed with that of real retail prices of sunflower cooking oil. The trend is very similar. Calculating the farm-retail spread is complex and could lead to erroneous interpretations since the oil extractions generate a number of by-products, which are also valuable. In interpreting these figures one should also remember that sunflower and other oils, such cotton seed oil together, with the various oil cakes are ranked amongst South Africa's top 5 agricultural import commodities. In 2000 South Africa imported R167 million worth of oil (sunflower and cotton seed) thus the exchange rate obviously played its role in increasing the landed costs of these commodities – as reflected in Figure 49 above.

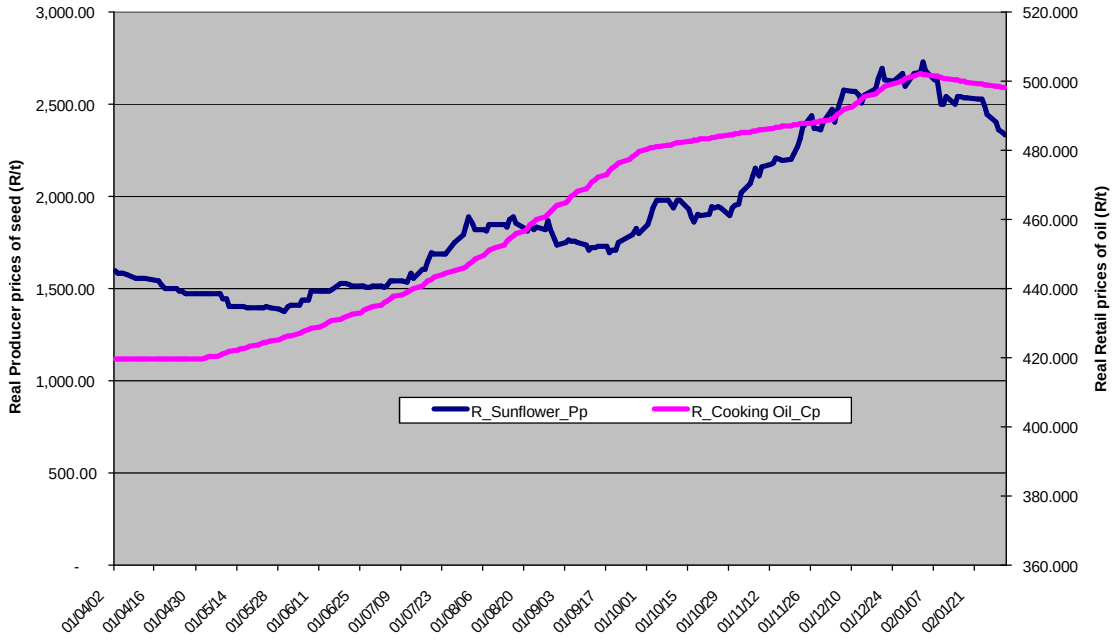


Figure 50: Real price of sunflower seed vs. real price of cooking oil, April 2001 to January 2002

2.6 Concluding comments: Are commodity prices a leading indicator of inflation?

Much of the discussion in this Chapter focussed on the key question on the impact of the rise in the producer prices of key agricultural commodities (in particular maize and oilseeds) on food inflation and increase in total inflation. The evidence provided here has so far provided fairly convincing evidence of how rising commodity prices is slowly but surely filtering through to the general level of prices in the economy. The discussion in Section 2.2 has clearly shown how food price increases are driving the increase in the CPI.

It is for this reason that some studies in the literature has been asking the question whether commodity prices can serve as a leading indicator of inflation. Moosa (1998) is one of the authors who recently shown that commodity prices can serve as a leading indicator of inflation. For a pure lack of time we could not test this hypothesis in the South African context but our evidence presented in this chapter intuitively leads us to the same conclusion.

The chapter focussed considerable attention on the causes of commodity price increases. Our analysis of price trends and the various statistical tests provide a rather convincing and consistent story, namely that **the recent increase in the farm gate price of basic food commodities has come about as a result of a unique combination of five factors**. These are (a) an increasing world price for these commodities, (b) a lack of competition in the supply chain beyond the farm gate, especially at the retail level, (c) a fast and severe depreciation in the value of the currency, (d) a shortage of maize in the SADC region, and (e) a climate of uncertainty, created specifically by the unfortunate circumstances surrounding the land reform programme and the elections in Zimbabwe, and more generally by the instability in parts of Central and Southern Africa.