THE SOUTH AFRICAN FOOD COST REVIEW

2004

JULY 2005

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The South African Food Cost Review: 2004

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Preface

This is the first publication of the "South African Food Cost Review", which follows directly on the acceptance by the Minister of Agriculture of the recommendations of the Food Price Monitoring Committee. This was a joint effort between the National Agricultural Marketing Council and the Directorate: Marketing and the Directorate: Agricultural Statistics of the Department of Agriculture. The assistance of Ferdie Meyer and Thomas Funke of the Department of Agricultural Economics, Extension and Rural Development at the University of Pretoria is also acknowledged with thanks. They helped a lot in doing all the calculations and preparing the draft document.

Prof Johann Kirsten
NAMC Council member

PRETORIA
JULY 2005

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Introduction

A sudden depreciation in the Rand against all major currencies, a sharp increase in all major commodity and food prices and a resultant increase in inflation, led to the appointment of the Food Price Monitoring Committee and a consequent investigation into the factors responsible for this. The Committee held its inaugural meeting on the 20th of January 2003, and undertook a detailed investigation into the reasons for the surge in food price inflation. The Committee made a number of recommendations as to how a similar situation could be avoided in future. Recommendation 9 in the final Report states that an annual publication, to be known as the "South African Food Cost Review" should be compiled and published. The publication's aim is to present information on food costs, trends in farm values, farm-to-retail price spreads, marketing margins and retail prices as well as to inform the public of the current economic situation and the trends in food price inflation.

The outline of the Report

This is the first publication of the South African Food Cost Review and is structured into five different chapters. Chapter 1 discusses the need for a food cost review as well as some background as to how the preparation of the Report came about. Chapter 2 presents an overview of the South African economy during 2004 and lends specific focus to the trend of food price inflation during this specific year.

The first part of Chapter 3 discusses the methodology behind the calculation of the farm value, the retail value and the farm-to-retail price spread of the various commodities under review. Each of these sections focus specifically on the trends of the various measures during the period leading up to and including 2004.

Chapter 4 discusses the prices of marketing inputs used in the food production process. Again a detailed description of the trends of these inputs is discussed and represented. The final chapter, Chapter 5, briefly discusses and summarizes the trends in food expenditure in South Africa. The information used in this section of the Report has been extracted from a report with the title "Trends in household expenditure in South Africa, 2003" by the Bureau of Market Research.

The Appendix contains a number of tables that display the numerical data used to construct graphs in Chapter 3 of the Report. These range from the farm values, retail values, spreads and margins to price indices of marketing inputs.

Main findings of the Report

The trend in food inflation, the CPIF, as discussed in Chapter 2, showed a steep decline from January 2003 up until January 2004. The index then leveled off during 2004 and the annual change in the index remained below 3 %. Lower than expected inflation rates for 2004 resulted in a further reduction in the repo rate and with that a slower rate of increase in the prices of food commodities.

The farm value of maize, white bread, brown bread and dairy products all decreased between 2002 and 2004. The farm value of meat, poultry and eggs increased over the same period, whilst the producer prices of vegetables and fruits varied from commodity to commodity.

The retail prices of super and special maize meal were perhaps some of the few prices that actually decreased during the period under review. Data on average weighted retail prices revealed that the prices of brown bread, white bread, the different cuts of beef, dairy products, mutton, poultry and eggs all increased in value during 2004. The retail prices of vegetables and fruits varied randomly during 2004, often dependent on when the product is harvested. In general it can be said that the prices did, however, increase at a rate similar to that of inflation.

The farm to retail price spreads and marketing margins of super and special maize meal fell slightly between January and December of 2004. They did, however, increase towards the end of the year. The spread of brown and white bread experienced a similar trend as it peaked, then fell and gradually rose again towards the end of the year. The spreads of the selected cuts of beef and milk both remained relatively constant throughout, decreasing and increasing at similar stages during 2004. The spreads of most fruits and vegetables followed their the production cycles, decreasing during the harvest season and then increasing again as the supply decreased. It can, however, be stated that the spreads of most products increased during 2004.

1. Introduction and Background: The need for an Annual "Food Cost Review" in South Africa

The sharp depreciation of the Rand against all major currencies in the world at the end of 2001 as well as rising commodity and food prices triggered a process, which sent inflation spiralling out of the target of 6 % set by the South African monetary and fiscal authorities. It became apparent that the increase in the inflation rate was largely the result of an increase in food price inflation. The dramatic impact of rising food prices on poor households, and also the effect of food price inflation on South Africa's inflation rate, compelled the Government to investigate ways and means to deal with the crisis. In addition suspicion about manipulation in the commodity market, and concerns about concentration and market power in the food manufacturing and retail sector created the perception amongst consumers and Government that the role players in the food sector were unfairly increasing the prices of basic foods. All of this pointed to the need for an investigation into pricing behaviour in the food sector.

In October 2002 the Cabinet approved the establishment of a food price monitoring mechanism (Food Pricing Monitoring Committee) in accordance with the Agricultural Marketing Act. The Food Price Monitoring Committee was appointed in January 2003 with specific Terms of Reference. A central part of the Terms of Reference of the Committee related to the analysis of the **price formation mechanism in supply chains of basic foodstuffs**. In this respect particular attention was given to:

- Market power as determined by the level of concentration and the extent of vertical and horizontal integration;
- Price formation at different points in the supply chain; and
- Costs and margins at each stage of the value chain.

In order to comply with its Terms of Reference, the Committee addressed these aspects in a comprehensive manner. The Committee was aware, however, that research into behaviour in food supply chains must be seen against the background of the changing nature of the agricultural and food industry worldwide, and also in South Africa. Essentially, supply chains of vertically related oligopolies have emerged either through ownership, strategic alliances, or contractual relationships. This presents a challenge for governments to ensure that potential social welfare losses resulting from the misallocation of resources and possible abuse of market power are avoided.

In this new structure the transmission of prices between vertical stages of the supply chain are likely to happen via proprietary information. This entails that missing market price information makes an investigation into anti-competitive behaviour difficult. At the same time, the potential benefits of the new agri-food structure should not be ignored. These benefits include potential efficiency gains through reduction of transaction costs, minimising wastage, etc.

As agricultural products move beyond the farm gate and the commodity markets, the costs of value-adding (processing, packaging, distribution) become critical aspects in influencing the retail price of food products. These factors are often influenced by different commodity markets, exchange rates, and State created monopolies such as Telkom, Sasol, Transnet, Eskom.

Given the proprietary nature of most information in the food manufacturing industry it is rather difficult to determine what specific aspects are responsible for the increase in the margin between the farm gate and retail prices. By calculating marketing margins and farm-to-retail price spreads for the major food items one is at least able to determine how consumer expenditure on farm-produced food is distributed between the farmer, manufacturer and retailer.

Price is the primary mechanism through which these various levels of the market are linked. The extent of adjustment and speed with which shocks are transmitted among producer, wholesale, and retail market prices is an important factor, which reflects the actions of market participants at different levels. Over the past several decades, producers, consumers, food industry interest groups and politicians have been concerned about the efficiency and equity of price transmission of agricultural and food products. Both casual and empirical research indicates that there are several asymmetries in price transmission in the food marketing chains, namely:

(1) Changes in farm and wholesale prices are either not fully or more than fully transmitted to consumer prices.
(2) Changes in consumer prices are not related to short-term changes in farm prices and follow medium and long term changes with a time lag.
(3) Down stream changes in consumr prices show a longer time lag than upstream changes do. Depending on the market structure and the nature of the product, several possible explanations can be put forward to explain this asymmetry.

Of the three asymmetries, the one that appears to be of particular interest is the asymmetry in the adjustment process, namely whether retailers pass on price increases, while decreases in price are not completely passed on to the consumer. Evidence from studies done elsewhere show that this is in fact the case, particularly with agricultural products. One of the reasons price increases are passed on to the consumer faster than decreases is that firms will react faster to decreases in profit margins than to increases. Another reason for the asymmetric price adjustments is the presence of search costs in locally imperfect markets. For example, grocery stores and other retailers may enjoy local market power due to a lack of similar firms in a given neighbourhood. Although customers may have a finite number of choices, they may not be able to gather full information about prices offered by other firms because of the cost of the search. In particular, consumers may observe a price increase at one local retail outlet but are uncertain if others have also increased their prices. Given this scenario, firms can quickly raise prices as upstream prices rise and they can slowly decrease prices as the upstream prices decline.

Firms do incur costs, however, when items need to be re-priced. Thus, they will only re-price items when the gains from changing the prices (up or down) exceed the costs. It is true that the utilisation of scanners has made this re-pricing process unnecessary; the reality is, however, that the majority of stores do not employ scanning systems yet. Thus, there is a range of food price changes, which retailers may choose not to re-price, resulting in less frequent adjustments both upward and downward. The implication of this is that pricing rigidity of retail goods during periods of falling farm prices – which draws more attention than rigidity in periods of rising farm prices – may be caused by the actual cost of re-pricing. Given the large number of possible variations

between commodities, retailers, and consumers, it is impossible to conclusively determine the cause of observed price asymmetries within a commodity group.

During the Committee's investigations only some of the role players in the food industry gave their full co-operation and supplied what is normally regarded as confidential and proprietary information. It became apparent as the investigations progressed, however, that many of the detailed processing costs were not provided. In some cases industry organisations provided industry averages, but generally, companies were not too keen to provide detailed cost information. Nevertheless, sufficient data was obtained to present, for the first time in South Africa, a comprehensive database on various aspects of the food industry. The Committee was therefore of the view that this data base could form the basis for an annual "South African Food Cost Review" which could be updated and monitored on a regular basis for any "unjust increases" in prices and/or marketing costs. It is for this reason that the Committee recommended in Recommendation number 9 that:

> An annual publication, to be known as the '*South African Food Cost Review*" is published by the National Department of Agriculture to disseminate information on food costs and trends in retail prices and farm-retail price spreads, and distributed as widely as possible. Such a publication can also be used to inform the public about food safety issues, food regulations and minimum specifications for food items.

The output of the Committee provided a useful foundation upon which the state can monitor trends in food prices, food processing costs and farm-to-retail price spreads. Such a mechanism of continuous monitoring should not take the form of *ad hoc* arrangements, but should rather be incorporated in normal government structures, either within the Department of Agriculture or the National Agricultural Marketing Council. This first edition of the Food Cost Review is the first step to establish such a permanent system of monitoring.

This report firstly provides an overview of trends in food price inflation and food prices at retail level. Secondly, estimates of food marketing costs and of food price spreads.

2. An overview of the South African economy during 2004 with specific focus on Food Price Inflation

South Africa's economy has been performing relatively well recently. In his 2005 Budget Speech, the Minister of Finance stated that the economy has averaged 3,2 % over the past four years, and it is expected that the expansion will rise to between 4 and 4,5 % over the next three years. This has been attributed to various factors, among which are stringent macro-economic policies [such as GEAR], which have led to improved macro-economic conditions like the reduction of inflation to a single digit rate, and decreased interest rates. This is supposed to encourage economic activities through more consumption and credit for business investments.

The growth in real domestic final demand also accelerated during the first quarter of 2004 by 7,5 %. This figure represents all current and capital expenditure, but excludes the spending on inventories. The gross domestic expenditure has moderated to 4,3 % during 2004, as companies have run down their inventories (DoA, 2004).

The average real growth rate from the second quarter of 1999 to the second quarter of 2004 came to 3,4 %. This firm growth rate over the medium term demonstrates the underlying resilience of the South African economy and the tangible benefits that flow from sound economic policies. The growth in the real domestic product picked up further in the third quarter of 2004 to an annualised rate of 5,5 %. This is the fifth successive quarter in which the real growth has accelerated (SARB, 2004).

The money-market interest rate generally moved at the same trend as the repurchase rate that has been set by the Reserve Bank. The money-market rate declined slightly after a reduction in the repurchase rate in August 2004, after which it moved along sideways. Occasionally, when the exchange rate of the rand strengthened or when lower than expected inflation data were released, the more forward-looking, money market rates indicated expectations of further policy easing in the near future (SARB, 2004).

The favourable economic conditions were accompanied by buoyant commodity prices and as a result improved South Africa's terms of trade. This resulted in a moderate improvement in South Africa's export performance and accordingly a somewhat smaller deficit on the current account of the balance of payments in the third quarter of 2004. At the same time a net inflow of investment capital was recorded to an amount exceeding the deficit on the current account.

Food Price Inflation in South Africa: 1991 – 2004

In this section, a broad overview is presented of general inflation trends in South Africa as measured by the Consumer Price Index (CPI). The CPI measures how the price level of consumer goods and services purchased by households has changed between two points in time.

Currently, Statistics South Africa (StatsSA) compiles and disseminates a number of different CPI aggregates, each serving a number of different analytical purposes. The various CPIs calculated for South Africa include:

- **Consumer Price Index**: This index is used to calculate the official or headline rate of inflation and consists of price increases for all goods and services in the main metropolitan areas of the country.
- **Core Index**: Certain items are excluded from the CPI basket on the basis that their prices are highly volatile, subject to temporary influences, or affected by government policies. These exclusions are fresh and frozen meat and fish, fresh and frozen vegetables, fresh fruit and nuts, interest rates on mortgage bonds and overdrafts/personal loans, and changes in VAT and assessment rates, and a few other items. The Core Index is used to calculate core inflation and is a reflection of the underlying inflationary pressures in the economy.
- **CPIX**: The CPI excluding interest rates on mortgage bonds (CPIX), a measure designed to assist with inflation targeting.
- **CPIF, or the Food Price Index**: Only the food items appearing in the CPI basket are included. The CPIF is regarded as useful to assess the impact of price increases on poor households since food is the single biggest item in the total basket for the CPI.

For the purpose of this Report, the CPIF is of relevance and is composed as shown in Table 1. In the rest of this section a long term view is taken about trends in inflation and food price inflation in particular. This provides the background for the detailed discussion of trends in retail prices and farm-retail margins in the rest of the Report.

Table 1: The weighting of food items in the CPI

Product	Weight
CPI	
CPI, excluding food	79,01
Food (total)	20,99
Grain products	3,81
Meat	5,66
Fish and other seafood	0,69
Milk, cheese and eggs	1,96
Fats and oils	0,76
Fruit and nuts	1,09
Vegetables	2,00
Sugar	0,50
Coffee, tea and cocoa	1,07
Other	3,45

Source: *Statistics South Africa*

Inflation trends

The Consumer Price Index for all items, also termed the general index, displayed the following trends during the period under review. During the early 1990's the *CPI all items*, showed a value of 15 % after which it consistently followed a decreasing trend and reached its lowest level towards the end of the 1990's, at nearly 2 %. During the escalation in food prices during late 2002 the CPI for all items followed the same trend, as it increased to nearly 12 % over a period of 3 months, after which it took another three months until it had subsided to its previous levels and continued with its downward trend.

The Consumer Price Index of Food (CPIF) followed a similar trend, yet variations in the trend were a lot greater. The early 1990's, or more specifically July 1992, saw an escalation of nearly 30 % of this index. This was followed by an investigation into the rise of food prices by the Board on Tariffs and Trade. The CPIF peaked at that time and thereafter fell to 2,28 % in September 1993. The CPI-food rose again to an 22 % annual growth in September 1994, probably caused by some pre-election jitters and then fell again to reach a negative growth rate or deflation in November 1995, of – 1,54 %. Thereafter the trend followed a relatively constant variation, between 12 % and 3,55 % of annual growth. This changed during 2002 when the annual growth in the CPIF rose to 19,8 % during October. This sudden rise in food inflation prompted another investigation into the rise in food prices. The CPIF remained relatively constant throughout 2004, falling ever so slightly as the year progressed. The CPIF fell from 15,51 % during January of 2003 to 2,73 % during January 2004. The average annual change during the 2004 remained relatively constant. The annual change in the CPIF averaged around 2,73 % for the entire year, with its largest change occurring during February 2004, 3,28 %, and its smallest during December 2004, 1,50 %.

Not surprisingly, the CPI-excluding food followed a similar trend to that of the CPI all items, in that it continuously varied with its main peaks in annual growth occurring during May 1995, November 1998 and November 2002.

The first half of 2004 saw inflation fears being fuelled by the upward trend in the price of crude oil. The OPEC cartel, however, decided that the daily output of oil would be increased to stimulate world demand (SARB, 2004). The inflation levels during 2004 where lower than was expected and as a result the South African Reserve Bank decided that it could lower the repurchase rate even further, and reduced it by 50 basis points. The rand depreciated somewhat due to this reduction in the repo rate. In general the inflation for goods remained low, contributing to the inflation process. Firstly, the production prices of imported goods declined by 0,3 % on the year to October 2004. This can mainly be attributed to the strengthening of the exchange rate. The PPI of domestically produced goods recorded a year-on-year rate of price inflation of 2,7 % in October of 2004. This level was slightly lower than the CPIX on goods prices (Quarterly Bulletin, December 2004). The CPIX inflation on services was, however, closer to 6,3 % and as a result it pushed the total CPIX to a level of around 4,2 %. This was higher but still within the target rate of 3 to 6 per cent, set by the Reserve Bank.

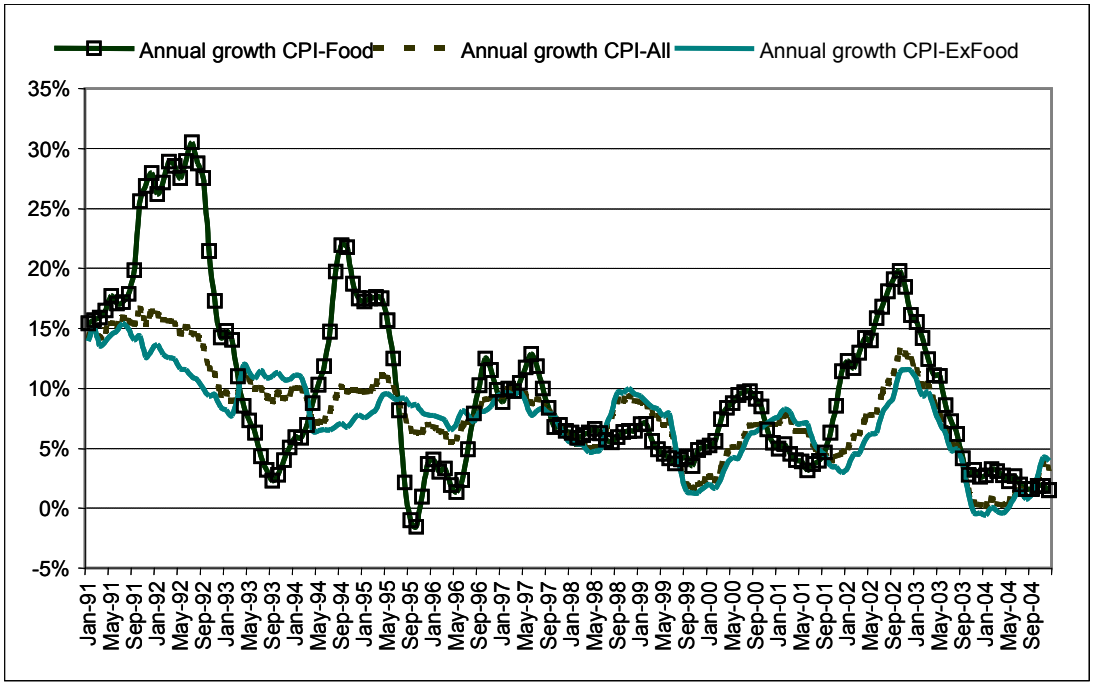

Figure 1: Change in CPI, CPI-food and CPI ex-food: January 1991 – December 2004.

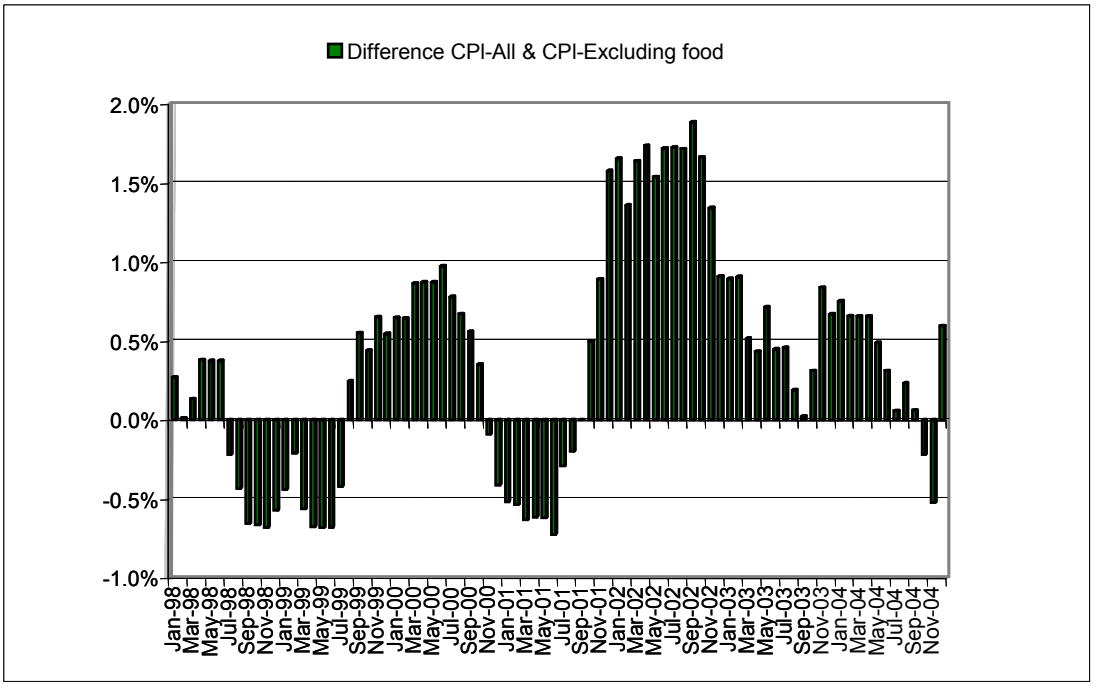

Figure 2: The difference between annual increase in CPI-all and CPI ex-food: Jan 1998 Dec 2004 (% points)

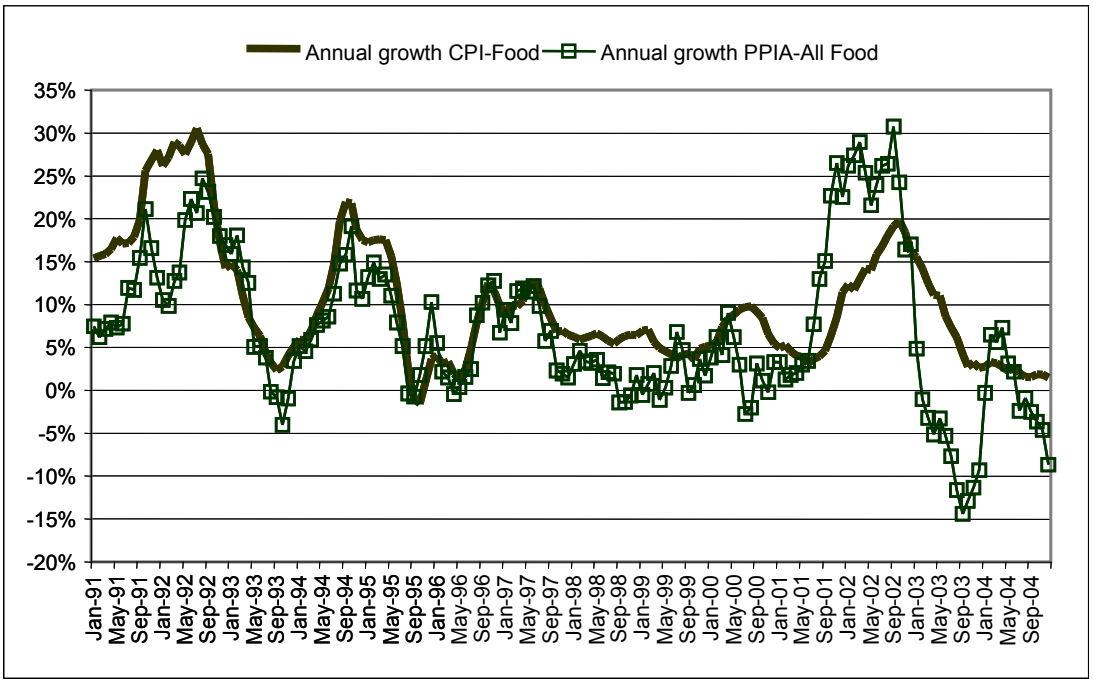

Figure 3: Annual change in CPI-food and PPIA-food: January 1991 to December 2004.

Unpacking food price inflation for different commodity groups

The next series of figures (Figures 4 to 7) are self-explanatory and provide more detailed analyses of the trends in the CPI and PPI for selected food groups, namely grain products, fruits and nuts, tea, coffee and sugar, and processed and unprocessed food products. Most of the commodities and food products show a similar trend with relatively stable and low inflation between July 1996 and November 2001. The high growth rates in the CPI and PPI series in 2002 are noticeable in all the commodities except for vegetables and fruits and nuts.

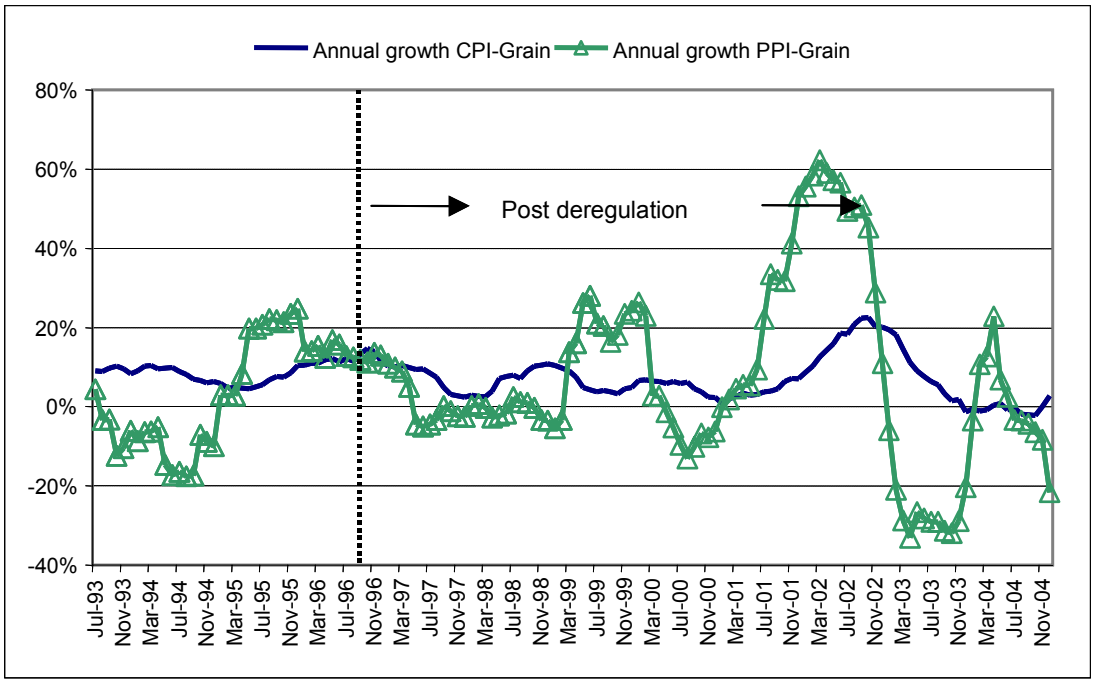

Figure 4: PPI and CPI for grain products: July 1993 to December 2004.

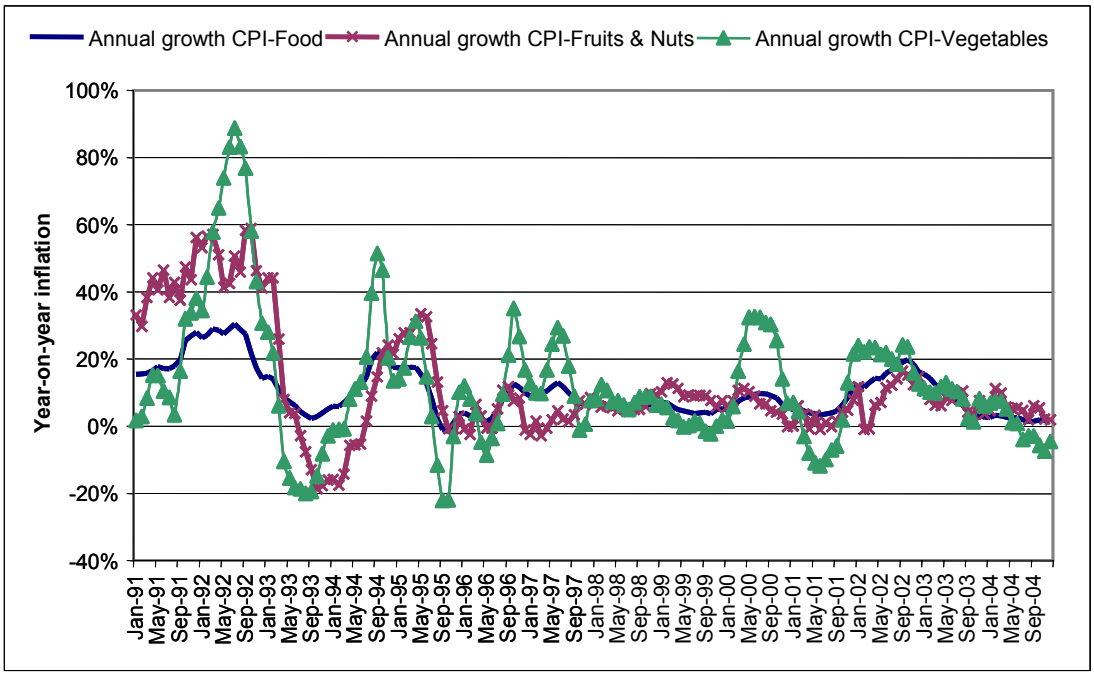

Figure 5: CPI for vegetables and fruits and nuts: January 1991 to December 2004.

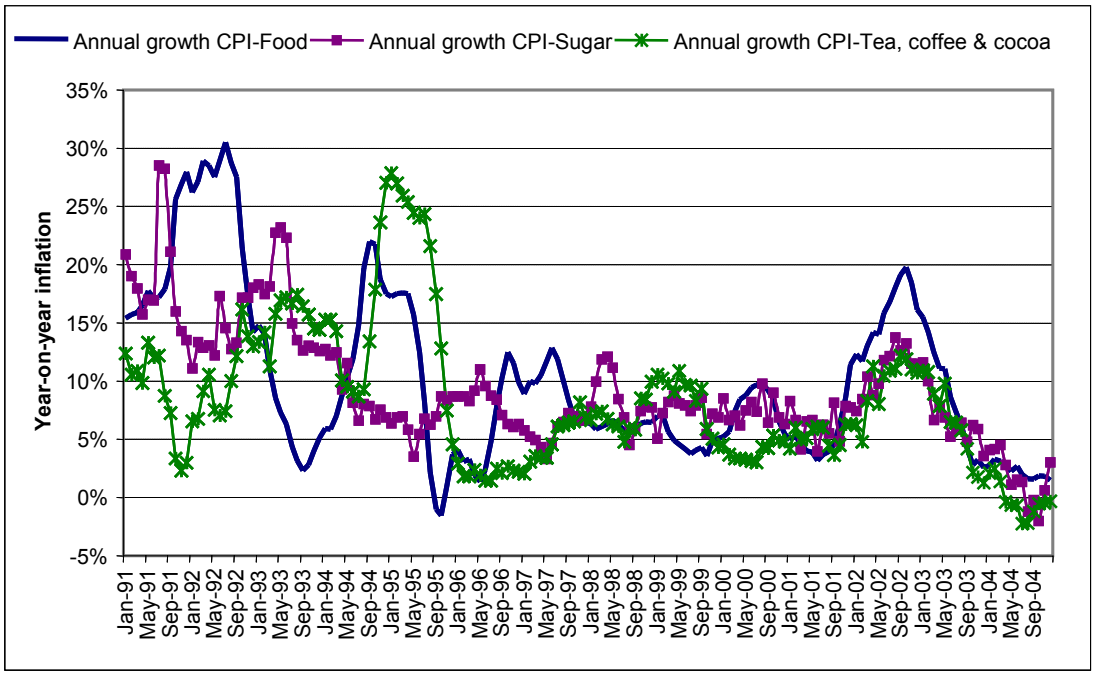

Figure 6: CPI for sugar and coffee, tea and cocoa: January 1991 to December 2004.

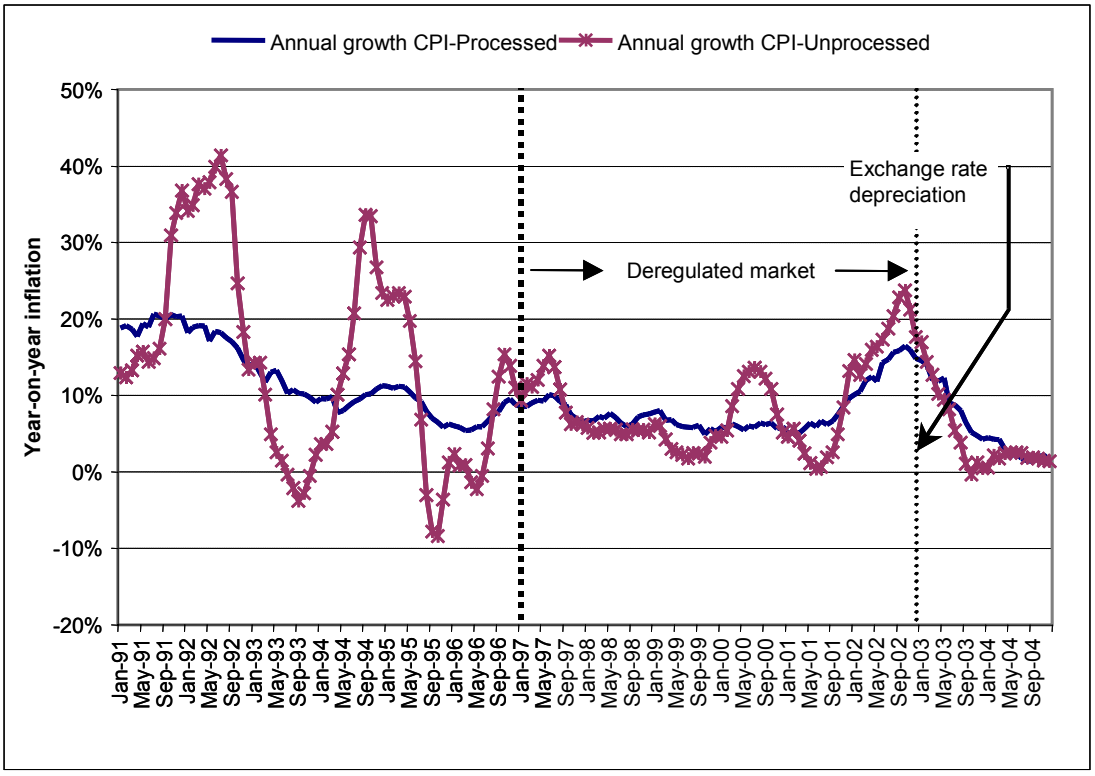

Figure 7: CPI for processed and unprocessed food products: January 1991 to December 2004.

Food price inflation and rural communities

When one unpacks the various CPI series in the StatsSA data base, an interesting dichotomy between food price inflation in rural and urban areas emerges. The Consumer Price Index for food (for most commodities) in rural areas is generally higher, with inflation (year-on-year) being generally higher than in urban areas (except for September 2003). This is illustrated in Table 2 and Figures 8 to 11.

Table 2: The relationship between food price inflation in rural and urban areas

	January 2003		**September 2003**	
	Urban	**Rural**	**Urban**	**Rural**
CPI-food	129,7	137,5	131,7	138,3
Inflation: Total Food	15,1 %	22,5 %	4,2 %	2,2 %
Inflation: Grain Prod	19,0 %	30,4 %	3,3 %	–3,2 %

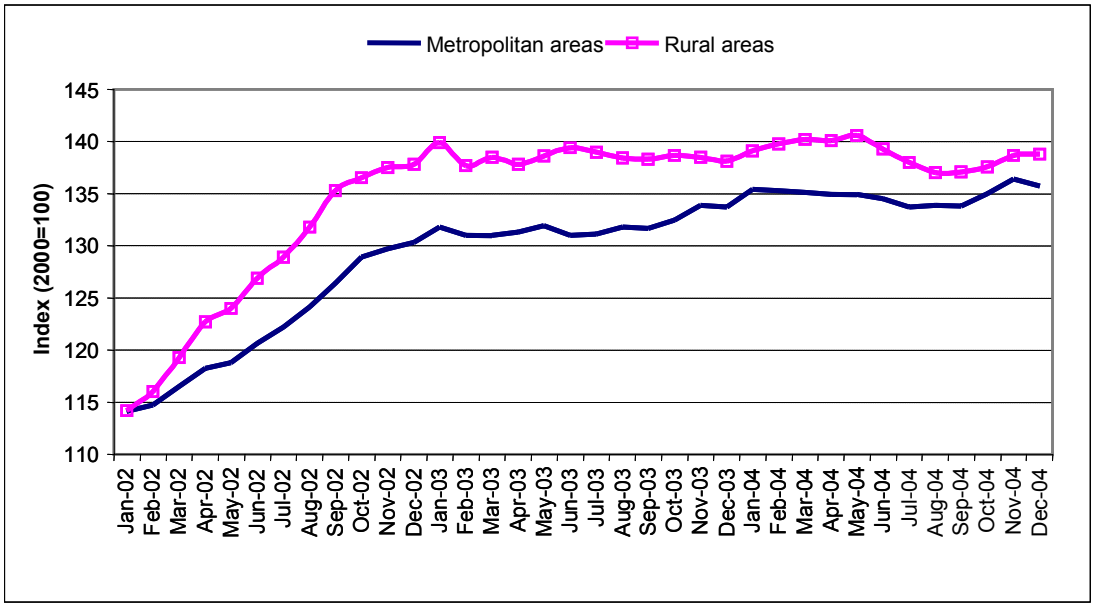

Figure 8: CPI food for rural and metropolitan areas: January 2002 to December 2004.

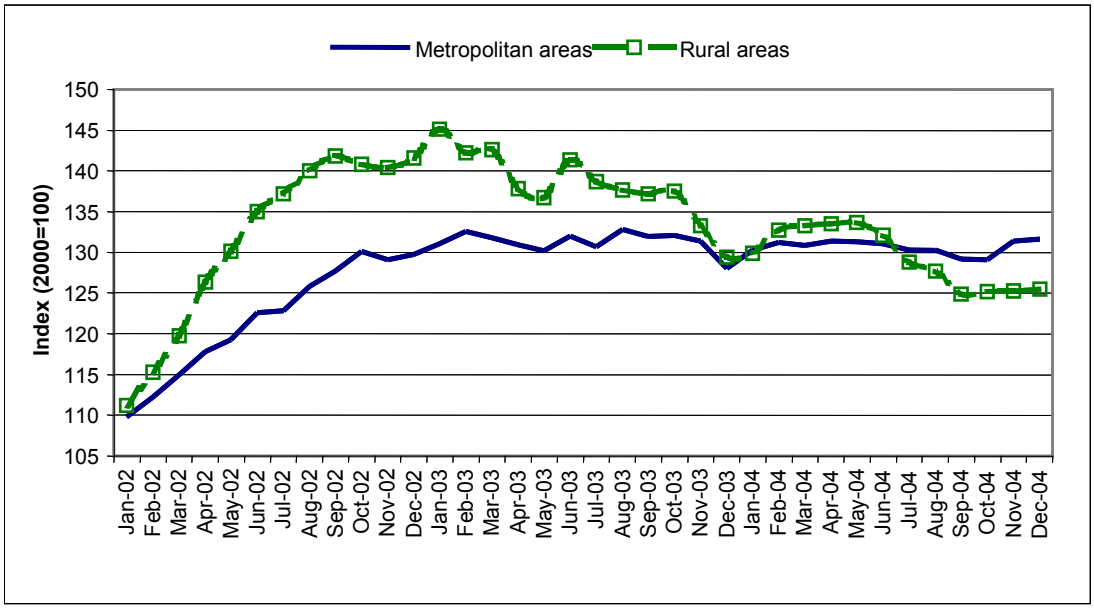

Figure 9: CPI for grain products for rural and metropolitan areas: January 2002 to December 2004.

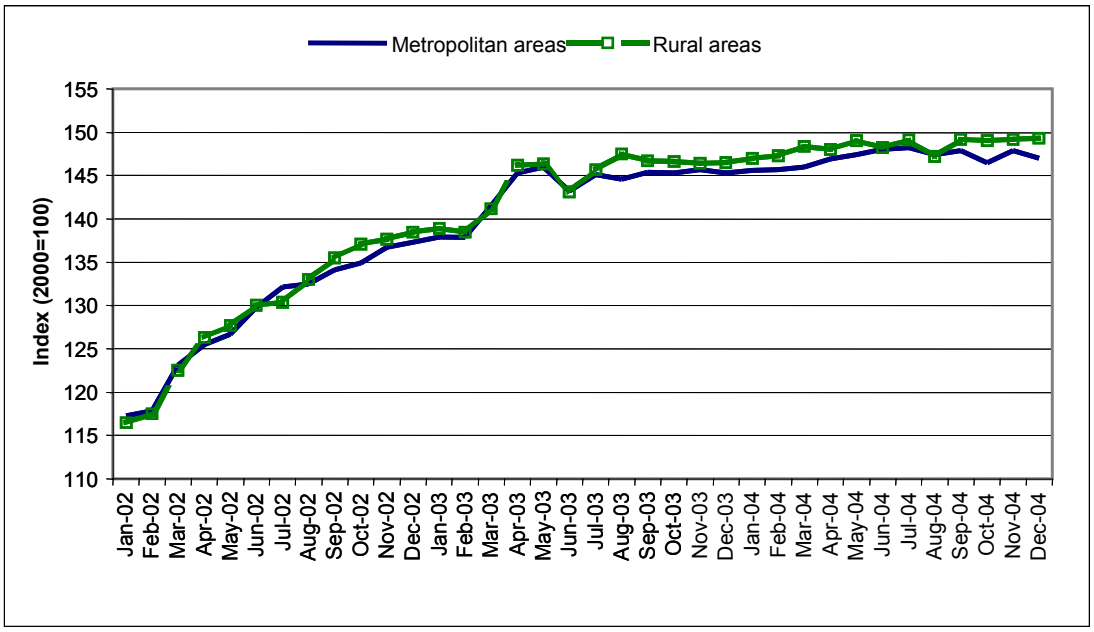

Figure 10: CPI for dairy products and eggs for rural and metropolitan areas: January 2002 to December 2004.

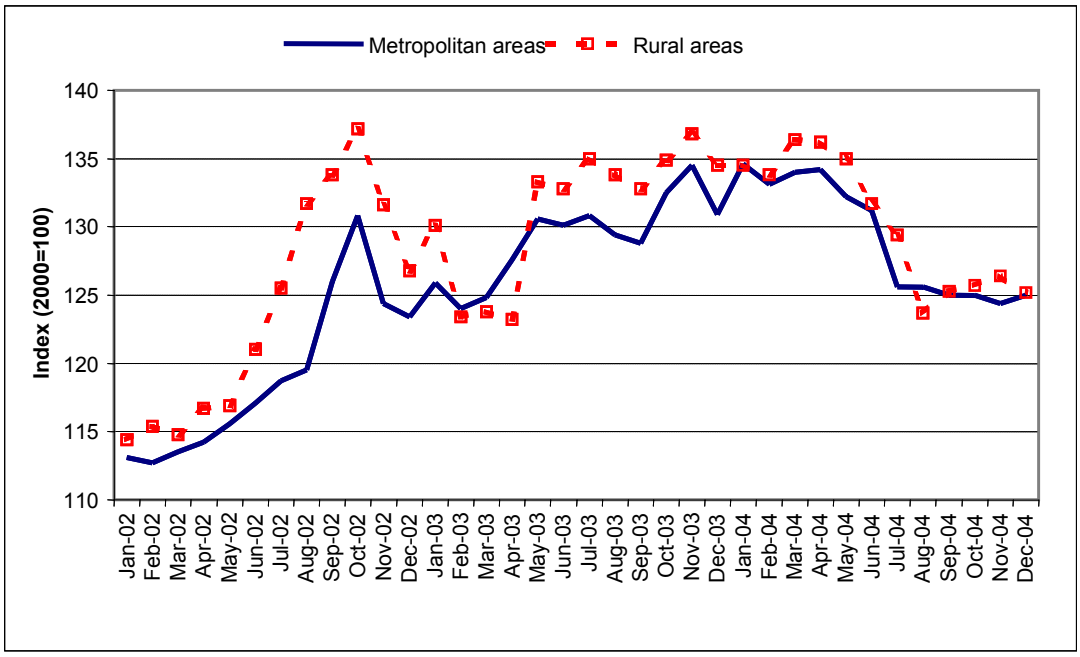

Figure 11: CPI for vegetables for rural and metropolitan areas: January 2002 to December 2004.

3. The farm value, farm-to-retail price spread and the retail value of the products contained within the food basket

Consumers for the most part do not buy food directly from farmers. The price consumers pay for food is almost invariably higher than that received by farmers. The farm-to-retail price spread is the difference between what the consumer pays and what the farmer receives. The price spread also provides some indication of the various activities that take place along the supply chain until the product reaches the consumer's table – also known as the marketing bill. The annual food marketing bill is a descriptive macro-economic measure showing the absolute and relative size of aggregate expenditure for farm-originated foods, marketing costs, and farm values. Changes over time in the marketing bill may result from changes in food prices, the quantity of marketing services (the amount of transportation, processing, and distribution by food sector firms), or the product mix or product quantities.

This section has been designed with the intention of calculating and explaining the farm value of each category, the farm-to-retail price spread of each category as well as the eventual movement of the retail price of the individual products. A specific section has been included to describe the costs of producing the various products and how these costs have changed over time. With consumers mostly worried about retail prices and farmers being more directly affected by farm prices, why would either care about price spreads.

For producers the calculation of price spreads will help marketing their products and also at the same time improve their knowledge of what the consumer wants since retail prices are critical in the calculation of the price spreads. Producers can also measure the efficiency of the food marketing system and thereby ensure that they get their fair share of the consumer expenditure on food products. Consumers are also concerned about the efficiency of the marketing system since they would prefer lower prices. In order to develop the process of calculating farm-to-retail price spreads we need to understand a few key terms. One critical aspect is coming up with a definition of the farm and retail product so that they can effectively be compared.

- **Farm value:** The farm value is the value of the farm products equivalent to food purchased by or for consumers at the point of sale by farmers. Farm values are calculated by multiplying disappearance quantities on a farm-weight basis by prices received by farmers. The farm value does not include the value of by-products. The **farm value share** is computed by dividing the farm value by consumer food expenditure, and is reported as a percentage. Over time, this share reflects relative changes in expenditure, for farm products, food marketing services, and retail food products. The marketing bill farm value share is lower than that reported for the market basket because the bill includes expenditure for away-from-home foods. These foods require a higher degree of preparation than is generally the case for at-home foods. Therefore, higher expenditure for additional marketing services, such as labour, are required, resulting in a smaller marketing bill farm value share.

- **Farm-to-retail price spread:** The farm-to-retail price spread is the difference between what the consumer pays for the retail food product and the value of

the farm products used in that product. Price spreads measure the aggregate contributions of food manufacturing, distribution, wholesaling and retailing firms that transform farm commodities into final food products. The values of extraction rates as well as those of by-products produced during processing are all taken into account.

- **The market basket:** The market basket concept is used to analyse the changes in grocery store food prices by separating the two major components of food prices, namely the prices received by farmers for food commodities and charges for marketing services. The South African market basket contains a number of commodities that are generally purchased by the everyday consumer for consumption at home. The retail values or retail prices of the different commodities are those, which the consumers pay at retail level when they purchase the products. These are the prices from which the Consumer Price Index is derived.

3.1 Farm value

The farm value is the measure of the return, or payment, which the farmers receive for the farm-product equivalent of retail food sold to consumers. The market basket farm value is an index of prices that farmers receive for products later used for food. Before the farm value can be calculated, it is necessary to estimate the quantity of a farm product that must be purchased from the farmer to sell a unit of the product at retail. The farm value is calculated by multiplying the farm price by the quantity of farm product equivalent of food sold at retail. The farm value usually represents a greater quantity than the retail unit, because the foodstuffs that farmers produce lose weight through storage, processing and distribution (USDA, 1997).

3.1.1 Farm value – Maize meal, super and special

The farm value of super maize meal decreased from an average value of R2420,56 per ton in 2002 to R1816,89 per ton for 2003. This is a decline of 24,93 %. During 2004 the farm value of super maize meal rose to a maximum of R1962,72 per ton during June and then slowly fell towards the end of the year to reach R1248,94 per ton in November. December 2004 saw the farm value move up just a bit to end the year on R1341 per ton. The average farm value of super maize meal taken for the entire 2004 is R1502,81 per ton. This is a decrease of R314,08 per ton or in percentage terms a decline of 17,32 %.

The farm value of special maize meal was R1016,52 per ton during January of 2004. Thereafter the value fell slightly to R994,92 per ton during February, but then rose at a relatively constant rate to reach its peak for the year at R1558,70 per ton during June 2004. As expected, with the low maize prices, the farm value gradually subsided towards the end of the year and the value reached R1064,98 per ton during December. The average farm value for 2004 was R1256,50 per ton, in general a relatively accurate reflection of the year's movements.

3.1.2 Farm value – Bread, White and Brown

The farm value for wheat has to be divided into two main components, namely white bread and brown bread.

The white bread sector had a farm value of R1966,92 per ton during 2003 compared to the R2180,96 per ton from the previous year. The movement of this farm value indicated a drop of 9,98 % over this period of time. The farm value for 2004 did not look very promising as it had a value of R2072,32 per ton during January, after which it rose slightly to R2114,42 per ton. Thereafter it just fell, as the producer price fell, and ended the year on R1501,25 per ton. The average farm value, taken over the twelve months of 2004, had a value of R1855,87 per ton.

The brown bread sector showed a similar trend to that of white bread. The farm value for 2003 averaged R1845,51 per ton compared to that of 2002, which was R2046,33 per ton. This was a 9,8 % decrease in the farm value from 2002 to 2003. During January 2004 the farm value of brown bread equalled R1944,44 per ton. This value as that of the farm value of white bread followed an ever-decreasing trend to reach R1408,58 per ton during December 2004. Again this low value can be attributed to the fall in the producer price of wheat. The average farm value for 2004 had a value of R1741,31 per ton, which is just lower than the average farm value of brown bread.

3.1.3 Farm value – Beef and beef cuts contained in the food basket

There are, in South Africa, no formal publications on the methodology as to how the farm value and the farm-to-retail price spread of beef are to be calculated. We have therefore, based on the methodology used by the Economic Research Service (ERS) of the USDA, taken the initiative and developed a sound methodology to accomplish this. This methodology is explained in the following section.

The ERS calculates price spreads based on a standard animal, cut up in a standard way and sold in a standard form through the retail store. The total value of the animal at the farm is compared with the total value of the animal at the retail level. The farm value of beef was calculated subject to the following assumptions.

The first assumption was that the average slaughtering weight of one head of cattle was equal to 220 kg. Of these 220 kg, 42,24 kg were made up of parts, which did not form part of any direct food related items, and include off-cuts, fats, kidneys and bones. The second assumption is that certain weights have been allocated to the different types of cuts contained within the food basket. The cuts that make up the beef side of the food basket include rump steaks with a weight of 16,72 kg, sirloin steaks with a weight of 11,22 kg, topside beef with a weight of 16,94 kg, chuck with a weight of 23,09 kg and brisket with a weight of 17,6 kg of the total 220 kg carcass.

The farm value of beef had been calculated by determining firstly the average weight of the specific cuts in question. This would mean that from a 220 kg carcass weight, 85,57 kg made up for the cuts represented in the StatsSA's food basket. To calculate the farm value the weight of the cuts, 85,57 kg was multiplied by the slaughter price (per kilogram) obtained from the Department of Agriculture's data base.

For 2002, the farm value had the following trend. At first, it increased slightly, then decreased and then increased rather sharply towards the end of the year. The average farm value for 2002 was R1007,80 per selected cuts of the carcass. During 2003 it followed much the same pattern in that the farm value fell at first and then also rose again slightly towards the end of the year to reach an average value of R1076,22 per selected cuts of the carcass. For 2004 the producer prices were only used up to the end

of June. These six months saw a relatively constant farm value with only a very slight fluctuation occurring during March and April of that year. The average for the first semester of 2004 was R1176,94 per selected cuts of the carcass.

3.1.4 Farm value – Poultry, Eggs and Fresh Milk

Other animal products include items such as milk, butter, cheese, eggs and poultry meat (poultry products). The producer realisation price of the poultry products followed a similar trend to that of the retail price for that category of products. The price rose towards the end of 2002 after which it then fell slightly and remained relatively constant throughout the year. Towards the end of 2003 it then rose again and reached its highest level in December at R12,34 per kilogram. Eggs followed a very similar trend as did the other poultry products. Again the producer price of eggs rose towards the end of 2002, and then fell slightly during the early part of 2003 after which it reached its highest price in December of 2003. The nominal producer price of eggs peaked at R5,81 per dozen during December 2003.

The producer price of the dairy products consists of the basic price of milk. The price movements of milk were as follows. At first, as was the case with all of the previous products, the producer price increased and reached its highest level in June 2003. After it had reached a level of R2,02 per kilogram its value declined and fell to R1,84 per kilogram in December of 2003. Thereafter the price remained relatively constant at around the R1,90 per kilogram of milk.

3.1.5 Farm value – Vegetables

The vegetable category is comprised of all the vegetables that are contained within the market basket. These include potatoes, onions, tomatoes, green beans, cabbage, carrots, pumpkins and gem squashes. Many of the products that have been included in the market basket have a farm value, which is equal to the producer price. The reason for this being that not a lot of value has been added to the products and therefore they almost remain the same. An example of this would be a 1 kg bag of apples or a 10 kg bag of potatoes. Some of the vegetables that are contained within the food basket indicated a decreasing trend in the producer prices based on the averages, whilst other vegetables followed an increasing trend in producer prices over the exact same period of time. This can be attributed to a number of different factors, like supply and demand, the level of rainfall and the producer cost realisation.

The producer price of potatoes followed a decreasing trend over the period which was analysed. During 2002 the producers received R1956,22 per ton compared to R1927,93 per ton that they received in 2003. 2004 saw the producer price of potatoes drop even further. Producers received an average of R1784,02 per ton during the first half of 2004. This changed dramatically during the second half of the year when the price of potatoes fell and averaged around R1261,63 per ton.

Tomatoes on the other hand, followed an increasing trend. The producer price of tomatoes increased by nearly 31 % during 2002 and 2003. The prices had increased from an average of R2126,22 per ton during 2002 to an average of R2796,46 per ton during 2003. In 2004 the price of tomatoes continued on an upward trend for the first two quarters of the year when it reached an average of R2926,65 per ton. Thereafter

the producer price of tomatoes also fell and averaged around R2283 per ton for the final months of 2004.

Green beans followed a very similar trend to that of tomatoes as their producer price also increased during the period in question. The producer price increased from R2803,28 per ton during 2002 to R3629,79 per ton during 2003. Green beans, like potatoes followed an upward trend and averaged R3664,89 per ton during the first half of 2004. The third quarter of 2004 saw the producer price of green beans average R4325,51 per ton.

The average producer price of carrots also followed an upward trend during the period under review. The producer price of carrots increased from R1342,98 per ton in 2002 to R1371,42 per ton in 2003. This was an increase of 2,13 %. 2004 saw the producer price of carrots declining. The price fell to an average of R1214,67 per ton during the first half of 2004 and then even further to an average of R1126,31 per ton during the third quarter of 2004. This was a decrease of 8 %.

The average producer price of cabbage followed a very similar trend to that of carrots and green beans, and also increased from 2002 up until 2003. The producer price displayed an increase of 7,24 %, from a level of R778,97 per ton to a level of R839,81 per ton over that period of time. The first and second quarters of 2004 saw the price falling as it averaged R763,54 per ton for both of those periods. Thereafter the price fell even further to average R669,37 per ton for the third quarter of the year.

Squashes' average producer price indicated an increasing trend over this same period of time. The average producer price rose from R1332,58 per ton in 2002 to R1344,03 per ton in 2003. This was an increase of 0,8 %. The 2004 price trend was as follows: At first the average price for the first quarter for squashes fell to R1338,72 per ton. Thereafter it increased and averaged R1926,49 per ton for the third quarter of 2004.

The average producer price for pumpkins fell during the period in question, from R944,14 per ton during 2002 to a value of R 819,04 per ton during 2003. This was a decline of 15,3 %. During 2004 the average price of pumpkins fell even further to R769,50 per ton for the first half of the year and then rose to an average of R806,59 per ton during the third quarter of 2004.

Table 3 presents a brief summary of the average year-on-year prices of the vegetables contained within the food basket. Producer prices are calculated as an average of prices received from all of the country's fresh produce markets over a period of twelve months.

Table 3: Average producer prices per ton, for various vegetables

Item	2002	2003	2004
Tomatoes	2126,22	2796,46	2926,65
Green beans	2803,29	3629,79	3664,89
Carrots	1342,20	1371,47	1214,67
Cabbage	778,97	839,81	763,54
Squashes	1332,58	1344,03	1338,72
Pumpkins	944,14	819,04	769,60

Source: *DoA, 2004.*

3.1.6 Farm value – Fruits

Apples, bananas and oranges were the three main fruit types that are contained in the market basket. The fruits category will be split up into the various products, which are contained in the market basket. These products include apples, oranges and bananas. Apples were measured with a quantity of 1,5 kg, compared to the 1 kg quantities for both bananas and oranges. It should, however, be noted that the same principle as discussed in the vegetables category, also applies to the fruits category. Many of the products don't have a farm value, or their farm value is represented by the producer price, as little or no value is added to the products in their food supply chain.

Apples were the only fruit that experienced a decreasing trend in price during the period under review. The average producer price fell from a level R2584,64 per ton during 2002 to a level of R2451,17 per ton during 2003. The first half of 2004 saw the average producer price of apples increase to R2503,59 per ton. This could, however, be misleading as the price rose at first to reach R3304,13 per ton, after which it fell to R2167,70 per ton during June of 2004. The average price for the third quarter of 2004 increased from June's lowest level to equal R2383,89 per ton.

Oranges had much the same trend and the producer price rose towards the end of the year and then fell again during the harvesting season. The highest monthly producer price that oranges reached was R1935,59 per ton and this occurred during December 2003, whilst the lowest price, R703,28 per ton, was realised in June 2002. Since oranges are a winter crop they follow a continual cycle of a lower price with a higher supply during winter, and a higher price and lower supply during the summer months. The severity of these fluctuations can be attributed to environmental factors such as the level of rainfall during the summer months and the extreme differences in temperature during April / May when the orange trees are in full blossom.

Banana's producer price varied during the period under review, peaking during December of 2002 when they were selling at R3036,27 per ton. Thereafter the price fell and remained relatively constant, with an average of R2215,60 per ton for 2003. 2004 saw the producer price of bananas rise above the three thousand rand per ton level with the peak occurring during April of 2004 at R3632,06 per ton. Thereafter the price fell again, reaching below the three thousand rand per ton level, after which it reached its lowest level of R2472,40 per ton during September.

3.2 Retail value

The retail value used in price-spread calculations is quite critical. For the purpose of the calculations in this Report we have made use of the national average retail prices as recorded at the major retail stores for a number of identified products. These prices were obtained from an electronic database kept by AC Nielsen, which is currently used by the NAMC to monitor food prices. Weights, volumes and product type are all carefully recorded to make sure that it is compared with the appropriate farm product.

3.2.1 Retail value – Maize meal: Super and Special 5 kg

According to retail sale statistics the 5 kg packet dominates sales of maize meal. The retail price has also been collected on a weighted average across the different brands for this product class.

The retail value of super maize meal 5 kg, showed the following price movements during 2004. During January 2004 it had a retail price of R15,16 per unit. This then increased to R17,74 per unit during April, its highest value for the year. Thereafter the price fell at a constant rate and ended the year at R14,04 per unit. This decline in the retail price can largely be attributed to the fall in the producer price over the same period of time. The price movement of super maize meal had a standard deviation around the mean of R1,37 per unit and a mean value of R15,19 per unit.

The retail value of special maize meal followed a similar trend as that of super maize meal. The only difference is that the price of special maize meal is generally lower than that of super, and that this usually differs by a constant margin. Special maize meal, 5 kg, fetched a price of R11,34 per unit during January of 2004, the retail price then peaked at R14,76 per unit during March 2004, and thereafter consistently decreased in value during the year. December saw the price of special maize meal equal R10,47 per unit. The price showed a standard deviation of R 1,57 per unit and a mean value of R12,09 per unit which is R3,10 per unit lower than that of super maize meal.

3.2.2 Retail value – Bread, White and Brown

The brands that sell the most, according to AC Nielsen barcode data, are Albany sliced brown and white bread and Blue Ribbon sliced brown and white bread. The data that has been used in this analysis is specifically centred on these products. Again a weighted average has been used to calculate the retail price for bread. The following section will look at the retail price movements of these bread types during 2004.

The retail price of white bread increased in value during 2004. In January a loaf of sliced white bread cost R4,38 and in December the same loaf cost R4,59. The price increase was, however, not constant as the price increased at first to reach R4,49 in July, after which it fell to R4,39 during September, only to rise again at the end of the year. White bread cost the most during December, at R4,59 per loaf. The mean value of the white bread price for 2004 is R4,47 with a standard deviation of R0,06 or 6 cents.

The retail price of brown bread also followed an increasing trend throughout the year. During January a loaf of brown bread on average cost R3,73. This increased during the year but again not at a constant rate. The retail price of brown bread reached its

peak during December when it cost R4,04 per loaf. The standard deviation of a sliced loaf of brown bread for 2004 is R0,08 or 8 cents from the mean, whilst the mean value of 2004 for a sliced brown bread equalled R3,95. This is 52 cents lower than the mean retail price of white bread.

The monthly average retail value of white bread is calculated by using the extraction rate and the number of loaves that can be produced by using one ton of flour. One ton of wheat produces 0,76 tons of white bread flour, which is the so-called extraction rate. From this 1 ton of flour, 2135 loaves, weighing 700 grams each, can be baked. To calculate the retail value the following has been done: The two extraction rates are multiplied, 0,76 x 2135, leaving us with the number of loaves per ton of wheat. The next step is then to multiply the number of loaves with the weighted average retail price of white bread, resulting in a final retail value of white bread loaves for every one ton of wheat. If the producer price of wheat was R1200 per ton, then it can be said that R1200 of wheat can make 1622 loaves of white bread. The retail value of white bread increased dramatically during 2002 from R5873,81 per ton during January to R7545 per ton in December. Thereafter it levelled off and remained relatively constant with a standard deviation of R182,63 per ton during 2003 and R103,11 per ton during 2004.

The monthly average retail value of brown bread is calculated in the same way. The only difference is that the extraction rate differs. 1 ton of wheat produces 0,81 tons of brown bread flour and from 1 ton of flour, approximately 2275 brown bread loaves can be baked. The number of loaves for every ton of wheat is 1842 and this multiplied by the weighted average annual retail price of brown bread, then gives the retail value. The retail value of brown bread rose throughout 2002, from a value of R6265 per ton of wheat during January to R7407 per ton during December. It then remained relatively constant for 2003 and 2004 peaking at R7438 per ton during December 2004. The retail value had a standard deviation of R193,98 per ton for 2003 and R162,69 per ton for 2004.

3.2.3 Retail value - Beef, selected cuts of the food basket

The food basket contains five different cuts of beef. These are brisket, chuck, rump, topside and sirloin. The prices of brisket and topside beef have been taken from the ACNielsen barcode data, whilst the retail prices of the other cuts were obtained from StatsSA data. The average retail prices of the meat products taken from ACNielsen have been determined according to the weighted average method. The retail value for the various cuts was calculated by multiplying the weight for the specific cuts by the retail price of that cut during the specific month. Again the average weight per cuts as a percentage of the entire carcass was used. The final annual value was calculated by adding the various retail values of the specific cuts for every month and then dividing this value by the number of months.

As mentioned in the previous section, the retail price of choice beef is made up of a number of components. These include the retail prices of rump steak, sirloin, topside mince, brisket, chuck and stewing steak.

Red meats are classified according to the age, fatness, conformation, damage and sex of the animals. According to criteria set out by the various meat inspection organisations, age plays one of the most important roles in classifying the grade of a carcass.

Table 4: Classification of livestock

Age of animal	Class
0 teeth	A
1–2 teeth	AB
3–6 teeth	B
More than 6 teeth	C

Source: *RMAA, 2004.*

The amount of fat that the carcass contains also plays a role in the grading of the carcass. A carcass with no fat will receive a grade 0, a very lean carcass a grade 1, a lean carcass grade 2, medium carcass a grade 3, a fat carcass a grade 4 and an over fat carcass a grade 5. In extreme cases one will also find an excessively over fat carcass which will be classified as grade 6 (RMAA, 2004).

A standard beef carcass can be dissected into the various cuts. However, the main cuts that will be analysed in this section include, rump steak, sirloin, chuck, brisket and topside beef. When a standard carcass of 220 kg is dissected, it is made up of the following components. Rump accounts for 7,6 % of the entire carcass, sirloin for 5,1 %, topside 7,7 %, brisket 8 % and chuck 10,8 %. The rest of the carcass is made up of the remaining components, which do not form part of the food basket.

The retail price of brisket followed the following price trend. The retail price remained relatively constant throughout, with a mean of R23,76 per kilogram and a standard deviation of R1,50 per kilogram. The product's retail price peaked during March when the product reached R27,15 per kilogram. The lowest price received was R21,73 per kilogram during July 2004.

The retail price of chuck remained relatively constant throughout the year, never becoming cheaper than R24,66 per kilogram and at the top end of the scale never becoming more expensive than R25,88 per kilogram. The mean retail price of chuck for 2004 was R25,06 per kilogram with a standard deviation of R0,41 per kilogram or 41 cents.

The retail price of rump for January 2004 was R44,25 per kilogram, thereafter it rose slightly to peak during March at R45,23 per kilogram. The retail price then fell and in December when a kilogram of rump steak could be bought for R42,85 per kilogram. The mean retail price of rump steak for 2004 had a value of R43,86 per kilogram with a standard deviation of R1,07 per kilogram.

The retail price of sirloin also remained relatively constant throughout the year. R43,81 per kilogram is the highest average price that a consumer would have to pay during 2004 and this occurred in May. The lowest average retail price for sirloin was recorded during September when it equalled R40,09 per kilogram. The mean retail price had a value of around R41,39 per kilogram with a standard deviation of R1,01 per kilogram.

Topside mince had a mean value of R24,03 per kilogram with a standard deviation of R1,34 per kilogram. The highest retail price that this product fetched during 2004 was

R26,88 per kilogram and this occurred during December. The lowest average retail price was recorded during July and it equalled R22,05 per kilogram.
The average retail value of the specific cuts for 2002 was R2747,45 per carcass and R2864,58 per carcass for 2003, while 2004 had a retail value of R2778,04 per carcass. The average retail value of beef had a relatively constant trend during the period under review. When looking at the monthly figures it can be seen that the value fell during the first part of 2002, then rose rather steeply towards the end of 2002, and as expected reached a maximum during January of 2003. The retail value fell from R3206,86 per carcass, its maximum value, to R2700,38 per carcass, its minimum value during November 2003.

3.2.4 Retail value – Dairy, Mutton, Pork and Poultry

A similar analysis has been conducted on the retail price movements of the above-mentioned products. Specific focus has been given to dairy products, as this is a highly complex structure.

The retail prices of the dairy products, milk, butter and cheese, indicated the following trends. Cheddar cheese's retail price rose to its highest level during April 2003 when it reached R38,07 per kilogram. Thereafter it fell again to around the R36 per kilogram level, only to rise again in December to R37,69 per kilogram. 2004 saw the average retail price of Cheddar cheese vary from month to month. The retail price, for example had a standard deviation around the mean of R2,50 per kilogram and a mean of R36,68 per kilogram for the entire year. What is interesting is that the weighted average retail price had its lowest value of R32,47 per kilogram, during March and its highest value of R42,35 per kilogram, during April 2004. Other than that the price varied randomly in between these two levels.

The fresh milk products are the 1 litre sachet of low fat milk and the 1 litre sachet of full cream milk. The weighted average retail prices of the two products were relatively equal, but on average for 2004, low fat milk was 31 cents per litre more expensive than full cream milk. The retail price of low fat milk had its lowest value of R4,62 per litre during September and it's highest of R5,01 per litre during May 2004. After May the retail price decreased at a relatively constant rate and reached R4,62 per litre during December. The weighted average retail price of 1 litre low fat milk had a standard deviation of R0,15 or 15 cents per litre and an annual average price of R4,81 per litre for 2004. The retail price of full cream milk followed a trend where it increased during the third month of 2004 and then moderated towards the end of the year. During the entire 2004 it was cheaper, according to the data, to purchase a litre of full cream milk than a litre of low fat milk. During April 2004 the price of full cream milk jumped from R4,53 to R4,67 per litre. The price then remained in the high R4,40s reaching its highest level in May at R4,67 per litre. The standard deviation of the weighted average retail price of a litre of full cream milk for 2004 was R0,08 or 8 cents per litre. The annual average value for full cream milk was R4,49 per litre, 31 cents higher than the average price of low fat milk.

The annual weighted average retail price of butter for 2004 was R16,02 for a 500-gram block. The retail price had a standard deviation of R0,31 or 31 cents per block and cost the most during April 2004, at R16,43 per unit. The month in which it was cheapest to purchase butter was during September 2004 when it cost R15,40 per unit.

Mutton chops constantly increased in retail price during 2004. In February a kilogram cost R34,99 and in December the same quantity retailed, on average, for R44,02, its highest level for 2004. Mutton chops had an annual average retail price of R37,85 per kilogram for the entire year with a standard deviation of R2,33 per kg around that value.

The retail price of pork was estimated by making use of a single pork product, which is contained within the market basket. Pork chops, had the highest price volatility of all the meat products during 2004. The weighted average retail price of pork chops remained relatively constant for the first half of 2004, thereafter it varied from R26,64 per kilogram during July to R37,61 per kilogram in December. Pork chops had an annual average retail price of R32,17 per kilogram with the highest standard deviation of any meat product of R3,42 per kilogram.

The retail prices of two different poultry products are compared to one another. The first being the retail price of whole chicken, frozen, and the second the retail price of whole chicken, fresh or unfrozen. On an annual average basis a fresh, whole chicken cost 52 cents less than a frozen bird. This is not entirely representative as the fresh chicken retailed for less during January, July and August. Frozen chicken was cheapest during March when it cost R16,41 per kilogram and most expensive during August when it retailed at R18,00 per kilogram. Frozen chicken had an annual average retail price of R17,15 per kilogram and a standard deviation of R0,46 or 46 cents per kilogram.

Fresh chickens, on the other hand, followed a relatively constant price trend. The month in which it was the most expensive to purchase a fresh whole chicken was May, where a kilogram would have cost R19,59. The cheapest month in which to purchase a fresh chicken was January. During January a kilogram of fresh whole chicken cost R16,54. The annual weighted average retail price of a fresh chicken for 2004 was R17,66 per kilogram and this had a standard deviation of R0,78 or 78 cents per kilogram.

The annual weighted average retail price of 30 eggs was R24,70 for 2004 with a standard deviation of R0,69 or 69 cents. The retail price remained relatively constant throughout the year, reaching a minimum of R23,00 per quantity during March and retailing for a maximum of R25,49 during December 2004.

3.2.5 Retail value – Vegetables

The retail prices of potatoes, onions, tomatoes, green beans, cabbage, carrots, pumpkins and gem squashes are discussed in this section. Again the prices of these products are discussed with reference to the annual average and their standard deviation.

The potatoes that are analyzed in this section come in a 7 kg packet and are sold in a large number of retail outlets. The 2004 annual average price for one of these items was R14,14 per unit with a standard deviation of R2,29. The weighted average retail price of this product had very large variations as the standard deviation suggests. The retail price varied from its highest of R17,91 per unit, which it sold for during February, to R11,53 per unit the lowest price for which the product retailed in August.

The retail price of onions showed very few variations during 2004. Packed per kilogram, a packet of onions, on average, retailed at R5,51. The product also had a standard deviation of 59 cents. The weighted average retail price generally varied between R6,04 and R4,41 per packet. The product cost the most during May, and was the least expensive during September 2004.

Tomatoes had an annual average retail price of R9,63 per kilogram. The month in which tomatoes cost the most was June, when they retailed at R10,35 per kilogram. Tomatoes were cheapest during December when they retailed, on average, for R8,80 per kilogram. The retail prices of tomatoes had a standard deviation of R0,49 or 49 cents.

The weighted average retail price of cabbages had a standard deviation of 57 cents and a mean value of R3,58 per head. The price had relatively few variations throughout the year, with cabbage being the most expensive during April with a retail price of R4,47 per head and the most affordable during May with a retail price of R2,75 per head.

Carrots were cheapest during March when they retailed at R4,29 per kilogram. The same product was the most expensive during November of 2004 when it retailed at R6,29, a whole two rand more than in March. The 2004 annual average retail price of carrots was R5,91 per kilogram, with a standard deviation of R0,53 or 53 cents.

White pumpkins had a mean retail price of R24,50 per unit, regardless of the weight. The retail price had a standard deviation of R4,69, which is the highest standard deviation of all the products discussed thus far. The products highest retail price was realised during July at R27,67 per unit, whereas the lowest was equal to R12,32 per unit, during September.

The retail price of squashes rose relatively consistently during 2004. During February hubbard squashes sold for R5,26 each, whereas in June they sold for R12,40 each. The annual average retail price for 2004 was R9,43 per unit with a standard deviation of R2,17 per unit.

3.2.6 Retail value – Fruits

This section discusses the retail price of the three fruit types contained within the food basket. The weighted average monthly retail prices of a 2,5 kg bag of oranges, 1 kg of bananas and a 1,5 kg bag of Granny Smith apples are discussed below with specific reference to the retail price trends of the different products.

A 2,5 kg bag of oranges sold cheapest during the harvest season, namely during June, when it retailed for R7,14 per unit. The month in which the product was most expensive, was during March when supply of the product is relatively low. During March a 2,5 kg bag of oranges would have cost the consumer R10,08. Oranges had a standard deviation of R0,79 or 79 cents per unit and an annual average retail price of R8,30 per unit. This is representative of the products price as it follows a continuous cycle of retailing for a high price when supply is low, mainly during the summer months, and retailing for a lower price when the local supply is high, during winter.

A kilogram of bananas retailed, on average, for R5,07. The standard deviation of this retail price during 2004 was R0,38 or 38 cents. The weighted average retail price trend of bananas increased at first and reached a maximum during April of 2004 where a kilogram was sold at R5,99. Thereafter the price fell and remained relatively constant around the R4,70 per kilogram mark. The annual average retail price is therefore not completely representative of the trend that this product followed.

Granny Smith apples, in a 1,5 kg bag, tracked a similar trend, as did oranges. At first the product retailed for a high price and then towards the middle of the year, the price receded and the product sold for much less. From April to September, the weighted average retail price of Granny Smith apples, had a value of around R6 per unit. Before and after this period the price was on average R2 to R3 higher. Again demand and supply forces can be used to explain this. Granny Smith apples had an annual average value of R7,19 per packet with a standard deviation of R1,56.

3.3 Farm-to-Retail Price Spread

The farm-to-retail price spread is the difference between the farm value and the retail price. It represents the payments for all assembling, processing, transporting and retailing charges added to the value of the products after they leave the farm gate. Price spreads are sometimes confused with marketing margins. Marketing margins represent the difference between the sales of a given firm and the cost of goods sold. There is often a time lag between the receipts and the final sale of commodities involved in the calculation of this figure. Spreads, on the other hand, represent the difference between the retail and farm prices of a specific product at a given point in time (USDA, 1997).

3.3.1 Farm-to-retail price spread – Maize meal

Figure 12 provides a comparison between the farm-to-retail price spread of super and special maize meal. The difference between the two is that the super maize meal is more refined. The special maize meal retails for less and therefore the spread is mostly lower. What is surprising about the graph is by how much the spread varies at some points and how equal the spread is at other points. The retail value that is used to calculate the farm-to-retail price spread is worked back from a 5 kg packet to a ton of meal. The white line represents the FTRPS of special maize meal and the black line that of super maize meal.

The periods when the spread was largest was during July/August of 2002, as well as during November/December of 2002. The rapid increases in the price of maize meal during this period could well have had an effect on this situation. The tables from which these graphs had been compiled can be found at the back of this Report. They contain the farm value over this entire period of time, the retail price of the two types of maize meal as well as the spread between these two items.

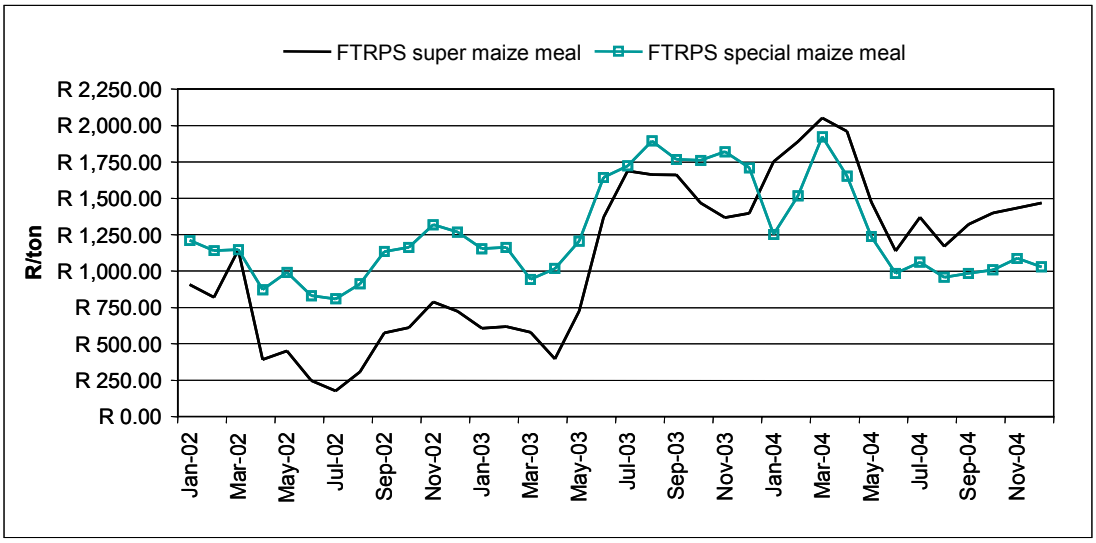

Figure 12: Comparison between the farm-to-retail price spread of super maize meal and special maize meal.

3.3.2 Farm-to-retail price spread – Bread

The farm-to-retail price spread between brown and white bread is often very similar. The difference is again related to the extraction rates. In the case of brown bread it is higher, meaning that brown bread is less refined and therefore has a higher farm value. The retail price of brown bread is also lower than that of white bread.

The farm-to-retail price spread of brown and white bread represents the difference between the farm value and the retail value. The two spreads followed a very similar trend during the period under review. At first the two trends were relatively constant up until May 2003. During this month the spreads increased rather steeply towards the end of 2003, then fell in the beginning of 2004 and increased again gradually during 2004.

3.3.3 Farm-to-retail price spread – Full cream milk

Figure 14 does not represent the farm-to-retail spread as such, but rather the margin between the producer price, the price that the farmer receives, and the retail price, the price which the customer pays in the store. As expected, there is a significant difference between these two prices, and yet these margins seem to be widening constantly. As can be seen on the graph the margin at the beginning of the analysis is a lot smaller than the margin at the end of the period. The reason for this is that the producer price is not increasing at the same rate as the retail price.

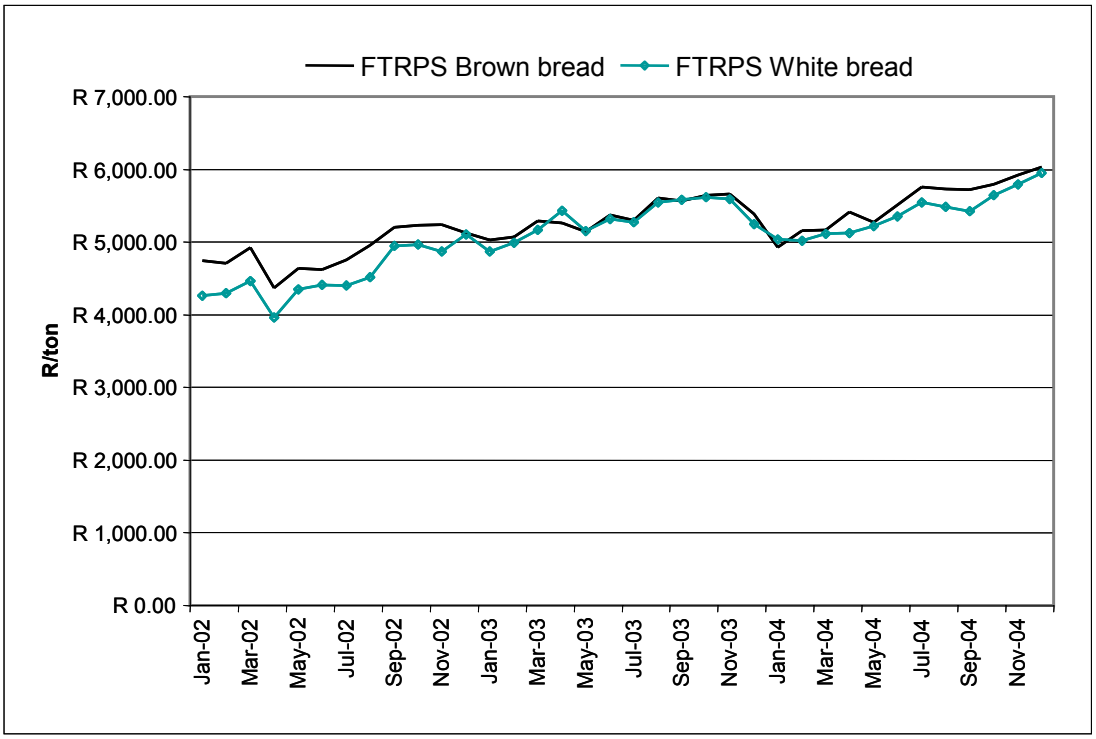

Figure 13: Comparison between the farm-to-retail price spread of brown and white bread.

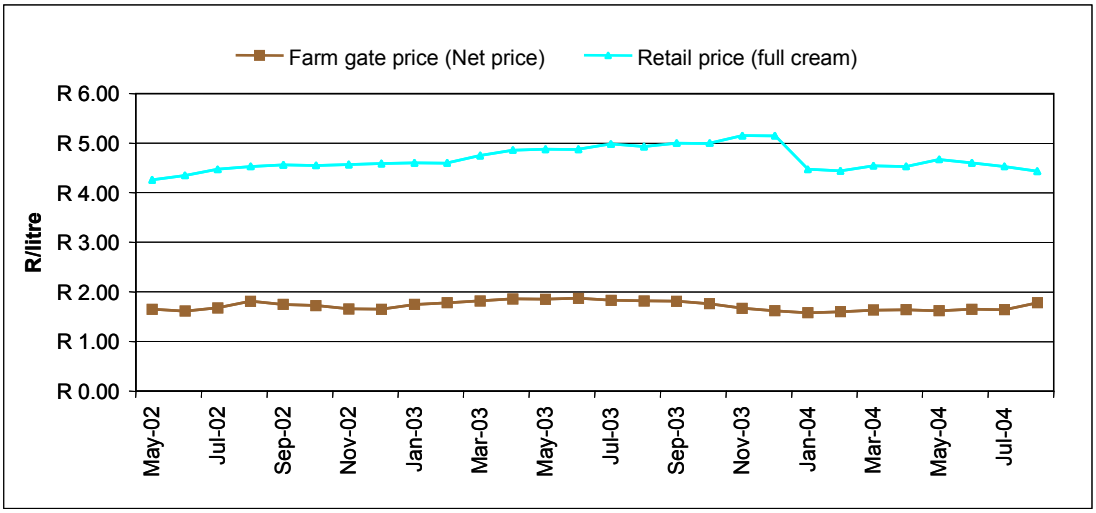

Figure 14: Margin between the producer and retail price of full cream milk.

3.3.4 Farm-to-retail price spread – Beef

A few assumptions have been made with respect to the calculation of the farm-to-retail price spread for beef. The first assumption was that the average slaughtering weight of one head of cattle was equal to 220 kg. Of these 220 kg, 42,24 kg were made up of parts, which did not form part of any direct food related items, and include off-cuts, fats, kidneys and bones. The second assumption is that certain weights have been allocated to the different types of cuts contained within the food basket. The cuts that make up the beef side of the food basket include rump steaks with a weight of 16,72 kg, sirloin steaks with a weight of 11,22 kg, topside beef with a weight of 16,94

kg, chuck with a weight of 23,09 kg and brisket with a weight of 17,6 kg of the total 220 kg carcass

The farm-to-retail price spread pays for the various marketing functions, most of which tend to increase in cost over time. The farm-to-retail spread of beef rose continuously over the period under review and then peaked during January of 2003. This means that the difference between the farm value and the retail value reached its maximum during that month. The spread had a maximum value of R2187,64 per carcass and a minimum value of R1540 per carcass towards the end of March 2004.

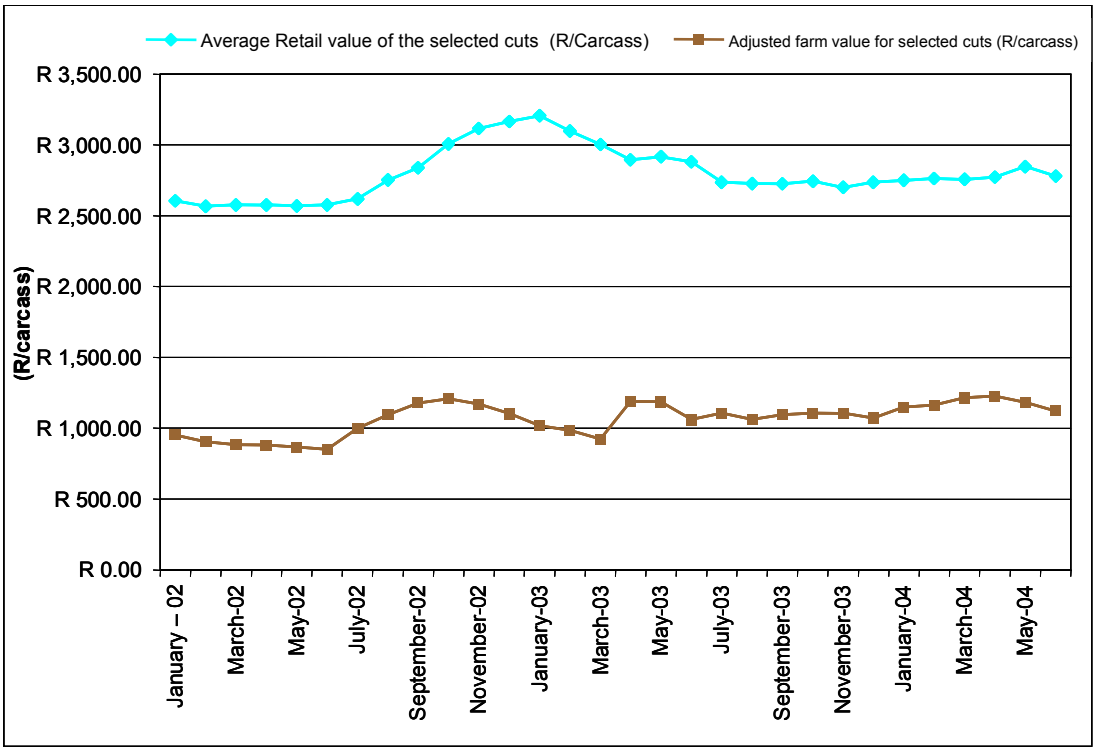

Figure 15: Spread between the average slaughter price and the average retail value of beef for the selected cuts contained in the food basket.

3.3.5 Farm-to-retail spreads – Other products

The margins of the other products have also been calculated in a similar manner, by subtracting the farm value from the retail value. Most of these products have less complicated supply chains and the spreads are therefore easier to calculate. The detailed documentation of these spreads are presented in the Appendix A, Tables 7 to 14, of the Report.

4. Prices of marketing inputs

Changes in the values of farm-to-retail price spreads are the result of changes in prices of marketing inputs and services required to transform raw agricultural products into consumer food commodities. Price spreads reflect a variety of underlying economic conditions, including changes in the technology used to process and distribute food and changes in the price of marketing inputs, such as oil. Changing consumer preferences for retail food products are catalysts for changing supply and demand conditions throughout the food marketing sector.

The prices of marketing inputs are largely independent of farm prices, as reflected in instances where retail prices have held steady or risen in the face of a decline in farm prices. Over the years, such marketing costs have had a persistent tendency to rise, regardless of whether farm prices were rising or falling. The effect on retail prices of increases in marketing costs can, and often do, exceed the effect of a reduction in farm prices.

Even if the prices of marketing inputs remain constant when farm prices fall, retail prices would be generally expected to fall by less than farm prices, and the farmer's percentage of the food rand will decline. For example, if the farm share is 20 % and farm prices fall by 10 %, retailer costs would fall just 2 %, assuming a complete pass-through of the farm price decline. The phenomenon of less-than-proportionate changes in retail prices in response to a farm price change is known as asymmetry. It is important to remember that the large size of the food marketing sector reflects extensive consumer demand for food marketing inputs and services.

There are a number of possible causes affecting the prices of food and with that the food price inflation. These, as found by past investigations, include excess profit taking by food chain participants, cost of inputs necessary for production within the food chain, the level of productivity within the food chain, concentration of the various participants within the sector, as well as the level of taxes and other state induced involvements within the industry.

The price of marketing inputs generally consists of the various components that make up the total inputs needed to produce and eventually market a product. The inputs that will be looked at also differ from where in the supply chain the actual analysis is taking place. Such inputs include the cost of the raw materials, prices of fertilizer, costs of seed, animal feed prices, taxes (VAT and others), packaging, handling (labour) and transport costs. Findings by various committees have proven that food inflation was possibly due to an increase in the price of agricultural inputs. The price of the inputs for the sector in turn depends on macro-economic factors, such as the exchange rate, the level of interest rates and others. Few exceptions, like the price of fertilizers, for example, are somewhat difficult to establish as they differ from time to time and from user to user. These prices are often subject to either negotiation with the end user or they might also differ due to geographical distances between the buyer and seller, different sales mixes and they are also dependent on agricultural conditions.

Increases in the farm-to-retail price spreads mainly reflect the rising costs that the food industry firms face. These costs include wages and salaries of workers and other variable and fixed operating costs of marketing inputs such as electricity, fuel, packaging materials, fertiliser, farm feeds, maintenance and repairs, etc. The marketing

inputs such as fuel, packaging materials, fertilizer, farm feeds and maintenance and repairs were analysed using a combined index that was recorded by the Department of Agriculture. The remaining inputs were analysed using other sources of information obtained from Stats SA.

The largest component of the combined index was animal feed. Its individual price movements from the year 2000 to 2001 have indeed indicated huge increases. The index increased with 13,4 % during this period. Fertilizer as well as maintenance and repairs have also followed the same trend with both indices increasing by 18,97 % and 9,84 %, respectively. The other components all featured moderate increases with fuel, dips and sprays and packing material increasing by 15,5, 6,70 and 10,83 %, respectively.

Electricity, as measured by Stats SA, was recorded on a monthly basis and for the purpose of this Report all the available figures up to and including January 2004 are utilized. The index indicated that the price of electricity fluctuated between January 2002 and January 2003 to decrease by 20,9 % during this period (Stats SA, 2004). During the following period this trend was reversed and the index showed an increase of 1,2 %.

The different types of animal feed all followed more or less the same price trend during the period under review. The retail prices of the different types of feed stayed relatively constant. The retail prices of broiler finisher, layers and pig supreme finisher pellets experienced a slight increase during the first months of 1997 and then again during the period when the currency devaluated strongly against the other major currencies. This was towards the end of 2001, beginning of 2002. Broiler finisher pellets seem to be more expensive than the layer feed and this is by a constant value. The dairy budget pride 14 and complete sheep finisher pellets followed much the same trend as the others with their price increases during the first period not being as large as with the feed types. The rise in the price towards the end of 2001 was, however, very similar as the price increase from around R800 per ton to approximately R1600 per ton.

Figure 16 represents a comparison between the price trends of the different types of feeds for various livestock categories. The graph clearly indicates that the different types of feed increased at the same time and at a rather constant rate over the past four years.

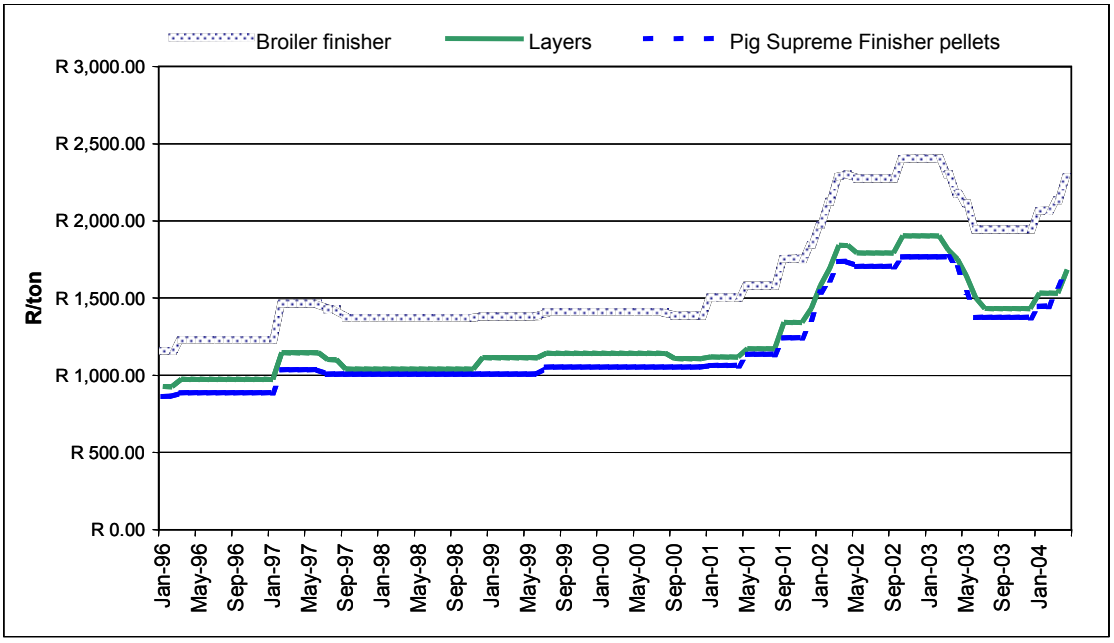

Figure 16: Cost relationship between different feed types, broiler finisher, layers and pig supreme finisher pellets: January 1996 to April 2004.

Source: *Riaan Lazenby, Meadow feeds.*

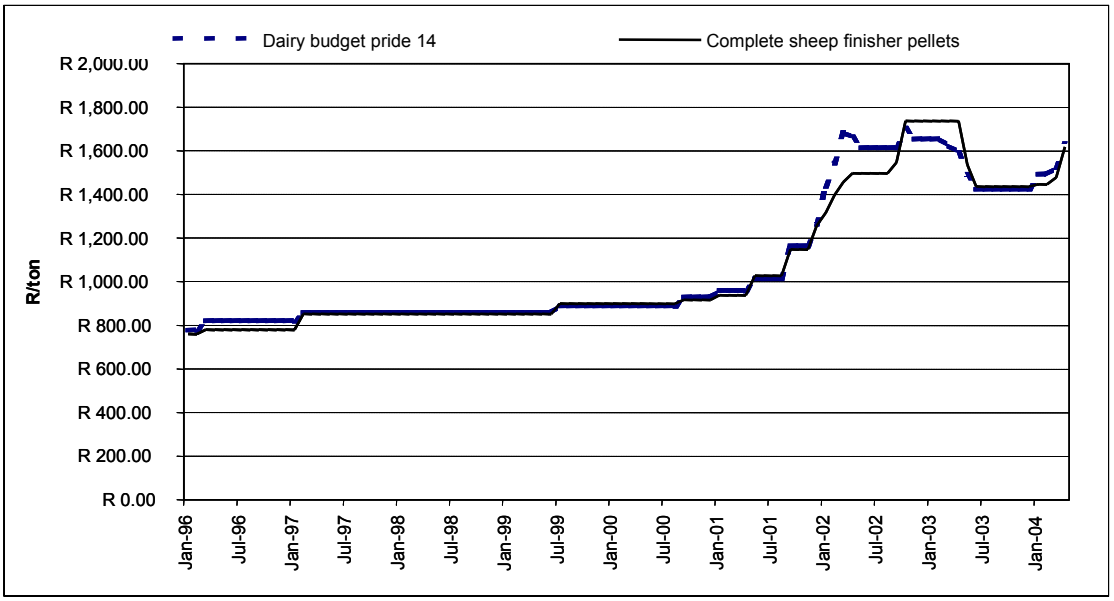

Figure 17: Price relationship between different feed types, dairy budget type 14 and complete sheep finisher pellets: January 1996 to April 2004.

Source: *Riaan Lazenby, Meadow feeds.*

5. Food expenditure in South Africa

This section of the Report considers the annual average expenditure by different household groups per main food group. The various food groups have been identified and described as grain products, meat products, milk products and eggs, vegetables, fruit and nuts as well as prepared foods.

The Bureau of Market Research conducted an omnibus survey of expenditure patterns by the South African population in 2003. Information from this survey was used to construct the trend analysis as depicted in Table 5. The time period stretches from August 2000 until May 2002. The food groups, which have been identified in the survey, include bread and pastries, dairy products, vegetables, fruits, meat and a variety of prepared food products like take away food and eating out at a sit down restaurant.

The basic trend identified was that for almost all of the products mentioned above the consumption increased during the first period, i.e. from August 2000 until August 2001. The same trend continued for the following period, from August 2001 until May 2002, a decrease at first and then an increase in the latter half of that specific period.

Table 6 gives a clearer representation of the trends in the consumption of food by this specific population. Apart from February 2002, the trend shows a relatively constant positive slope. Most of the items in the survey show that in general, their commodity prices hovered around the average expenditure on that item, which is given by the last column of the table. This was the case for all items except for the month of February 2002, when the expenditure jumped to a higher level.

Table 5: Average expenditure, in Rands, by total population covered in the omnibus survey, August 2000 – May 2002.

Item	Aug-00	Feb-01	May-01	Aug-01	Nov-01	Feb-02	May-02	Avg
Bread	47,49	59,02	54,45	59,3	54,71	89,34	55,86	60,02
Dairy	39,48	58,91	39,45	46,85	43,18	61,12	42,54	47,36
Vegetables	42,14	44,76	36,8	45,48	39,63	60,87	38,25	43,09
Fruits	26,09	31,10	23,14	28,46	24,96	38,40	23,80	27,99
Meat	131,28	147,22	126,40	147,47	139,60	237,16	136,87	152,29
Take away	24,26	28,26	21,78	26,16	23,13	32,05	22,51	25,45
Sit down restaurant	29,20	29,13	26,85	28,78	30,84	23,95	22,93	27,38
Total expenditure	**418,64**	**487,60**	**406,24**	**471,53**	**444,85**	**671,23**	**427,80**	**475,41**

Source: *Bureau of Market Research, Trends in household expenditure in South Africa, 2003.*

The survey that was conducted found that the relative expenditure on grain products declined from the first to the last period in which the survey were conducted. There was, however, an increase of 42,2 % in the CPI value of grain products between 1995 and 2000, which exceeded the 39,5 % increase for food. What this means is that if the

consumption of grain products (real expenditure) were to remain constant during this period then the relative expenditure in monetary terms should have increased over the five years (Trends in household expenditure in South Africa, Bureau of Market Research, 2003).

The relative expenditure on meat products was found to have decreased over the period during which the survey was conducted. This is due to a smaller increase in the price of meat from 1995 to 2000, which was 27,9 % compared to the 39,5 % for food. Milk products and eggs as well as vegetables indicated a CPI increase of 43,3 % and 61 %, respectively. This resulted in an increase in the relative expenditure of these items. (Trends in Household Expenditure in South Africa, Bureau of Market Research, 2003).

The population on which the survey was conducted displayed a tendency to keep expenditure on take away food outlets, as well as at sit down restaurants, relatively constant during the period of the survey. Both types of expenditure showed a very slight increase during one month, but that was not continuous as the expenditure in the next period dropped again to below average levels. The average for take away foods was R25,45 per month and for sit down restaurants R27,38 per month over the period of the survey.

A few interesting facts have come to the fore whilst compiling this analysis. The first is that the estimated household expenditure on food items in Gauteng is smaller than their total estimated household expenditure, 33,7 % compared to the 36,2 %. The Limpopo province on the other hand had a larger percentage expenditure on food than their total expenditure per household had been, 7,2 % compared to the 4,9 % of the previous expenditure (Total Household Expenditure in South Africa by province, population group and product, Bureau of Market Research, 2003).

There are some differences when comparing the households in the rural areas, to the households in the more urban provinces. The main differences are that the households in a province like Limpopo and the Eastern Cape, where the household income is relatively low, spend a relatively large proportion of their income on food. When comparing this to households where income is relatively high, one can see that the proportion of what they spend on food is relatively smaller that means that, as theory tells us, the higher the income the smaller is the proportion of income, which will be spent on food.

Grain products are a very important staple food in South Africa. The following analysis will focus on the share of grain products in household cash expenditure on food by province. The main type of staple foods in South Africa are maize meal, and to a certain extent bread and rice. The research that has been conducted in this regard has indicated that the Limpopo province had the highest share of grain products in the total household food cash budget of all the nine provinces, with 35,8 % followed by the Eastern Cape with 27,6 % and KwaZulu-Natal with 26,6 %. All of these provinces have populations of which a relatively large proportion are rural with a relatively low income.

Appendix A

Tables representing the farm-to-retail price spread of the products contained within the food basket :

Table 6: Farm value and farm-to-retail price spread of super maize meal (Rands per ton): Monthly 2002 – 2004.

Month	2002 Farm value	2003 Farm value	2004 Farm value	2002 FTRPS	2003 FTRPS	2004 FTRPS
January	1470,14	2660,08	1280	908,19	606,51	1752
February	1557,92	2648,76	1252,80	820,42	617,83	1889,2
March	1585,52	2722,96	1295,76	1145,81	581,04	2052,24
April	2340,17	2629,47	1588,80	391,15	394,53	1959,2
May	2631,23	2289,38	1922,37	449,76	724,62	1473,63
June	2833,36	1594,64	1962,72	247,64	1369,00	1137,28
July	3076,62	1268,8	1583,47	175,78	1688,2	1368,53
August	2945,84	1107,65	1616,98	306,56	1661,2	1171,02
September	2706,91	1243,81	1518,78	576,64	1661,05	1321,22
October	2672,17	1257,6	1422,08	611,38	1467,64	1399,92
November	2580,94	1166,4	1248,94	788,05	1367,6	1433,06
December	2645,87	1212,8	1341,02	723,13	1397,2	1466,98

Table 7: Farm value and farm-to-retail price spread of sunflower oil (Rands per ton): Monthly 2002 – 2004.

Month	2002 Farm value	2003 Farm value	2004 Farm value	2002 FTRPS	2003 FTRPS	2004 FTRPS
January	5825,19	6574,36	4828,21	3728,55	3653,66	4492,60
February	6093,36	6235,16	5582,31	3007,71	3586,31	3814,67
March	7121,68	5867,21	6507,82	2701,95	3718,73	2923,79
April	6175,64	5596,62	6999,77	2665,68	4351,65	2501,09
May	6175,64	4733,33	6335,26	3316,07	4770,54	3089,43
June	5867,34	4384,62	5641,95	3891,33	5070,75	3761,96
July	5691,69	4041,03	5120,95	3873,29	5955,22	4324,51
August	5590,21	3838,46	5200,85	4089,94	5612,54	4126,89
September	6045,48	4300,00	4769,10	3782,40	5223,70	4627,88
October	6227,43	4153,85	4241,15	3820,88	5326,23	5183,53
November	6731,03	4058,97	4652,38	3468,49	5324,16	4751,52
December	6659,87	4394,87	4975,85	3541,39	4932,86	4434,99

Table 8: Farm value and farm-to-retail price spread of wheat (brown bread) (Rands per ton): 2002 – 2004.

Month	2002 Farm value	2003 Farm value	2004 Farm value	2002 FTRPS	2003 FTRPS	2004 FTRPS
January	1516,50	2036,67	1944,44	4748,85	5028,748	4934,48
February	1613,63	2353,08	1983,95	4707,00	5073,203	5160,70
March	1855,16	2093,94	1958,02	4926,16	5295,478	5165,70
April	2233,20	1922,74	1969,14	4363,86	5263,985	5418,05
May	2176,77	1787,87	1959,26	4641,41	5140,86	5272,56
June	2084,51	1555,43	1753,09	4623,10	5373,31	5509,51
July	2080,18	1612,26	1627,16	4756,42	5298,053	5755,32
August	2156,85	1597,97	1628,57	4956,17	5607,173	5734,86
September	2203,93	1568,48	1590,36	5203,93	5562,963	5723,27
October	2144,25	1637,47	1569,00	5226,75	5641,393	5796,62
November	2205,85	1729,29	1504,15	5238,86	5660,138	5925,93
December	2285,19	1926,85	1408,58	5122,68	5388,868	6029,69

Table 9: Farm value and farm-to-retail price spread of wheat (white bread) (Rands per ton): 2002 – 2004.

Month	2002 Farm value	2003 Farm value	2004 Farm value	2002 FTRPS	2003 FTRPS	2004 FTRPS
January	1616,27	2515,98	2072,37	4257,542	4866,85	5038,72
February	1719,79	2507,89	2114,47	4300,056	4988,522	5021,54
March	1977,21	2231,70	2086,84	4464,512	5167,356	5112,31
April	2380,12	2049,24	2098,68	3964,246	5430,946	5124,08
May	2319,98	1905,50	2088,16	4348,916	5152,81	5225,06
June	2221,64	1657,76	1868,42	4414,784	5319,42	5355,27
July	2217,04	1718,33	1734,21	4403,168	5275,076	5546,75
August	2298,75	1703,11	1735,71	4516,17	5549,922	5489,40
September	2348,92	1671,67	1694,99	4952,78	5581,352	5427,88
October	2285,32	1745,19	1672,22	4967,702	5621,404	5641,40
November	2350,97	1843,06	1603,11	4869,60	5588,448	5791,37
December	2435,53	2053,62	1501,25	5109,57	5248,09	5948,00

Table 10: Farm-to-retail price spread of fresh milk, broilers and eggs: 2002 – 2004.

Month	Fresh milk (R / litre) FTRPS	Eggs (R / dozen) FTRPS	Broilers (fresh) (R / kg) FTRPS
January 2002	-	2,00	4,40
February	-	2,44	4,66
March	-	2,16	4,91
April	-	1,96	4,71
May	2,61	1,87	5,42
June	2,74	3,16	4,52
July	2,79	2,85	5,46
August	2,72	3,24	4,88
September	2,81	3,17	5,26
October	2,83	2,78	4,55
November	2,91	3,06	4,41
December	2,94	2,99	5,50
January 2003	2,85	3,43	5,18
February	2,82	3,25	4,75
March	2,93	1,75	3,97
April	3,00	2,96	5,48
May	3,03	3,85	5,42
June	3,01	3,67	4,80
July	3,15	2,67	5,32
August	3,11	2,86	3,95
September	3,19	2,92	4,68
October	3,24	2,61	4,48
November	3,48	2,65	4,61
December	3,53	2,36	5,50
January 2004	3,59	2,18	4,83
February	3,60	2,17	5,96
March	3,86	2,65	5,71
April	3,83	2,70	7,01
May	3,92	2,12	8,18
June	3,83	2,72	6,16
July	3,84	2,65	6,50
August	3,65	2,42	5,50
September	3,66	2,44	6,52
October	3,51	2,44	6,92
November	3,65	2,81	5,79
December	3,66	2,82	5,97

Source: *Statistics SA and ACNielsen, 2005.*

Table 11: Farm-to-retail prices spread of selected vegetables: 2002 – 2004.

Month	Potatoes (R / kg) FTRPS	Tomatoes (R / kg) FTRPS	Carrots (R / kg) FTRPS
January 2002	2,81	5,01	2,81
February	2,94	4,30	2,90
March	3,04	4,61	2,40
April	2,79	4,30	2,66
May	2,57	4,62	3,25
June	2,33	4,49	3,36
July	2,20	4,52	3,14
August	1,66	4,32	2,77
September	2,08	2,93	2,74
October	2,80	6,35	2,69
November	3,27	4,38	2,86
December	2,78	4,55	2,64
January 2003	3,45	5,28	2,74
February	3,11	3,97	2,91
March	2,98	2,86	2,71
April	2,87	3,45	2,76
May	2,82	4,05	3,40
June	3,02	3,96	3,40
July	3,21	3,68	3,20
August	3,20	4,26	3,10
September	2,78	3,20	3,26
October	2,50	4,82	3,21
November	2,70	5,85	2,97
December	2,80	5,43	2,62
January 2004	2,88	7,85	4,64
February	3,17	7,08	4,92
March	3,24	7,54	3,01
April	3,43	6,37	4,72
May	3,89	5,82	4,78
June	3,60	6,19	4,73
July	3,29	6,77	4,98
August	3,46	7,83	4,87
September	3,02	7,56	5,06
October	4,78	9,83	5,99
November	4,41	9,16	6,29
December	4,18	8,80	6,27

Source: *ACNielsen and Statistics SA, 2005.*

Table 12: The Farm-to-retail price spread of cabbage: 2002 – 2004.

Month	Cabbage (R per head) FTRPS
January 2002	2,86
February	2,74
March	2,73
April	3,04
May	3,01
June	2,98
July	2,96
August	3,29
September	3,24
October	3,19
November	2,17
December	2,14
January 2003	3,04
February	2,98
March	3,11
April	3,40
May	3,21
June	3,25
July	3,36
August	3,48
September	3,29
October	3,08
November	2,84
December	3,02
January 2004	3,75
February	3,73
March	2,15
April	3,69
May	2,15
June	3,15
July	2,65
August	2,87
September	3,08
October	2,90
November	3,29
December	3,55

Source: *ACNielsen, Statistics SA 2005.*

Table 13: Farm-to-retail spread of apples, bananas and oranges: 2002 – 2004.

Month	Apples (R/ 1.5 kg) FTRPS	Bananas (R/kg) FTRPS	Oranges (R/kg) FTRPS
January 2002	1,93	1,01	2,58
February	2,13	1,16	2,61
March	3,06	1,21	5,49
April	2,91	1,11	5,04
May	3,11	1,12	3,82
June	2,97	1,42	3,61
July	3,05	1,62	3,31
August	2,69	1,27	3,21
September	3,46	1,62	3,94
October	3,36	1,29	3,82
November	3,13	1,54	4,23
December	2,98	0,82	4,32
January 2003	3,02	1,44	5,76
February	4,21	1,46	5,70
March	3,90	1,67	7,18
April	3,32	1,22	4,99
May	3,32	1,34	5,07
June	3,76	1,38	5,10
July	3,36	1,32	3,79
August	2,26	1,35	3,85
September	2,95	1,48	3,78
October	2,66	1,49	3,76
November	2,45	1,45	3,87
December	2,18	1,83	3,69
January 2004	4,15	2,19	4,06
February	4,15	2,31	3,62
March	5,90	2,13	4,98
April	2,54	2,36	4,42
May	2,64	2,21	4,18
June	2,43	2,23	3,79
July	2,59	1,90	4,27
August	1,70	2,10	4,06
September	3,83	2,36	4,36
October	2,55	2,13	4,15
November	4,23	2,50	4,42
December	5,07	2,58	4,51

Source: *Statistics SA and ACNielsen, 2005.*

Table 14: Price indices for food marketing costs – fuel, power, machinery and equipment: Monthly 2002 – 2004.

Month	Electricity	Petrol 93 (Gau)	Diesel oil (Gau)	Transport equipment	Motor vehicles, parts and accessories
Jan ‘02	108,7	116,0	126,9	115,6	115,7
Feb ‘02	112,2	111,8	124,4	117,0	117,0
Mar ‘02	109,1	115,9	119,1	117,8	117,9
Apr ‘02	109,2	131,0	128,8	118,3	118,3
May ‘02	109,7	142,8	128,5	121,6	121,6
June ‘02	121,6	129,6	130,3	121,5	121,5
July ‘02	121,6	126,0	128,1	122,0	122,0
Aug ‘02	122,0	124,7	127,0	124,2	124,5
Sept ‘02	88,4	129,1	131,0	124,5	124,8
Oct ‘02	83,0	132,4	140,4	125,0	125,4
Nov ‘02	82,8	132,8	144,3	125,9	126,4
Dec ‘02	85,9	124,9	136,1	125,5	126,0
Jan ‘03	90,4	120,3	121,2	125,0	125,6
Feb ‘03	91,2	124,8	124,3	126,5	128,2
Mar ‘03	89,3	135,5	133,0	125,9	126,7
Apr ‘03	91,0	133,3	138,5	126,1	127,0
May ‘03	90,3	111,2	105,8	127,2	128,2
June ‘03	130,9	105,3	97,5	127,4	128,4
July ‘03	139,1	117,5	108,0	126,3	127,3
Aug ‘03	138,0	118,2	103,9	126,1	127,0
Sept ‘03	98,6	121,7	106,4	125,8	126,7
Oct ‘03	92,7	112,1	103,7	125,7	126,6
Nov ‘03	92,7	110,4	108,4	126,1	127,0
Dec ‘03	91,5	108,4	106,6	125,9	126,9
Jan ‘04	92,8	111,9	103,4	126,0	126,9
Feb ‘04	92,2	124,0	117,6	126,3	127,2
Mar ‘04	92,7	121,5	112,1	126,2	127,1
Apr ‘04	93,4	129,3	115,9	126,4	127,3
May ‘04	92,2	130,8	117,2	126,9	127,8
June’04	136,5	147,4	130,1	126,6	127,5
July ‘04	143,7	131,7	122,0	126,4	127,3
Aug ‘04	139,7	131,9	126,6	126,7	127,8
Sept‘04	100,6	140,6	139,2	127,4	128,5
Oct ‘04	94,5	141,7	148,0	126,8	127,9
Nov ‘04	92,9	150,2	158,0	126,8	127,8
Dec ‘04	93,6	137,5	145,4	126,7	128,0

Source: *PPI, Statistics SA, 2005.*

Table 15: Price indices of marketing inputs: Monthly 2002 – 2004.

Month	Fertiliser	Chemical compounds	Boxes, Cardboard	Plastic bottles	Paper products and printing	Glass and glass products
Jan '02	133,0	115,3	115,9	111,0	115,3	111,8
Feb '02	132,8	116,0	115,9	111,0	116,0	116,0
Mar '02	133,2	116,6	115,9	111,0	120,0	116,1
Apr '02	130,8	119,8	123,8	113,1	126,0	116,0
May '02	131,0	119,4	123,8	113,1	126,0	119,8
June '02	131,0	119,3	123,8	113,1	125,9	119,6
July '02	130,9	122,1	127,5	133,3	130,3	120,0
Aug '02	131,0	122,3	127,5	133,3	130,3	122,7
Sept '02	131,3	122,3	127,5	133,3	130,3	122,9
Oct '02	132,8	116,6	127,5	133,3	133,2	123,0
Nov '02	133,5	119,8	127,5	133,3	133,2	123,0
Dec '02	133,2	119,4	127,5	133,3	133,0	122,5
Jan '03	132,1	119,3	127,5	133,3	135,8	123,4
Feb '03	132,3	122,1	127,5	133,3	135,8	125,8
Mar '03	132,3	122,3	127,5	133,3	135,4	125,7
Apr '03	131,2	122,3	129,5	133,3	136,2	125,6
May '03	131,7	128,1	129,5	133,3	135,8	126,2
June '03	131,4	128,1	129,5	133,3	135,9	126,1
July '03	127,8	128,0	127,4	136,7	136,1	125,8
Aug '03	127,5	127,4	127,4	136,7	136,0	129,1
Sept '03	127,5	127,3	127,4	136,7	136,0	129,0
Oct '03	128,9	127,0	127,4	136,7	131,7	127,9
Nov '03	128,7	126,8	127,4	136,7	131,5	127,8
Dec '03	128,7	126,1	127,4	136,7	131,2	127,6
Jan '04	129,2	126,5	127,4	136,7	130,9	127,8
Feb '04	129,3	128,0	127,4	136,7	130,7	129,6
Mar '04	129,3	128,0	127,4	136,7	130,6	129,7
Apr '04	127,6	128,0	127,4	137,3	128,3	129,5
May '04	127,7	127,8	127,4	137,3	128,3	129,2
June'04	128,1	127,5	127,4	137,3	128,4	129,9
July '04	128,4	125,7	126,7	142,0	128,9	129,8
Aug '04	128,8	125,4	126,7	142,0	128,6	129,8
Sept '04	128,9	125,5	126,7	142,0	128,5	129,8
Oct '04	136,1	125,4	126,7	148,7	128,4	130,8
Nov '04	135,9	125,4	126,7	148,7	128,4	131,1
Dec '04	135,7	125,2	126,7	148,7	129,7	131,1

Source: *PPI, Statistics SA, 2005.*

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