

SOUTH AFRICAN FOOD COST REVIEW: 2009



THE SOUTH AFRICAN FOOD COST REVIEW: 2009

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This publication attempts to provide more insight into the complex factors driving commodity and food prices. This is the fifth publication of the South African Food Cost Review, emanating from the recommendations by the Food Pricing Monitoring Committee in 2003 to monitor food prices in South Africa on a regular basis. The purpose of this publication is to reflect on food price trends during 2009.

EXECUTIVE SUMMARY

Introduction

It is evident from statistics pertaining to 2009 that input, commodity and food prices have declined significantly from the highs experienced during 2008. The global Food Price Index (FPI) as measured by the Food and Agricultural Organization (FAO) decreased with 20.77 % from 2008 to 2009. The main reasons for this decline in prices include, amongst others, the following:

- ~ Significant expansion in world cereal production on the back of high prices; this expansion was mainly in developed countries, while Brazil, China and India also experienced higher production of cereals.
- ~ The emergence of the financial crises during late 2008 and the subsequent global economic recession in 2009 had a significant negative impact on global economic activity. The result was a significant drop in oil prices, which culminated into lower energy, fertiliser and distribution costs. The economic slowdown also resulted in a weaker demand for agricultural inputs and food.

Although prices have declined significantly, prices for most inputs, commodities and food were still at higher levels in 2009 than before the hike in prices that commenced in 2007. In addition, the significant drop in commodity and food prices measured at a global level have not necessarily translated into significantly lower prices at an individual country level. The FAO reports that 80 % to 90 % of all cereal prices monitored by them in 27 countries in Sub-Saharan Africa were more than 25 % higher than before the food price crisis, and similar trends were reported for countries in Asia and Latin America. Reasons provided for the aforementioned include reduced harvests, higher or delayed imports, civil conflict, devaluation of national currencies, changes in food and trade policies, increased incomes and demand, transport constraints and higher transport costs.

There is also increasing concern that commodity and food prices will rise again in the near future. The FAO argues that with the exception of oil prices, the factors that contributed to high food prices remain unchanged, supplies have not increased substantially and stocks remain low. Other factors that could put upward pressure on food prices include, amongst others, an increase in area dedicated for growing crops for biofuels, a growing world population, migration and urbanisation, exchange rate variability (especially the devaluation of the US Dollar), and climate events.

Due to South Africa's liberalised trade policies and deregulated marketing environment price events on the international agricultural commodity and food markets are transmitted to the domestic market relatively fast. For example, a commodity like wheat and food products like rice, palm oil and chicken cuts are among the leading agricultural commodity and food items imported by South Africa due to the fact that South Africa does not produce enough or very little of these items. Prices for these items will therefore almost always reflect import parity prices, which mean that local demand and supply conditions will not have any significant bearing on domestic prices as is the case in the maize industry. In addition, global inflationary pressures will be transmitted much faster onto the local market for these commodities and products. This is in stark contrast to the local maize industry where local maize prices moved more or less sideways when international maize prices were on the increase during 2008 due to local production that exceeded local consumption. If local maize production was deficient to meet local demand for maize, the local price of maize would have been approximately R1 500 per ton higher during mid-2008, which would have resulted in even higher food inflation in South Africa during 2008. This is a clear indication that conditions could be created where local consumers are shielded against international price shocks, i.e. the expansion of local production to force prices to move lower than import parity. There is however limited room for import substitution due to the type of products that are imported.

- **South Africa agricultural trade**

In 2009 the value of total agricultural exports amounted to approximately R49 billion, while the value of total agricultural imports stood at R37 billion, resulting in a R12 billion agricultural trade surplus. This is a result of the 2 % increase in the value of total agricultural exports and a decrease in the value of total agricultural imports by 8 % from 2008 to 2009. The top ten agricultural exports accounted for almost 46 % (R23.1 billion) of the total value of agricultural exports. The main contributors were wine, maize, different fruit types and wool.

The top ten products imported accounted for 47 % of the total value of imports in 2009. The top three products were rice, soybean oilcake, and wheat, accounting for 10 %, 7 %, and 6 % respectively of the total value of agricultural imports. The latter two products have some potential for increased local production provided an enabling policy, investment and value chain environment. Another product that has potential for local expansion includes chicken cuts, which contributed to 3 % of the value of agricultural imports in 2009.

Selected international price trends

- **International fertiliser and oil prices, and the Baltic Dry Index (BDI)**

Since 2007 fertiliser prices have been one of the major cost drivers in the primary agricultural sector, more specifically in the grain sub-sector. Globally concerns were raised about the impact of significant increases in fertiliser prices on the sustainability of crop production, especially in countries with a high level of national and household food insecurity. After fertiliser prices peaked during the latter part of 2008, prices started to decline and 2009 started with lower fertiliser prices. Fertiliser prices continued to slow during 2009. Lower oil prices, stronger stocks levels than in 2006/07 and lower demand for fertilisers were the main reasons for lower fertiliser prices. Another factor that affected the demand for fertilisers is tighter credit controls amid the global financial and economic crises, which resulted in the postponement of purchasing fertilisers.

Crude oil prices affect food value chains in several complex ways, i.e. from influencing the prices of primary agricultural inputs, to inputs used in value addition processes (e.g. packaging) to the distribution of food. Hence trends in the crude oil price are an important indicator of trends in prices throughout the food value chain. The oil price has decreased significantly since the peak in 2008 due to, amongst others, tighter credit availability, the slowdown in economic activity as a result of the global financial and economic crises and less speculation in the oil market.

The BDI measures the change in the transport costs of raw materials such as metals, grains and fossil fuels by sea, which is derived from the global demand and supply for the mentioned commodities, shipped abroad by dry bulk carriers. The average BDI for 2009 was 2566 index points, a decrease of 60 % from the average of 6394 index points of 2008. This can be attributed to a significant slowdown in the demand for bulk carriers, which reflected the lower demand as a result of the depressed global economic situation.

- **International commodity and food prices**

The International Monetary Fund (IMF) Edibles Index compiled by the IMF to measure international food and beverage prices decreased by 13.13 %, from an average 156.55 index points in 2008 to 136 index points in 2009. The index was nevertheless still higher in 2009 than in the years preceding 2008.

From a commodity specific point of view, international prices decreased on averaged by 22 % from 2008 to 2009. The global Food Price Index (FPI) compiled by the FAO show that commodity prices decreased by 20.77 % from 2008 to 2009, but were still 23.77 % higher in 2009 than in 2006. The prices for cereals and vegetable oils decreased by 27.35 % and 33.48 %, respectively,

from 2008 to 2009. The price of dairy decreased by 35.53 %, meat prices decreased by 8.56 %, while sugar prices increased by 41.71 % over the same period.

Selected local price trends

- **Domestic fertiliser and fuel costs**

Intermediate farm level inputs make a significant contribution to the variable input cost to produce commodities. These include fertiliser, fuel, animal health and crop protection, maintenance and repairs, and farm feed. Prices for fertiliser and fuel decreased from 2008 to 2009, while prices for the other intermediate inputs increased. Fertilisers and fuel makes the largest contribution to the production cost of mainly field crops. Price trends for these two items from 2008 to 2009 were:

- ~ Mono-Ammonium Phosphate (MAP) decreased by 50.8 %, Urea Pril (46) decreased by 30.6 % and Potassium Chloride increased by 8.1 %.
- ~ The average diesel price decreased by 38.6 %.

There is a perception that food prices are driven up by high fuel prices but never come down when fuel prices decrease. Cognisance should be taken of the fact that there are also other cost drivers affecting transport and logistical costs. For example the running costs of 2-axle, 6-axle and 7-axle vehicles increased by 74.9 %, 78.2 % and 108.8 % from 2004 to 2009 respectively.

- **Domestic commodity price trends**

Producer price trends for selected field crops from 2008 to 2009 were as follows:

- ~ The annual average domestic wheat price decreased by 30.1 %, from R3 498 per ton in 2008 to R2 444.83 per ton in 2009.
- ~ The average price of white maize was R1 567.43 per ton, 14 % down from average price of R1 830.25 per ton in 2008. The average price of yellow maize decreased by 22 % from R1 853.02 per ton in 2008 to R1 446.38 per ton in 2009.
- ~ The annual average price of soybeans was R3 201.91 per ton in 2009, 21 % lower than the annual average soybean price of 2008.
- ~ The annual average price for sunflower was R3 066.73 per ton in 2009, which was 33 % lower than in 2008.

Producer price trends in the livestock sector from 2008 to 2009 were as follows:

- ~ The annual average producer price for beef class A2/A3 increased by 5.4 % from R22.26 per kg in 2008 to R23.46 per kg in 2009.
- ~ In 2009, the annual average price of lamb class A2/A3 increased by 1.4 % to R33.29 per kg from R32.82 per kg in 2008.
- ~ The annual average porker producer price increased by 8.8 % from R15.52 per kg in 2008 to R16.88 per kg in 2009 and the annual average baconer price increased by 4.5 % from R14.96 per kg in 2008 to R15.64 per kg in 2009.
- ~ In 2009 the annual average producer price of chicken was R19.33 per kg compared to R16.71 per kg in 2008, which was 15.7 % higher.
- ~ The annual average milk producer price was R3.05 per litre in 2009, 1.61 % lower than that of R3.10 per litre in 2008.

From the above it is clear that, on average, domestic producer prices in the livestock sub-sector were higher in 2009 than in 2008, contrary to price movements in the field crop industry. Price variability was also much less than in the field crop industry. Similar trends were experienced on the international market. Probable reasons for this include, amongst others: (i) changing consumer

tastes and preferences in favour of protein based diets as a result of higher per capita income (especially in developing countries); (ii) increases and high variability in the oil price, which affects the price of diesel, has a less significant impact on the production cost of meat (the impact is transmitted indirectly through higher grain prices over a longer time frame); (iii) the nature of production processes compared to field crops; and (iv) the ability of meat chains to “better” synchronise supply and demand due to the perishable nature of the product and hence limited storage capability. An important observation in the context of price movements in both the field crop and livestock sub-sectors is that livestock can play a significant role in reducing variability in overall farm income, especially if one considers that the largest part of South Africa is mainly suited for extensive livestock production and is a net importer meat in general. Much more attention is needed to enhance the potential that exist in the livestock industry, especially in the smallholder sector.

- **Domestic urban food price trends**

The analysis of urban food price trends is based on 68 food items monitored by the National Agricultural Marketing Council (NAMC) between December 2008 and December 2009. The price trends can be summarised as follows:

- ~ The price of wheat products decreased by an average of 3.18 % between December 2008 and December 2009.
- ~ Between December 2008 and December 2009, the price of maize products decreased, on average, by 12.52 %.
- ~ The average price of sunflower products decreased by 8.80 % between December 2008 and December 2009.
- ~ The price of processed vegetables increased by 18.58 % between December 2008 and December 2009, while the price of fresh vegetables increased by 16.87 % over the same period.
- ~ The price of processed meat increased by 12.50 % between December 2008 and December 2009, while the price of fresh meat decreased by 0.5 % over the same period.
- ~ Dairy products experienced a double digit price increase of 15.49 % between December 2008 and December 2009.
- ~ The price of fresh fruits increased by an average of 13.41 % between December 2008 and December 2009.
- ~ Between December 2008 and December 2009, the price of fish increased, on average, by 8.60 %.

- **Domestic Rural food price trends**

The rural food price data was collected from 192 outlets/shops across the country and include maize meal, brown bread, white bread, rice, samp, sorghum meal, pilchards, milk, butter beans, dried beans, sugar, tea, coffee, margarine, peanut butter, and cooking oil. The price trends between December 2008 and December 2009 can be summarised as follows:

- ~ The price of wheat products increased, on average, by 1.49 %.
- ~ The price of maize products decreased, on average, by 4.14 %.
- ~ The price of sunflower products decreased, on average, by 7.23 %.
- ~ The price of dairy products increased, on average, by 5.66 %.
- ~ Tea and coffee experienced an average price increase of 1.93 %.
- ~ The price of pilchards in tomato sauce increased, on average, by 17.81 %.
- ~ The price of beans increased, on average, by 0.55 %.
- ~ The price of white sugar increased, on average, by 6.66 %.
- ~ The increase in the price of rice averaged 2.50 %.
- ~ The price of peanut butter increased, on average, by 16.50 %.
- ~ The increase in the price of sorghum averaged 6.79 %.

In December 2008, a person buying the food items that are monitored in rural areas paid R13.38 more than a person in urban areas. This price difference increased to R16.73 in July 2009 and still further to R18.63 in December 2009.

Farm-to-Retail Price Spreads

A burning issue that is continuously questioned and debated is the margin between commodity prices (i.e. the price the producer receives) and the price of the final product (i.e. the price the end consumer pays). In order to shed more light on the margin between producer and retail prices different cost components that contribute to the margin between farm gate prices and the price the consumer pays for selected food items was investigated. This is done by, amongst others, investigating the farm values of selected products and the farm-to-retail price spreads (FTRPS). What follows is a summary of the aforementioned.

- **Wheat**

- ~ The average real farm value of brown bread declined significantly (32.9 %), while the average real retail value of brown bread increased marginally (3.6 %) between 2008 and 2009. The average real farm value and retail value for white bread showed similar trends.
- ~ The average farm value share of brown and white bread declined by 35 % and 34.6 %, respectively, between 2008 and 2009.
- ~ The average real FTRPS for brown and white bread increased by 16.5 % and 15.9 %, respectively, between 2008 and 2009.

- **Maize**

- ~ The average real farm value of special maize meal declined by 22.2 %, while the average real retail value of special maize meal declined by 9.7 % between 2008 and 2009. The average real farm value for super maize meal followed a similar trend than special maize meal, but the real retail value for super maize meal only declined by 1.2 %.
- ~ The average farm value share of super maize meal and special maize meal declined by 21.4 % and 14.5 %, respectively, between 2008 and 2009.
- ~ The average real FTRPS for super maize meal and special maize meal increased by 40.2 % and 10.7 %, respectively, between 2008 and 2009.

- **Vegetables**

- ~ The real farm value share of cabbage increased on average by 9.1 %, while the real FTRPS of cabbage increased by 25.1 %, on average, between 2008 and 2009.
- ~ The real farm value share of carrots increased on average by 21.7 %, while the real FTRPS of carrots increased by 3.5 % on average between 2008 and 2009.
- ~ The real farm value share of onions increased on average by 20.2 %, while the real FTRPS of onions increased by 3 % on average between 2008 and 2009.
- ~ The real farm value share of tomatoes decreased on average by 4.9 %, while the real FTRPS of tomatoes increased by 22.7 % on average between 2008 and 2009.
- ~ The real farm value share of potatoes increased on average by 27.7 %, while the real FTRPS of potatoes increased by 6.8 % on average between 2008 and 2009.

- **Dairy**

- ~ The average real retail value of full cream and low fat milk increased by 1.64 % and 1.97 % between 2008 and 2009.
- ~ The average real raw milk price decreased by 7.94 % during the same period.

- ~ The real farm value share of full cream milk decreased on average by 2.66 %, while the real FTRPS of full cream milk increased by 4.14 % on average between 2008 and 2009.

- **Meat**

- ~ The average real farm, wholesale and retail prices of beef decreased by 1.61 %, 0.22 % and 1.61 % respectively from 2008 to 2009. The farm value share of beef decreased on average by 0.06 %, while the average real FTRPS of beef decreased by 1.62 % on average between 2008 and 2009.
- ~ The average farm, wholesale and retail values pertaining to lamb has declined between 2008 and 2009. The largest decline was experienced at wholesale level (12.78 %), followed by the retail level (12.15 %). The average farm value declined by 6.22 % between 2008 and 2009. The farm value share on average increased from 44.46 % in 2008 to 47.98 % in 2009, while the real FTRPS for lamb chops decreased by 18.07 %.
- ~ The farm value for pork chops increased on average by 1.65 % from 2008 to 2009. The average wholesale value for pork chops decreased by 7.86 %, while the average retail value for pork chops dropped by 7.19 %. The farm value share, on average, increased from 30.01 % in 2008 to 32.90 % in 2009, while the average real FTRPS decreased by 10.98 %.
- ~ The real producer price of poultry increased by 15.89 % on average from 2008 to 2009, while the real retail price of poultry increased by 7.73 % over the same period. The farm value share increased from 62.74 % in 2008 to 67.44 % in 2009, while the real FTRPS declined by 12.25 % on average from 2008 to 2009.

In an effort to explain price spreads for different value chains information was sourced from different industry stakeholders. For the wheat and maize value chains comparisons were made between the information published in the final report of the Food Price Monitoring Committee Report of 2003 and more up to date information pertaining to 2009/10. Due to the significance of National Fresh Produce Markets (NFPM) in the vegetable value chain broad guidelines in terms of costs and margins as it pertains to market agents are provided. The costs and margins in the dairy value chain is illustrated by means of a typical cost composition of pasteurised full cream milk in two litre containers offered for sale in a retail store. For the red meat value chain broad guidelines in terms of costs and margins at the abattoir and retail levels are provided. The results for the different value chains can be summarised as follows:

- **Wheat-to-bread value chain (A comparison between 2000-2003 and 2009/10)**

- ~ The gap between what farmers realized at farm level for wheat, versus the spot market price widened. One can safely postulate that there was a substantial increase in costs that are applicable to derive the farm gate price.
- ~ The mill door price for wheat was 77 % higher. Input cost inflation between the farm gate and the mill door played a significant role in lowering the price farmers received for their wheat and increased the procurement cost of wheat by millers.
- ~ The increase in total mill site costs in the wheat-to-white bread value chain ranges between 53 % (low cost scenario) and 70 % (high cost scenario). The main cost items were production, packaging and distribution costs. Changes in the total mill site costs in the wheat-to-brown bread value chain are almost similar.
- ~ The increase in the cost of flour to bake one white bread range between 40 % to as high as 74 % depending on whether it is a high or low cost scenario and the level of efficiency of a baking plant. In the wheat-to-brown bread value chain the increase in the cost of flour to bake one brown bread range between 43 % to as high as 69 %.
- ~ Overall, the cost of producing a white or a brown bread has increased, on average, by 100 %. Over and above the cost of flour, other costs of producing bread include packaging, production and maintenance costs.

~ The margin between the selling price of a loaf of white bread and the cost of producing it has increased, on average, by 264 %. This margin is made of Value Added Tax (VAT) (R0.97 per loaf), a retailer margin of 15 % (R0.90 per loaf), costs associated with rebates, losses and returns (R0.60 per loaf), and a baker and miller margin that varies according the cost structure of the baking facility and its efficiency (R0.07 to R0.79 per loaf). The margin between the selling price of a loaf of brown bread and the cost of producing it has increased, on average, by 394 %. This margin is made of a retailer margin of 15 % (R0.93 per loaf), costs associated with rebates, losses and returns (R0.61 per loaf), and a baker and miller margin that varies according to the cost structure of the baking facility and its efficiency (R0.48 to R1.11 per loaf). The margin applicable to retailers is a gross margin since it is inclusive of the cost of retailing.

● **Maize-to-maize meal value chain (A comparison between 2000-2003 and 2009/10)**

- ~ The estimated gap between the farm gate price and the South African Futures Exchange (SAFEX) spot price increased substantially, which indicates the increase in the cost of sales by the producer of maize. The cost for the miller to land maize at the mill door increased, on average, by 102.95 %.
- ~ The total manufacturing and distribution costs that include capital expenditures increased between 28.81 % (low cost scenario) and 42.37 % (high cost scenario).
- ~ The cost of producing super maize meal (measured as Rand per ton of meal inclusive of manufacturing and distribution costs, as well as the procurement cost of maize) increased between 39.06 % (low cost scenario) and 44.89 % (high cost scenario).
- ~ The miller-to-retail margin increased between 38.25 % (low cost scenario) and 9.86 % (high cost scenario). This is a gross margin since it is inclusive of the cost of retailing.

● **Vegetables (breakdown of the margin applicable to market agents)**

- ~ The amount of commission paid to the agent varies between produce types and also between farmers, and ranges between 5 % and 7.5 % commission on the total amount of the transaction.
- ~ A typical breakdown of the commission is as follows:
 - Staff costs - 3 % to 4 %
 - Operational costs - 1 % to 1.75 %
 - Administration costs - 2 %
 - Capital and finance costs - 0.15 %
 - Net margin before tax - 0.5 % to 0.75 %

● **Dairy**

- ~ Typical activities to transform raw milk into pasteurised full cream milk in two litre containers offered for sale in a retail store include:
 - Collection of raw milk at raw milk production unit and delivery to processing plant
 - Processing and packaging
 - Marketing and distribution
 - Retailing
- ~ The contribution of each of these activities, as well as the cost of the raw milk, to the selling price of full cream milk in a two litre container can be summarised as follows:
 - Raw milk – 40.2 % (low cost scenario); 35.8 % (high cost scenario)
 - Collection and delivery of raw milk – 3.5 % (low cost scenario); 3.7 % (high cost scenario)
 - Processing and packaging – 18.1 % (low cost scenario); 15.5 % (high cost scenario)

- Marketing and distribution – 25.2 % (low cost scenario); 28.3 % (high cost scenario)
- Retailing – 13 % (low cost scenario); 16.6 % (high cost scenario)
- **Red meat**
 - ~ Due to the different value chain configurations in the red meat value chain the current analysis pertaining to the red meat value chain was restricted to the abattoir and retail levels.
 - ~ Various factors determine the income and cost structures of abattoirs. The most important of these factors include the lifetime of the infrastructure used; the degree to which the abattoir is vertically integrated up or down into the value chain; the degree to which the abattoir relies on capital investments in terms of technology or on labour; the capacity of the abattoir; the degree to which the abattoir adheres to certain rules and regulations relating to health and safety; the capacity utilised; and the distance from input and output markets and procurement practices. It is therefore very difficult to compile a typical cost structure for abattoirs.
 - ~ The cost structure for what could be classified as a service abattoir is as follows (note that even within the category of service abattoirs the contribution of different costs can be substantially different):
 - Facility payments (e.g. interest payment, electricity, water, rates and taxes) – 18 % to 32 %
 - Cost of sales (e.g. inspections, classification, veterinary services, packaging) – 6 % to 14 %
 - Other expenses (e.g. slaughter floor expenses, repairs and maintenance) – 53 % to 80 %
 - ~ Gross margins at the retail level can range between 20 % and 30 %, but net margins can range between 1 % and 5 %. At the retail level the largest contributors to costs are labour, electricity, packaging material, and rental costs. These costs items contribute as high as 90 % to the cost of selling red meat at the retail level.

Food security and the sustainability of agriculture

• Food security

Food security is a necessary pre-condition for any equitable economic growth to take place that is driven by savings and investment from the local population. Conversely, for the larger population of South Africa to be able to save and thus invest in economic development, their basic needs (i.e. food security) will have to be met. This however remains a challenge since the South African poor spend a larger proportion of their meagre income on food. In this regard cognisance must be taken that sound policy actions for the short and long term are not necessarily the same.

Primarily, it is specific policies that are needed to deal with the causes and consequences of high food prices. Although the issue of high food prices, and thus lack of accessibility to food by the poor, pose policy challenges on several fronts, there are effective and coherent actions that can be taken to help the most vulnerable people in the short term, while working to stabilise food prices by increasing agricultural production in the long term. For example, while positive, equitable economic growth is necessary to reduce poverty and thereby reduce the food gap for poor households, social welfare provides a specific poor-oriented mechanism to relieve chronic hunger in the short run. In long run, however, unless the poor and the commercial operators are directly involved in producing food within and around their location, neither the goal of food security nor that of sustainable development will be achieved. From a policy perspective, this requires an entire re-orientation of the food system in relation to planning and social and economic development, at all levels of government. In order to achieve long-term agricultural growth, the government should increase medium- and long-term investments in agricultural research and extension, rural infrastructure, and market access for small farmers.

Moreover, South African agriculture is facing new challenges that, along with existing forces, pose risks for poor people's livelihoods and food security. This situation calls for policy actions in three areas:

- (i) Comprehensive social protection and food and nutrition initiatives to meet the short- and medium-term needs of the poor;
- (ii) Investment in agriculture, particularly in agricultural science and technology, infrastructure and improved market access of smallholders to address the long-term problem of boosting supply; and
- (iii) Ensuring the sustainable use of natural resources.

- **Farming sustainability**

The discussion pertaining to food security indicated that food security has two major components that require co-existence for its success, namely, availability and access to sufficient, safe, and nutritious food. Access to sufficient food includes the ability to afford food. An interesting question therefore is what commodity and food trends are in real terms, i.e. without the effect of inflation. The real prices of commodities/food will give an indication of the affordability of food over the long term, but will also provide valuable insight into the long run economic viability of the agriculture sector to produce food.

The latest real international commodities price data published by the FAO until 2008 show that, for the periods 1957 to 2008 and 1974 to 2008, the average real prices for bulk commodities decreased by 35 % and 51 % respectively. Similar trends, i.e. declining real prices, have been evident in the vegetable oil and livestock sub-sectors. The downward trend in real commodity prices is cause for concern in that it has definite implications for the profitability of agricultural production, which in turn will affect the ability and willingness of producers to invest further and continue to farm. The challenge for producers to remain profitable in the long run in developing countries (and certain developed countries) is compounded by the fact that they receive very little support from their governments as opposed to producers in countries like the European Union (EU) and the United States of America (USA).

From a South African perspective, the terms of trade in agriculture deteriorated by 15.1 % from 1990 to 2009. The domestic terms of trade in agriculture indicate whether prices received by the farmers have kept pace with the prices paid for farming inputs, and hence provides a proxy for the state of profitability of the primary agricultural sector. Although real gross farm income showed an increasing trend since the early 1990s, the long term trend in real net farm income has been sideways since 1981/82. The long run trend in net farm income is concerning since it will affect future investment in agriculture, directly and indirectly. This in turn holds serious implications for the country as far as sustainable rural development is concerned and the ability to produce affordable food.

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Table of Contents

EXECUTIVE SUMMARY	i
Acknowledgements	x
Table of Contents	xi
List of Tables	xiii
List of Figures	xiv
List of Diagrams	xvi
Acronyms	xvii
1 Introduction	1
1.1 Introduction.....	1
1.2 Background.....	1
1.3 South Africa's agricultural trade.....	3
1.3.1 Primary versus processed agricultural trade.....	6
2 Selected International Price Trends	8
2.1 International fertiliser prices.....	8
2.2 International crude oil prices and the Baltic Dry Index.....	8
2.3 International commodity prices.....	10
2.4 International food prices.....	11
3 Selected Domestic Price Trends	13
3.1 Domestic fertiliser, fuel and transport costs.....	13
3.1.1 Domestic fertiliser price trends.....	13
3.1.2 Domestic fuel and transport cost trends.....	14
3.2 Selected domestic commodity price trends.....	15
3.2.1 Selected domestic producer price trends in the field crop sub-sector.....	16
3.2.2 Selected domestic producer price trends in the livestock sub-sector.....	18
3.3 Selected domestic food price trends.....	21
3.3.1 Urban food price trends.....	21
3.3.2 Rural food price trends.....	25
4 Farm-to-Retail Price Spreads	30
4.1 Wheat-to-bread value chain.....	31
4.2 Maize-to-maize meal value chain.....	38
4.3 Vegetable value chain.....	42
4.3.1 Real price trends in the vegetable value chain.....	42
4.3.2 Real price trends in the potato value chain.....	46
4.3.3 Composition of the market agent margin.....	47
4.4 Milk value chain.....	48
4.5 Red meat value chain.....	53
4.5.1 Real price trends in the beef value chain.....	53
4.5.2 Real price trends in the lamb value chain.....	56
4.5.3 Real price trends in the pork value chain.....	57
4.5.4 Farm-to-retail price spreads of red meat.....	58
4.6 Poultry value chain.....	60
5 Food security and the sustainability of agriculture	61
5.1 Food security issues in South Africa revisited.....	61
5.1.1 Analysis and discussion of food security in South Africa.....	63

5.1.2	Policy issues.....	64
5.2	Farming sustainability	66
References.....		70
Appendix A: Methodology to calculate the costs and margins in the wheat-to-bread value chain		73
Appendix B: Methodology to calculate the costs and margins in the maize-to-maize meal value chain		75

List of Tables

Table 1: Leading agricultural exports in 2009	5
Table 2: Leading agricultural imports in 2009	6
Table 3: Vehicle cost changes from 2004 to 2009.....	15
Table 4: Urban price trends for wheat products.....	21
Table 5: Urban price trends for maize products.....	21
Table 6: Urban price trends for sunflower products.....	22
Table 7: Urban price trends for processed vegetables	22
Table 8: Urban price trends for fresh vegetables.....	23
Table 9: Urban price trends for processed meat.....	23
Table 10: Urban price trends for fresh meat	24
Table 11: Urban price trends for dairy.....	24
Table 12: Urban price trends for fresh fruits.....	25
Table 13: Urban price trends for fish.....	25
Table 14: Urban price trends for other products	25
Table 15: Rural price trends for wheat products.....	26
Table 16: Rural price trends for maize products	26
Table 17: Rural price trends for sunflower products	27
Table 18: Rural price trends for dairy products.....	27
Table 19: Rural price trends for tea and coffee	27
Table 20: Rural price trends for pilchards in tomato sauce.....	28
Table 21: Rural price trends for beans.....	28
Table 22: Rural price trends for white sugar.....	28
Table 23: Rural price trends for rice.....	28
Table 24: Rural price trends for peanut butter	29
Table 25: Rural price trends for sorghum products.....	29
Table 26: Comparison between rural and urban food prices.....	29
Table 27: Average costs in the wheat-to-white bread value chain (Component A).....	34
Table 28: Average costs in the wheat-to-brown bread value chain (Component A).....	36
Table 29: Average costs in the maize-to-maize meal (super maize meal) value chain (Component A)	41
Table 30: Typical cost composition of pasteurised full cream milk in 2 litre containers offered for sale in a retail store.....	53
Table 31: Poverty indicators for South Africa: 1993-2000	62

List of Figures

Figure 1: The total value of primary and processed agricultural trade (1998–2009).....	4
Figure 2: Top ten export destinations for South African agricultural products in 2009.....	5
Figure 3: Top ten import origins for South African agricultural products in 2009.....	6
Figure 4: South Africa's primary agricultural trade	7
Figure 5: South Africa's processed agricultural trade	7
Figure 6: International fertiliser prices (2000–2009).....	8
Figure 7: Crude oil price (1997–2009).....	9
Figure 8: The Baltic Dry Index (August 2007–December 2009).....	9
Figure 9: The edibles price index (1980–2009).....	10
Figure 10: International cereal price trends (1980–2009).....	11
Figure 11: International vegetable oil price trends (1980–2009).....	11
Figure 12: Food price index (monthly 2006–2009).....	12
Figure 13: Global food price index for different food categories (1991–2009).....	12
Figure 14: Trends in selected intermediate input costs (1990–2009).....	13
Figure 15: Local fertiliser price trends (2000–2009).....	14
Figure 16: Crude oil and diesel prices in Gauteng and at the coast (2006–2009).....	14
Figure 17: Vehicle costs over time for different sized vehicles (2004–2009).....	15
Figure 18: Import and export parity prices of wheat (2006–2009).....	16
Figure 19: Domestic maize prices trends	16
Figure 20: Import and export parity prices of maize (2006–2009).....	17
Figure 21: Domestic soybean price trends	17
Figure 22: Domestic sunflower price trends	18
Figure 23: Beef producer price trends	18
Figure 24: Lamb producer price trends	19
Figure 25: Pork producer price trends	19
Figure 26: Chicken producer price trends	20
Figure 27: Raw milk price, sachets (R/litre) (2005–2009).....	20
Figure 28: Real farm gate price of wheat and the real price of sliced brown and white bread.....	31
Figure 29: Price difference between a loaf of white and brown bread.....	31
Figure 30: Real retail value and real farm value for brown bread.....	32
Figure 31: Real retail value and real farm value for white bread	32
Figure 32: Farm value shares for white bread and brown bread	33
Figure 33: Real farm-to-retail price spreads for white bread and brown bread	33
Figure 34: Real retail value and real farm value of special maize meal	39
Figure 35: Real retail value and real farm value of super maize meal	39
Figure 36: Farm value shares for super maize meal and special maize meal	40
Figure 37: Real farm-to-retail price spreads for super maize meal and special maize meal	40
Figure 38: Real retail price trends for selected vegetables	43
Figure 39: Real farm gate price trends for selected vegetables.....	43
Figure 40: Real farm-to-retail price spread and farm value share of cabbages.....	44
Figure 41: Real farm-to-retail price spread and farm value share of carrots	44
Figure 42: Real farm-to-retail price spread and farm value share of onions.....	45
Figure 43: Real farm-to-retail price spread and farm value share of tomatoes	45
Figure 44: Real farm-to-retail price spread of tomatoes including and excluding transport cost	46

Figure 45: Real retail price trends for potatoes.....	46
Figure 46: Real farm-to-retail price spread and farm value share of potatoes	47
Figure 47: Real retail values for full cream and low fat milk, sachets.....	48
Figure 48: Real calculated raw milk price, sachets.....	49
Figure 49: Farm value shares for full cream milk, sachets (R/litre).....	50
Figure 50: Real farm-to-retail price spread for full cream milk and low fat milk, sachets.....	51
Figure 51: Real retail price trends for selected beef cuts	54
Figure 52: Real producer price trends for beef	54
Figure 53: Real farm, wholesale and retail prices of beef (carcass equivalent)	55
Figure 54: Real farm-to-retail price spread and farm value share of beef	55
Figure 55: Index of real farm, wholesale and retail prices of lamb chops (carcass equivalent).....	56
Figure 56: Index of real farm-to-retail price spread and farm value share of lamb chops.....	56
Figure 57: Index of real farm, wholesale and retail prices of pork chops (carcass equivalent).....	57
Figure 58: Index of real farm-to-retail price spread and farm value share of pork chops	57
Figure 59: Breakdown of costs in selling red meat at retail level.....	60
Figure 60: Real retail and producer price of poultry.....	60
Figure 61: Real farm-to-retail price spread and farm value share of poultry	60
Figure 62: Trends in food prices in South Africa.....	62
Figure 63: Household expenditure on food versus total household expenditure.....	64
Figure 64: Real international prices of bulk commodities (1957–2008).....	67
Figure 65: Real international prices of vegetable oils (1957–2008)	67
Figure 66: Real international prices of livestock commodities (1957–2008).....	67
Figure 67: Terms of trade in agriculture	68
Figure 68: Real gross and net farm income in agriculture.....	69

List of Diagrams

Diagram 1: Cost components of a market agent	48
Diagram 2: Principle of fat standardization.....	50
Diagram 3: Typical activities include actions from raw milk at the raw milk production unit to packaged pasteurised milk offered for sale in a retail outlet.....	51
Diagram 4: Operational cost components of a typical service abattoir	59
Diagram 5: The food challenge in South Africa	63
Diagram 6: Conceptualising the 'location is what it eats'.....	64

Acronyms

AMT	Agrimark Trends
BDI	Baltic Dry Index
DAP	Di-Ammonium Phosphate
DAFF	Department of Agriculture, Fisheries and Forestry
CAADP	Comprehensive African Agricultural Development Programme
CPI	Consumer Price Index
CPI-Food	Consumer Price Index for Food
CPIX	Consumer Price Index excluding bond rates
EU	European Union
FAO	Food and Agriculture Organization
FCR	Food Cost Review
FPI	Food Price Index (FAO)
FRPI	Farming Requisites Price Index
FPM	Food Price Monitor
FTRPS	Farm-to-Retail Price Spreads
IEA	International Energy Agency
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
ICM	Input Cost Monitor
MAP	Mono-Ammonium Phosphate
MDG	Millennium Development Goals
MOP	Muriate of Potash
MPO	Milk Producers' Organisation
NAMC	National Agricultural Marketing Council
NFD	National Freight Database
NFPM	National Fresh Produce Market
NEPAD	New Partnership for African Development
NFD	National Freight Database
PPI	Producer Price Index
SADC	Southern African Development Community
SAFEX	South African Futures Exchange
SAMPRO	South African Milk Processors Organization
SARB	South African Reserve Bank
SAPIA	South African Petroleum Industry Association
Stats SA	Statistics South Africa
UK	United Kingdom
UN	United Nations
USA	United States of America
USDA	United States Department of Agriculture
WTA	World Trade Atlas

1 | Introduction

1.1 Introduction

It is evident from statistics pertaining to 2009 that input, commodity and food prices have declined significantly from the highs experienced during 2008. The 2008 and 2009 Food Cost Review (FCR) reports deliberated extensively on input, commodity and food price trends in 2007 and 2008. Although prices have declined significantly, prices for most inputs, commodities and food were still at higher levels in 2009 than before the hike in prices that commenced in 2007. It is generally expected that most prices throughout the various different agro-food chains will remain above the long-run equilibrium prices prior to 2007.

This issue of the FCR considers input, commodity and food price trends, globally and nationally, in 2009, but also briefly reflects on more long-run trends. In addition, special attention is paid to provide a cost breakdown for selected value chains, from farm to retailer. Lastly, issues pertaining to food security and the sustainability of the South African agricultural sector are considered.

1.2 Background

The Food and Agriculture Organization (FAO) monitor international food prices by means of a Food Price Index¹ (FPI) on a monthly basis. According to the FAO (2010), the weighted FPI for all products increased with 68.84 % from 2006 to 2008. Cereal prices increased with 117.6 %, vegetable oil prices with 113.43 %, dairy product prices with 91.6 % and meat product prices with 21.63 %. Sugar prices decreases with 28 % from 2006 to 2008. According to various studies by amongst others the FAO (2009), Abbott (2009), Fan (2010), Shapouri, Rosen and Peters (2010), Fava Neves (2010), and as reported in previous Food Price Monitor (FPM) reports, the spike in food prices were largely due to the following factors.

- ~ Weather-related production shortfalls.
- ~ Low stock levels for grains.
- ~ Trade policies used by certain countries, which disrupted imports and exports of inputs, commodities and food.
- ~ Surge in energy costs, in particular the oil price.
- ~ Increased production of biofuels.
- ~ Global economic growth (particularly in developing countries) that stimulated demand and influenced consumer preferences.
- ~ Migration and urbanisation.
- ~ Speculative activity on futures markets due to higher volatility in prices.
- ~ Depreciation in the US Dollar that had a negative impact on countries that peg their currencies to the US Dollar, and that is weaker than the US Dollar.

¹ The index consists of a weighted average of five different food price groups namely: Meat Price, Dairy Price, Cereals Price, Oil and Fat Price and Sugar Price indices. In total 55 commodity quotations considered by FAO commodity specialists as representing the international prices of the food commodities are included in the overall index.

According to Grynberg (2010), the above factors can be narrowed down to three that had the largest impact on food prices, namely:

- ~ Currency fluctuations, e.g. the US Dollar depreciated significantly in value due to twin deficits.
- ~ Increase in the oil price and its traditional transmission to food prices.
- ~ Biofuel policies in the United States of America (USA) and European Union (EU) which created mandates for renewable fuels.

In addition to the hike in prices, prices also became more volatile as a result of increasingly variable weather patterns, volatility in the energy markets, short-run policy changes that affected trade in agricultural products, etc. The high level of volatility resulted in increased levels of uncertainty in the global food markets. High uncertainty in turn affects producers' ability to access credit, influences their decisions to invest in technology and determines their planting decisions. Uncertainty in markets also attracts speculative behaviour, which could further fuel volatility.

The impact of high food prices at a country level includes, amongst others, the following:

- ~ Social unrest and food riots.
- ~ "Panic buying" by some net importing countries to secure adequate supplies and build domestic stocks of major cereals.
- ~ Widening current account deficits for net importing countries.
- ~ Threat to macroeconomic stability and overall growth, especially of low-income, net-importing countries.
- ~ More food insecure households and hence increased pressure on governments to expand their social welfare programmes.

At the household level the consequences include, amongst others, the following:

- ~ Substitution of more expensive sources of protein and other nutrient-rich foods for low-cost high-energy foods to maintain a minimum level of productivity.
- ~ Compromise on health care, education and other non-food household expenditures.
- ~ Selling off assets, e.g. livestock.
- ~ Increased reliance on social programmes.
- ~ Eat fewer and less nutritious meals per day.

Since the latter part of 2008 the upward trend in prices for agricultural inputs, commodities and food reversed. For example, according to the FAO (2009), the global FPI decreased with 26 % from 2008 to 2009. The main reasons for this decline in prices include, amongst others, the following: (FAO, 2009; Eghbal, 2009)

- ~ Significant expansion in world cereal production on the back of high prices; this expansion was mainly in developed countries, while Brazil, China and India also experienced higher production of cereals.
- ~ The emergence of the financial crises during late 2008 and the subsequent global economic recession in 2009 had a significant negative impact on global economic activity. The result was a significant drop in oil prices, which culminated into lower energy, fertiliser and distribution costs. The economic slowdown also resulted in a weaker demand for agricultural inputs and food.

It is however important to note that the significant drop in commodity and food prices measured at a global level have not necessarily translated into significantly lower prices at an individual country level. For example, in mid-2009 the FAO (2009) reported that 80 % to 90 % of all cereal prices monitored by them in 27 countries in sub-Saharan Africa were more than 25 % higher than before the food price crisis. Similar trends were reported for countries in Asia and Latin America. Reasons provided

for the aforementioned include reduced harvests, higher or delayed imports, civil conflict, devaluation of national currencies, changes in food and trade policies, increased incomes and demand, and transport constraints and higher transport costs.

The question that arises is what does the future (medium to long-run) holds in terms of input, commodity and food prices. The FAO (2009) argues that with the exception of oil prices, the factors that contributed to high food prices remain unchanged; supplies have not increased substantially and stocks remain low. Of particular importance will be developments in the biofuels industry. According to Fava Neves (2010), these are nine major factors that are changing and that will place increasing pressure on the capacity to supply food to the world. These include:

- ~ Increase in area dedicated for growing crops for biofuels;
- ~ The growth of the world population;
- ~ Economic development and income distribution in highly populated countries;
- ~ Stronger governmental programmes;
- ~ Migration and urbanisation;
- ~ The impact of oil prices on agricultural inputs and the distribution cost of food;
- ~ Exchange rate variability and in particular the devaluation of the US Dollar;
- ~ Production shortages as a result of adverse climate and financial conditions, water and climate change impacts; and
- ~ Investment funds operating in agricultural commodity markets.

South Africa did not escape the hike in agricultural input, commodity and food prices. Similarly, the drop in global prices was also transmitted to the South African market. The future holds the same prospects. The reason for this is that trade policies applicable to agriculture in South Africa was significantly liberalised in the mid-1990s and was followed by the deregulation of the marketing of agricultural products shortly afterwards.

A more open and deregulated marketing environment means that major commodity and food price events globally, in whatever way initiated, are transmitted onto the local market relatively fast. It is for this reason that it is important to consider South Africa's agricultural trade in more detail before considering global and local price trends.

1.3 South Africa's agricultural trade²

Within the ambit of global and domestic food inflation trends, cognisance should be taken that a commodity like wheat and food products like rice, palm oil and chicken cuts are among the leading agricultural commodity and food items imported by South Africa due to the fact that South Africa does not produce enough or very little of these items, i.e. South Africa is a net importer of these items. Prices for these items will therefore almost always reflect import parity prices, which mean that local demand and supply conditions will not have any significant bearing on domestic prices as is the case in the maize industry. In addition, global inflationary pressures will be transmitted much faster onto the local market for these commodities and products.

This is in stark contrast to the local maize industry where local maize prices moved more or less when international maize prices were on the increase during 2008 due to local production that exceeded local consumption. If local maize production was deficient to meet local demand for maize, the local price would have been approximately R1 500 per ton higher during mid-2008, which would have resulted in even higher food inflation in South Africa during 2008.

² The definition of agricultural trade in this section includes all agricultural and fishery products as specified in the World Trade Organisation (WTO) Agreement on Agriculture (AoA) (WTO, 2003). The agriculture products included are HS:1-HS:24, HS:2505.43, HS:2905.44, HS:33.01, HS:35.01-HS:35.05, HS:3809.10, HS:3823.60, HS:41.01-HS:41.03, HS:43.01, HS:50.01-HS:50.03, HS:51.01-HS:51.03, HS:52.01-HS:52.03, HS:53.01, and HS:53.02; but excludes forestry products (HS:44).

If one considers the four major import items mentioned above, there is potential to expand production of wheat and poultry production. In the medium to long-run expansion in the production of wheat and poultry will provide for conditions where local supply and demand factors can influence prices on the domestic market in a more meaningful way, and hence create the conditions where local consumers are shielded against international price shocks.

This sub-section shows that soybean oilcakes constitute the second largest import item in value terms. In other words, the same principles apply that are mentioned above for net imported products. This is notwithstanding the fact that South Africa has the potential to expand soybean production, but that sub-optimal investment in the processing industry has limited South Africa's potential to absorb increased soybean production without severely disrupting the primary soybean sector.

The value of total agricultural exports showed continuous growth from 1998 to 2009. Since 2007, the growth in the value of total agricultural exports has exceeded growth in the value of total agricultural imports (see Figure 1). In 2009 the value of total agricultural exports amounted to approximately R49 billion, while the value of total agricultural imports stood at R37 billion, resulting in a R12 billion agricultural trade surplus. This is a result of the 2 % increase in the value of total agricultural exports and a decrease in the value of total agricultural imports by 8 % from 2008 to 2009. This is a significant improvement compared to 2007, when the positive trade balance was nearly eroded due to a sharp increase in the value of total agricultural imports during 2007 compared to the value of total agricultural exports.

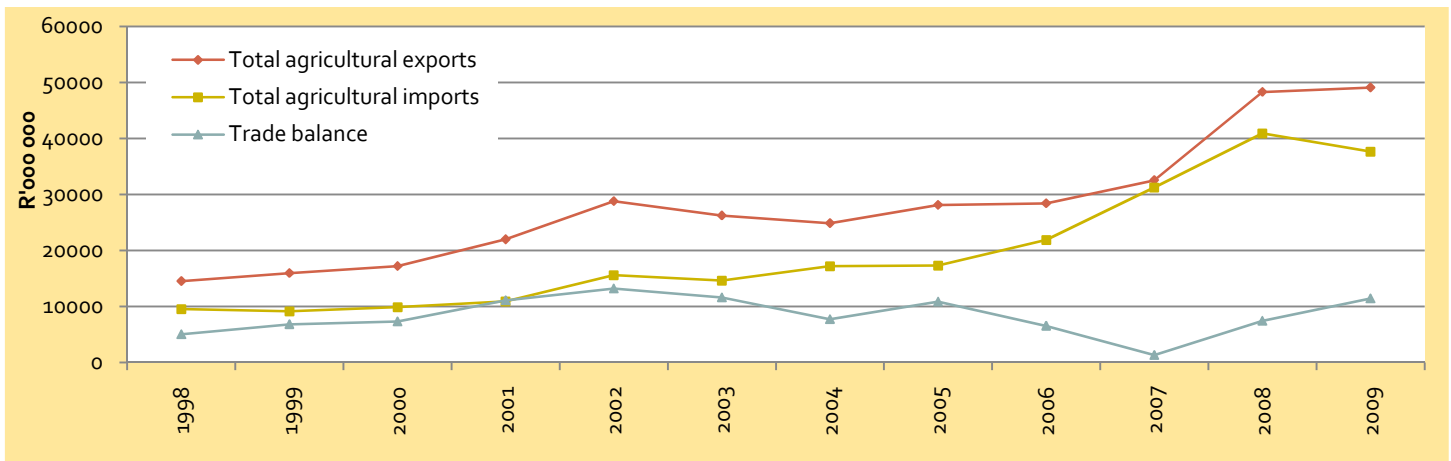


Figure 1: The total value of primary and processed agricultural trade (1998–2009)

Source: World Trade Atlas, 2010.

Figure 2 presents the top ten export destinations for South African agricultural exports in 2009, expressed in value terms. The top five destinations were the EU-27, Zimbabwe, Kenya, Mozambique, and the USA. The total value of exports of agricultural products from South Africa to the EU-27, i.e. 36 %, makes it a very strategic market for South African agricultural products. Five African countries accounted for a total of 22 % of the value of exports. These were Zimbabwe, Kenya, Mozambique, Angola and Zambia, contributing 7 %, 6 %, 4 %, 3 % and 2 % respectively to the value of exports. Notably, China, regarded as one of the most important emerging economies in the world, accounted for only 3 % of the total value of agricultural exports.

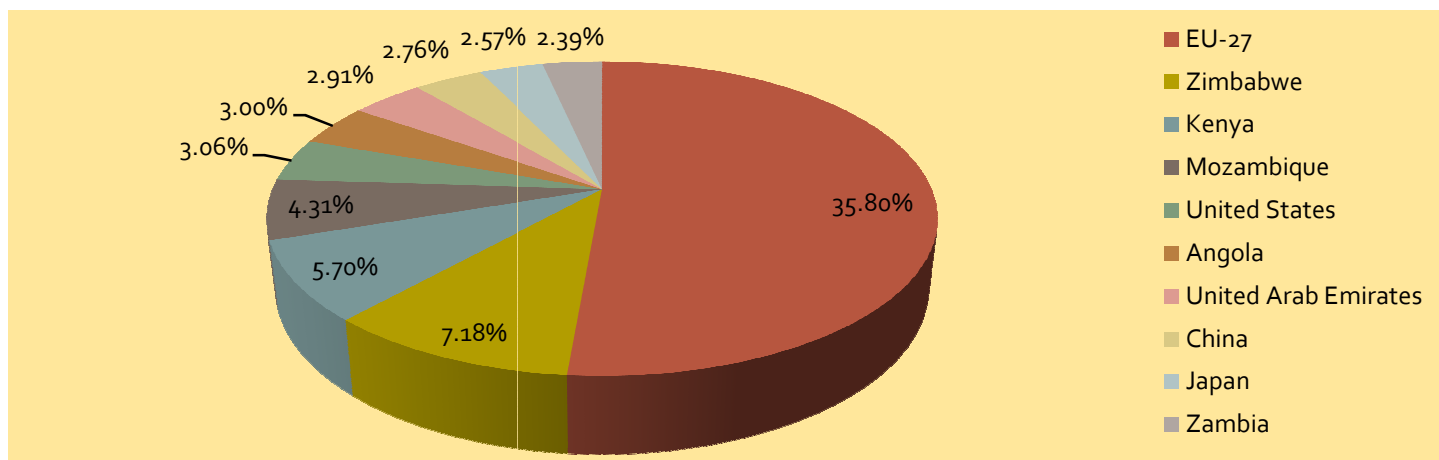


Figure 2: Top ten export destinations for South African agricultural products in 2009

Source: World Trade Atlas, 2010.

The top ten products exported in 2009, expressed in value terms, and their share of total agricultural exports are presented in Table 1. The top three agricultural exports were wine (2 litres), maize, and fresh oranges, accounting for 9 %, 7 %, and 7 % respectively. It is important to note that the top ten agricultural exports accounted for almost 46 % (R23.1 billion) of the total value of agricultural exports. This indicates South Africa’s reliance on export earnings from a relatively small group of products. The top ten list is dominated by wine and fruits, with only one grain product (maize) and one animal product (wool).

Table 1: Leading agricultural exports in 2009

Products	Value 2009 (R'million)	Share of total agricultural export (%)
Wine 2 litres	4 343.02	9
Maize	3 444.47	7
Oranges, fresh	3 365.03	7
Grapes, fresh	3 021.50	6
Cane sugar	2 067.23	4
Apples, fresh	1 957.45	4
Wine, fresh grape nesoi	1 472.90	3
Wool	1 226.79	2
Pears and quinces, fresh	1 163.13	2
Cane/beet sugar, chemically pure	1 058.75	2

Source: World Trade Atlas, 2010.

Figure 3 presents the top ten import origins for South African agricultural products in 2009, expressed in value terms. These countries accounted for 84 % of the total value of agricultural imports. The EU-27 was South Africa’s most dominant import trade partner, accounting for 27 % of the value of agricultural imports. Following the EU-27, Argentina, Thailand, and Brazil accounted for 14 %, 11 %, and 9 % respectively of the total value of agricultural imports by South Africa. It is interesting to note that there were no African countries in the top ten list of import origins, and that 51 % of agricultural imports were from non-OECD countries.

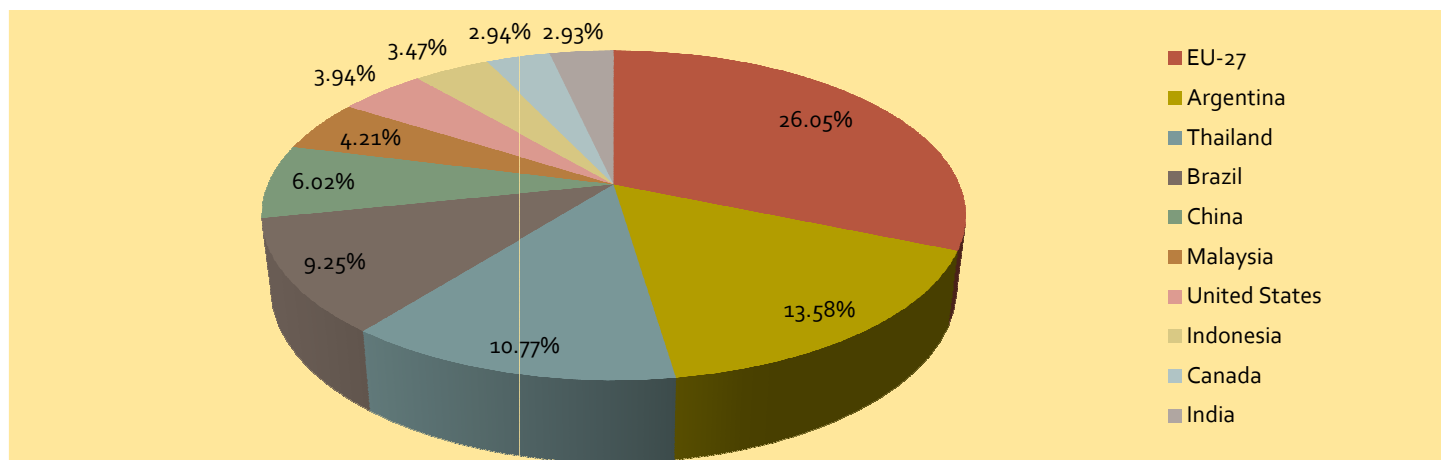


Figure 3: Top ten import origins for South African agricultural products in 2009

Source: World Trade Atlas, 2010.

Table 2 presents the leading agricultural products imported into South Africa in 2009. The top three products were rice, soybean oilcake, and wheat, accounting for 10 %, 7 %, and 6 % respectively of the total value of agricultural imports. It should be noted that most of the top ten import products are processed products. The top ten products accounted for 47 % of the total value of imports in 2009.

Table 2: Leading agricultural imports in 2009

Products	Value 2009 (R' million)	Share of total agricultural imports (%)
Rice	37 659.32	10
Soybean oilcake	3 704.432	7
Wheat	2 466.415	6
Palm oil	2 337.361	5
Whiskies	1 963.489	4
Tobacco	1 636.719	4
Chicken cuts, frozen	1 342.18	3
Beer made from malt	1 191.368	3
Food preparations nesoi	1 185.919	3
Sardines	962.444	2

Source: World Trade Atlas, 2010.

1.3.1 Primary versus processed agricultural trade³

Figure 4 shows that the value of primary agricultural exports consistently exceeded that of agricultural imports from 2000 to 2009. In 2009, there was a positive trade balance of R7.6 billion. The value of both imports and exports decreased from 2008 to 2009.

³ It is important to note that the figures used in this sub-section are preliminary figures received from Department of Agriculture, Forestry and Fishery (DAFF).

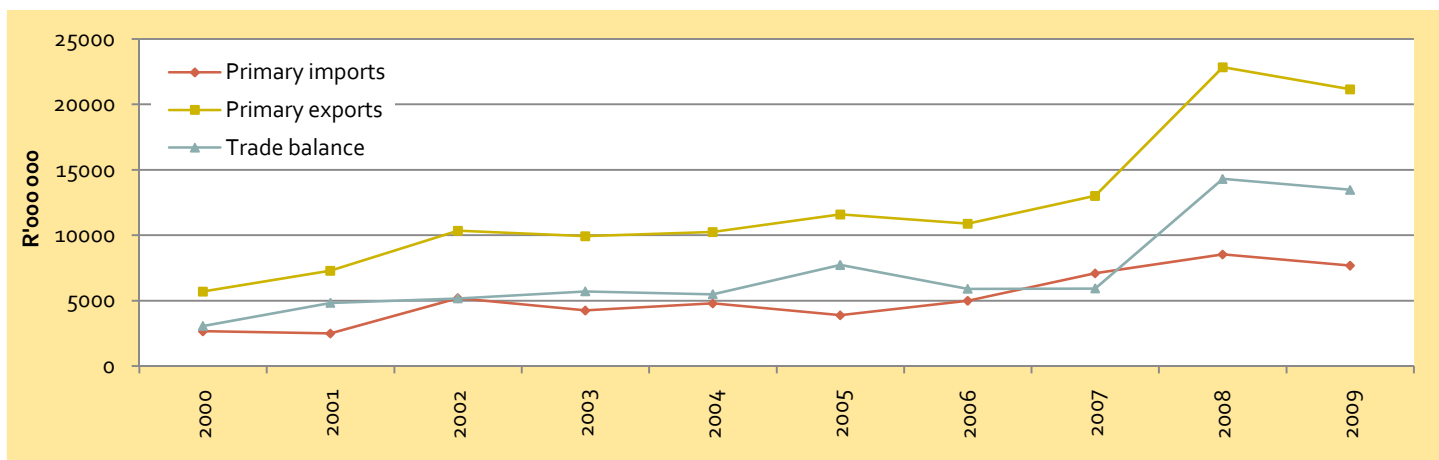


Figure 4: South Africa's primary agricultural trade

Source: DAFF, 2010 (preliminary figures).

In 2009, wheat, tobacco, and kidney beans contributed 30 %, 18 %, and 6 % respectively to the total value of primary agricultural imports. Maize, oranges, and grapes contributed to 16 %, 16 %, and 14 % respectively to the total value of primary agricultural exports.

Figure 5 shows the value of processed agricultural imports and exports from 2000 to 2009. The value of processed agricultural exports increased from 2008 to 2009, to approximately R25.3 billion. The value of processed agricultural imports decreased during this period to approximately R27.7 billion (The value of the top three processed agricultural imports in 2009, namely rice, soybean oilcake, and palm oil, accounted for 13 %, 9 %, and 7 % respectively of the total value of processed agricultural imports). The resulting processed agricultural trade deficit was R2.5 billion in 2009. The trade deficit for processed agricultural products improved from over R7 billion in 2008 to R2.5 billion in 2009.

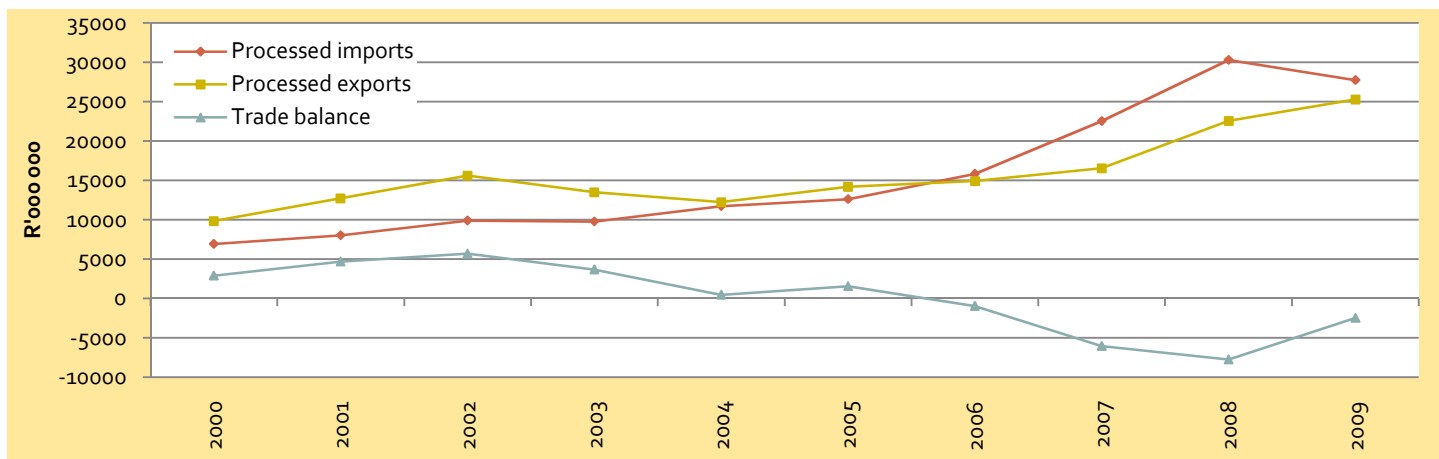


Figure 5: South Africa's processed agricultural trade

Source: DAFF, 2010 (preliminary figures).

2 | Selected International Price Trends

2.1 International fertiliser prices

Since 2007 fertiliser prices have been one of the major cost drivers in the primary agricultural sector, more specifically in the grain sub-sector. Globally concerns were raised about the impact of significant increases in fertiliser prices on the sustainability of crop production, especially in countries with a high level of national and household food insecurity.

More specifically, international fertiliser prices started to increase in 2007 and peaked in 2008 as reported in the FCR of 2008. After prices peaked during the latter part of 2008, prices started to decline and 2009 started with lower fertiliser prices. Fertiliser prices continued to decline during 2009. Figure 6 shows the international fertiliser price movements. During the same period the R/\$ exchange rate depreciated by 21.6 %. Price changes for the items depicted in Figure 6 between 2008 and 2009 were as follows: the price for Urea decreased by 46.4 %, the Di-Ammonium Phosphate (DAP) price decreased by 65.1 % and the price of Muriate of Potash (MOP) decreased by 6.6 %.

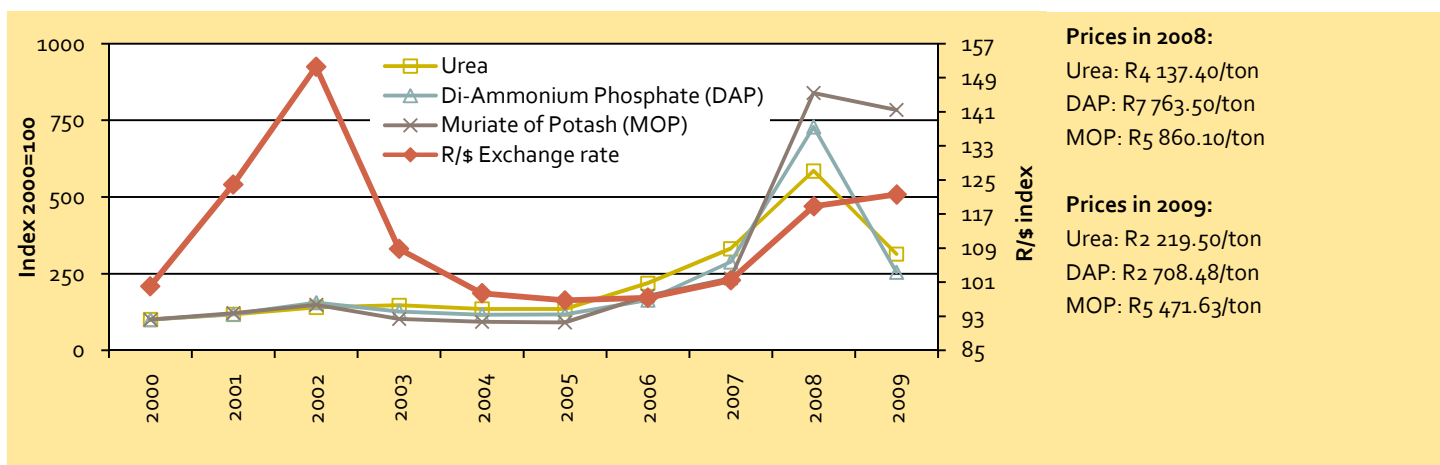


Figure 6: International fertiliser prices (2000–2009)

Source: Grain SA, 2010.

Since the fertiliser price hikes in 2008, various studies have been conducted to determine their cause. A report by Huang (2009) argues that strong global demand for fertiliser and low inventories of fertiliser caused the price hikes in 2008. He is of the opinion that the increased global fertiliser demand was due to high commodity prices, which encouraged producers to expand production and increase their fertiliser use for higher yields. Lower oil prices, stronger stocks levels than in 2006/07 and lower demand for fertilisers resulted in significantly lower fertiliser prices in 2009 compared to 2008. Another factor that affected the demand for fertilisers is tighter credit controls amid the global financial and economic crises, which resulted in the postponement of purchasing fertilisers.

2.2 International crude oil prices and the Baltic Dry Index

Crude oil prices affect food value chains in several complex ways, i.e. from influencing the prices of primary agricultural inputs, to inputs used in value addition processes (e.g. packaging) to the distribution of food. Hence trends in the crude oil price are an

important indicator of trends in prices throughout the food value chain. Crude oil prices rocketed since the early parts of 2007 to reach a peak of US\$145 per barrel in July 2008. The average price per barrel in 2008 was US\$97.55 per barrel. The oil price has decreased significantly since the peak in 2008. On an average annual basis the price decreased with 36.65 % from US\$97.55 per barrel in 2008 to US\$61.80 per barrel in 2009. According to the International Energy Agency (IEA) (2009), the price of oil is dependent on a multitude of global economic factors such economic growth, future demand and supply of oil and speculation in the oil market. Tighter credit availability, the slowdown in economic activity as a result of the global financial and economic crises and less speculation in the oil market are reasons provided by the IEA (2009) for the significant drop in oil prices since mid-2008.

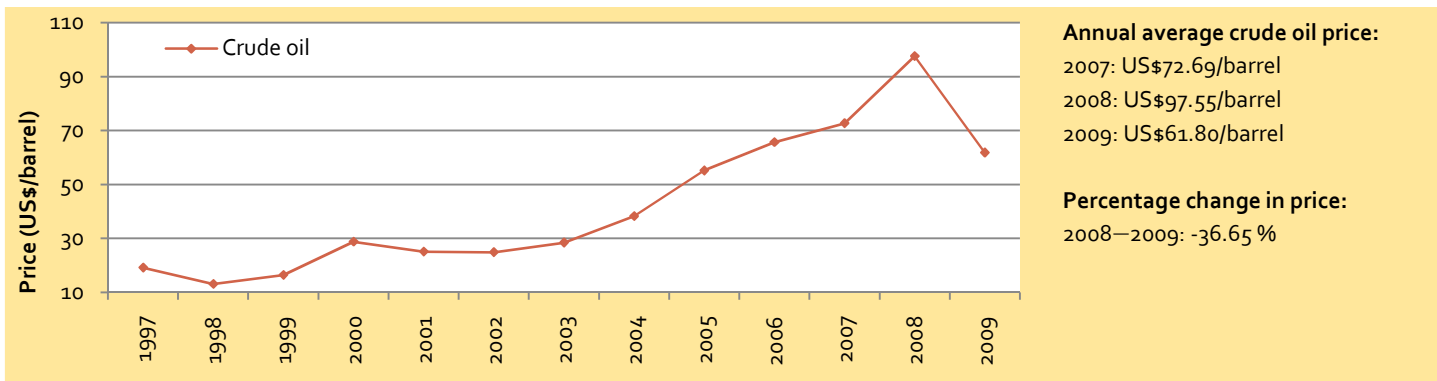


Figure 7: Crude oil price (1997–2009)

Source: GrainSA, 2010.

Figure 8 shows the movement of the Baltic Dry Index (BDI) from August 2007 to December 2009. The BDI is a shipping and trade index created by the London-based Baltic Exchange. The BDI measures the change in the transport costs of raw materials such as metals, grains and fossil fuels by sea, which is derived from the global demand and supply for the mentioned commodities, shipped abroad by dry bulk carriers. The BDI is also used by investors to determine the global demand and supply of raw materials, which give an indication of future economic growth. The average BDI for 2009 was 2566 index points, a decrease of 60 % from the average of 6394 index points of 2008. This can be attributed to a significant slowdown in the demand for bulk carriers, which reflected the lower demand as a result of the depressed global economic situation.

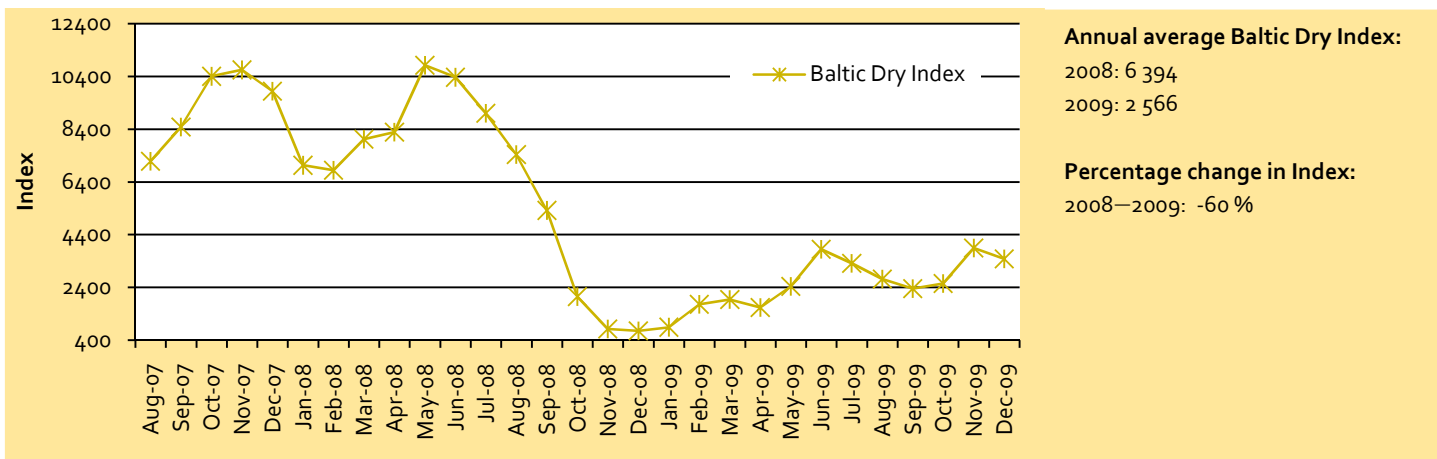


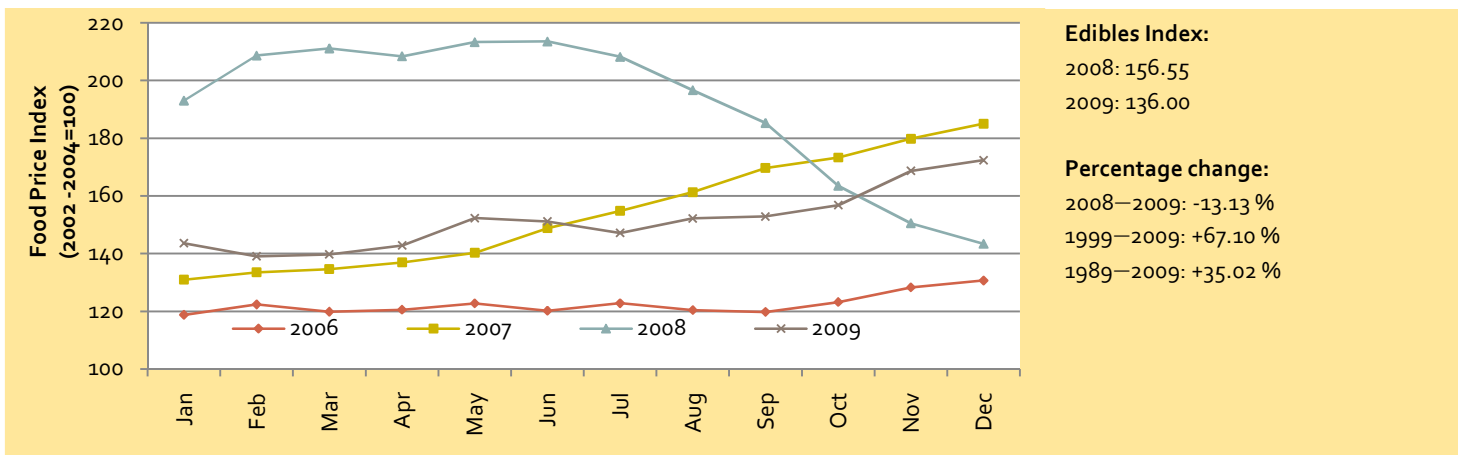
Figure 8: The Baltic Dry Index (August 2007–December 2009)

Source: SAGIS, 2010.

2.3 International commodity prices

The International Monetary Fund (IMF) Edibles Index⁴ compiled by the IMF measure international food and beverage prices, some in commodity form and some in final product form on a monthly basis. According to this index, world food and commodity prices experienced extremes at both ends during the past decade. In October 2001, the IMF Edibles Index reached its lowest point, and in June 2008, it reached its highest point over the period depicted in Figure 9. The previous high was in November 1980, when the index reached 143 index points, which is considerably lower than the high reached in June 2008 of 178 index points.

After the price hikes of 2008, consumers worldwide experienced some relief in the form of lower food prices in 2009. For example, the IMF Edibles Index decreased by 13.13 %, from an average 156.55 index points in 2008 to 136 index points in 2009. The index was nevertheless still higher in 2009 than in the years preceding 2008. Record harvests in mostly developing countries, weaker demand for food as a result of the global economic slowdown, a weaker US Dollar and lower fuel prices during the global recession have caused prices to decrease for most of the agricultural commodities (FAO, 2009; Eghbal, 2009).



Edibles Index:
 2008: 156.55
 2009: 136.00

Percentage change:
 2008–2009: -13.13 %
 1999–2009: +67.10 %
 1989–2009: +35.02 %

Figure 9: The edibles price index (1980–2009)

Source: IMF, 2010.

From a commodity specific point of view, high commodity prices experienced during mid-2008 decreased towards the end of 2008, and 2009 started with much lower prices. International commodity prices decreased on averaged by 22 % from 2008 to 2009, but commodity prices still remained high compared to price levels before the price hikes in 2008.

The estimated production for world cereals in 2009 was 2 234 million tonnes (including rice in milled terms), the second largest crop ever. This was nevertheless an estimated 3 % lower than world cereal production in 2008. Higher yields in wheat crops in several countries like Asia, Africa and Europe and in the USA were responsible for the higher production levels. The production of coarse grains in the USA was also much higher than expected. The recovery in world stocks helped to ease concerns about shortages and led to a decline in international grain prices (USDA, 2009).

⁴ The Edibles Index includes cereal prices, vegetable oils and protein meals prices, frozen meat prices, seafood prices, sugar prices and non-alcoholic beverage prices.

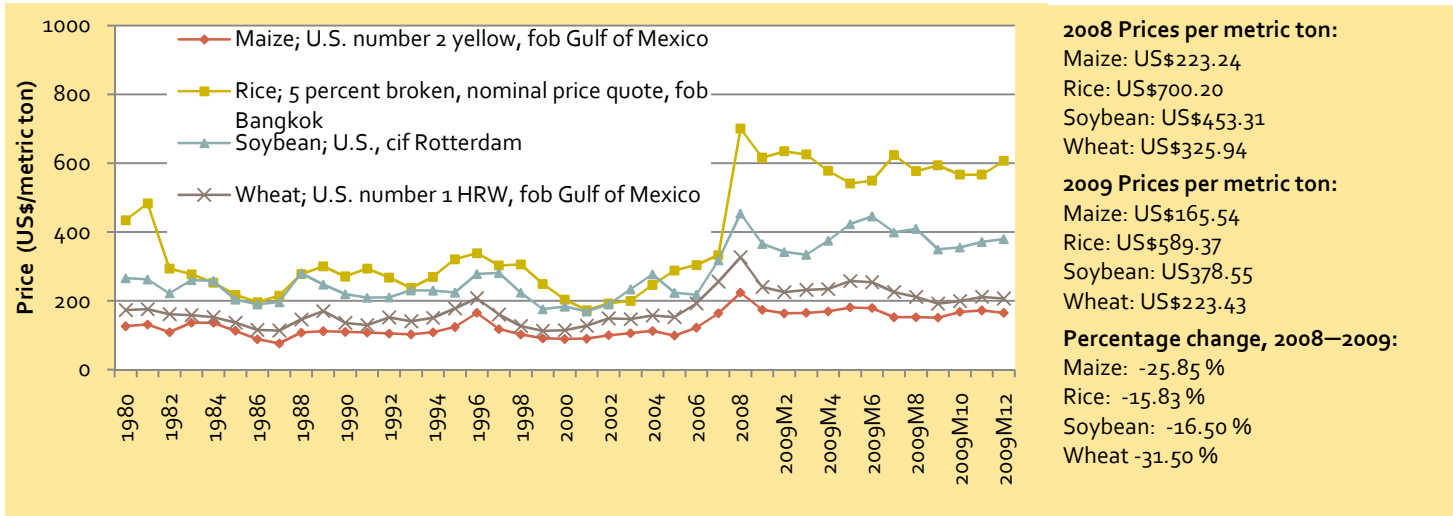


Figure 10: International cereal price trends (1980–2009)

Source: IMF, 2010.

Figure 11 depicts global price movements in the vegetable oil market. Although vegetable oil prices decreased considerably from 2008 until early 2009, prices started to increase gradually again. On average, vegetable oil prices were 12.81 % higher in 2009 than in 2007, before the price hikes in 2008. The main reason for the price trends in 2009 can be attributed to strong global demand for vegetable oils, active investment fund activity on futures markets that coincided with relatively tight export supplies, recovering mineral oil prices and further weakness in the US Dollar.

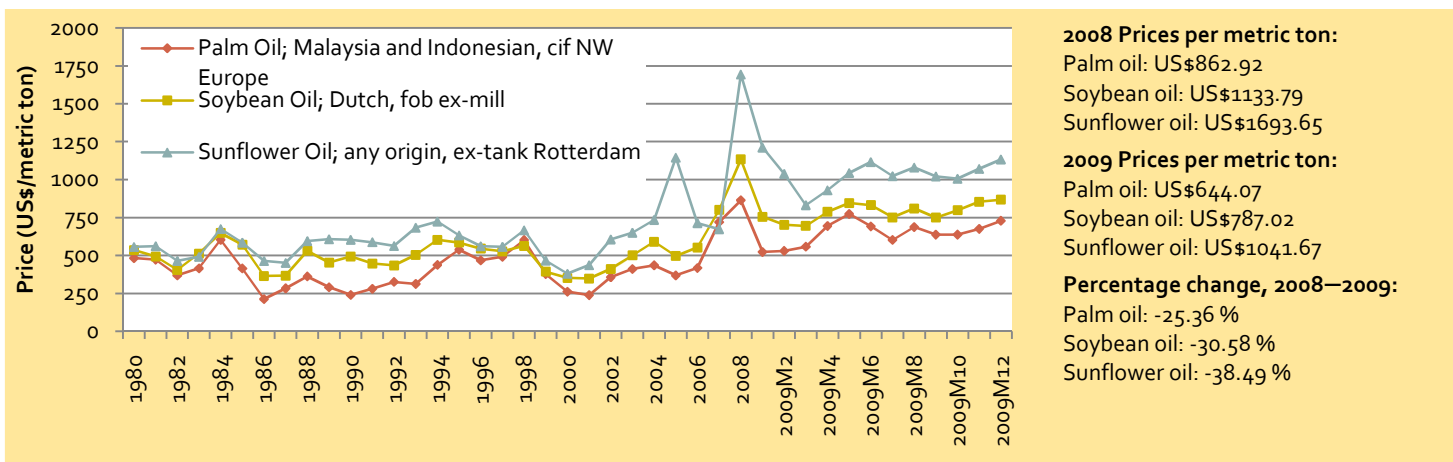
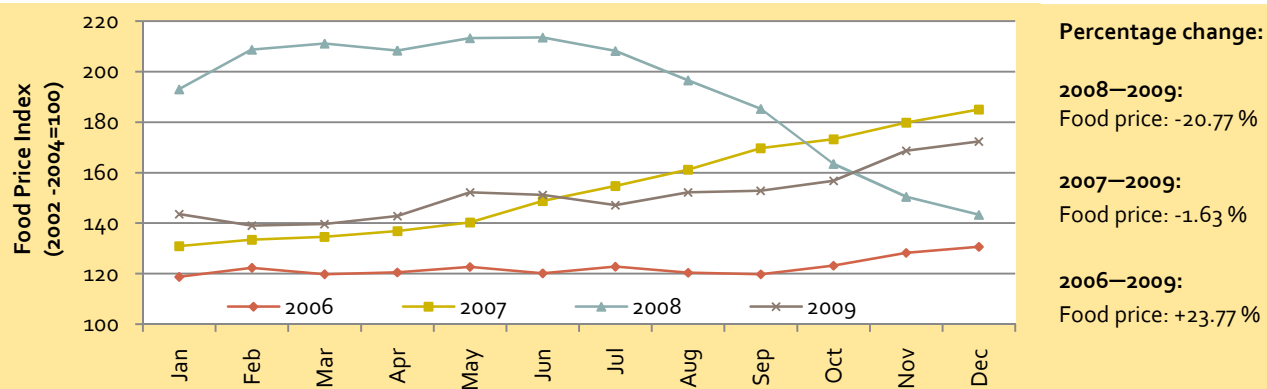


Figure 11: International vegetable oil price trends (1980–2009)

Source: IMF, 2010.

2.4 International food prices

Figure 12 shows the global FPI compiled by the FAO for each month for the past four years. Food prices decreased by 20.77 % from 2008 to 2009, but were still 23.77 % higher in 2009 than in 2006.



Percentage change:

2008–2009:
Food price: -20.77 %

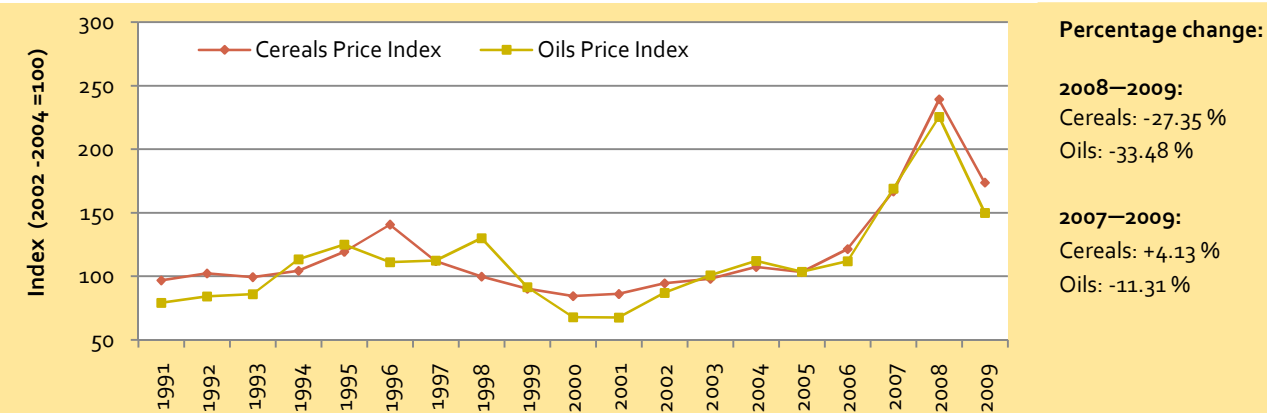
2007–2009:
Food price: -1.63 %

2006–2009:
Food price: +23.77 %

Figure 12: Food price index (monthly 2006–2009)

Source: FAO, 2010.

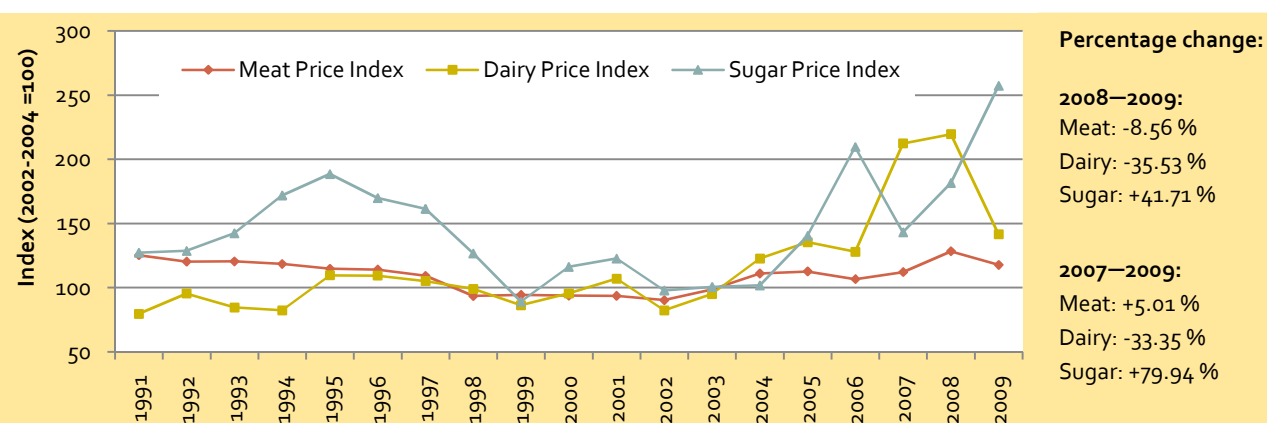
Figure 13 shows the price indices for selected food products annually from 1991 to 2009. The prices for cereals and oils decreased by 27.35 % and 33.48 % respectively from 2008 to 2009. The price of dairy decreased by 35.53 %, meat prices decreased by 8.56 %, while sugar prices increased by 41.71 % over the same period.



Percentage change:

2008–2009:
Cereals: -27.35 %
Oils: -33.48 %

2007–2009:
Cereals: +4.13 %
Oils: -11.31 %



Percentage change:

2008–2009:
Meat: -8.56 %
Dairy: -35.53 %
Sugar: +41.71 %

2007–2009:
Meat: +5.01 %
Dairy: -33.35 %
Sugar: +79.94 %

Figure 13: Global food price index for different food categories (1991–2009)

Source: FAO, 2010.

3 | Selected Domestic Price Trends

3.1 Domestic fertiliser, fuel and transport costs

Figure 14 shows price trends for selected intermediate inputs from 1990 to 2009. (The intermediate inputs included are fertiliser, fuel, animal health and crop protection, maintenance and repairs, and farm feed). All the indices show an increasing trend over the depicted period. The price of fuel showed the largest increase, of 761.8 %, from 1990 to 2009, followed by fertiliser at 699.3 % and farm feed at 515.5 %. During the same period, the price of maintenance and repairs and animal health and crop protection increased by 401.3 % and 290.9 %, respectively. Trends in the depicted price indices from 2008 to 2009 were as follows: fertiliser and fuel price both decreased by 10.7 % and 23.7 % respectively, while animal health and crop protection, maintenance and repairs and farm feed all showed an increase of 16 %, 15.8 % and 25.9 %, respectively.

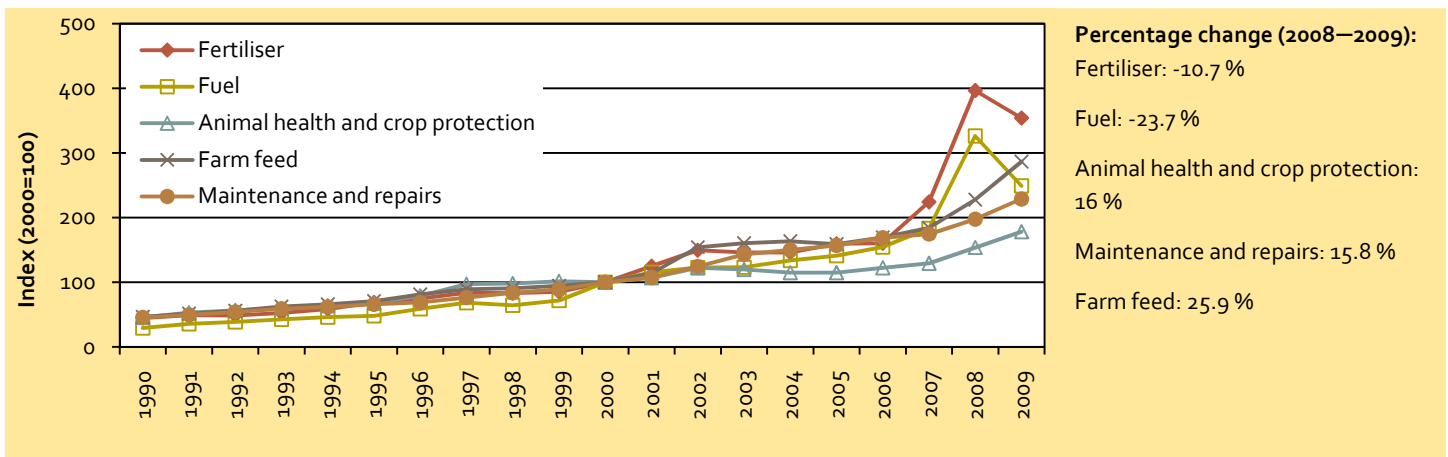


Figure 14: Trends in selected intermediate input costs (1990–2009)

Source: DAFF, 2010.

According to several Input Cost Monitor (ICM) reports published by the NAMC during the last two years fertilisers and fuel makes the largest contribution to the production cost of mainly field crops. The next two sub-sections discuss these two cost items in more detail.

3.1.1 Domestic fertiliser price trends

When looking at the price trends of local fertilisers, it must be noted that South Africa imports most of the fertiliser it requires, and thus the prices of local fertiliser are highly reactive to international fertiliser price movements and other external factors. Factors influencing fertiliser prices are, among others, the international demand for fertilisers (especially in the USA and China), the oil price and fertiliser stock levels. The reasons for the decline in international fertiliser prices were discussed in the previous section and hence one would expect a similar trend in local fertiliser prices.

Figure 15 depicts the price movement of local fertiliser prices. From 2000 to 2009, the local prices of Muriate of Potash (MAP), Urea Pril (46) and Potassium Chloride increased by 157.2 %, 200 % and 409.8 %, respectively. Figure 15 further shows that, on average, price movements were generally sideways and with some smaller fluctuations until the end of 2007, after which they escalated during 2008. Price trends between 2008 and 2009 for the items depicted were as follows: MAP decreased by 50.8 %, Urea Pril (46) decreased by 30.6 % and Potassium Chloride increased by 8.1 %.

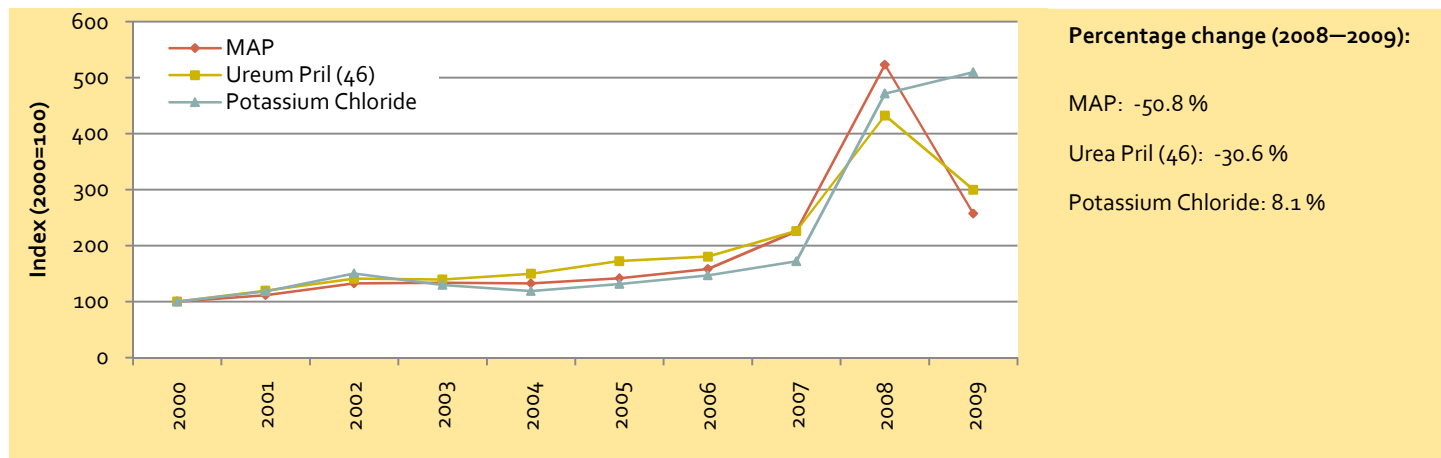


Figure 15: Local fertiliser price trends (2000–2009)

Source: Own calculations from listed prices.

3.1.2 Domestic fuel and transport cost trends

Fuel makes a significant contribution towards the variable cost of primary agricultural production, as well as in the distribution cost of food. Figure 16 illustrates trends in the crude oil price and 0.05 % sulphur diesel price in Gauteng and at the coast. Variation in the diesel price is affected by the international oil price, the R/US\$ exchange rate and changes in taxes and levies. The crude oil price (\$/barrel) increased by 18.3 % from January 2006 to December 2009 and the price of 0.05 % sulphur diesel in Gauteng and at the coast by 35.9 % and 37.1 %, respectively. The diesel price peaked in July 2008, achieving an average rate of R11.36/l, with R11.43/l in Gauteng and R11.30/l at the coast. The average diesel price, however, decreased significantly towards December 2009 (i.e. by 38.6 %). Over this same period, the crude oil price decreased by 44.1 %. It is evident from Figure 16 that the diesel price follows the international oil price with a slight time lag. The significant drop in diesel prices from 2008 to 2009 brought some relief to producers.

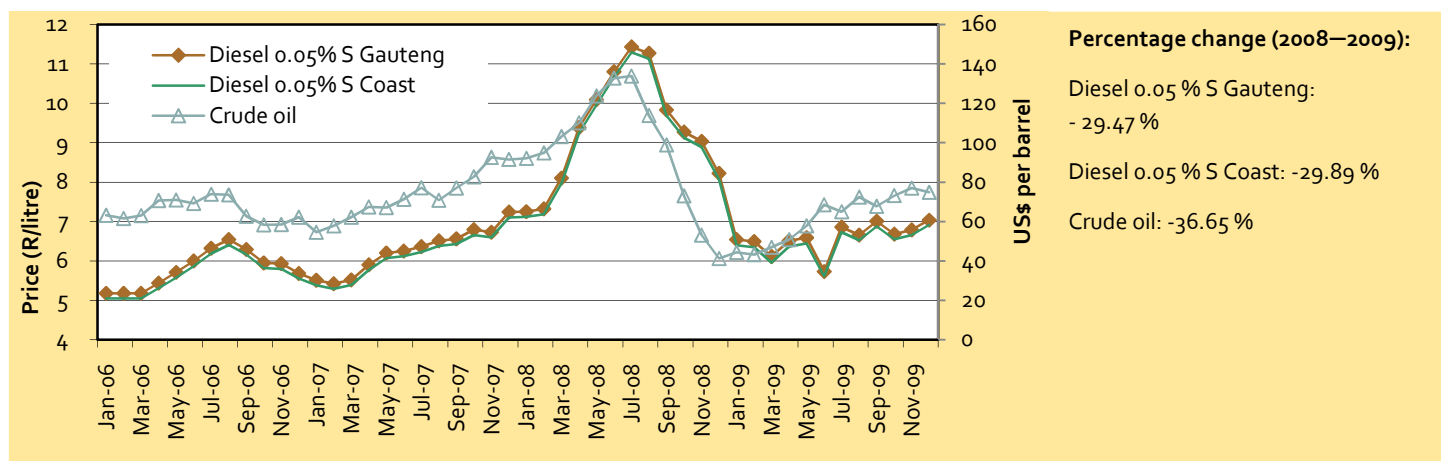


Figure 16: Crude oil and diesel prices in Gauteng and at the coast (2006–2009)

Source: South African Petroleum Industry Association (SAPIA) and Grain SA for oil price, 2010.

Transport and logistical costs account for a substantial portion of the overall cost of food. The diverse nature, location and size of the various agricultural value chains from farm gate to consumer present a highly complex transport matrix. Furthermore, there is a perception that food prices are driven up by high fuel prices but never come down when fuel prices drop. Cognisance should be taken of the fact that there are also other cost drivers affecting transport and logistical costs.

Based on the National Freight Database (NFD), three vehicle categories were chosen to represent vehicles typically used to transport agricultural products and livestock. The NFD categorises vehicles by their number of axles; this method is similar to that applied in the calculation of toll road fees.

Figure 17 illustrates the vehicle cost composition over time for different sized vehicles.⁵ Fixed costs include depreciation, cost of capital, licence, insurance and wages. Running costs include fuel, oil, maintenance, tyres and incidental costs. The sum of the fixed and running costs is the total operational cost.

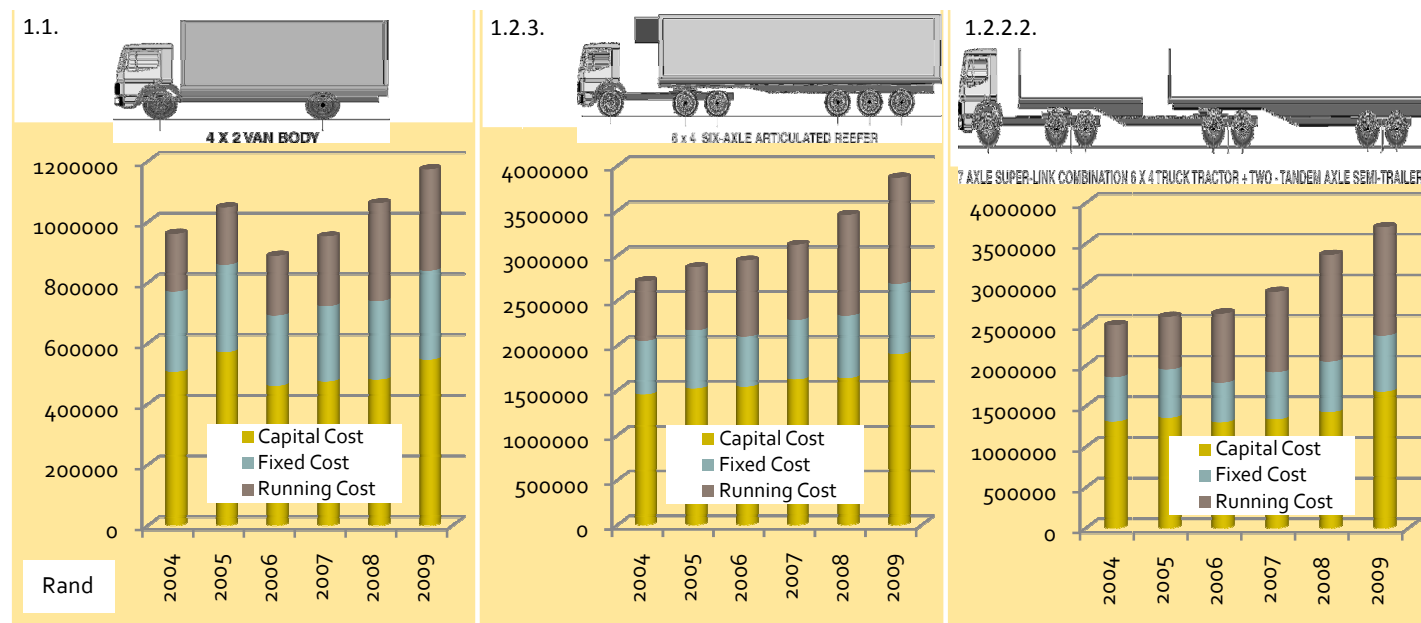


Figure 17: Vehicle costs over time for different sized vehicles (2004–2009)

Source: Max Braun Consulting Services, 2010.

Note: The headings refer to the number of axles of each vehicle illustrated; 1.1 represents 2-axle vehicles etc.

Table 3: Vehicle cost changes from 2004 to 2009

2-axle vehicles:	6-axle vehicles:	7-axle vehicles:
Capital cost: 7.9 %	Capital cost: 30.8 %	Capital cost: 28.2 %
Fixed cost: 10.9 %	Fixed cost: 31.3 %	Fixed cost: 26 %
Running cost: 74.9 %	Running cost: 78.2 %	Running cost: 108.8 %

Source: Max Braun Consultancy Services, 2010.

3.2 Selected domestic commodity price trends

This section will discuss domestic commodity price trends for 2009. The degree to which South Africa’s domestic commodity prices are influenced by international commodity prices and market trends depends largely on South Africa’s import/export situation. In cases where commodities are mainly imported prices will tend to move close to import parity, while prices of commodities that are in surplus will tend to move closer to export parity. In cases, such as maize, where the domestic supply can fluctuate between shortage and surplus situations domestic prices will fluctuate between import and export parity prices. The reasons for the trends in international prices between 2008 and 2009 for field crops, which are transmitted to the domestic market, were discussed in section 2.3 and will not be repeated in this section.

⁵ Assumptions: 1 – 85,000 km per annum, 260 work days, 8-ton payload and est. economical life of 8 years.
 2 – 180,000 km per annum, 286 work days, 28-ton payload and est. economical life of 5 years.
 3 – 200,000 km per annum, 286 work days, 36-ton payload and est. economical life of 4 years.

3.2.1 Selected domestic producer price trends in the field crop sub-sector

Figure 18 shows the import parity price of wheat, the export parity price of wheat and the domestic, South African Futures Exchange (SAFEX) price of wheat. South Africa relies on wheat imports to meet the domestic demand for wheat, therefore the strong correlation between the domestic wheat price and the import parity price of wheat. The annual average domestic wheat price decreased by 30.1 %, from R3 498 per ton in 2008 to R2 444.83 per ton in 2009, while the annual average import parity price of wheat decreased by 30.2 %, from R3 480.90 per ton in 2008 to R2 427.18 per ton in 2009. The import parity price is derived from the international benchmark price for wheat that decreased by 31.5 % between 2008 and 2009.

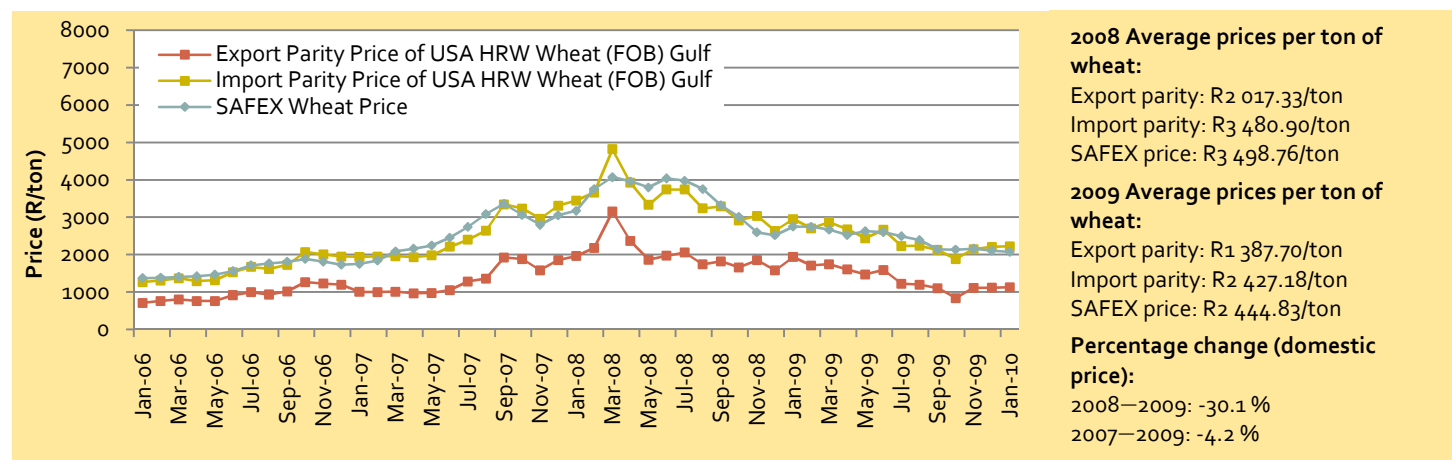


Figure 18: Import and export parity prices of wheat (2006–2009)

Source: SAGIS, 2010.

Both white maize and yellow maize prices decreased from 2008 to 2009. In 2009, the average price of white maize was R1 567.43 per ton, 14 % down from average price of R1 830.25 per ton in 2008. The average price of yellow maize decreased by 22 % from R1 853.02 per ton in 2008 to R1 446.38 per ton in 2009. Figure 19 shows the domestic price trends for white and yellow maize from 2006 to 2009. It is clear that the two prices are closely related and followed a similar trend.

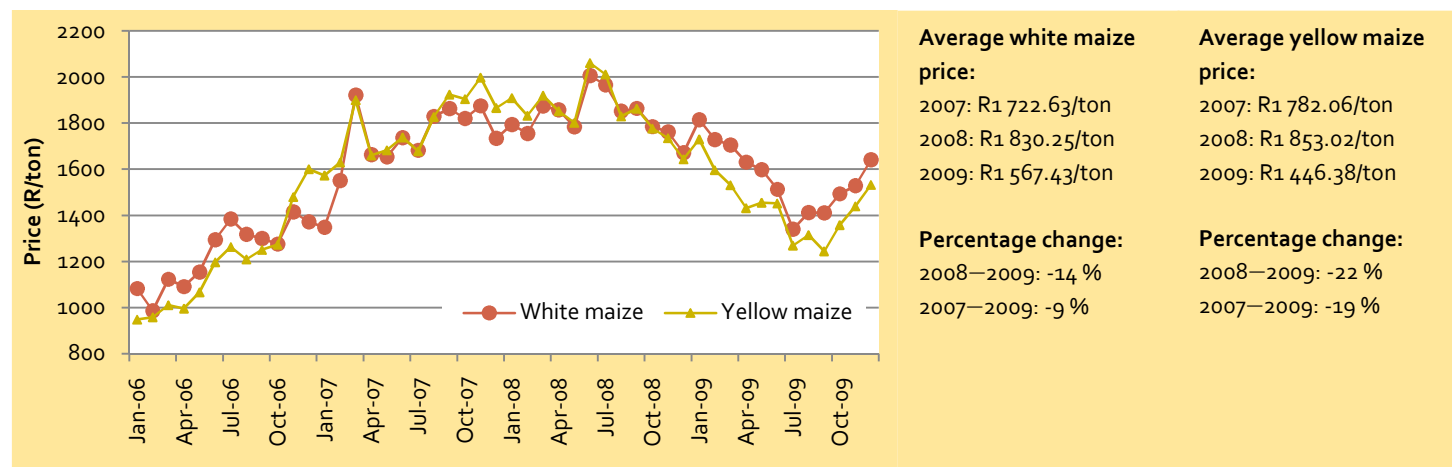


Figure 19: Domestic maize prices trends

Source: SAFEX, 2010.

South Africa usually produces surpluses of maize. The result is that the domestic price of maize will move closer to the export parity price of maize. Figure 20 shows the import and export parity prices of maize and also the domestic price of yellow maize.

The trend in the local price of maize since 2006 has been discussed in previous issues of the FCR report. Also note the discussion pertaining to maize prices in the introduction of this report.

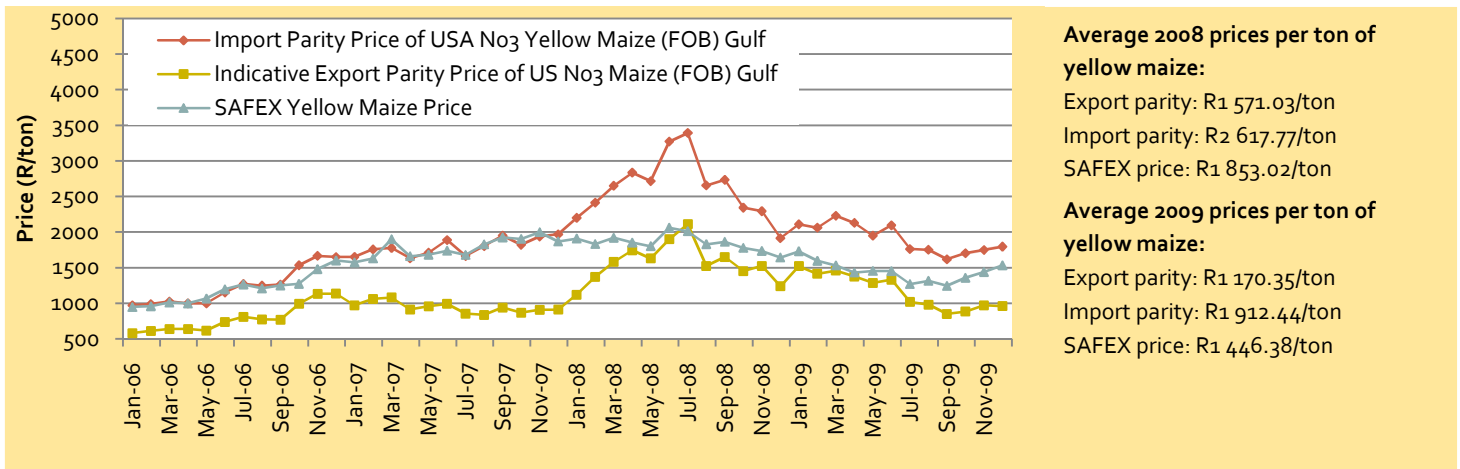


Figure 20: Import and export parity prices of maize (2006–2009)

Source: SAGIS, 2010.

The annual average price of soybeans was R3 201.91 per ton in 2009, 21 % lower than the annual average soybean price of 2008 and 14 % higher than the annual average soybean price in 2007. Figure 21 shows domestic soybean prices from 2006 to 2009. South Africa is a net importer of soybean products such as soybean oilcake due to the bulky nature of soybeans, and hence the domestic price for soybeans is a derived price from the imported products.

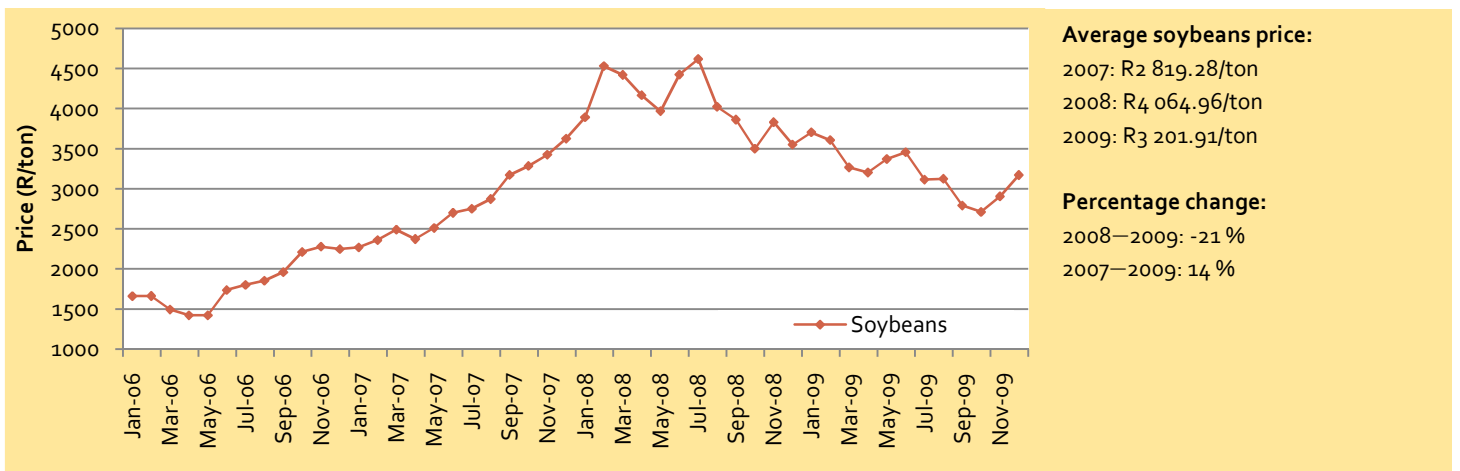


Figure 21: Domestic soybean price trends

Source: SAFEX, 2010.

The annual average price for sunflower was R3 066.73 per ton in 2009. It showed an 11 % decrease from 2007 and a 33 % decrease from 2008. In 2007 the annual average price of sunflower was R3 441.68 per ton and in 2008 the annual average price was R4 558.86 per ton.

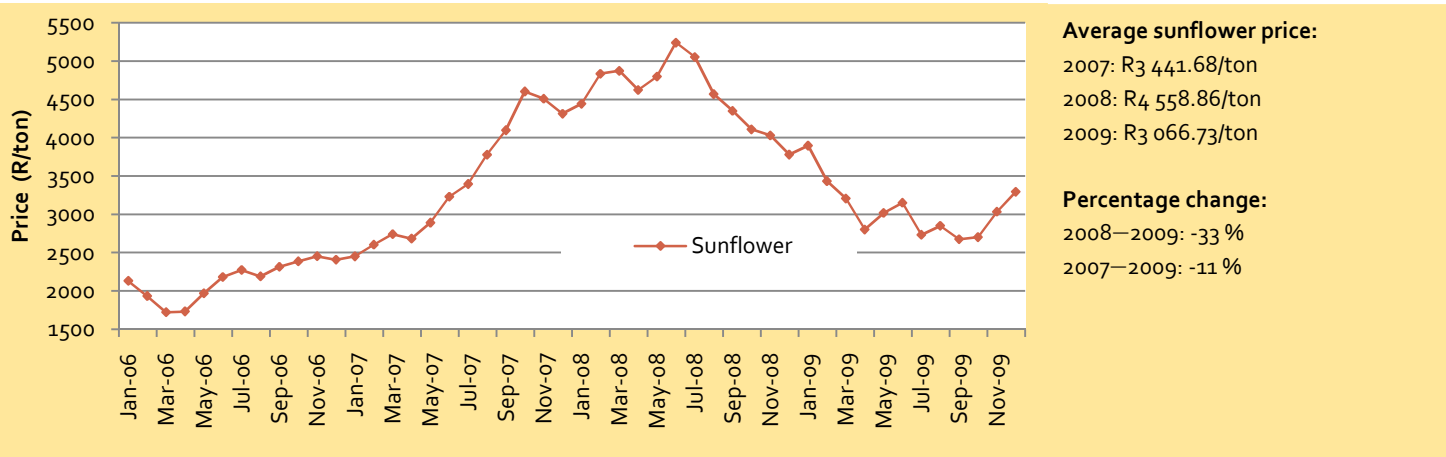


Figure 22: Domestic sunflower price trends

Source: SAFEX, 2010.

3.2.2 Selected domestic producer price trends in the livestock sub-sector

On average domestic producer prices in the livestock sub-sector were higher in 2009 than in 2008, contrary to price movements in the field crop industry. Price variability was also much less than in the field crop industry. Similar trends were experienced on the international market. Probable reasons for this include, amongst others, (i) changing consumer tastes and preferences in favour of protein based diets as a result of higher per capita income (especially in developing countries), (ii) increases and high variability in the oil price, which affects the price of diesel, has a less significant impact on the production cost of meat (the impact is transmitted indirectly through higher grain prices over a longer time frame), (iii) the nature of production processes compared to field crops and (iv) the ability of meat chains to “better” synchronise supply and demand due to the perishable nature of the product and hence limited storage capability. An important observation in the context of price movements in both the field crop and livestock sub-sectors is that livestock can play a significant role in reducing variability in overall farm income, especially if one considers that the largest part of South Africa is mainly suited for extensive livestock production and is a net importer meat in general. Much more attention is needed to enhance the potential that exist in the livestock industry, especially in the smallholder sector. The rest of this sub-section describes price trends in the different livestock sub-sectors.

The annual average producer price for beef class A2/A3 increased by 5.4 % from R22.26 per kg in 2008 to R23.46 per kg in 2009. The annual average beef class A2/A3 producer price increased by 18 % from 2007 to 2009.

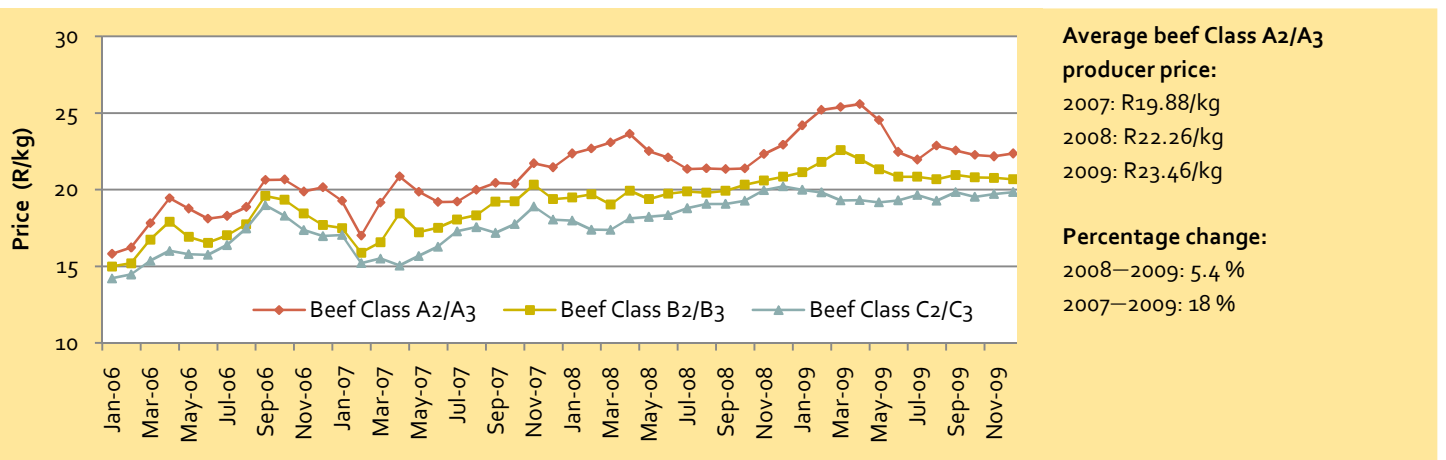


Figure 23: Beef producer price trends

Source: AMT, 2010.

The annual average producer price of lamb also showed an increase in 2009 compared to 2008 and 2007 prices. In 2009, the annual average price of lamb class A2/A3 increased by 1.4 % to R33.29 per kg. In 2008, the annual average producer price of lamb class A2/A3 was R32.82 per kg and in 2007 it was R30.21 per kg.

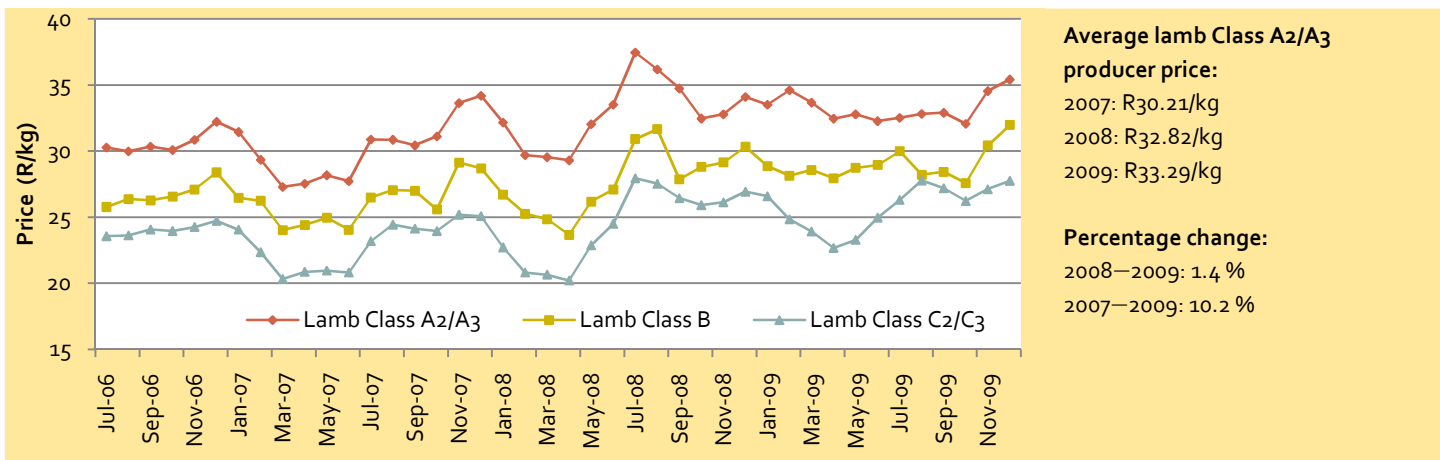


Figure 24: Lamb producer price trends

Source: AMT, 2010.

The annual average porker producer price was R16.88 per kg in 2009 and the annual average baconer price was R15.64 per kg. Both porker and baconer prices increased from 2008. The annual average porker producer price increased by 8.8 % from R15.52 per kg in 2008 and the annual average baconer price increased by 4.5 % from R14.96 per kg in 2008. Figure 25 shows porker and baconer producer price trends from 2006 to 2009.

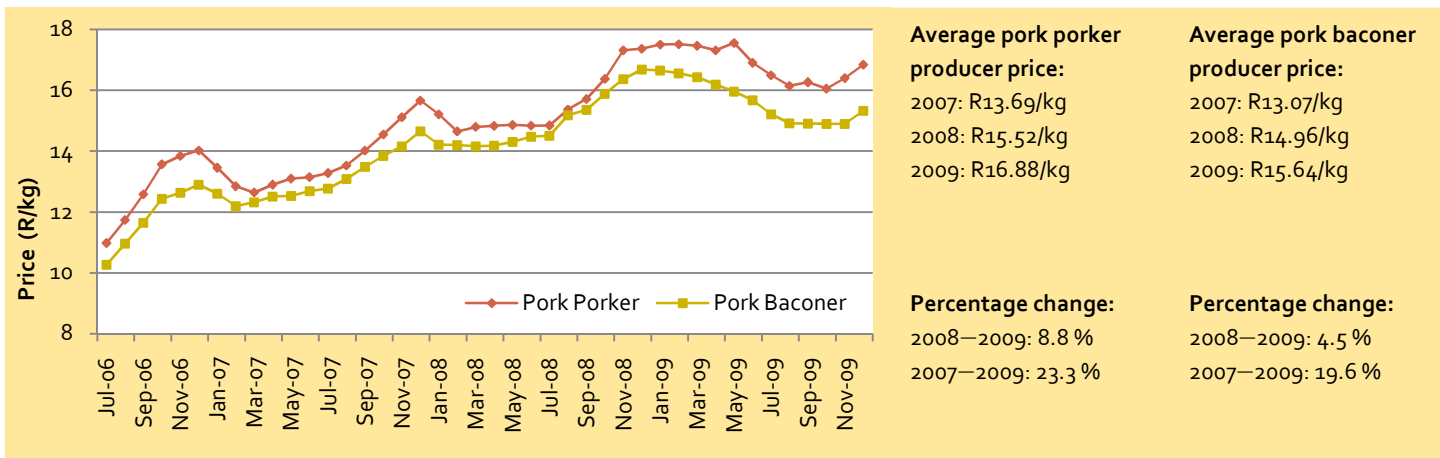


Figure 25: Pork producer price trends

Source: AMT, 2010.

In 2009 the annual average producer price of chicken was R19.33 per kg. The annual average producer price of chicken increased by 15.7 % from 2008 and 31.4 % from 2007 to 2009. The annual average producer price of chicken was R16.71 per kg in 2008 and R14.71 per kg in 2007.

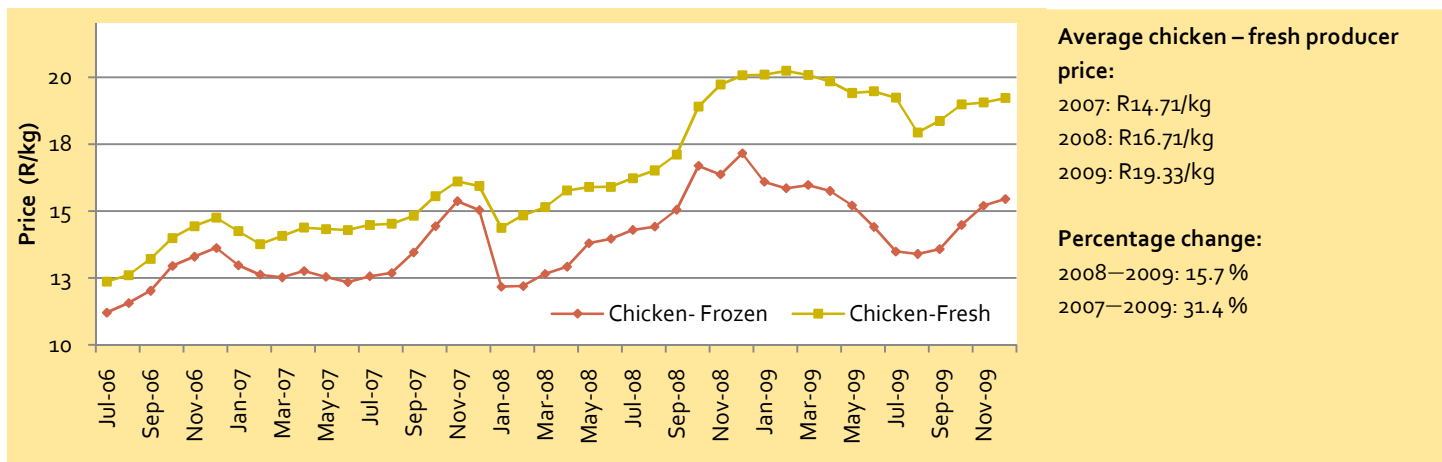


Figure 26: Chicken producer price trends

Source: AMT, 2010.

The annual average milk producer price was R3.05 per litre in 2009, -1.61 % lower than that of R3.09 per litre in 2008 and 19.24 % higher than the annual average milk producer price of R2.53 per litre in 2007.

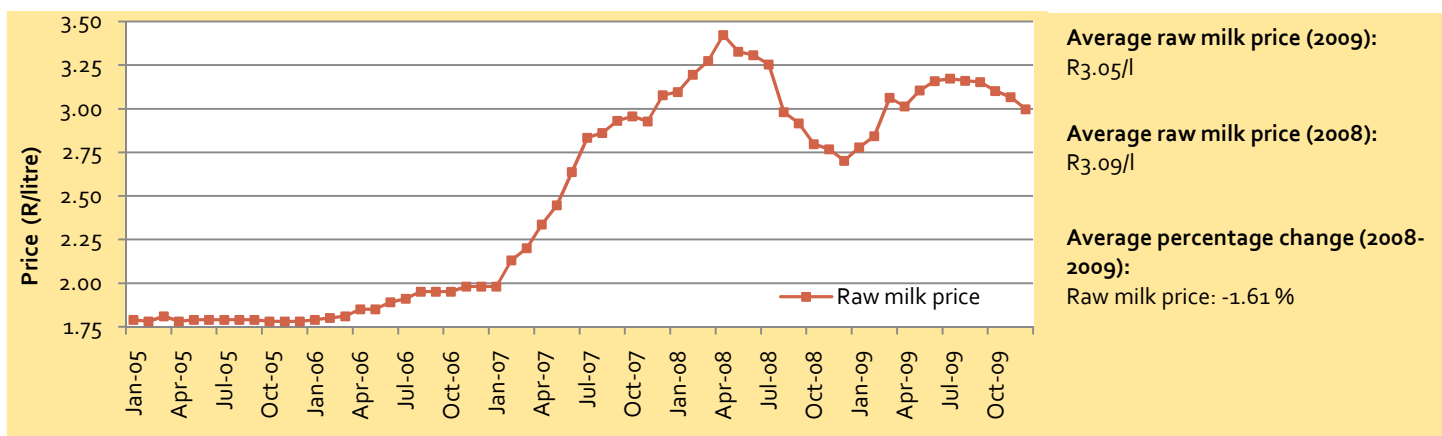


Figure 27: Raw milk price, sachets (R/litre) (2005–2009)

Source: MPO, SAMPRO, 2010 and own calculations.

Note: PPI, Base Year 2000

3.3 Selected domestic food price trends

3.3.1 Urban food price trends

This sub-section presents an analysis of food price inflation for different food commodities and products during the periods July 2009 to December 2009 and December 2008 to December 2009. The analysis is based on 68 food items monitored by the NAMC between December 2008 and December 2009. The prices were obtained from Statistics South Africa (Stats SA), the DAFF, AC Nielsen, the Milk Producers' Organisation (MPO), Agrimark Trends (AMT) and South African Futures Exchange (SAFEX). The products are sub-divided into different categories, namely wheat products, maize products, sunflower products, processed vegetables, fresh vegetables, processed meat, fresh meat, dairy, fruit, fish products, and other products. Tables 4 to 14 show the prices for these products and commodities in December 2008, April 2009, July 2009, October 2009 and December 2009. The tables also present an overview of price changes during the periods July 2009 to December 2009 and December 2008 to December 2009.

Table 4 shows that the price of wheat products decreased by an average of 1.83 % between July 2009 and December 2009. The prices of brown and white bread decreased by 1.83 % and 0.38 % respectively, while those of cake flour, spaghetti, and macaroni decreased by 6.60 %, 1.05 %, and 0.47 % respectively. Again, these prices decreased, on average, by 3.18 % between December 2008 and December 2009. During this period, the prices of brown and white bread decreased by 1.27 % and 0.25 % respectively, while cake flour, spaghetti, and macaroni decreased by 16.78 %, 2.76 %, and 0.37 % respectively. The SAFEX price of wheat, which directly influences the bread price at the retail level, decreased from R2 521/ton to R2 105/ton, i.e. by 16.50 %, during the same period.

Table 4: Urban price trends for wheat products

Wheat Products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Loaf of brown bread 700 g	7.07	7.17	7.11	7.04	6.98	-1.83 %	-1.27 %
Loaf of white bread 700 g	7.86	7.87	7.87	7.88	7.84	-0.38 %	-0.25 %
Cake flour 2.5 kg	19.90	18.23	17.73	17.04	16.56	-6.60 %	-16.78 %
Spaghetti 500 g	10.13	10.41	10.52	10.27	10.41	-1.05 %	2.76 %
Macaroni plain 500 g*	8.24	7.97	8.25	8.23	8.21	-0.47 %	-0.37 %
Average						-1.83 %	-3.18 %
Wheat (R/ton)	2,521	2,526	2,492	2,135	2,105	-15.52 %	-16.50 %

*AC Nielsen

Table 5 shows that the price of maize products decreased by an average of 1.74 % between July 2009 and December 2009. The price of special maize meal and super maize meal decreased by 2.66 % and 0.81 % respectively. Between December 2008 and December 2009, the price of maize products decreased, on average, by 12.52 %. Special maize meal and super maize meal experienced a 20.67 % and 4.36 % price decrease respectively. The SAFEX price of white maize decreased by 1.85 %.

Table 5: Urban price trends for maize products

Maize Products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Maize special 5 kg*	20.75	17.62	16.91	16.90	16.46	-2.66 %	-20.67 %
Maize super 5 kg*	24.29	22.20	23.42	23.48	23.23	-0.81 %	-4.36 %
Average						-1.74 %	-12.52 %
White maize (R/ton)	1,671	1,630	1,339	1,493	1,640	22.45 %	-1.85 %

*AC Nielsen

Table 6 shows that the price of sunflower products decreased by an average of 7.66 % between July 2009 and December 2009. During this period, the price of sunflower oil, medium fat spread, and margarine decreased by 2.11 %, 0.18 %, and 2.33 %

respectively. The average price of sunflower products decreased by 8.80 % between December 2008 and December 2009. During this period, the price of sunflower oil, medium fat spread, and margarine decreased by 11.98 %, 4.45 %, and 9.97 % respectively. The SAFEX price of sunflower decreased by 12.84 %.

Table 6: Urban price trends for sunflower products

Sunflower products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Sunflower oil 750 ml	14.77	14.30	13.28	12.81	13.00	-2.11 %	-11.98 %
Medium fat spread 1 kg tub*	20.53	21.28	19.65	19.67	19.61	-0.18 %	-4.45 %
Brick margarine 500 g	14.44	13.84	13.31	13.10	13.00	-2.33 %	-9.97 %
Average						-7.66 %	-8.80 %
Sunflower (R/ton)	3,780	2,802	2,733	2,702	3,295	20.56 %	-12.84 %

***AC Nielsen**

While grain commodities and products experienced price decreases, the price of processed vegetables increased between December 2008 and December 2009. Table 7 shows that processed vegetables experienced an average year-on-year price increase of 18.58 %. During this period, baked beans, butter beans, chopped peeled tomatoes, tomato & onion mix, canned peas, and green peas experienced price increases of over 10 %. The price of baby carrots increased by 4.52 %, while super juicy corn decreased by 0.04 %. However, processed vegetables experienced a decline in prices of 0.45 % during the second half of 2009. While the price of baked beans, butter beans, and tomato & onion mix increased by 8.05 %, 2.07 %, and 4.04 % respectively, the remaining products under this category decreased by up to 4.50 %.

Table 7: Urban price trends for processed vegetables

Processed vegetables	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Baked beans - tinned 420 g	5.50	6.75	7.08	7.95	7.65	8.05 %	39.09 %
Butter beans - tinned 410 g	8.95	9.99	10.63	10.68	10.85	2.07 %	21.23 %
Chopped peeled tomatoes 410 g*	8.50	9.70	10.59	10.55	10.56	-0.27 %	24.33 %
Tomato & onion mix 410 g*	6.96	7.60	8.16	8.94	8.49	4.04 %	22.10 %
Canned peas 410 g*	6.20	7.06	7.19	6.87	6.92	-3.69 %	11.75 %
Baby carrots 1 kg*	29.08	29.30	31.62	31.45	30.40	-3.87 %	4.52 %
Green peas 1 kg*	20.01	24.14	28.19	28.63	27.15	-3.69 %	35.70 %
Sliced beans 1 kg*	25.95	27.64	29.48	28.92	28.16	-4.50 %	8.50 %
Super juicy corn 1 kg*	27.29	27.59	27.90	28.75	27.28	-2.20 %	-0.04 %
Average						-0.45 %	18.58 %

***AC Nielsen**

Table 8 shows that the price of fresh vegetables increased by an average of 8.69 % between July 2009 and December 2009. The year-on-year (December 2008 to December 2009) increase in the price of fresh vegetables averaged 16.87 %. During this period, vegetables such as carrots, onions, potatoes, sweet potatoes, cabbages and lettuces experienced price increases of more than 10 %, while tomatoes and pumpkins increased by less than 10 %. On the other hand, the only product whose price decreased during this period was cauliflower, by 1.60 %. Table 8 also shows that the price of fresh vegetables at the National Fresh Produce Markets (NFPM) decreased, on average, by 1.58 % between July 2009 and December 2009, and by 101.65 % between December 2008 and December 2009.

Table 8: Urban price trends for fresh vegetables

Fresh vegetables	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Carrots 1 kg	7.74	10.43	9.76	8.60	8.84	-9.43 %	14.21 %
Onions 1 kg	6.28	8.09	10.13	9.52	8.37	-17.37 %	33.28 %
Potatoes bag 10 kg*	48.85	47.67	41.83	57.07	63.37	51.48 %	29.73 %
Tomatoes 1 kg	13.16	15.36	12.28	16.02	13.39	9.04 %	1.75 %
Sweet potatoes 1 kg	9.85	9.60	9.31	9.94	10.92	17.29 %	10.86 %
Cabbages 1 kg	6.51	8.39	8.58	8.02	8.33	-2.91 %	27.96 %
Lettuces 1 kg	13.48	16.83	16.11	19.82	17.43	8.19 %	29.30 %
Pumpkins 1 kg	10.45	9.86	9.26	12.12	11.11	19.98 %	6.32 %
Cauliflowers 1 kg	21.20	22.62	20.47	20.63	20.86	1.91 %	-1.60 %
Average						8.69 %	16.87 %
Fresh produce market prices**	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Cabbages 1 kg	1.37	2.33	1.30	1.12	0.88	-32.42 %	-123.67 %
Carrots 1 kg	2.37	4.91	1.69	2.05	2.78	64.60 %	-72.74 %
Onions 1 kg	2.28	3.73	3.55	3.33	2.63	-25.76 %	-111.30 %
Potatoes 1 kg	3.02	2.98	2.99	4.25	3.42	14.39 %	-95.24 %
Tomatoes 1 kg	4.35	4.55	4.52	4.88	3.20	-29.28 %	-106.73 %
Cauliflowers 1 kg	3.69	3.84	3.33	3.39	4.38	31.32 %	-91.51 %
Lettuces 1 kg	4.17	2.22	4.15	2.05	3.77	-9.04 %	-102.17 %
Pumpkins 1 kg	2.70	1.19	1.23	1.78	0.90	-26.48 %	-109.81 %
Average						-1.58 %	-101.65 %

*AC Nielsen

**DAFF

Table 9 shows that between July 2009 and December 2009, the price of processed meat decreased by an average of 1.35 %. The price of picnic ham and polony decreased by 6.23 % and 1.83 % respectively, while meatballs and pork sausages increased by 0.53 % and 2.15 % respectively. The year-on-year increase in the average price of these products was 12.50 %. During this period, the price of meatballs, picnic ham, pork sausages, and polony increased by 15.73 %, 13.15 %, 10.27 %, and 10.83 % respectively.

Table 9: Urban price trends for processed meat

Processed meat	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Meatballs in gravy 400 g*	11.45	12.34	13.18	13.25	13.25	0.53 %	15.73 %
Picnic ham 300 g*	21.15	24.29	25.52	25.25	23.93	-6.23 %	13.15 %
Pork sausages 1 kg	47.50	50.67	51.28	52.45	52.38	2.15 %	10.27 %
Polony 1 kg	23.73	26.75	26.79	27.03	26.30	-1.83 %	10.83 %
Average						-1.35 %	12.50 %

*AC Nielsen

Table 10 shows that between December 2008 and December 2009, the price of fresh meat decreased, on average, by 0.5 %. During this period, pork chops, lamb, whole chicken (frozen) and chicken portions (frozen) experienced a price decrease, while beef brisket, beef chuck, beef rump, beef t-bone, beef mince, whole chicken (fresh) and chicken portions (fresh) experienced a price increase. During the second half of 2009, the price of fresh meat decreased, on average, by 0.85 %, but pork chops, beef mince, whole chicken (fresh) and chicken portions (fresh) experienced price increases.

Table 10: Urban price trends for fresh meat

Fresh meat	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Pork chops - fresh 1 kg	54.34	53.02	48.56	48.87	49.24	1.40 %	-9.39 %
Lamb - fresh 1 kg	76.14	69.85	68.97	68.43	68.95	-0.03 %	-9.44 %
Beef brisket - fresh 1 kg	42.24	45.85	44.59	44.32	44.05	-1.21 %	4.29 %
Beef chuck - fresh 1 kg	44.15	47.21	46.79	45.91	45.66	-2.42 %	3.42 %
Beef rump steak -fresh per kg	72.28	75.70	75.98	73.98	75.18	-1.05 %	4.01 %
Beef t-bone - fresh 1 kg	59.88	61.20	60.50	59.79	59.93	-0.94 %	0.08 %
Beef mince - fresh 1 kg	46.47	47.88	47.14	47.11	47.35	0.45 %	1.89 %
Whole chicken - fresh 1 kg	27.32	28.00	28.28	28.41	28.68	1.41 %	4.98 %
Whole chicken - frozen 1 kg	25.90	26.11	26.02	25.24	23.87	-8.26 %	-7.84 %
Chicken portions - fresh 1 kg	36.92	37.31	37.60	37.52	38.62	2.71 %	4.60 %
Chicken portions - frozen 1 kg	24.05	24.64	23.86	23.72	23.53	-1.38 %	-2.16 %
Average						-0.85 %	-0.50 %

*AC Nielsen

Dairy products experienced a double digit price increase of 15.49 % between December 2008 and December 2009. Other than skimmed powder milk, which decreased by 5.57 %, all other products experienced double digit inflation. Between July 2009 and December 2009, however, the prices of dairy products decreased by an average of 6.09 %, as shown in Table 11.

Table 11: Urban price trends for dairy

Dairy	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Fresh milk full cream 1 l*	5.99	7.18	7.18	6.99	6.74	-6.09 %	12.58 %
Fresh milk full cream 2 l*	13.39	15.44	15.85	15.64	15.31	-3.38 %	14.33 %
Fresh milk low fat 1 l*	6.14	7.33	7.31	7.31	7.10	-2.85 %	15.76 %
Fresh milk low fat 2 l*	13.59	15.84	16.31	16.02	15.87	-2.69 %	16.83 %
Longlife milk full cream 1 l*	7.48	9.20	9.52	10.07	9.86	3.47 %	31.76 %
Skimmed powder milk 1 kg*	59.49	57.79	56.15	56.12	56.18	0.04 %	-5.57 %
Total butter 500 g*	22.06	23.81	24.17	25.41	25.36	4.95 %	14.99 %
Cheddar cheese per kg	69.86	77.59	80.03	84.12	86.10	7.58 %	23.25 %
Average						-6.09 %	15.49 %

*AC Nielsen

Table 12 shows that the price of fresh fruits increased by an average of 13.41 % between December 2008 and December 2009. During this period, the price of apples and bananas increased by 17.18 % and 25.00 % respectively. On the other hand, the price of oranges decreased by 1.94 %. During the second half of 2009, the price of fresh fruits increased by 23.83 %, with all products in this category experiencing double-digit inflation. Table 12 also shows that from July 2009 to December 2009, fresh fruits experienced an average price increase of 59.30 % at the NFPMs, with the price of oranges increasing by 134.89 % and apples and bananas increasing by 24.37 % and 18.63 % respectively. On the other hand, NFPMs experienced a price decrease of 78.49 %, with the price of apples, bananas, and oranges decreasing by 96.17 %, 94.12 %, and 45.17 % respectively, on a year-on-year basis.

Table 12: Urban price trends for fresh fruits

Fresh fruits	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Apples - fresh 1 kg	10.42	11.31	10.21	10.48	12.21	19.59 %	17.18 %
Bananas - fresh 1 kg	8.12	9.40	8.86	9.15	10.15	14.56 %	25.00 %
Oranges - fresh 1 kg	7.20	7.36	5.14	5.56	7.06	37.35 %	-1.94 %
Average						23.83 %	13.41 %
Fresh produce market prices**	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Apples – fresh 1 kg	6.36	4.16	3.66	3.98	4.55	24.37 %	-96.17 %
Bananas – fresh 1 kg	3.17	4.55	3.59	3.61	4.25	18.63 %	-94.12 %
Oranges – fresh 1 kg	2.46	2.02	1.19	1.90	2.79	134.89 %	-45.17 %
Average						59.30 %	-78.49 %

** DAFF

Table 13 shows that the price of fish increased by an average of 1.00 % between July 2009 and December 2009. During this period, the price of fish (tinned 155 g and 425 g, excluding tuna) increased by 5.93 % and 1.23 % respectively, while that of tuna (tinned) decreased by 4.16 %. Between December 2008 and December 2009, the price of fish increased, on average, by 8.60 %. During this period, the price of fish (tinned 155 g, 425 g) and tuna (tinned) increased by 8.89 %, 11.96 %, and 4.95 % respectively.

Table 13: Urban price trends for fish

Fish	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Fish (excl tuna) - tinned 155 g	5.74	5.78	5.90	6.10	6.25	5.93 %	8.89 %
Fish (excl tuna) - tinned 425 g	11.04	13.17	12.21	12.30	12.36	1.23 %	11.96 %
Tuna - tinned 170 g	10.11	10.95	11.07	10.95	10.61	-4.16 %	4.95 %
Average						1.00 %	8.60 %

Table 14 shows that the price of other products monitored by the NAMC increased by an average of 8.06 % between December 2008 and December 2009. During this period, rice was the only product whose price decreased, by 10.01 %. Other products experienced a price increase, with instant coffee experiencing the highest rate of inflation (19.30 %) and peanut butter experiencing the lowest rate of increase (6.03 %). Between July 2009 and December 2009, the price depicted decreased, on average, by 0.21 %, with rice, peanut butter, soya mince, and tomato & onion experiencing 8.48 %, 1.56 %, and 0.50 % decreases in price respectively, and the rest of the products in this category experiencing price increases.

Table 14: Urban price trends for other products

Other products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
King korn 1 kg*	9.39	10.06	10.02	10.05	10.04	0.26 %	6.96 %
White sugar 2.5 kg	16.40	17.65	18.02	18.16	18.15	0.72 %	10.67 %
Rice 2 kg	25.67	26.28	25.24	23.83	23.10	-8.48 %	-10.01 %
Instant coffee reg 750 g*	41.34	47.58	48.49	49.44	49.32	1.70 %	19.30 %
Ceylon/black tea 62.5 g	6.43	6.92	6.85	7.03	7.04	2.77 %	9.49 %
Peanut butter 410 g	14.92	15.90	16.07	15.92	15.82	-1.56 %	6.03 %
Soya mince tomato & onion 200 g*	7.62	8.06	8.66	8.49	8.61	-0.50 %	13.05 %
Eggs 1.5 dozen	23.26	24.04	24.53	24.17	25.36	3.38 %	9.03 %
Average						-0.21 %	8.06 %

*AC Nielsen

3.3.2 Rural food price trends

This section focuses on food inflation in the rural areas of South Africa, and provides the prices for selected food items for December 2008, April 2009, July 2009, October 2009, and December 2009. It also highlights price changes between December

2008 and December 2009, as well as price changes during the second half of 2009. The rural food price data was collected from 192 outlets/shops across the country, i.e. 28 outlets in the Free State, 27 in KwaZulu-Natal, 21 in Mpumalanga, 17 in the Northern Cape, 18 in the Eastern Cape, 16 in Gauteng, 21 in Limpopo, 25 in the North West, and 19 in the Western Cape. The food items for which rural prices are monitored include maize meal, brown bread, white bread, rice, samp, sorghum meal, pilchards, milk, butter beans, dried beans, sugar, tea, coffee, margarine, peanut butter, and cooking oil. For some food items, different size categories are reported.

Table 15 shows that, on average, the price of wheat products decreased by 2.45 % during the second half of 2009. The price of brown breads (600 g and 700 g) increased by 0.81 % and 0.69 % respectively, while that of white breads (600 g and 700 g) decreased by 0.45 % and 10.84 % respectively. Between December 2008 and December 2009, the price of wheat products increased, on average, by 1.49 %. The price of brown breads (600 g and 700 g) increased by 1.92 % and 0.77 % respectively. The price of white breads (600 g and 700 g) increased by 1.26 % and 2.02 % respectively.

Table 15: Rural price trends for wheat products

Wheat products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Loaf of brown bread 600 g	6.74	6.70	6.82	7.52	6.87	0.81 %	1.92 %
Loaf of brown bread 700 g	6.86	6.92	6.86	6.87	6.91	0.69 %	0.77 %
Loaf of white bread 600 g	7.32	7.38	7.45	7.40	7.42	-0.45 %	1.26 %
Loaf of white bread 700 g	7.61	7.61	8.71	7.74	7.77	-10.84 %	2.02 %
Average						-2.45 %	1.49 %

Table 16 shows that the price of maize products experienced a 4.87 % decrease during the second half of 2009. The price of maize meal 12.5 kg and samp 1 kg experienced a price increase of 1.64 % and 7.22 % respectively. On the other hand, the price of maize meal 1 kg, maize meal 2.5 kg, maize meal 5 kg, and samp 2.5 kg experienced a price decrease of 9.03 %, 2.29 %, 1.59 %, and 25.18 % respectively. Between December 2008 and December 2009, the price of maize products decreased, on average, by 4.14 %. During this period, maize meal 12.5 kg, maize meal 1 kg, and samp 2.5 kg experienced a 0.92 %, 9.39 %, and 16.34 % decrease in price respectively. On the other hand, the price of maize meal 2.5 kg, maize meal 5 kg, and samp 1 kg experienced a price increase of 0.03 %, 1.16 %, and 0.62 % respectively.

Table 16: Rural price trends for maize products

Maize products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Maize meal 12.5 kg	56.25	60.34	54.83	55.65	55.73	1.64 %	-0.92 %
Maize meal 1 kg	7.26	7.48	7.23	7.78	6.58	-9.03 %	-9.39 %
Maize meal 2.5 kg	14.22	14.28	14.55	14.58	14.22	-2.29 %	0.03 %
Maize meal 5 kg	28.27	28.36	29.05	29.10	28.59	-1.59 %	1.16 %
Samp 1 kg	7.12	6.92	6.68	6.95	7.17	7.22 %	0.62 %
Samp 2.5 kg	15.14	13.17	16.92	12.70	12.66	-25.18 %	-16.34 %
Average						-4.87 %	-4.14 %

Table 17 shows that the price of sunflower products decreased by an average of 4.07 % between July 2009 and December 2009. Only the price of margarine 250 g increased, by 4.95 %, during this period. The price of other products such as sunflower oil 2 l, sunflower oil 500 ml, sunflower oil 750 ml, margarine 125 g, and margarine 500 g decreased by 11.18 %, 1.90 %, 4.52 %, 3.25 %, and 8.51 % respectively. Between December 2008 and December 2009, the price of sunflower products decreased, on average, by 7.23 %. The price of sunflower oil 2 l, sunflower oil 500 ml, sunflower oil 750 ml, and margarine 500 g decreased by 32.73 %, 2.50 %, 19.60 %, and 3.05 % respectively. The price of margarine 125 g and margarine 250 g increased by 2.30 % and 12.16 % respectively.

Table 17: Rural price trends for sunflower products

Sunflower products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Sunflower oil 2 l	40.49	33.93	30.67	28.07	27.24	-11.18 %	-32.73 %
Sunflower oil 500 ml	11.81	11.45	11.74	10.96	11.51	-1.90 %	-2.50 %
Sunflower oil 750 ml	16.17	14.47	13.61	12.45	13.00	-4.52 %	-19.60 %
Margarine 125 g	5.30	5.51	5.61	5.57	5.43	-3.25 %	2.30 %
Margarine 250 g	9.36	9.67	10.00	10.07	10.50	4.95 %	12.16 %
Margarine 500 g	13.56	14.04	14.37	13.85	13.15	-8.51 %	-3.05 %
Average						-4.07 %	-7.23 %

Table 18 shows that the price of dairy products increased by an average of 3.53 % between July 2009 and December 2009. Full cream long life milk, 1 l and 500 ml, experienced a price increase of 4.94 % and 2.13 % respectively. Between December 2008 and December 2009, the price of dairy products increased, on average, by 5.66 %. The price of full cream long life milk 1 l increased by 11.40 %, while full cream long life milk 500 ml decreased by 0.07 %.

Table 18: Rural price trends for dairy products

Dairy products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Full cream long life milk 1 l	9.39	9.44	9.97	10.08	10.46	4.94 %	11.40 %
Full cream long life milk 500 ml	6.68	6.64	6.54	6.77	6.68	2.13 %	-0.07 %
Average						3.53 %	5.66 %

Table 19 shows that the price of tea and coffee increased by an average of 3.19 % between July 2009 and December 2009. The price of tagless tea bags 250 g decreased by 1.29 % and the price of instant coffee 250 g decreased by 0.04 %, while tagless tea bags 62.5 g and instant coffee 100 g, increased by 2.77 % and 11.34 % respectively. Tea and coffee experienced an average price increase of 1.93 % year-on-year ending December 2009. During this period, the price of tagless tea bags 250 g increased by 1.35 %, and the price of tagless tea bags 62.5 g, instant coffee 100 g, and instant coffee 250 g increased by 0.61 %, 2.02 %, and 3.73 % respectively.

Table 19: Rural price trends for tea and coffee

Tea and coffee	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Tagless tea bags 250 g	16.19	17.63	17.77	17.82	17.54	-1.29 %	1.35 %
Tagless tea bags 62.5 g	6.43	6.92	6.85	7.03	7.04	2.77 %	0.61 %
Instant coffee 100 g	16.54	17.21	16.67	19.07	18.56	11.34 %	2.02 %
Instant coffee 250 g	19.15	21.73	22.89	22.43	22.88	-0.04 %	3.73 %
Average						3.19 %	1.93 %

Table 20 shows that during the second half of 2009, the price of pilchards in tomato sauce increased by an average of 12.07 %. The price of pilchards in tomato sauce 155 g increased by 7.73 %, while that of pilchards in tomato sauce 425 g increased by 16.41 %. Between December 2008 and December 2009, the price of pilchards in tomato sauce increased, on average, by 17.81 %; pilchards in tomato sauce 155 g increased by 10.56 % and pilchards in tomato sauce 425 g increased by 25.05 %.

Table 20: Rural price trends for pilchards in tomato sauce

Pilchards	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Pilchards in tomato sauce 155 g	6.87	7.13	7.05	7.35	7.60	7.73 %	10.56 %
Pilchards in tomato sauce 425 g	12.86	13.54	13.81	14.13	16.08	16.41 %	25.05 %
Average						12.07 %	17.81 %

Table 21 shows that the price of beans increased by an average of 0.59 % during the second half of 2009. During this period, the price of beans 1 kg, beans 500 g, and butter beans 410 g decreased by 7.57 %, 0.60 %, and 6.00 % respectively. On the other hand, the price of butter beans 420 g increased by 16.54 %. Between December 2008 and December 2009, the price of beans increased, on average, by 0.55 %. Within this product category, beans 1 kg is the only product whose price decreased during this period, by 21.51 %. The price of beans 500 g, butter beans 410 g, and butter beans 420 g experienced a price increase of 2.53 %, 4.04 %, and 17.16 % respectively.

Table 21: Rural price trends for beans

Beans	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Beans 1 kg	17.72	14.30	15.05	14.12	13.91	-7.57 %	-21.51 %
Beans 500 g	8.35	8.57	8.61	8.64	8.56	-0.60 %	2.53 %
Butter beans 410 g	8.44	8.70	9.34	9.07	8.78	-6.00 %	4.04 %
Butter beans 420 g	6.53	6.70	6.57	7.00	7.66	16.54 %	17.16 %
Average						0.59 %	0.55 %

Table 22 shows that the price of white sugar increased by an average of 0.56 % during the second half of 2009. White sugar 1 kg is the only product whose price decreased, by 11.49 %, during this period. The price of white sugar 2.5 kg and white sugar 500 g increased by 11.37 % and 1.80 % respectively. Between December 2008 and December 2009, the price of white sugar increased, on average, by 6.66 %. During this period, the price of white sugar 1 kg and white sugar 2.5 kg increased by 10.67 % and 18.12 % respectively. The price of white sugar 500 g decreased by 8.82 %.

Table 22: Rural price trends for white sugar

White sugar	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
White sugar 1 kg	8.63	9.17	10.79	9.23	9.55	-11.49 %	10.67 %
White sugar 2.5 kg	19.28	20.29	20.45	20.93	22.77	11.37 %	18.12 %
White sugar 500 g	6.20	5.57	5.55	5.31	5.65	1.80 %	-8.82 %
Average						0.56 %	6.66 %

Table 23 shows that the price of rice decreased by an average of 5.14 % between July 2009 and December 2009. All products (rice 1 kg, rice 2 kg, and rice 500 g) under this category experienced a price decrease, i.e. 4.99 %, 4.69 %, and 5.75 % respectively. Between December 2008 and December 2009, the increase in the price of rice averaged 2.50 %. During this period, the price of rice 1 kg, rice 2 kg, and rice 500 g increased by 0.04 %, 3.15 %, and 4.31 % respectively.

Table 23: Rural price trends for rice

Rice	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Rice 1 kg	14.45	14.15	15.21	14.99	14.45	-4.99 %	0.04 %
Rice 2 kg	28.14	29.53	30.45	28.48	29.02	-4.69 %	3.15 %
Rice 500 g	7.32	7.77	8.10	7.68	7.63	-5.75 %	4.31 %
Average						-5.14 %	2.50 %

Table 24 shows that the price of peanut butter increased by an average of 4.52 % during the second half of 2009. The price of peanut butter 270 g increased by 6.23 %, while peanut butter 400 g and peanut butter 410 g increased by 6.12 % and 1.21 %

respectively. The year-on-year increase in the price of peanut butter averaged 16.50 %. During this period, all products (peanut butter 270 g, 400 g, and 410 g) under this category increased by 16.81 %, 18.20 %, and 14.49 % respectively.

Table 24: Rural price trends for peanut butter

Peanut butter	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Peanut butter 270 g	11.20	12.14	12.32	13.09	13.09	6.23 %	16.81 %
Peanut butter 400 g	14.04	15.21	15.63	16.59	16.59	6.12 %	18.20 %
Peanut butter 410 g	15.35	21.76	17.37	17.58	17.58	1.21 %	14.49 %
Average						4.52 %	16.50 %

Table 25 shows that between July 2009 and December 2009, the price of sorghum meal decreased by an average of 0.43 %. The price of sorghum meal 1 kg increased by 3.91 %, while sorghum meal 500 g decreased by 4.77 %. Between December 2008 and December 2009, the year-on-year increase in the price of sorghum averaged 6.79 %. During this period, the price of 1 kg and 500 g sorghum meal increased by 6.75 % and 6.82 % respectively.

Table 25: Rural price trends for sorghum products

Sorghum products	Price level					Percentage change	
	Dec-08	Apr-09	Jul-09	Oct-09	Dec-09	Jul-09 to Dec-09	Dec-08 to Dec-09
Sorghum meal 1 kg	10.06	10.07	10.34	10.68	10.74	3.91 %	6.75 %
Sorghum meal 500 g	5.56	5.81	6.24	9.05	5.94	-4.77 %	6.82 %
Average						-0.43 %	6.79 %

Table 26 compares the prices between rural and urban food for ten selected food items. In December 2008, full cream long life milk, maize meal, peanut butter, rice, sunflower oil, and white sugar were more expensive in rural areas than in urban areas. For example, a person in rural areas paid R5.75 more than a person in urban areas for maize meal 5 kg. In July 2009, the price of full cream long life milk, tagless tea bags, a loaf of white bread, maize meal, margarine, peanut butter, rice, sunflower oil, and white sugar was higher in rural areas than in urban areas. In December 2009, the same products, with the exceptions of a loaf of white bread and sunflower oil, were still more expensive in rural areas than in urban areas.

It is evident from Table 26 that food prices are generally higher in rural areas than in urban areas. In December 2008, a person buying all listed food items in rural areas paid R13.38 more than a person in urban areas. This price difference increased to R16.73 in July 2009 and still further to R18.63 in December 2009.

Table 26: Comparison between rural and urban food prices

Products	Rural food prices (R)			Urban food prices (R)			Price difference (R/unit)		
	Dec-08	Jul-09	Dec-09	Dec-08	Jul-09	Dec-09	Dec-08	Jul-09	Dec-09
Full cream long life milk 1 l	9.39	9.97	10.46	7.48	9.52	9.86	1.91	0.45	0.61
Tagless tea bags 62.5 g	6.31	7.09	7.32	6.43	6.85	7.04	-0.12	0.24	0.28
Loaf of brown bread 700 g	6.86	6.86	6.91	7.07	7.11	6.98	-0.21	-0.25	-0.07
Loaf of white bread 700 g	7.61	8.71	7.77	7.86	7.87	7.84	-0.25	0.84	-0.07
Maize meal 5 kg	28.27	29.05	28.59	22.52	23.94	23.20	5.75	5.11	5.39
Margarine 500 g	13.56	14.37	13.15	14.44	13.31	13.00	-0.88	1.06	0.15
Peanut butter 410 g	15.35	17.37	17.62	14.92	16.07	15.82	0.43	1.30	1.80
Rice 2 kg	28.14	30.45	29.02	25.67	25.24	23.10	2.47	5.21	5.92
Sunflower oil 750 ml	16.17	13.61	13.00	14.77	13.28	13.00	1.40	0.33	0.00
White sugar 2.5 kg	19.28	20.45	22.77	16.40	18.02	18.15	2.88	2.43	4.62
Total							13.38	16.73	18.63

4 | Farm-to-Retail Price Spreads

The previous sections of this report addressed issues pertaining to international and domestic price movements for selected agricultural inputs, commodities and food. A burning issue that is continuously questioned and debated is the margin between commodity prices (i.e. the price the producer receives) and the price of the final product (i.e. the price the end consumer pays). In an effort to enrich this debate and to build on the 2003 report by the Food Price Monitoring Committee, this section investigates in more detail the different cost components that contribute to the margin between farm gate prices and the price the consumer pays for selected food items. This is done by, amongst others, investigating the farm values of selected products and the farm-to-retail price spreads (FTRPS). The farm value is the value of the farm product's equivalent in the final food product purchased by the consumers. 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 expenditures, and is reported as a percentage. Over time, the share reflects relative changes in expenditures for farm products, food marketing services and retail food products. The FTRPS 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.

Firstly, trends reported in this section are expressed in real terms⁶. In other words, prices are adjusted for inflation, or stated differently, the effect of inflation is removed to indicate relative prices movements compared to a specific base year. In South Africa, Stats SA compiles the Consumer Price Index (CPI) that is used to reflect changes in prices over time relative to a specific base year (i.e. how prices have changes relative to a chosen year in the past). The CPI is also used to give an indication of how prices have increased and is a principal indicator for the South African Reserve Bank (SARB) whether prices in the economy are "overheating". Generally, the CPI is used to remove the inflationary effect from nominal prices (prices actually paid). This is to determine, amongst others:

- (i) Whether a particular price increased relatively more than prices in general.
- (ii) Whether the purchasing power of producers and consumers has improved or deteriorated.

For example, from a producer point of view, real price movements give an indication of whether producers are still able to buy the same amount of inputs from the returns they receive from selling their produce. If the producers' real returns have declined, it means that he/she has to generate additional income to purchase the same amount of inputs relative to a base year in the past. This means the producer is currently worse off than in the past.

From a consumer point of view, if real prices have increased, while his/her income has not increased at a similar rate in real terms, it means that the consumer has to spend a larger proportion of his/her income to buy the same amount of food. The result is, assuming consumers stay within budgetary constraints, that they have less money to spend on other goods and services. It is therefore not surprising that labour unions demand salary adjustments that are equal to inflation or higher in order to maintain or improve their members' general level of welfare.

⁶ Real prices in this section have been deflated with the headline CPI, base year 2008.

4.1 Wheat-to-bread value chain

Figure 28 shows the trend in the real farm gate price of wheat (lagged with four months)⁷ and the real prices of sliced bread (brown and white) between January 2005 and December 2009. Over the depicted period the real price of wheat increased from R1 435 per ton in January 2005 to peak at R3 691 per ton in July 2008, after which it declined significantly to reach R1 864 per ton in December 2009 (the decline in price since July 2008 was 49 %). The real price of wheat decreased by 44 % from December 2008 to December 2009.

The real prices of white and brown bread increased from R5.5 and R5.09 per loaf, respectively, in January 2005 to peak at R7.68 per loaf of white bread in December 2008 and R6.99 per loaf of brown bread in February 2009. Thereafter the real prices declined gradually to R7.18 per loaf of white bread and R6.39 per loaf of brown bread in December 2009. From December 2008 to December 2009 the real price of white and brown bread declined by 6.51 % and 7.47 %, respectively.

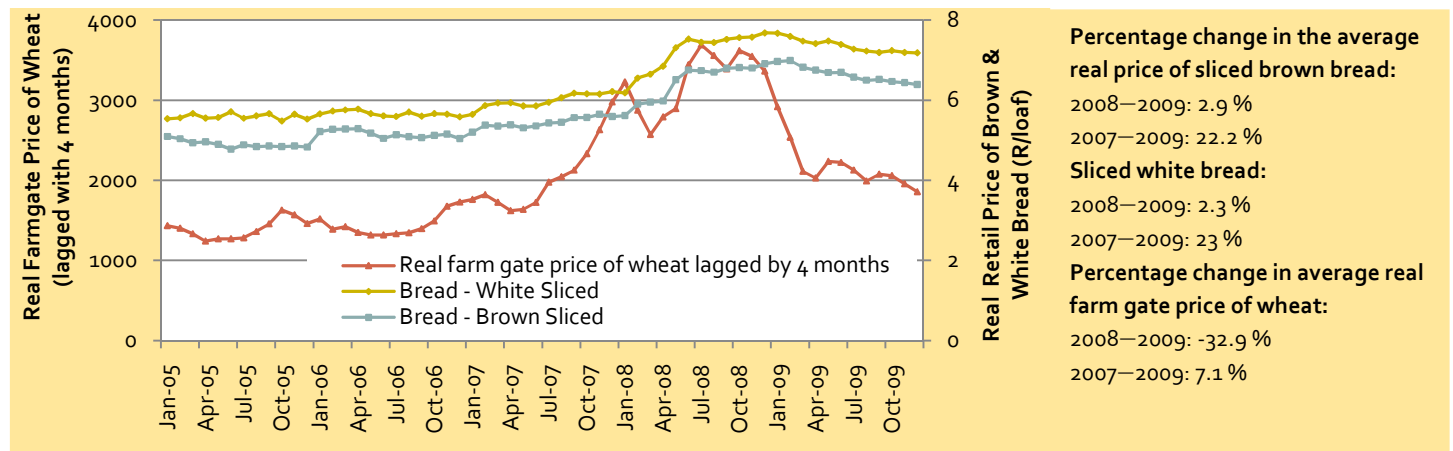


Figure 28: Real farm gate price of wheat and the real price of sliced brown and white bread
Sources: SAFEX, 2010; Stats SA, 2010 and own calculations.

Figure 29 shows the differential between national average prices of white and brown bread between January 2005 and December 2009. Over the depicted period the price of brown bread was, on average, 11.82 % lower than the price of white bread. The expectation, however, is that the price difference should be at least 14 % or more since brown bread is zero-rated on value added tax and because it is more expensive to produce a loaf of white bread.

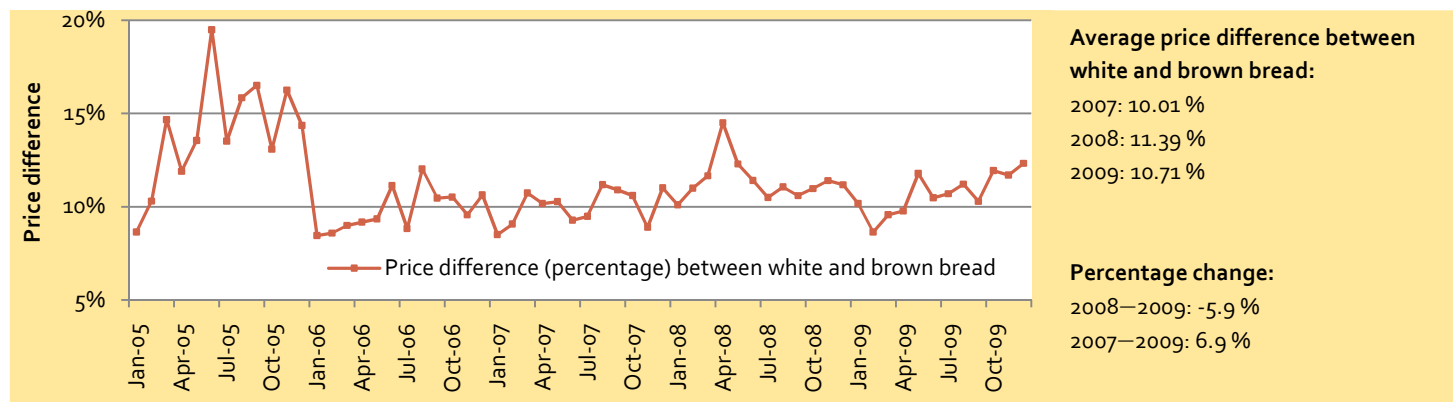


Figure 29: Price difference between a loaf of white and brown bread
Sources: SAFEX, 2010; Stats SA, 2010 and own calculations.

⁷ According to the Food Price Monitoring Committee Report 2003, statistical tests showed that the level of correlation between the producer’s price and the consumers price is the highest when the producers price is lagged by four months.

Figure 30 shows the trend in the farm⁸ and real retail values for brown bread between January 2005 and December 2009 expressed in Rand per ton of flour. Since mid-2007 both real farm and retail values increased significantly. The real farm value peaked at R4 556 per ton of flour in July 2008 and the real retail value peaked at R15 901 per ton of flour in February 2009. Prices then declined towards December 2009. The real farm value declined to reach R2 294 per ton of flour in December 2009 (a 49 % decline), while the real retail price declined to R14 644 per ton of flour or by 8.5 %.

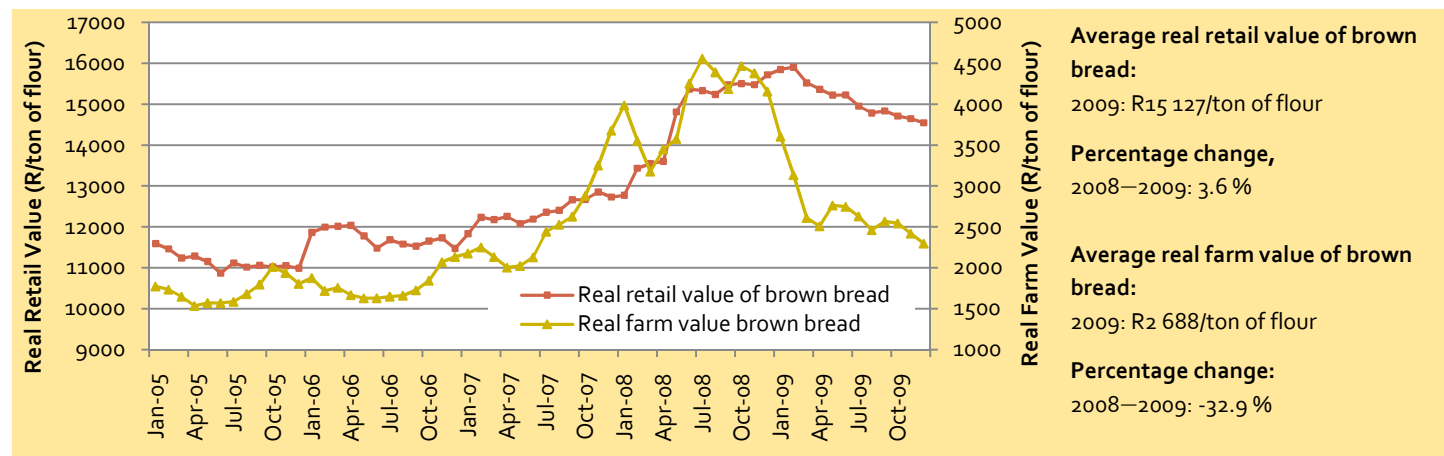


Figure 30: Real retail value and real farm value for brown bread

Sources: SAFEX, 2010; Stats SA, 2010 and own calculations.

Figure 31 shows the real farm and real retail values for white bread between January 2005 and December 2009. The real farm value increased steeply from early 2007 to peak at R4 856 per ton of flour in July 2008, while the retail value increased to R16 396 per ton of flour in January 2009. The real farm value then declined significantly, while the real retail value showed only a marginal decline until December 2009. The two values decreased by 47 % and 6.6 % to reach R2 574 per ton of flour and R15 351 per ton of flour in December 2009, respectively.

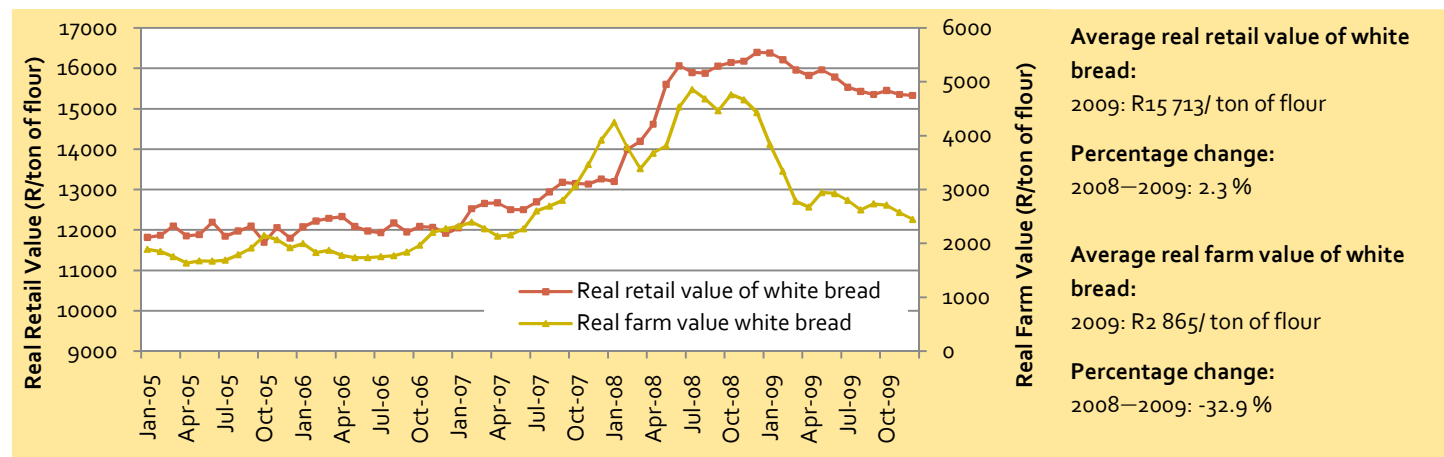


Figure 31: Real retail value and real farm value for white bread

Sources: SAFEX, 2010; Stats SA, 2010 and own calculations.

⁸ Farm Value = SAFEX wheat spot price - (transport cost to the silo + silo handling, grading and commission + 1 % physical loss + average storage cost for 60 day + transport differential)/extraction rate of brown bread

Figure 32 shows the trend in the farm value shares for brown and white bread between January 2005 and December 2009. In January 2005 the farm value share for brown bread and white bread was around 16 %. The farm values moved between approximately 15 % and 20 % until July 2007 after which it increased significantly to peak at just over 30 % in January 2008. The respective farm values decreased to around 25 % during the first quarter of 2008, but increased again to around 30 % during the third quarter. Since then the farm values for white and brown bread declined substantially to reach levels similar to that in 2005 and 2006.

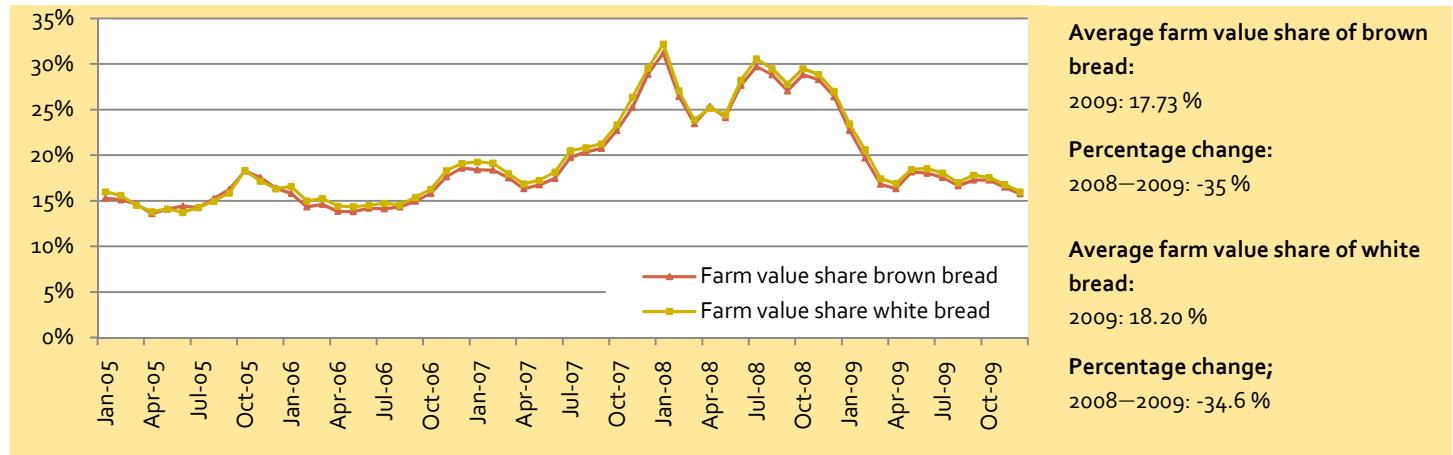


Figure 32: Farm value shares for white bread and brown bread
Sources: SAFEX, 2010; Stats SA, 2010 and own calculations.

Figure 33 shows the real FTRPS for brown bread and white bread between January 2005 and December 2009. In January 2005, the FTRPS for brown bread was R9 815 per ton of brown bread flour, while that of white bread was R9 925 per ton of white bread flour. The two spreads moved more or less sideways for most of 2005 to the last quarter of 2007, but then declined to reach R8 786 per ton of brown bread flour and R8 948 per ton of white bread flour in January 2008. Thereafter the two spreads increased significantly to peak at R12 909 per ton of brown bread flour and R13 177 per ton of white bread flour in March 2009. The spreads then decreased marginally to reach R12 247 per ton of brown bread flour and R12 883 per ton of white bread flour, respectively towards the end of 2009. Between December 2008 and December 2009 the two spreads decreased by 5.1 % and 2.2 %, respectively.

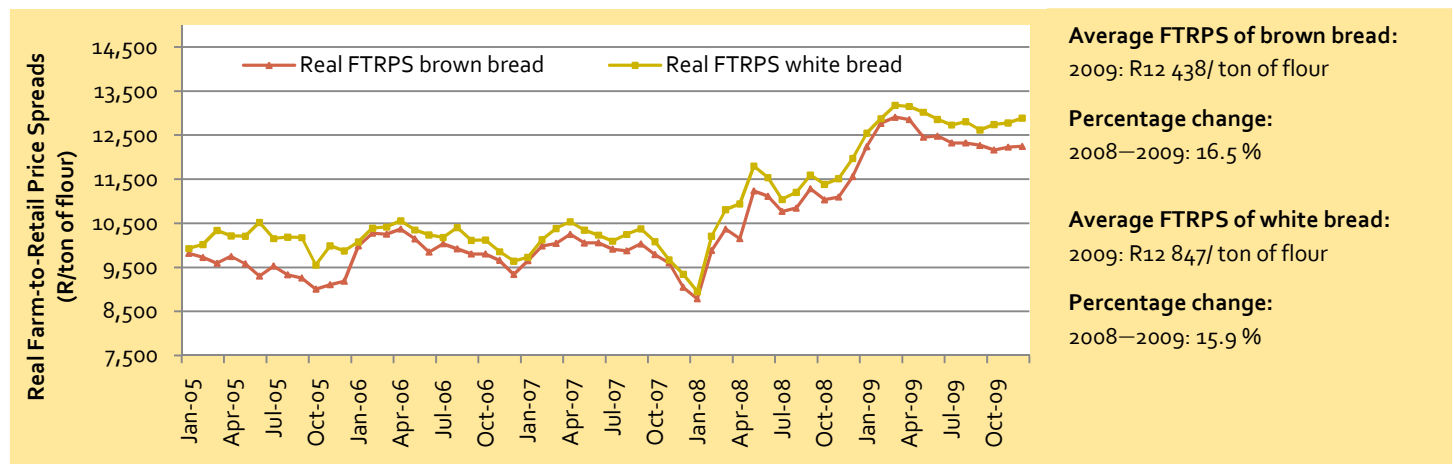


Figure 33: Real farm-to-retail price spreads for white bread and brown bread
Sources: SAFEX, 2010; Stats SA, 2010 and own calculations

Table 27 shows the costs and margins in the wheat-to-white bread value chain from farm gate to retailer. It also provides a comparison of margins and costs between the information published in the final report of the Food Price Monitoring Committee Report of 2003 and more up to date information pertaining to 2009/10.

These include:

- (i) More detailed cost components were used to calculate the farm gate price (see Appendix A for details how different items were calculated).
- (ii) In the 2009 calculation the value chain from the manufacturing phase onward was split into different scenarios, i.e. low cost and high cost scenarios combined with different quantities used to bake a white bread. Scenarios 1 and 3 represent typical high cost scenarios, but in scenario 1 more flour is required than in scenario 3 to bake a white (brown) bread. Scenarios 2 and 4 represent typical low cost scenarios, but in scenario 2 more flour is required to bake white (brown) than in scenario 4. The high and low costs scenarios reflect the impact of different economics of scale, while the amount of flour used reflects different efficiencies in converting wheat into white bread.

Table 27 shows the different cost and value adding activities in the wheat-to-white bread value chain. In order to make the discussion more manageable the Table is divided into different components. Each component is then discussed separately.

Table 27 (component A) shows that the producer price (farm gate price) for wheat was R971 per ton (or 72 %) higher in 2009/10 than in 2000-2002, while the average wheat spot price was R1 218 per ton (or 82.91 %) higher in 2009/10. Therefore, the gap between what farmers realized at farm level versus the spot market price widened, i.e. from R112.97 per ton in 2000-2003 to R359.86 per ton in 2009/10. Although the increase in the gap between what farmers received for their wheat at the farm gate and the SAFEX spot might be due to differences in methodological approach, one can safely postulate that there was a substantial increase in costs that are applicable to derive the farm gate price.

Component A of Table 27 also shows that the mill door price for wheat was R1 065 per ton (or 77 %) higher in 2009/10 than in 2000-2002. This is despite a substantial increase in the income obtained from bran sales. From the above it is clear that input cost inflation between the farm gate and the mill door played a significant role in lowering the price farmers received for their wheat and increased the procurement cost of wheat by millers.

Table 27: Average costs in the wheat-to-white bread value chain (Component A)

No.	Item	Units	Value 2000 - 2002	Value 2009/10
1.	Wheat avg. producer price lagged 4 months	R/ton	1 356.43	2 327.85
2.	Transport cost: Farm gate to silo	R/ton	96.57	41.20
3.	Average handling, grading, procurement fee & 1% physical loss fee.	R/ton	16.40	85.78
4.	Average storage cost for the farmer (2 months)	R/ton		28.78
5.	Safex derived price for the producer at the silo	R/ton		2 483.61
6.	Average location differential	R/ton	*	204.10
7.	Averages Safex spot price for wheat (2009). Lagged with 4 months	R/ton	1 469.40	2 687.71
8.	Storage and handling costs: Cost to miller	R/ton	20.4	63.33
9.	Transport costs: silo to mill door	R/ton	76.57	163.28
10.	Income from sale of bran	R/ton	176.83	255.41
11.	Mill door price	R/ton	1 389.54	2 454.82

*The average location differential was previously included as a cost in the transport cost: farm gate to silo item

Component B of Table 27 shows that mills site costs have increased significantly. The increase in total mill site costs between 2000-2002 and 2009/10 ranges between 53 % (low cost scenario) and 70 % (high cost scenario). The main cost items that contributed to the increase in total mill site costs were production, packaging and distribution costs. Total millers costs that include

capital expenditures increased between 37 % (low cost scenario) and 52 % (high cost scenario). The cost of producing white bread flour (measured as Rand per ton of meal) increased between 56 % and 60 % if 2000-2002 is compared with the low and high cost scenarios in 2009/10.

Table 27: Average costs in the wheat-to-white bread value chain (Component B)

No.	Item	Units	Value 2000 - 2002	Value 2009/10	
11.	Mill door price	R/ton grain	1 389.54	2 454.82	
	MANUFACTURING COST			Scenario 1 & 3	Scenario 2 & 4
	Production cost (milling costs)		86.83	161.70	146.67
	Packing cost & losses		13.66	31.50	28.57
	Administration, warehouse and selling		148.60	220.50	200.00
12.	Mill site costs	R/ton grain	249.10	413.70	375.24
	Distribution costs	R/ton grain	126.10	222.60	201.90
13.	Total mill site costs	R/ton grain	375.20	636.30	577.14
14.	Fixed capital costs	R/ton grain	203.61	228.69	207.43
15.	Floating capital costs	R/ton grain	54.82	95.55	86.67
16.	Total millers costs	R/ton grain	633.63	960.54	871.24
17.	Total wheat flour cost for white bread (11 + 16)	R/ton grain	2 023.17	3 415.36	3 326.05
18.	Average extraction for white bread		0.76	0.80	0.80
19.	Total cost of white bread flour (17 ÷ 18)	R/ton meal	2 662.07	4 269.20	4 157.57

Component C of Table 27 shows that the increase in the cost of flour to bake one white bread (line 21) from 2000-2002 to 2009/10 could range between 40 % to as high as 74 % depending on whether it is a high or low cost scenario and the level of efficiency of a baking plant. Packaging increased, on average, by 120 %, while production and maintenance costs have increased, on average, by 317 %. Distribution and overhead costs increased, on average, by 100 % and 198 %, respectively from 2000-2002 to 2009/10. Overall, the cost of producing a white bread has increased, on average, by a 100 % since 2000-2002.

The price of a loaf of white bread has increase by 140 % during the period applicable to this analysis. The margin between the selling price of a loaf of white bread and the cost of producing it has increased, on average, by 264 %. This margin is made of VAT (R0.97 per loaf), a retailer margin of 15 % (R0.90 per loaf), costs associated with rebates, losses and returns (R0.60 per loaf), and a baker and miller margin that varies according the cost structure of the baking facility and its efficiency (R0.07 to R0.79 per loaf).

Table 27: Average costs in the wheat-to-white bread value chain (Component C)

No.	Item	Units	Value 2000- 2002	Value 2009/10			
				Scenario 1 (508g - high)	Scenario 2 (508g - low)	Scenario 3 (420g - high)	Scenario 4 (420g - low)
19.	Total cost of white bread flour	R/ton meal	2 662.07	4 269.20	4 157.57	4 269.20	4 157.57
20.	Extraction rate of white bread from 1 ton flour (508 g & 420 g)*	loaves/ton	2 135	1 966	1 966	2 381	2 381
21.	Cost of flour per loaf (19 ÷ 20)	R/loaf	1.25	2.17	2.11	1.79	1.75
22.	Packaging	R/loaf	0.10	0.24	0.22	0.24	0.22
23.	Other raw materials	R/loaf	0.27	0.42	0.38	0.42	0.38
24.	Production & Maintenance	R/loaf	0.22	0.95	0.86	0.95	0.86
25.	Distribution	R/loaf	0.45	0.95	0.86	0.95	0.86
26.	Overheads (Admin + sales)	R/loaf	0.20	0.63	0.57	0.63	0.57
27.	Cost of producing white bread	R/loaf	2.48	5.35	4.99	4.97	4.63
28.	Bakers & millers margin	R/loaf		0.07	0.42	0.45	0.79
29.	Wholesale price	R/loaf		5.42	5.42	5.42	5.42
30.	Rebates, losses & returns	R/loaf		0.60	0.60	0.60	0.60
31.	Retailers purchase price	R/loaf		6.01	6.01	6.01	6.01
32.	Retailers margin	R/loaf		0.90	0.90	0.90	0.90
33.	White bread retail price (VAT Exl)	R/loaf		6.91	6.91	6.91	6.91
34.	VAT (14 %)	R/loaf		0.97	0.97	0.97	0.97
35.	White bread retail price (VAT Inc)	R/loaf	3.28	7.88	7.88	7.88	7.88
36.	Margin between selling price and cost of producing a loaf of white bread (35 – 27)	R/loaf	0.80	2.53	2.89	2.91	3.25

* The different extraction rates were calculated as 508 g flour/bread per 1 ton for scenario 1 and 2 and 420 g flour/bread per 1 ton flour for scenario 3 and 4. An extraction rate of 468 g flour/bread per 1 ton flour was used in the 2003 Food Price Monitoring Committee Report.

Table 28 shows the different cost and value adding activities in the wheat-to-brown bread value chain. The calculation of the mill door price for brown bread is similar to that of white bread, with the exception that the income received from bran differs due to different extraction rates to produce brown bread flour. This is shown in Table 28. Table 28 (Component A) shows that the mill door price for wheat when used to produce brown bread was R1 132 per ton (or 80.16 %) higher in 2009/10 than in 2000-2002.

Table 28: Average costs in the wheat-to-brown bread value chain (Component A)

No.	Item	Units	Value 2000 - 2002	Value 2009/10
1.	Wheat avg. producer price lagged 4 months	R/ton	1 356.43	2 327.85
2.	Transport cost: Farm gate to silo	R/ton	96.57	41.20
3.	Average handling, grading, procurement fee & 1 % physical loss fee.	R/ton	16.40	85.78
4.	Average storage cost for the farmer (2 months)	R/ton		28.78
5.	Safex derived price for the producer at the silo	R/ton		2 483.61
6.	Average location differential	R/ton	*	204.10
7.	Averages Safex spot price for wheat (2009). Lagged with 4 months	R/ton	1 469.40	2 687.71
8.	Storage and handling costs: Cost to miller	R/ton	20.4	63.33
9.	Transport costs: silo to mill door	R/ton	76.57	163.28
10.	Income from sale of bran	R/ton	154.16	166.02
11.	Mill door price	R/ton	1 412.21	2 544.21

*The average location differential was previously included as a cost in the Transport cost: Farm gate to silo item

Table 28 (Component B) shows that the increase in total mill site costs from 2000-2002 and 2009/10 ranges between 45 % (low cost scenario) and 70 % (high cost scenario). The main cost items that contributed to the increase in total mill site costs were production, packaging and distribution costs. Total millers costs that include capital expenditures increased between 37 % (low

cost scenario) and 52 % (high cost scenario). The cost of producing brown bread flour (measured as Rand per ton of meal) increased between 55 % and 60 % if 2000-2002 is compared with the low and high cost scenarios in 2009/10.

Table 28: Average costs in the wheat-to-brown bread value chain (Component B)

No.	Item	Units	Value 2000 – 2002	Value 2009/10	
11.	Mill door price	R/ton grain	1 412.21	2 544.21	
	MANUFACTURING COST			Scenario 1	Scenario 2
	Production cost (milling costs)	R/ton grain	86.83	161.70	146.67
	Packing cost & losses	R/ton grain	13.66	31.50	28.57
	Administration, warehouse and selling	R/ton grain	148.60	220.50	200.00
12.	Mill site costs	R/ton grain	249.10	413.70	375.24
	Distribution costs	R/ton grain	126.10	222.60	201.90
13.	Total mill site costs	R/ton grain	375.20	636.30	577.14
14.	Fixed capital costs	R/ton grain	203.61	228.69	207.43
15.	Floating capital costs	R/ton grain	54.82	95.55	86.67
16.	Total millers costs	R/ton grain	633.63	960.54	871.24
17.	Total wheat flour cost for brown bread (11 + 16)	R/ton grain	2045.84	3 504.75	3 415.45
18.	Average extraction for brown bread		0.81	0.87	0.87
19.	Total cost of white bread flour	R/ton meal	2 525.73	4 028.45	3 925.80

Table 28 (Component C) shows that the increase in the cost of flour to bake one brown bread from 2000-2002 to 2009/10 ranges between 43 % and 69 % depending on whether it is a high or low cost scenario and the level of efficiency of a baking plant. Packaging increased, on average, by 114 %, while production and maintenance costs have increased, on average, by 307 %. Distribution and overhead costs increased, on average, by 96 % and 191 %, respectively from 2000-2002 to 2009/10. Overall, the cost of producing a brown bread has increased, on average, by a 100 % since 2000-2002.

The price of a loaf of brown bread has increased by 151 % during the period applicable to this analysis. The margin between the selling price of a loaf of brown bread and the cost of producing it has increased, on average, by 394 %. This margin is made of a retailer margin of 15 % (R0.93 per loaf), costs associated with rebates, losses and returns (R0.61 per loaf), and a baker and miller margin that varies according to the cost structure of the baking facility and its efficiency (R0.48 to R1.11 per loaf).

Table 28: Average costs in the wheat-to-brown bread value chain (Component C)

No.	Item	Units	Value 2000-2002	Value 2009/10			
				Scenario 1 (508g - high)	Scenario 2 (508g - low)	Scenario 3 (420g - high)	Scenario 4 (420g - low)
19.	Average cost of brown bread flour	R/ton meal	2 525.73	4 028.45	3 925.80	4 028.447	3 925.80
20.	Extraction rate of brown bread from 1 ton flour (480 g & 405 g loafs/ton flour).	Loaves/ton	2 275	2 095	2 095	2 469	2 469
21.	Cost of flour per loaf	R/loaf	1.11	1.92	1.87	1.63	1.59
22.	Packaging	R/loaf	0.10	0.24	0.22	0.24	0.22
23.	Other raw materials	R/loaf	0.27	0.42	0.38	0.42	0.38
24.	Production and maintenance	R/loaf	0.22	0.95	0.86	0.95	0.86
25.	Distribution	R/loaf	0.45	0.95	0.86	0.95	0.86
26.	Overheads	R/loaf	0.20	0.63	0.57	0.63	0.57
27.	Cost of producing brown bread	R/loaf	2.35	5.10	4.75	4.81	4.47
28.	Bakers & millers margin	R/loaf		0.48	0.82	0.77	1.11
29.	Wholesale price	R/loaf		5.58	5.58	5.58	5.58
30.	Rebates, losses & returns	R/loaf		0.61	0.61	0.61	0.61
31.	Retailer's purchase price	R/loaf		6.19	6.19	6.19	6.19
32.	Retailers margin	R/loaf		0.93	0.93	0.93	0.93
33.	Brown Bread retail price (VAT Exc)	R/loaf		7.12	7.12	7.12	7.12
34.	VAT (14 %)	R/loaf		0.00	0.00	0.00	0.00
35.	Brown bread retail price (VAT Inc)	R/loaf	2.84	7.12	7.12	7.12	7.12
36	Brown bread margin from miller to retailer	R/loaf	0.49	2.02	2.37	2.31	2.65

4.2 Maize-to-maize meal value chain

Figure 34 shows the trends in the real farm value⁹ and real retail value of special maize meal between January 2005 and December 2009. The real farm value of special maize meal increased from mid-2005 and peaked at R2 372/ton in July 2007, after which it declined gradually to reach R1 351 per ton in December 2009. Between December 2008 and December 2009, the real farm value of special maize meal decreased by 46 %. The real retail value of special maize meal followed a similar trend as the real farm value but peaked later at R3 598 per ton in December 2008, after which it declined to reach R2 691 per ton in December 2009. The year-on-year decrease was 25 %.

⁹ Farm value = SAFEX white maize spot price - (transport cost to the silo + silo handling, grading & commission) + 1% physical loss + average storage cost for 60 days + Transport differential/extraction rate.

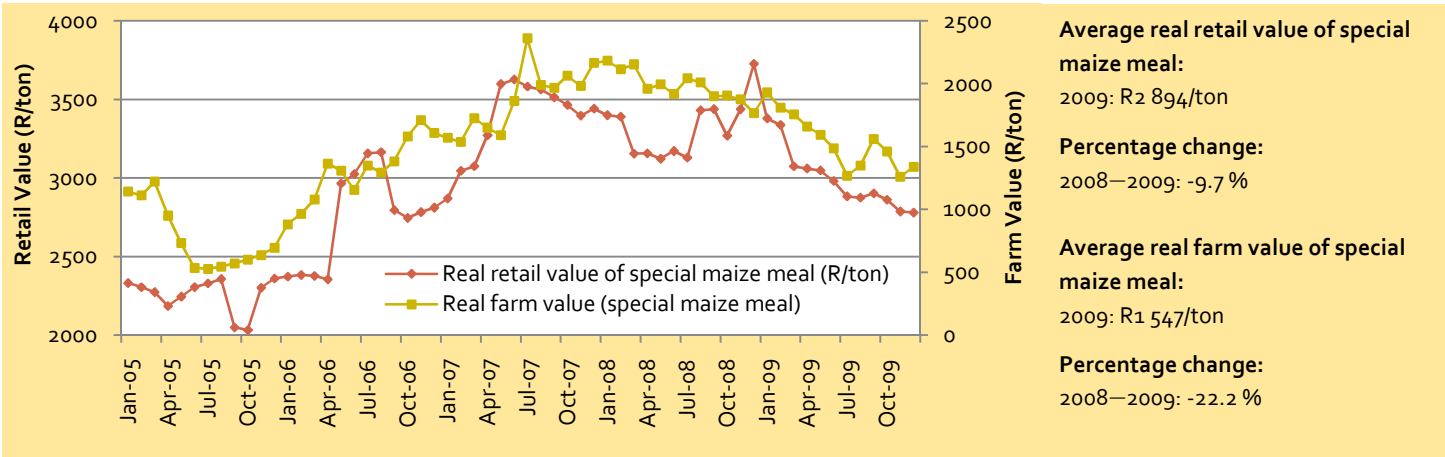


Figure 34: Real retail value and real farm value of special maize meal

Sources: SAFEX, AC Nielsen and own calculations.

Figure 35 shows the trends in the real farm value and real retail value of super maize meal between January 2005 and December 2009. The real farm value of super maize meal increased from R671 per ton in mid-2005 and peaked at R3 068 per ton in July 2007. The real farm value decreased by 43.29 % between July 2007 and December 2009. The real retail value of super maize meal peaked later at R4 211 per ton in December 2008 and declined to reach R3 788 per ton in December 2009. This was a year-on-year decline of 10.5 %.

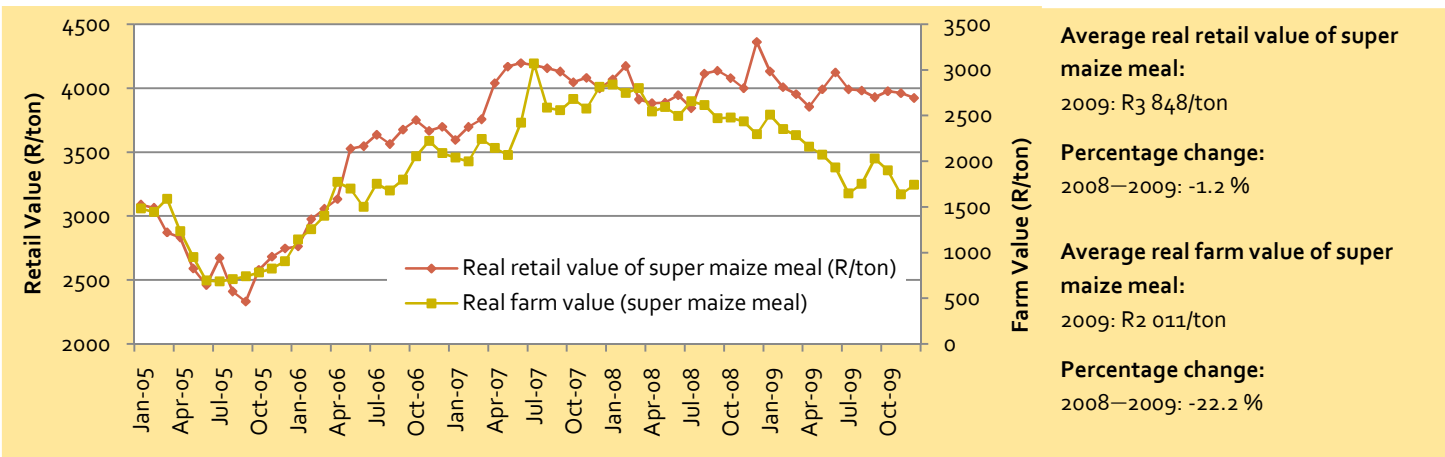


Figure 35: Real retail value and real farm value of super maize meal

Sources: SAFEX, AC Nielsen and own calculations.

Figure 36 shows the trends in the farm value shares for super maize meal and special maize meal. The two farm value shares increased between mid-2005 and mid-2007. Between 2008 and 2009 the average farm value share of super and special maize meal declined by 21.4 % and 14.5 %, respectively.

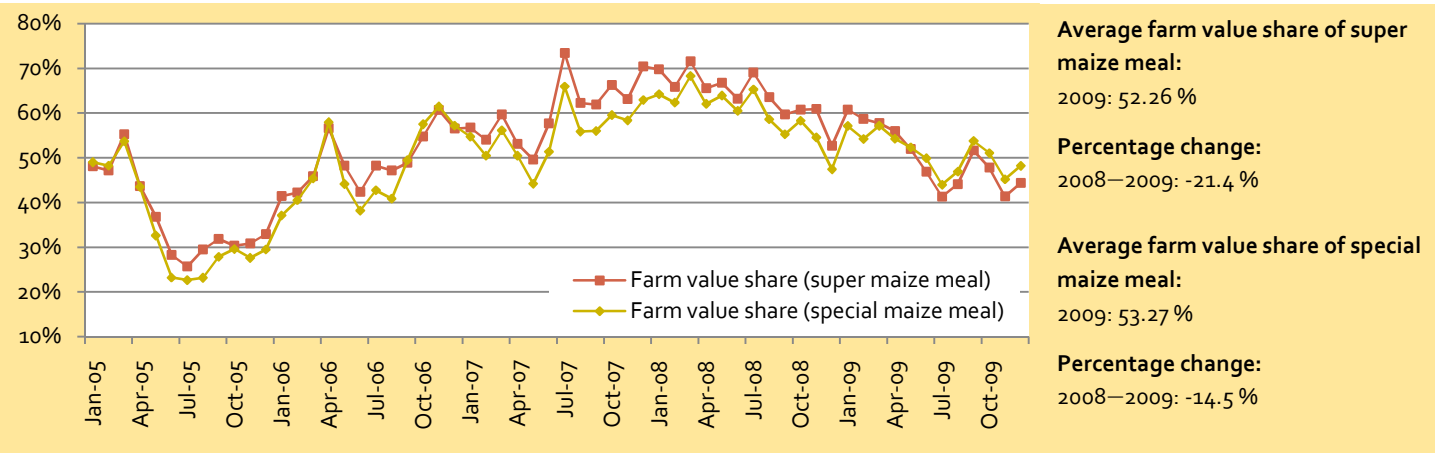


Figure 36: Farm value shares for super maize meal and special maize meal

Sources: SAFEX, AC Nielsen and own calculations.

Figure 37 shows the FTRPS for super maize meal and special maize meal between January 2005 and December 2009. In January 2005, the real FTRPS for super maize meal was R1 586 per ton, while that of special maize meal was R1 175 per ton. The two spreads showed high variability, reaching R1 504 per ton and R2 190 per ton in July 2009 respectively. This was the highest real FTRPS for super maize meal since January 2005. The highest real FTRPS for special maize meal was in May 2007. From December 2008 to December 2009 the real FTRPS for super maize meal increased from R1 912.14 per ton to R2 030.96 per ton, or 12.9 %, and the real FTRPS for special maize meal decreased from R1 876.68 per ton to R1 453.25 per ton, or 22.5 %.

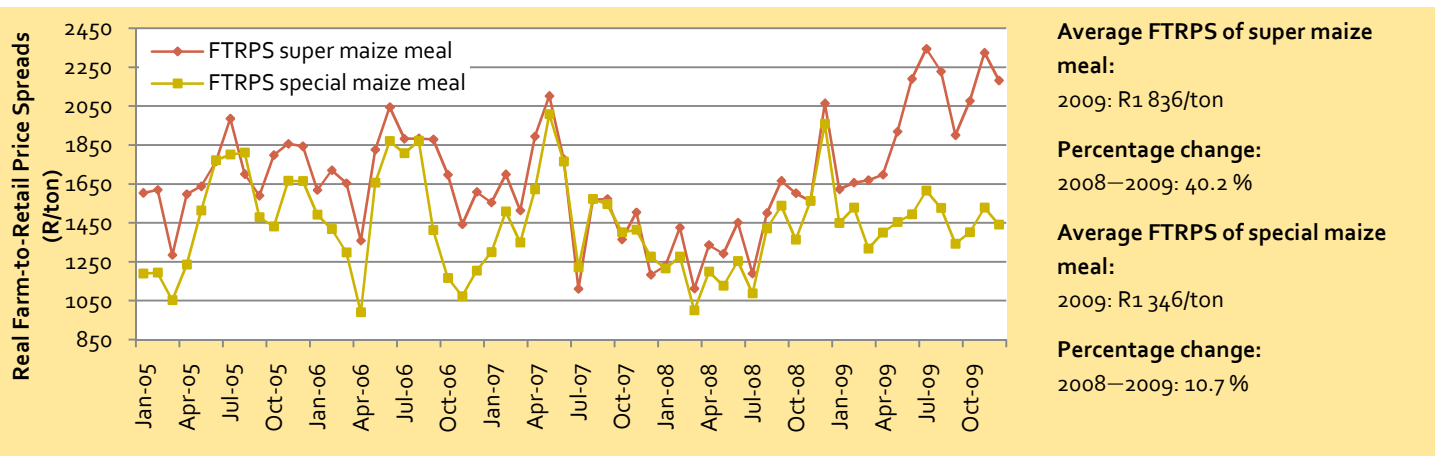


Figure 37: Real farm-to-retail price spreads for super maize meal and special maize meal

Sources: SAFEX, AC Nielsen and own calculations.

In the rest of this sub-section the value composition of the maize-to-maize meal value chain is investigated in more detail. The 2003 data was taken from the report compiled by the Food Price Monitoring Committee in 2003. A similar methodology was used to construct the maize-to-maize meal value chain for 2009/10. It was necessary to make certain adjustments to the method used for 2003. These include:

- (i) For 2003, the calculation of the average monthly retail price was based on a 5 kg bag of maize meal. In the 2009 calculation, a weighted price ratio between a 5 kg bag and a 12.5 kg bag of maize meal was used. The reason for this is that industry role players (experts) indicated that using either one of the two would result in biased results that are not representative of the most popular bag sizes sold (due to a paucity in available data on all different bag sizes the analysis

was restricted to the 5 kg and 12 kg bag sizes and hence the results from the analysis below is only indicative of trends). Cognizance should also be taken of the fact that different marketing channels sell different amounts of smaller versus bigger bags (the impact of using different bag sizes on margins will be illustrated later).

- (ii) More detailed cost components were used to calculate the farm gate price (see Appendix B) for details of how different items were calculated).
- (iii) In the 2009 calculation, the value chain from the manufacturing phase onward was split into two scenarios, i.e. a low cost scenario (scenario 1) and a high cost scenario (scenario 2). This reflects different economics of scale and efficiencies.

Table 29 (Component A) represents the value chain for maize-to-super maize meal for 2003 (as published in the final report of the Food Pricing Committee in December 2003) and 2009/10. The farm gate price for maize was R396.03 per ton, or 39.74 %, higher in 2009 than in 2003, while the mill door price for maize was R409.76 per ton, or 46.80 %, higher in 2009 than in 2003. The estimated gap between the farm gate price and the SAFEX spot price increased from R101 per ton to R286.40 per ton, which indicates the increase in the cost of sales by the producer of maize. The cost for the miller to land maize at the mill door increased, on average, by 102.95 %, while the income received from the sales of chop increased by 39.92 %.

Table 29: Average costs in the maize-to-maize meal (super maize meal) value chain (Component A)

No	Item	Units	June 2003	2009/10
1.	Farm gate price lagged 4 months	R/ton grain	996.65	1 392.68
2.	Transport costs: farm gate to silo	R/ton grain	76.00	41.20
3.	Average handling, grading, procurement fee and 1 % physical loss fee	R/ton grain	25.00	83.56
4.	Average storage cost for the farmer	R/ton grain	R 0.00	33.87
5.	Safex derived price for the producer at the silo	R/ton grain	1 097.65	1 551.32
6.	Average location differential			127.77
7.	Averages Safex spot price for white maize (2009) 4 months lagged	R/ton grain	1 097.65	1 679.08
8.	Storage and handling costs: Cost to miller	R/ton grain	25.00	55.85
9.	Transport costs: silo to mill door	R/ton grain	56.00	102.21
10.	Income from sale of chop	R/ton	303.01	423.98
11.	Mill door price for maize	R/ton grain	875.64	1 285.40

Sources: Discussions with different industry stakeholders at various levels of the maize value chain.

Average annual chop price: South Africa Feedlot Association.

SAFEX, 2010. (<http://www.jse.co.za/Markets/Commodity-Derivatives-Market/Commodity-Derivatives-physical-delivery-info.aspx>)

Table 29 (Component B) shows costs from the mill door to the retail level. On average, milling costs increased by 42.57 %, packaging cost by 91.96 %, packing material by 36.36 % and admin, warehouses and selling by 25.62 %. The increase in total mill site costs between 2000-2002 and 2009/10 ranges between 29 % (low cost scenario) and 42 % (high cost scenario). Total mill site costs that includes distribution costs increased on average by 42.86 %; average distribution cost increased by 60.92 %. Total manufacturing and distribution costs that include capital expenditures increased between 28.81 % and 42.37 %.

The cost of producing maize meal (measured as Rand per ton of meal) increased between 39.06 % and 44.89 %, respectively, from 2003 if compared with the low and high cost scenarios in 2009/10. The miller-to-retail margin increased between 38.25 % and 9.86 % for scenario 1 (low cost) and scenario 2 (high cost) since 2003.

Table 29: The maize-to-maize meal (super maize meal) value chain (Component B)

No	Item	Units	Value 2003	Value 2009/10	
				Scenario 1	Scenario 2
11.	Mill door price for maize	R/ton grain	875.64	1 285.40	
	MANUFACTURING COSTS				
	Production cost (milling costs)	R/ton grain	70.84	95.95	106.05
	Packing cost	R/ton grain	16.67	30.40	33.60
	Packing material costs and losses	R/ton grain	88.00	114.00	126.00
	Administration, warehouses and selling	R/ton grain	157.62	188.10	207.90
12.	Mill site cost	R/ton grain	333.13	428.45	473.55
	Distribution costs	R/ton grain	137.96	210.90	233.10
13.	Total mill site cost	R/ton grain	471.09	639.35	706.65
14.	Fixed capital cost	R/ton grain	151.23	146.97	162.45
15.	Floating capital costs	R/ton grain	38.84	65.31	72.19
16.	Total manufacturing and distribution cost	R/ton grain	661.16	851.64	941.28
	Cost of production of super maize meal				
17.	Conversion cost (Maize to Maize Meal)	R/ton grain	661.16	851.64	941.28
18.	Average cost of maize (mill door price)	R/ton grain	875.64	1 285.40	1 285.40
19.	Total super maize meal cost	R/ton grain	1 536.80	2 137.03	2 226.68
20.	Average extraction rate for super maize meal		0.63	0.63	0.63
21.	Average cost of super maize meal	R/ton meal	2 458.88	3 419.25	3 562.69
22.	Miller to retail margin	R/ton meal	505.12	698.35	554.92
23.	Average monthly retail price	R/ton meal	2 964.00	4 117.60	4 117.60

Note: The average retail price for super maize meal for 2003 was based on a 5 kg bag of maize meal. In Table 29 (Component B) the average retail price for 2009/10 is based on a weighted price of 30 % for 5 kg and 70 % for 12.5 kg bags of maize meal. If only a 12.5 kg bag of maize meal is used then the average retail price for super maize meal would amount to R3 898 per ton, and the miller-to-retail margin would be R55.37 per ton for scenario 1 and a loss of R132.63 per ton for scenario 2.

4.3 Vegetable value chain

4.3.1 Real price trends in the vegetable value chain

Figure 38 shows the real retail price trends for different fresh vegetables from July 2006 to December 2009. Real retail prices for the selected vegetables were all higher in 2009 compared to 2008. The average real retail prices per kilogram for cabbage, carrots and onions were respectively 27.4 %, 10.7 % and 11.4 % higher in 2009 than in 2008. The average real retail price of tomatoes was 20.6 % higher in 2009 compared to 2008. Year-on-year (i.e. December 2008 to December 2009) real retail prices of selected vegetables showed an increasing trend.

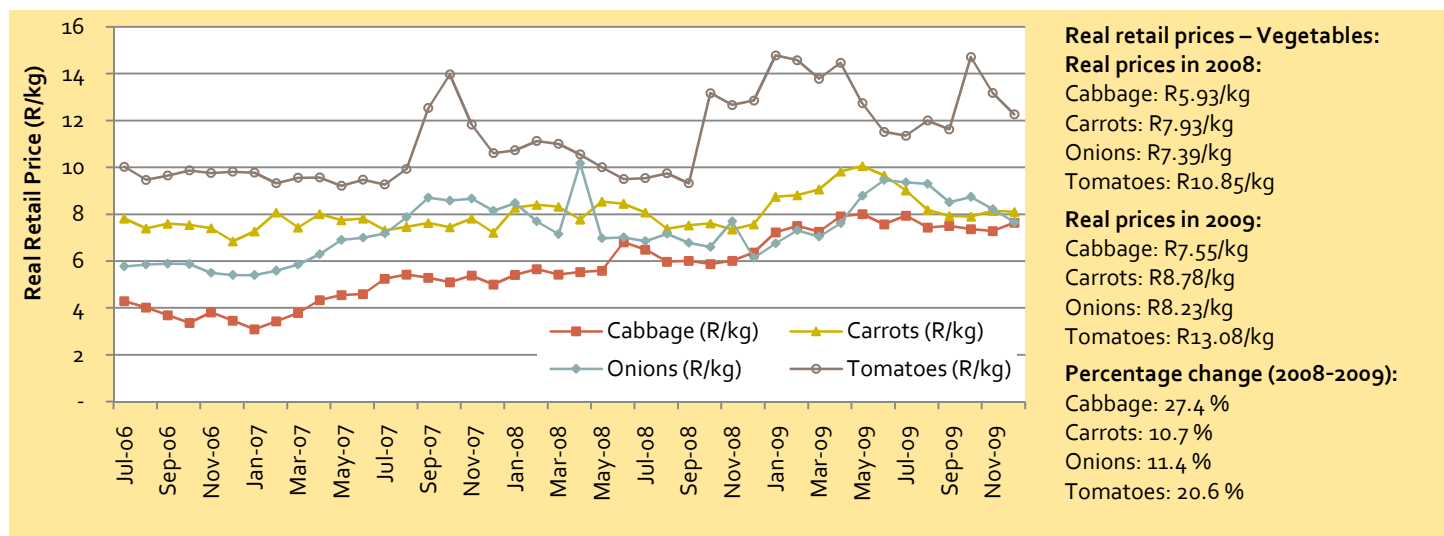


Figure 38: Real retail price trends for selected vegetables
Source: Statistics South Africa and own calculations, 2010.

Figure 39 shows the real farm gate price¹⁰ trends for selected fresh vegetables. The average real farm gate prices were between 15.2 % and 39.2 % higher in 2009 than in 2008. On a year-on-year basis from December 2008 to December 2009, real farm gate prices of carrots and onions increased by 10.3 % and 8.5 %, respectively, while the real farm gate prices of cabbage and tomatoes decreased by 39.9 % and 31.1 %, respectively.

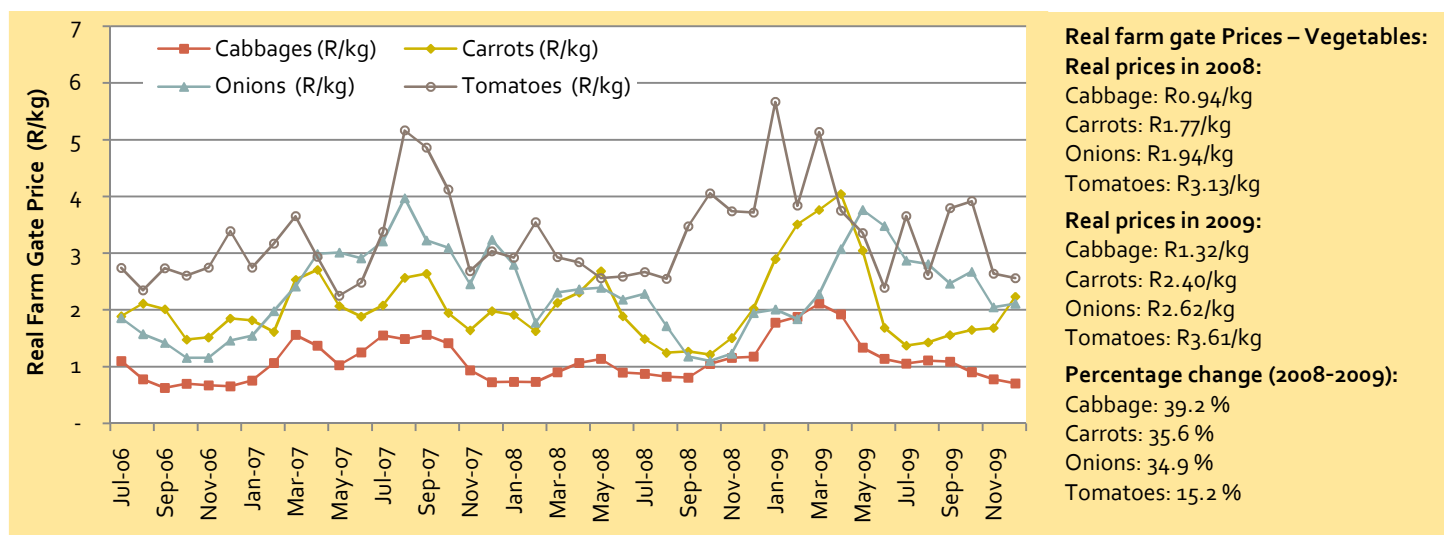


Figure 39: Real farm gate price trends for selected vegetables
Source: DAFF, Statistics South Africa and own calculations, 2010.

The real FTRPS and the real farm value share for cabbage are depicted in Figure 40. The real FTRPS of cabbage increased by 25.1 % on average between 2008 and 2009 and reached R6.92 per kg in December 2009. The real farm value share of cabbage increased on average by 9.1 % from 2008 to 2009. In March 2009 the real farm value share reached a high of 29.1 %, after which it decreased to around 10 % for the last two months of 2009.

¹⁰ The farm gate price is the realised average price on all the National Fresh Produce Markets (NFPM) minus the maximum of 12.5 % market and market agent commission permissible. This does not take into account the cost of transport to the market.

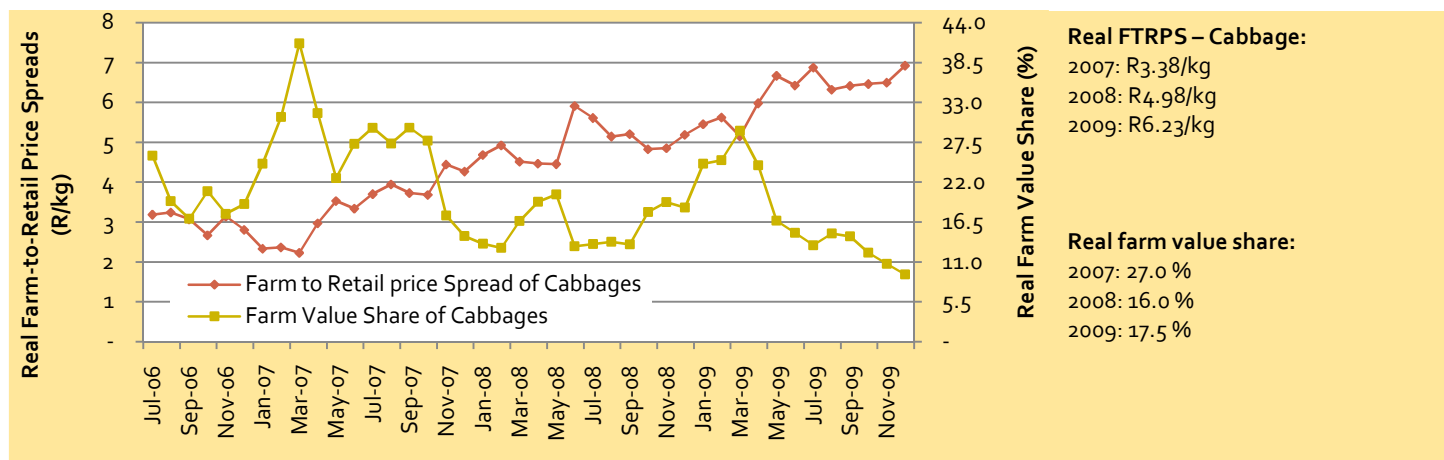


Figure 40: Real farm-to-retail price spread and farm value share of cabbages

Source: Statistics South Africa, 2010; DAFF, 2010 and own calculations.

The real FTRPS and the real farm value share for carrots are depicted in Figure 41. The real FTRPS of carrots increased by 3.5 % on average between 2008 and 2009 and reached R5.86 per kg in December 2009. The real farm value share of carrots increased on average by 21.7 % from 2008 to 2009. In March 2009, the real farm value share reached a high of 41.5 %, after which it decreased again to reach around 20 % for October and November 2009. During December 2009 it increased again to 27.6 %.

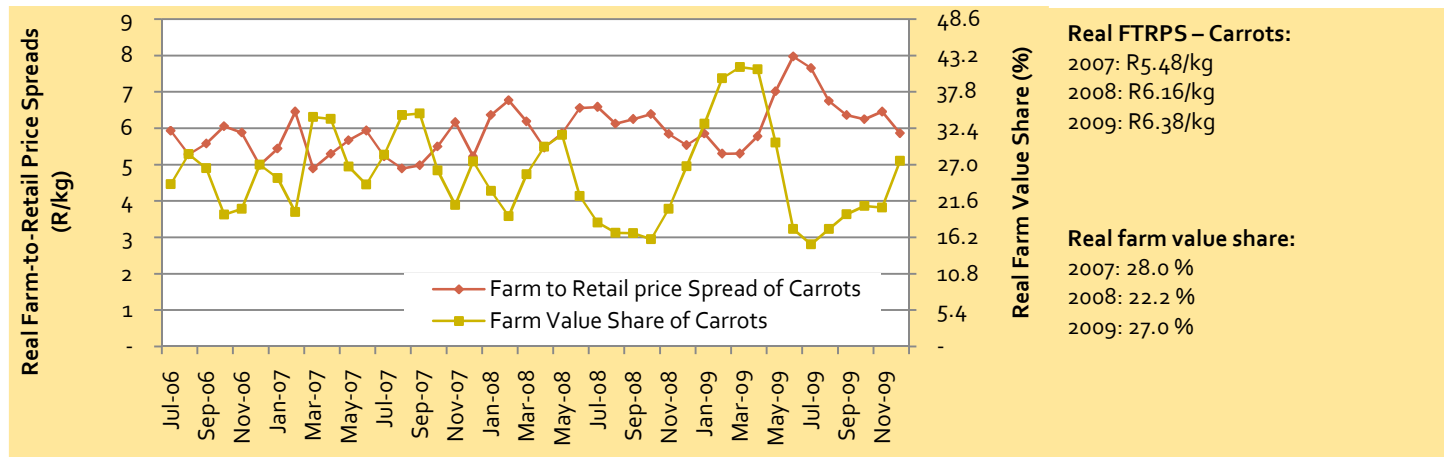


Figure 41: Real farm-to-retail price spread and farm value share of carrots

Source: Statistics South Africa, 2010; DAFF, 2010 and own calculations.

The real FTRPS and the real farm value share for onions are depicted in Figure 42. The real FTRPS of onions increased by 3 % on average between 2008 and 2009 and stabilised at R5.55 per kg in December 2009. The real farm value share of onions increased, on average, by 20.2 % from 2008 to 2009. In May 2009, the real farm value share reached a high of 42.8 %, after which it decreased again to stabilise at around 25 % for the last few months of 2009.

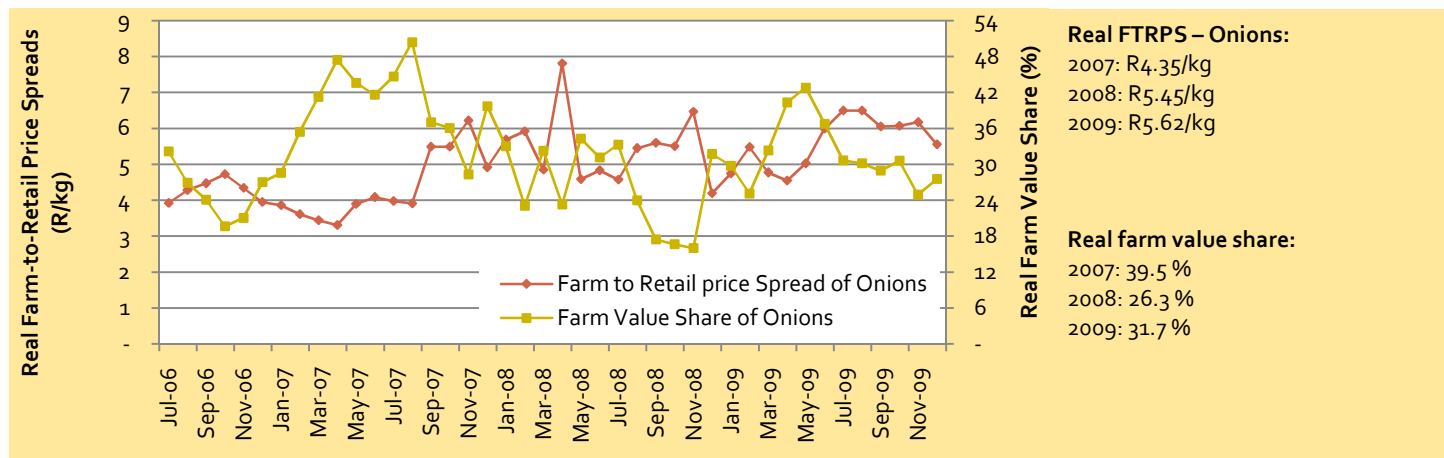


Figure 42: Real farm-to-retail price spread and farm value share of onions

Source: Statistics South Africa, 2010; DAFF, 2010 and own calculations.

The real FTRPS and the real farm value share for tomatoes are depicted in Figure 43. The real FTRPS of tomatoes increased by 22.7 % on average between 2008 and 2009 and reached R9.70 per kg in December 2009. The real farm value share of tomatoes decreased on average by 4.9 % from 2008 to 2009. In January 2009, the real farm value share reached a high of 38.3 %, after which it decreased again to reach around 20 % for the last few months of 2009.

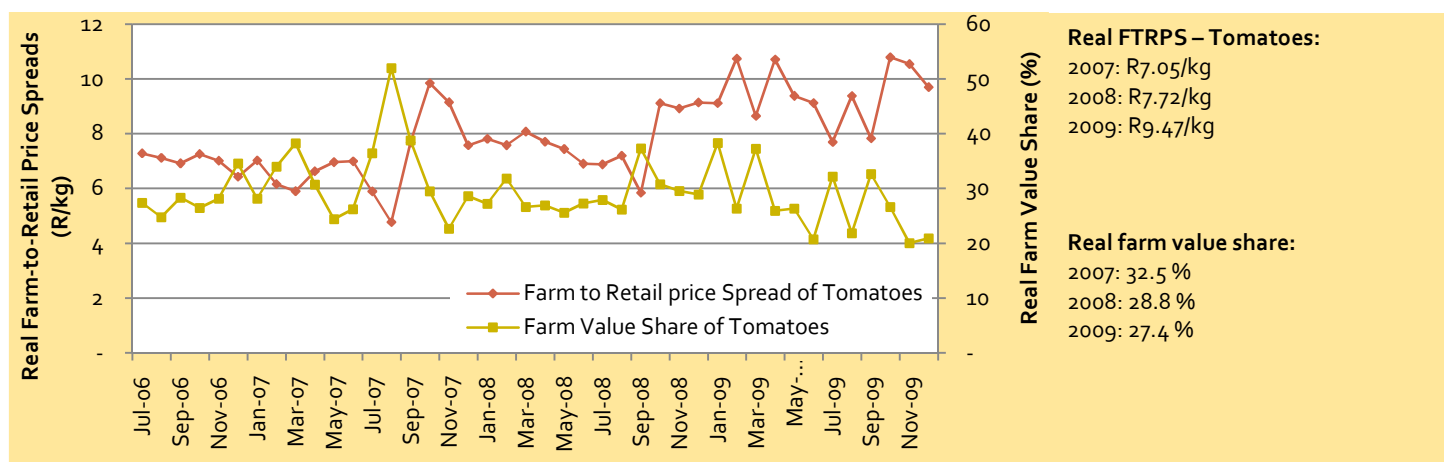


Figure 43: Real farm-to-retail price spread and farm value share of tomatoes

Source: Statistics South Africa, 2010; DAFF, 2010 and own calculations.

As mentioned previously, the farm gate price does not take into account the cost of transporting the fresh produce from the farm to the markets. The mode of transport for vegetables varies widely as well as the distances travelled from farms to markets. Most vegetables require climate controlled conditions as well as protection against bruising. After consultation with experts and own calculations, Figure 44 depicts the real FTRPS of tomatoes on an annual basis, where transport cost was taken into account. It is evident that the transport cost does make a difference to the real FTRPS of tomatoes. For the transport cost calculations, a 6x4 six-axle articulated reefer's total operating cost trends were used and applied to as an indication of the cost per ton to transport fresh produce from the northern regions to the Tswane Fresh Produce Market. The transport cost changes for 2007, 2008 and 2009 were 6.0 %, 10.7 % and 12 %, respectively.

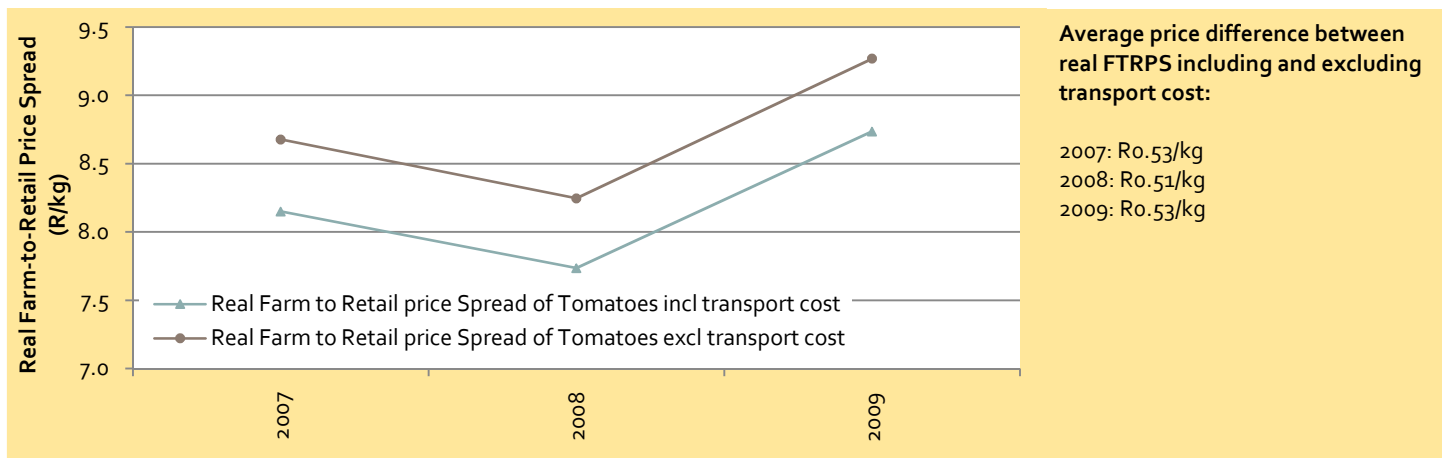


Figure 44: Real farm-to-retail price spread of tomatoes including and excluding transport cost

Source: Based on data from Statistics South Africa, DAFF, expert opinions and own calculations, 2010.

4.3.2 Real price trends in the potato value chain

Figure 45 shows the real retail and farm gate¹¹ price trends for potatoes from July 2006 to December 2009. Real retail and farm gate prices for potatoes were higher in 2009 compared to 2008. The average real retail and farm gate price per kilogram for potatoes were respectively 17.6 % and 50.0 % higher in 2009 than in 2008.

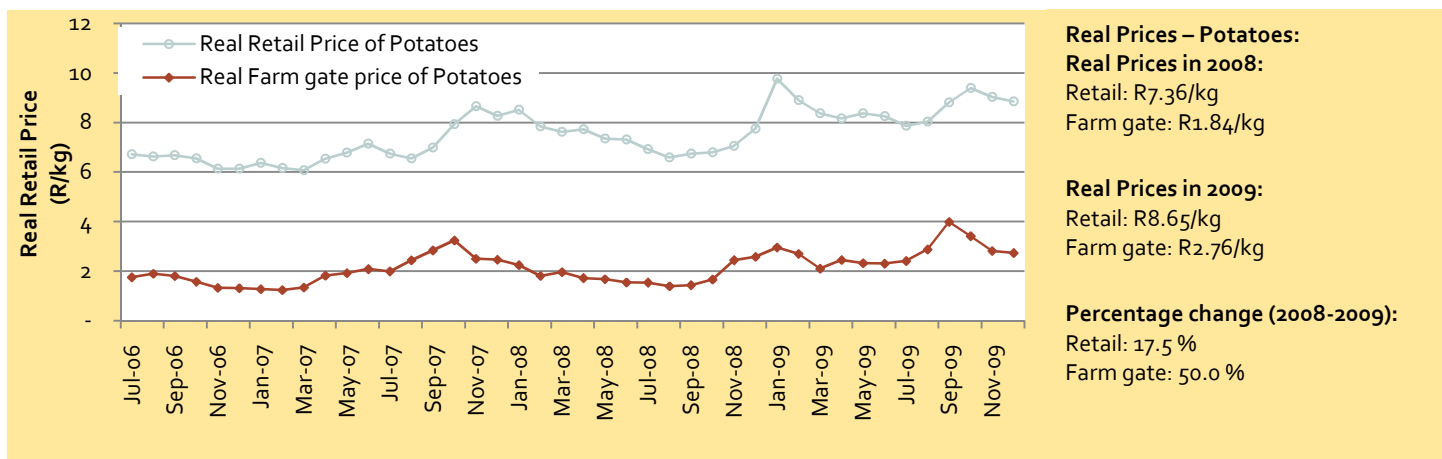


Figure 45: Real retail price trends for potatoes

Source: DAFF, Statistics South Africa and own calculations, 2010.

The real FTRPS and the real farm value share for potatoes are depicted in Figure 46. The real FTRPS of potatoes increased by 6.8 %, on average, between 2008 and 2009 and reached R6.12 per kg in December 2009. The real farm value share of potatoes increased, on average, by 27.7 % from 2008 to 2009. In September 2009 the real farm value share reached a high of 45.4 %, after which it decreased again to reach around 31.2 % for December 2009.

¹¹ The farm gate price is the realised average price of all the NFPM minus the maximum of 12.5 % market and market agent commission permissible. This does not take into account the cost of transport to the market.

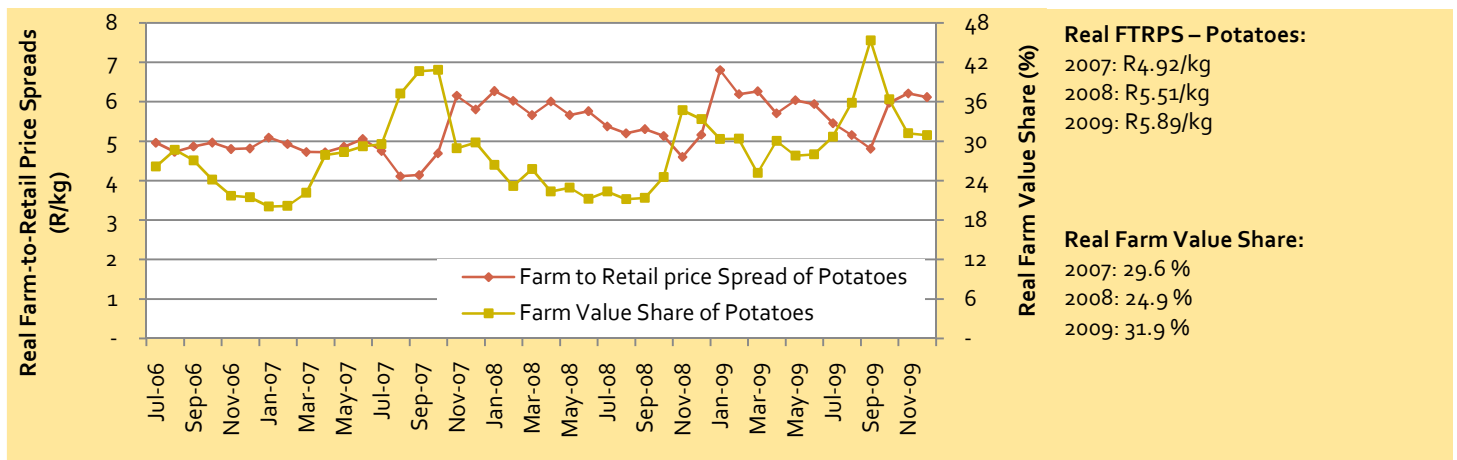


Figure 46: Real farm-to-retail price spread and farm value share of potatoes

Source: DAFF, Statistics South Africa and own calculations, 2010.

4.3.3 Composition of the market agent margin

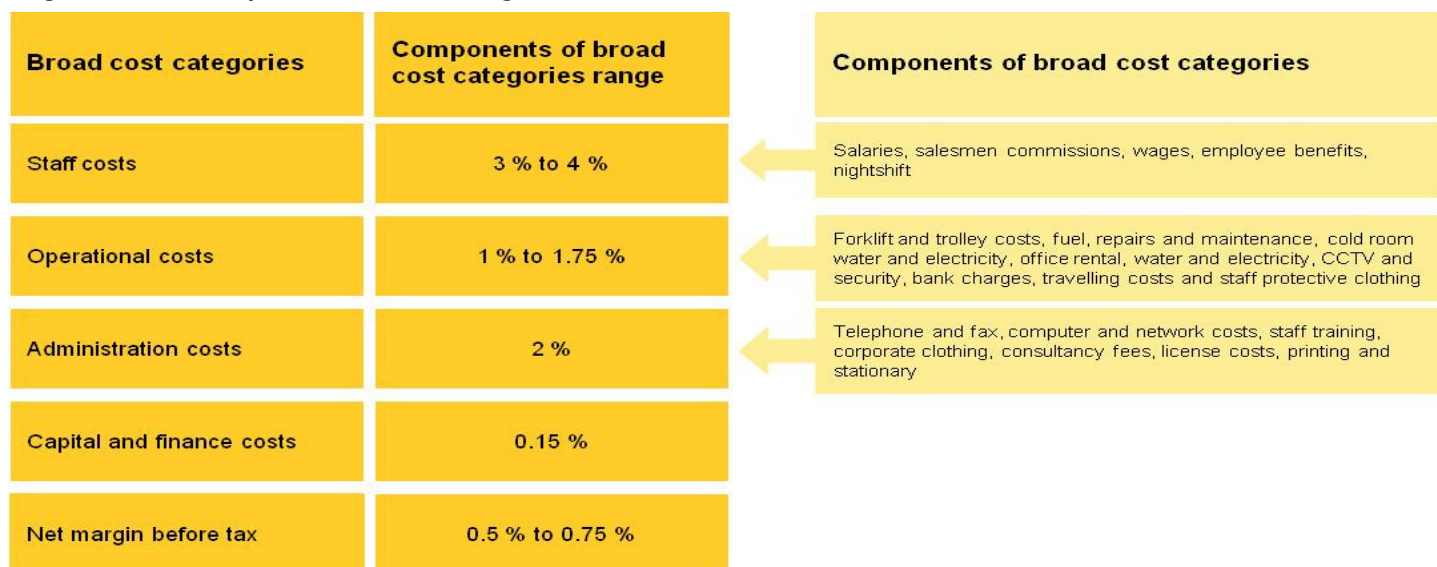
The vegetable value chain has various different marketing channels from farm to retail level, each of which differs in terms of business systems, degree of integration and economies of size, amongst others. In addition, similar differences exist between different business entities (farms, FPM, wholesalers and retailers) in the vegetable value chain. This makes it very difficult to establish a standard value chain to illustrate costs and margins at different levels of the vegetable value chain in an effort to explain the FTRPS in the vegetable value chain. In order to obtain more detailed information, specific sub-chains will have to be investigated, but the next sub-section only provides broad guidelines in terms of costs and margins in the vegetable value chain as it pertains to market agents.

4.3.3.1 Cost factors applicable to market agents

On a NFPM, the market agent receives the fresh produce from various farmers, providing a service where farmers can deliver almost 24/7. Generally the market agent ensures that he/she negotiates the best possible price for his/her producer and usually does not take ownership of the produce. For this service to the farmer the agent is allowed to receive between 5 % and 7.5 % commission on the total amount of the transaction. The amount of commission paid to the agent varies between produce types and also between farmers. For example, for products not stacked on a pallet (such as pumpkins), an additional 1 % commission is charged because this produce needs to be unloaded and moved with additional manual labour.

Diagram 1 provides a broad breakdown of the different costs associated with operating a market agency. The market agent's income is the agent commission paid by the farmer on the total Rand value of sales. This income can range between 5 % to 7.5 %. The net margin before tax varies between 0.5 % and 0.75 %. One of the consequences of operating at such low net margins is that in order to run a sustainable business agents are forced to attract as much as possible volumes through their respective agencies. The downward trend in the volume of fresh produce being transacted by agents at national NFPMs should be of concern if one considers that the NFPM is considered as the general free market price formation mechanism (benchmark) for fresh produce in South Africa.

Diagram 1: Cost components of a market agent



Source: Various market agents and own calculations.

4.4 Milk value chain

Figure 47 shows the trends in the real retail values for full cream and low fat milk between January 2005 and December 2009. The real retail values for the two products were R5.34 per litre and R5.57 per litre in January 2005, respectively. In December 2006, they declined to reach R5.17 per litre and R5.44 per litre, after which they peaked at R6.83 per litre and R6.95 per litre in March 2008. After March 2008, they declined to reach R5.83 per litre and R5.97 per litre in December 2008, respectively. Between December 2008 and December 2009, the prices increased, on average, by 1.64 % and 1.79 % for full cream milk and low fat milk respectively.

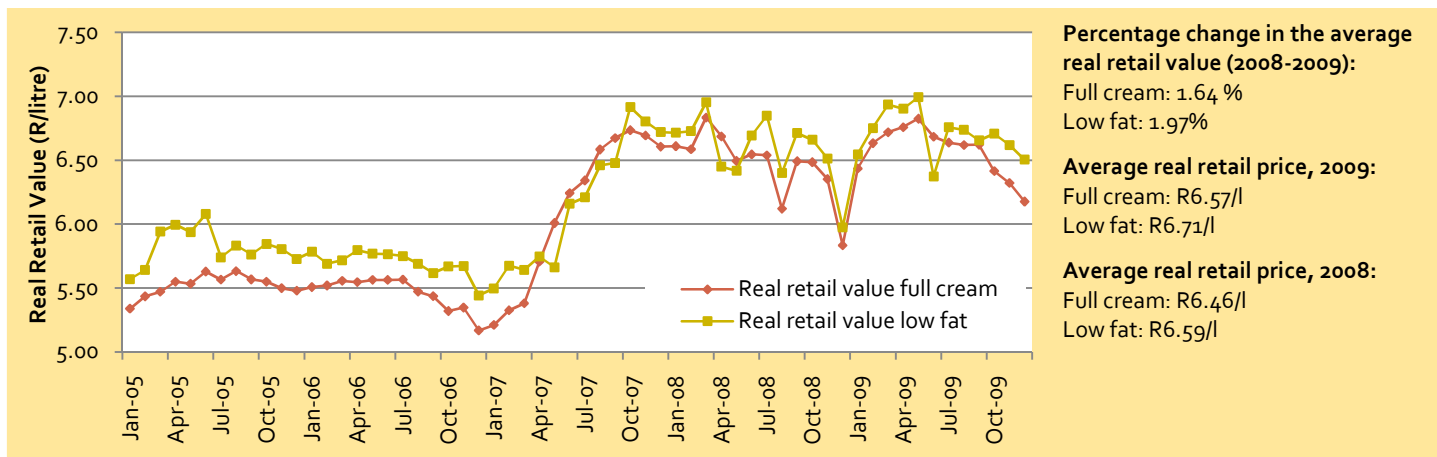


Figure 47: Real retail values for full cream and low fat milk, sachets

Sources: AC Nielsen and own calculations.

Figure 48 shows the trend in the raw milk price between January 2005 and December 2009. In January 2007, the value of raw milk was R2.24 per litre, up from R2.18 per litre in January 2005. Following this marginal increase, the raw milk price increased to peak of R3.49 per litre in April 2008 after which it decreased to R2.63 per litre in December 2008. The price then increased by 4.34 % to reach R2.74 per litre in December 2009.

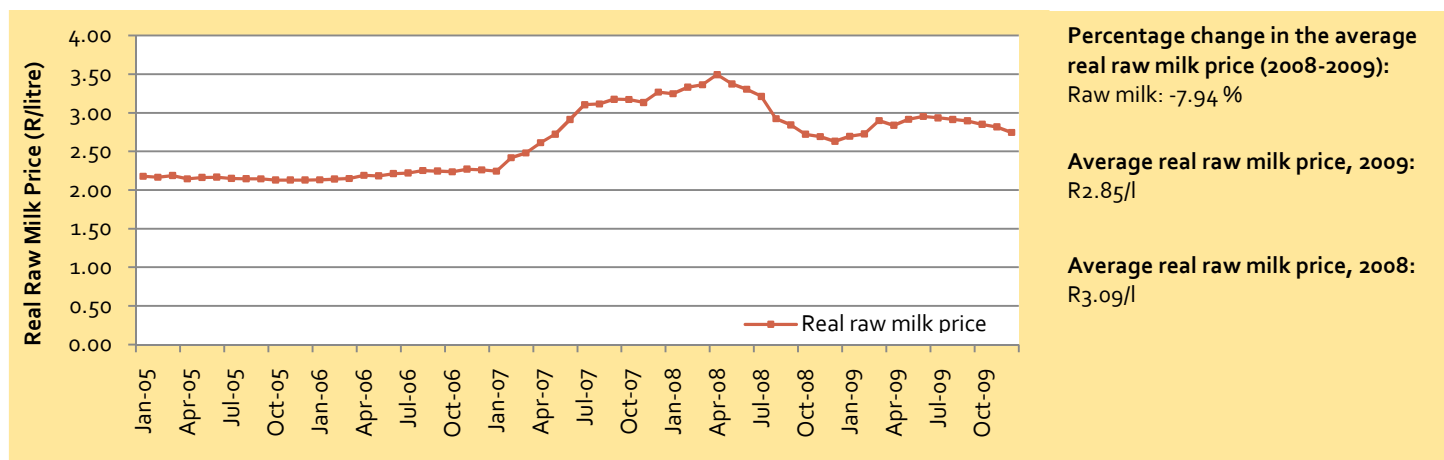


Figure 48: Real calculated raw milk price, sachets
Sources: MPO, Stats SA, SAMPRO and own calculations.

In an effort to explain the difference between what farmers receive for their milk and what consumers pay for milk it is important to recognize the complexity of the different processes involved before milk and its by-products can be sold. Those processes are elaborated on below.

To produce 1 litre of packaged, standardised pasteurised milk, more than 1 litre of raw milk is required as the processes of pasteurisation and packaging create a loss of milk volume and as standardisation of the fat content of milk often means that fat (cream) is removed, which reduced the quantity of milk which is available to sell.¹² If the fat content of the non-standardised raw milk is higher than the fat level required, the quantity of standardised milk will be lower than the quantity of non-standardised raw milk used as input. To reduce the fat content, cream (consisting typically of 40 % fat) should be removed from the milk and as a result, the quantity of milk will reduce. For example:

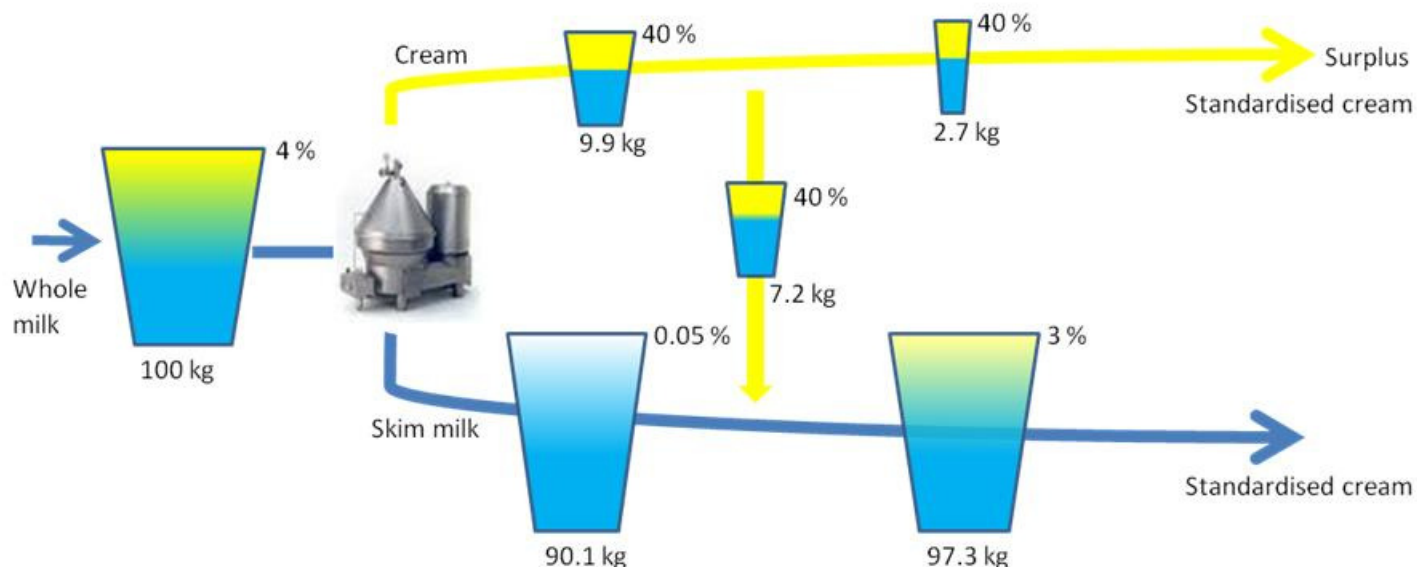
100 kg milk with 4 % fat (or 4 kg fat):
 = 90.1 kg of skimmed milk with 0.05 % fat or 0.04 kg fat *plus* 9.9 kg of cream containing 40 % fat or 3.96 kg of fat
 (The fat of the two products, namely 0.04 kg plus 3.96 kg = 4 kg)

= 97.3 kg of milk with 3 % fat or 2.92 kg of fat *plus* 2.7 kg of cream containing 40 % fat or 1.08 kg fat
 (The fat of the two products, namely 2.92 kg plus 1.08 kg = 4 kg).

Diagram 2 illustrates the treatment of 100 kg whole milk with 4 % fat. The requirement is to produce an optimal amount of 3 % standardized milk and surplus cream containing 40 % fat.

¹² Verified by dairy scientist, Mr. G. Venter (M.Sc. Food Science)

Diagram 2: Principle of fat standardization



Source: Dairy Processing Handbook, 2003.

If the fat content of the non-standardised milk is lower than the required level, cream should be added and as a result the quantity of standardised milk will be higher than the quantity of milk with a too low fat content which was used as input.

If the question is what the relationship between the raw milk price and packaged standardized pasteurized milk should be, a high number of assumptions should be made regarding factors such as the fat content of milk produced in South Africa, the price of cream, the production, packaging, administration, marketing and management cost of cream, and the quantity of each fat class of milk (fat free, low fat and full cream) sold (Office of SAMPRO, 2010).

Due to the complex process mentioned above, the rest of this section will only discuss the price spread between full cream milk and the retail price of milk.

Figure 49 shows the farm value share as a percentage of the retail value for full cream milk, between January 2005 and December 2009. In January 2005 the farm value share of full cream milk was 34 %. The farm value shares for full cream milk increased to peak at 51 % in May 2008 after which it declined to reach 46 % in December 2008. In December 2009 the farm value share for full cream milk was 49 %.

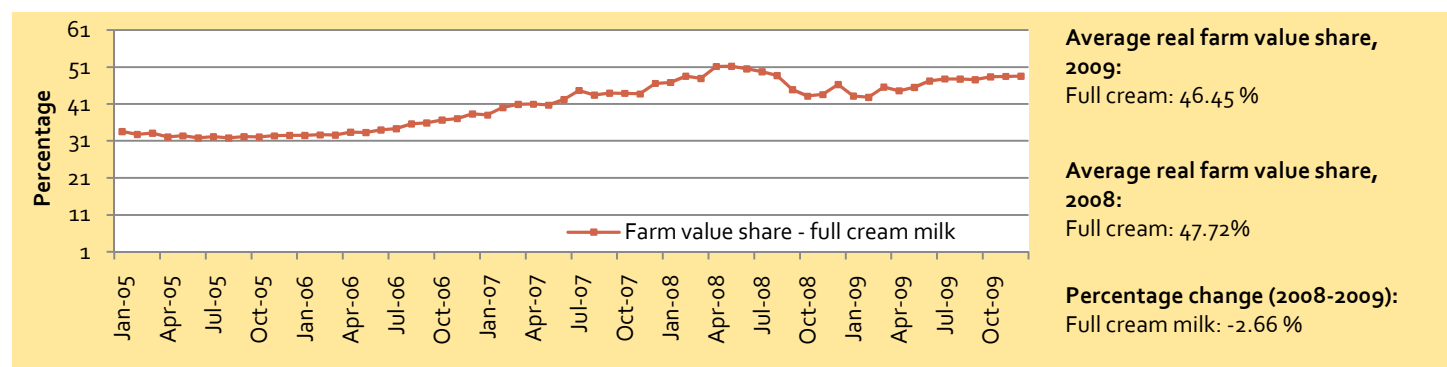


Figure 49: Farm value shares for full cream milk, sachets (R/litre)

Sources: AC Nielsen, MPO and own calculations.

Figure 50 shows the trends in the real FTRPS for full cream milk between January 2005 and December 2009. From January 2005, the spread was R3.55 per litre and decreased to reach R3.13 per litre December 2008. The real FTRPS then increased by 1.6 % to reach R3.18 per litre in December 2009.

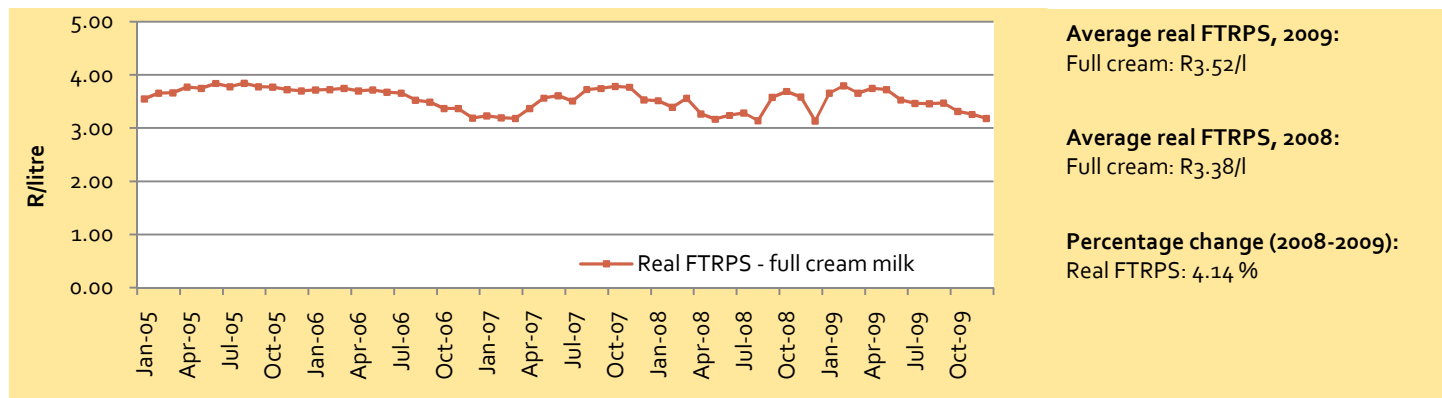


Figure 50: Real farm-to-retail price spread for full cream milk and low fat milk, sachets

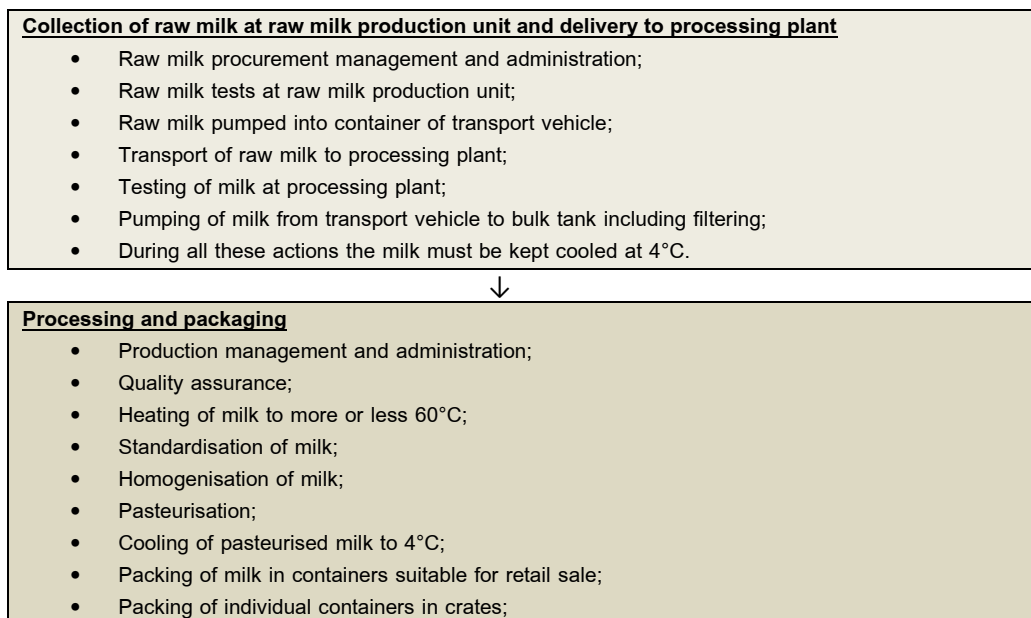
Sources: AC Nielsen, MPO and own calculations.

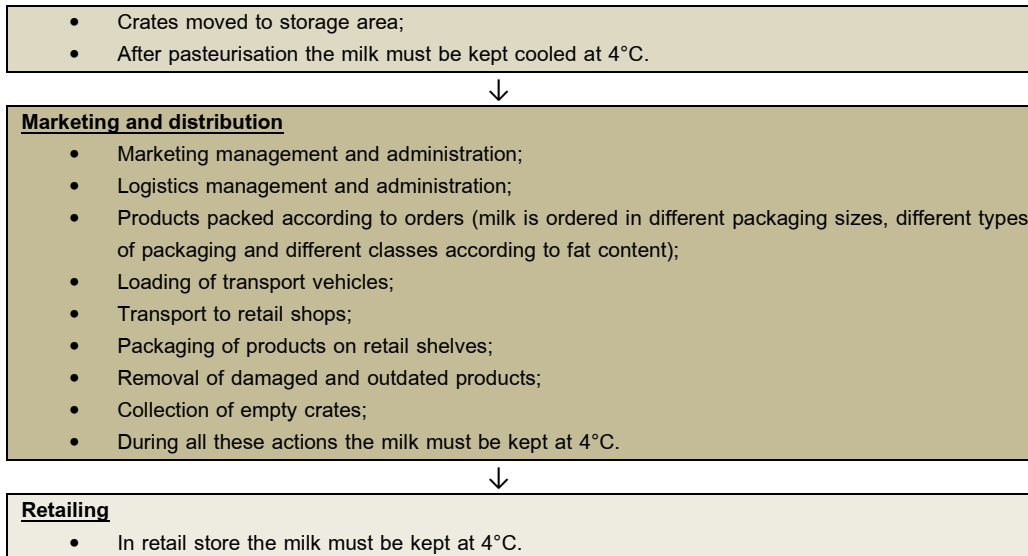
In order to explain the FTRPS for dairy, a simplified diagram was constructed of the activities in the dairy value chain to deliver fresh milk to the consumer. Four main activities were identified, all of which require a diverse set of resources and inputs, for example:

- (i) Human resources are required who must be capable of conducting diverse activities;
- (ii) Capital equipment such as transport, production, packaging, cooling and testing equipment, is required;
- (iii) Electricity is needed to heat or cool the milk from the time of milking up to the moment when the product leaves the retail shelves;
- (iv) Different types of packaging materials are used (plastic, carton, multilayer composite material and glass), in many different sizes (200 ml, 250 ml, 500 ml, 1 litre, 1.5 litre, 2 litre, 3 litre and 5 litre), and this is a major cost contributor.

The main activities to deliver fresh milk to the consumer are depicted in Diagram 3.

Diagram 3: Typical activities include actions from raw milk at the raw milk production unit to packaged pasteurised milk offered for sale in a retail outlet





Source: Office of SAMPRO, 2010

In order to get a better understanding of the margins and costs in the fresh milk dairy chain, industry stakeholders were consulted with regard to the off-farm value chain, which included the Office of SAMPRO. Two different scenarios were constructed to explain the costs and margins in the fresh milk value chain as applicable to full cream pasteurised milk in a 2 litre container, namely:

(i) A low value-added scenario:

- Raw milk close to processing plant;
- Less complex technology;
- Cheaper with respect to type and size of packaging;
- Direct surroundings of distribution; and
- Limiting marketing- and advertising costs.

(ii) A high value-added scenario:

- Raw milk farther from processing plant;
- More complex technology;
- Type and size of packaging are more expensive;
- Distribution to further outlets; and
- Marketing- and advertising costs.

It should be noted that the typical contribution of each value-adding activity to the retail selling price of full cream pasteurised milk in a 2 litre container will differ from firm to firm, from region to region, from one to the other type and size of packaging and from season to season.

Information revealed by a number of highly experienced and informed milk processors was requested to indicate what they regard as typical low- and high-cost scenario in South Africa for each of the value-adding activities. Table 30 shows the distribution costs and margins along the fresh milk dairy chain per action as illustrated in Diagram 3.

Table 30: Typical cost composition of pasteurised full cream milk in 2 litre containers offered for sale in a retail store

Item	R-value (low cost scenario)	%	R-value (high cost scenario)	%
Raw milk price (2 litre) (administration cost excluded)	5.8	40.2	6.8	35.8
Action 1 (see Diagram 3):				
Raw milk collection and transport to processing plant (truck driver's labour included, management costs excluded)	0.5	3.5	0.7	3.7
Action 2:				
Processing and quality assurance (firm labour included)	1.2	8.3	1.4	7.2
Container (2 litre plastic or 2 litre gable top)	1.3	9.0	1.5	7.6
Filling of 2 litre containers	0.1	0.8	0.1	0.7
Action 3:				
Marketing and distribution by milk processor	2.3	15.9	3.3	17.3
Interest, profit and overhead costs	1.3	9.3	2.1	11.0
Selling price to retailer	12.6		15.8	
Action 4:				
Retailer mark-up	1.9	13.0	3.2	16.6
Selling price to consumer	14.4	100.0	19.0	100.0

Source: Office of SAMPRO and own calculations, 2010.

Note: Fully researched figures do not exist and the costs were determined as follows in June 2010: A number of highly experienced and informed milk processors were requested to indicate what, in their judgment, can be regarded in the South African dairy industry, as typical low- and high-cost scenarios for each value-adding activity.

From Table 30 it is evident that the raw milk price contributes between 35.8 % and 40.2 % of the total selling price to the consumer. Action 1 contributes between 3.5 % and 3.7 % to the total price consumers pay. Action 2 contributes between 15.5 % and 18.1 %, while Action 3 contributes a significant proportion, of between 25.2 % and 28.3 % in total, to the selling price.

When considering individual items of the actions mentioned, marketing and distribution by the milk processor (part of action 3) contributes the greatest proportion of 15.9 % to 17.3 % of the selling price. The retailer mark-up (part of action 4) constitutes approximately 13 % to 16.6 % of the difference between the price the consumer pays and the price at which the retailer procure the milk. This spread includes all costs e.g. electricity-, labour-, distribution costs, etc., at retail level. Interest, profit and overhead costs constitute the third highest proportion, which includes depreciation, administration- and management costs.

4.5 Red meat value chain

4.5.1 Real price trends in the beef value chain

Figure 51 shows the average real retail price trends for different beef cuts from July 2006 to December 2009. Average real retail prices for the lower priced beef cuts and minced meat were higher in 2009 compared to 2008. The average real retail prices per kilogram for beef brisket, chuck and minced meat were respectively 2.07 %, 1.43 % and 0.70 % higher in 2009 than in 2008. The average real retail prices of higher priced beef cuts were lower, i.e. rump steak and T-bone real prices were 2.11 % and 1.40 % lower in 2009 compared to 2008. Year-on-year (i.e. December 2008 to December 2009) real retail prices of beef cuts showed a declining trend, except for minced end rump steak, which showed slight increases towards the end of 2009. Overall, year-on-year real prices of the beef cuts depicted in Figure 51 declined between December 2008 and December 2009.

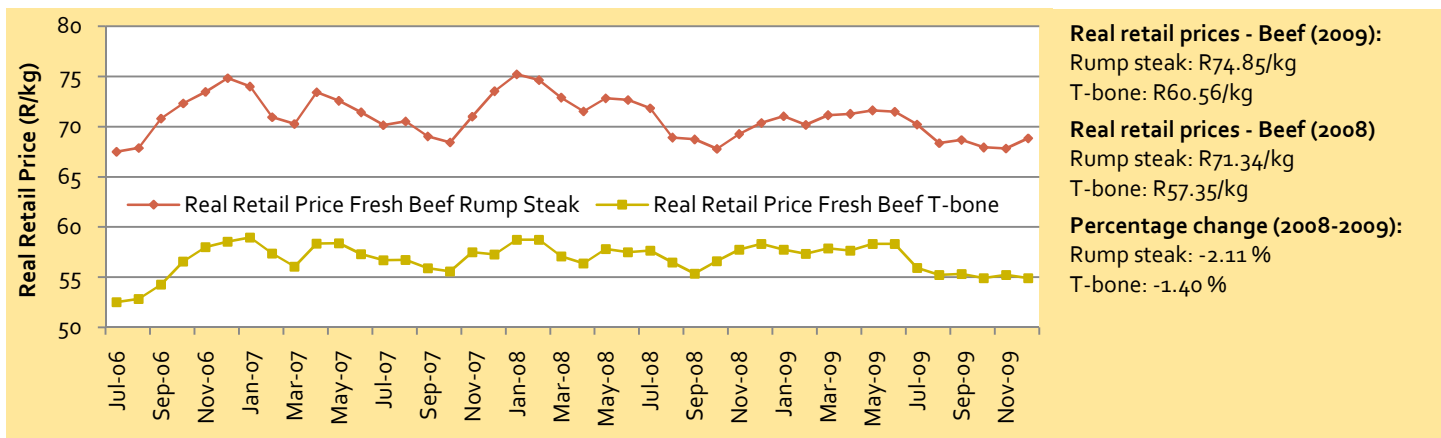
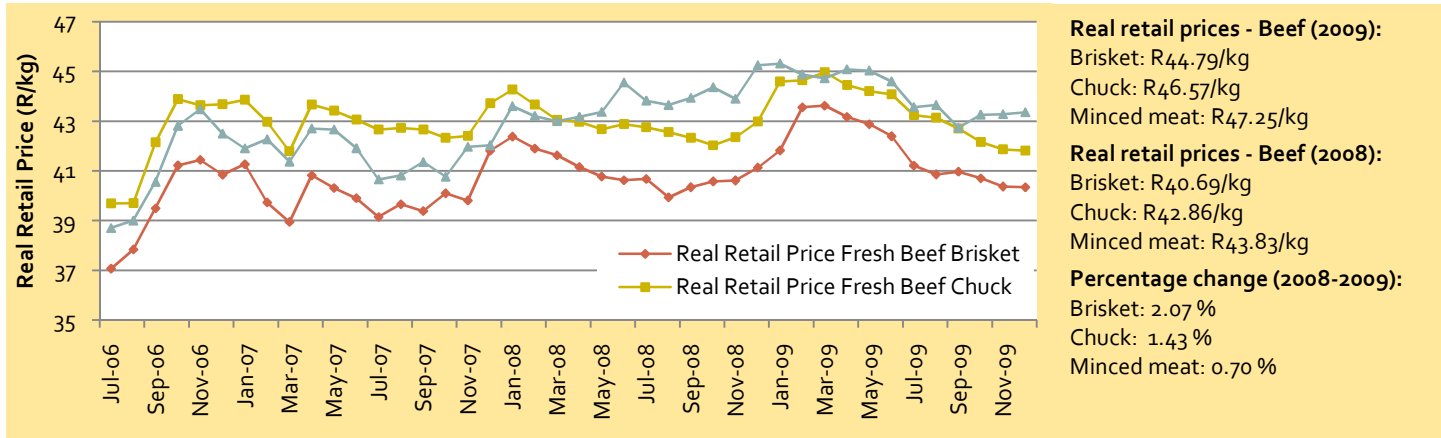


Figure 51: Real retail price trends for selected beef cuts
Source: StatsSA, 2010 and own calculations.

Figure 52 shows the real producer price trends for different classes of beef. The average real producer prices were between 0.45 % and 2 % lower in 2009 than in 2008. On a year-on-year basis from December 2008 to December 2009 real producer prices decreased by 8.3 %, 6.7 % and 7.68 %, respectively, for class A2/A3, class B2/B3 and class C2/C3 beef. Figure 52 depicts that real prices tend to increase from July towards the end of each year, except in 2009, when real prices moved sideways from July to December.

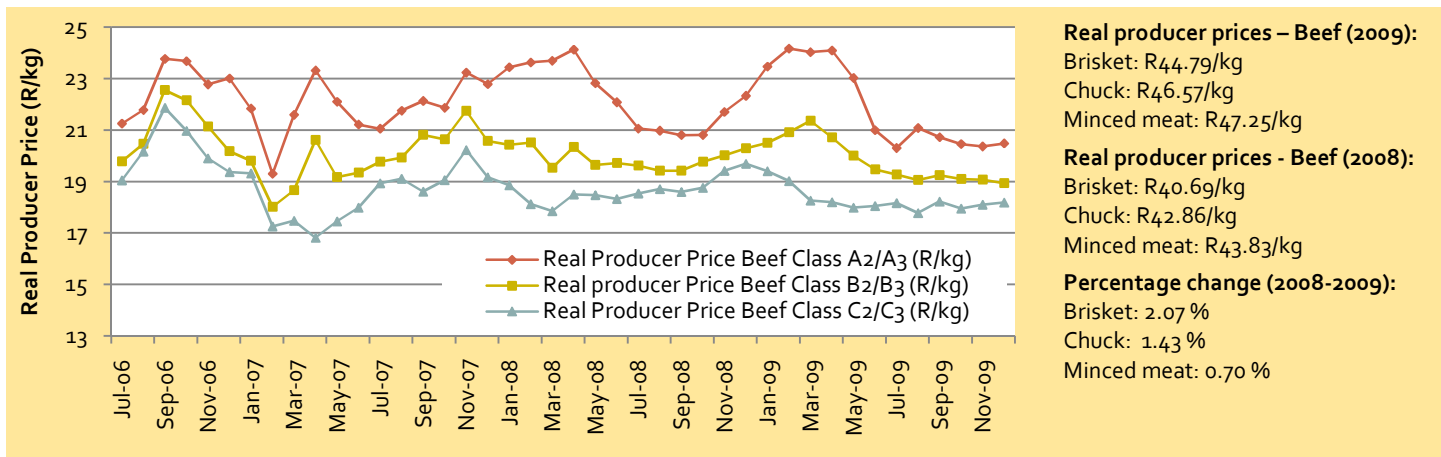


Figure 52: Real producer price trends for beef
Source: AMT, 2010 and own calculations.

Figure 53 compares the real farm price, the real wholesale price and the real retail price of beef. The real FTRPS for beef is also depicted in Figure 53. Real farm prices and real wholesale prices show a strong correlation. The difference between the average real producer price and the average real wholesale price in 2005 amounted to R6.90 per kg. This difference was R6.00 per kg in 2009. A similar comparison between the average real producer price and the average real retail price between 2005 and 2009 shows that the spread increased from R23.97 to R28.65 per kg.

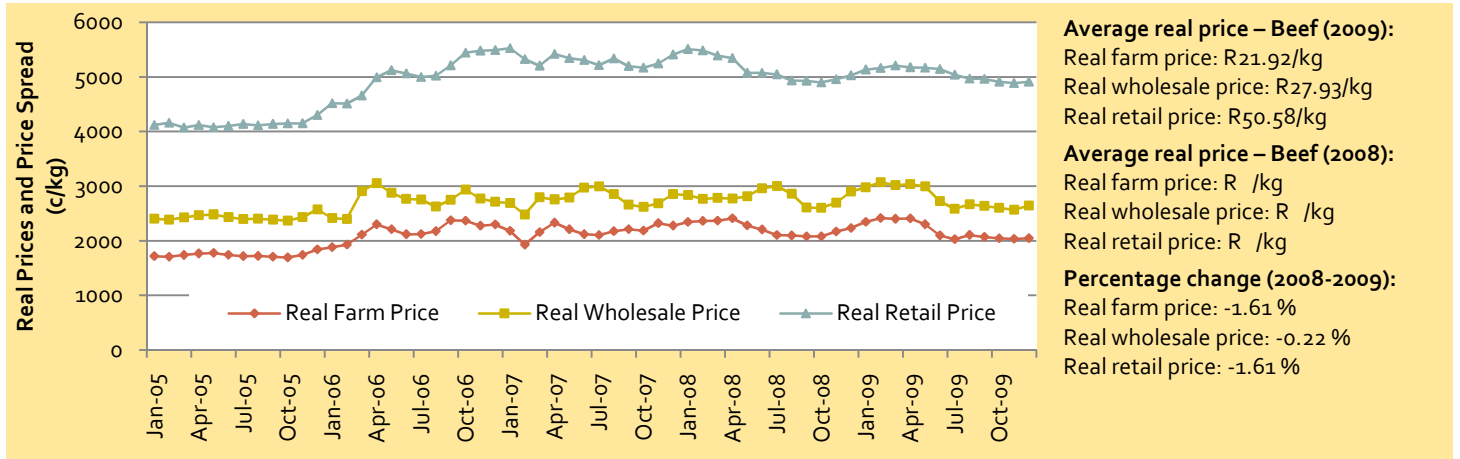


Figure 53: Real farm, wholesale and retail prices of beef (carcass equivalent)

Source: Stat SA, 2010; AMT, 2010; Pick and Pay, 2010 and own calculations.

Note: Real wholesale prices depicted in the graph include distribution and VAT.

The real FTRPS and the farm value share for beef are depicted in Figure 54. The real FTRPS of beef decreased by 1.62 % on average between 2008 and 2009 and stabilised at R28.67 per kg in December 2008. The farm value share of beef decreased by 0.06 % on average from 2008 to 2009. In February 2009, the farm value share reached a high of 46.76 % after which it decreased again to stabilise at around 41 % for the last few months of 2009.

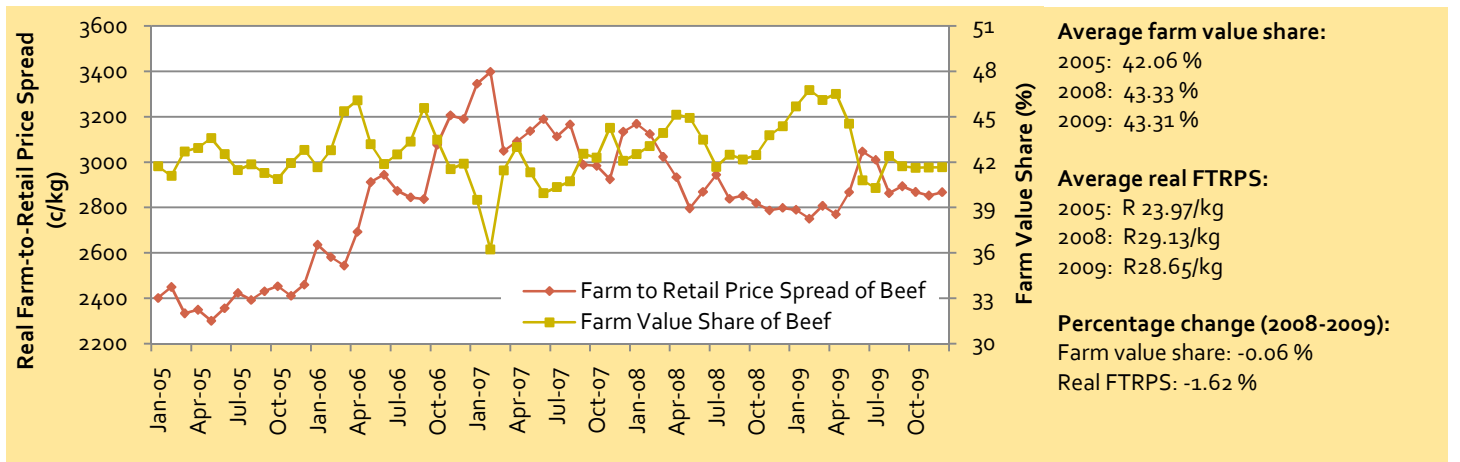


Figure 54: Real farm-to-retail price spread and farm value share of beef

Source: Stats SA, 2010; AMT, 2010 and own calculations.

4.5.2 Real price trends in the lamb value chain

This sub-section reports the trends in the real retail, wholesale and producer prices expressed as the value of the meat found on a lamb carcass that could be sold by the retailer as lamb chops¹³. The reason for this is that the retail price of lamb chops is the only lamb cut price supplied by Stats SA to the NAMC and hence it is necessary to convert the wholesale and producer prices to loin chop equivalents. For example, the real wholesale value represents the wholesale price for lamb meat per kilogram times the average kilograms of chops in a lamb carcass; this is also the case with the producer value. The calculated values were converted into indices to emphasise the trends since July 2006. Figure 55 shows the indices of the farm value, wholesale value and retail value of lamb chops. The farm value index for chops decreased on average by 5.86 index points from 2008 to 2009. The wholesale value index for chops in a lamb carcass decreased on average by 13.05 index points from 2008 to 2009. A decrease of 13.43 index points was experienced in the retail value index for lamb chops, from 2008 to 2009. It should also be noted that all three indices were considerably lower relatively to July 2006 that was used as base to calculate the indices.

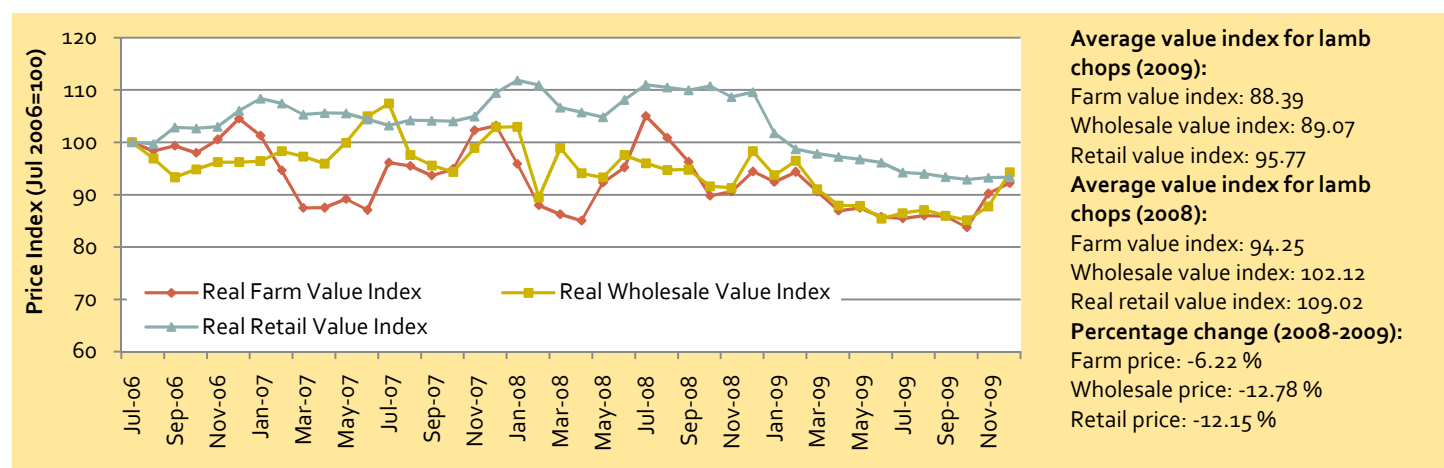


Figure 55: Index of real farm, wholesale and retail prices of lamb chops (carcass equivalent)

Source: Stats SA, 2010; AMT, 2010; Pick and Pay, 2010 and own calculations.

Note: Real wholesale prices depicted in the graph include distribution and VAT.

Figure 56 shows the real FTRPS and farm value share for lamb chops. On average, the real FTRPS for lamb chops in a lamb carcass decreased from 126.66 index points in 2008 to 103.77 index points in 2009 (i.e. 18.07 %). The farm value share increased throughout most of 2009. The farm value share, on average, increased from 44.46 % in 2008 to 47.98 % in 2009.

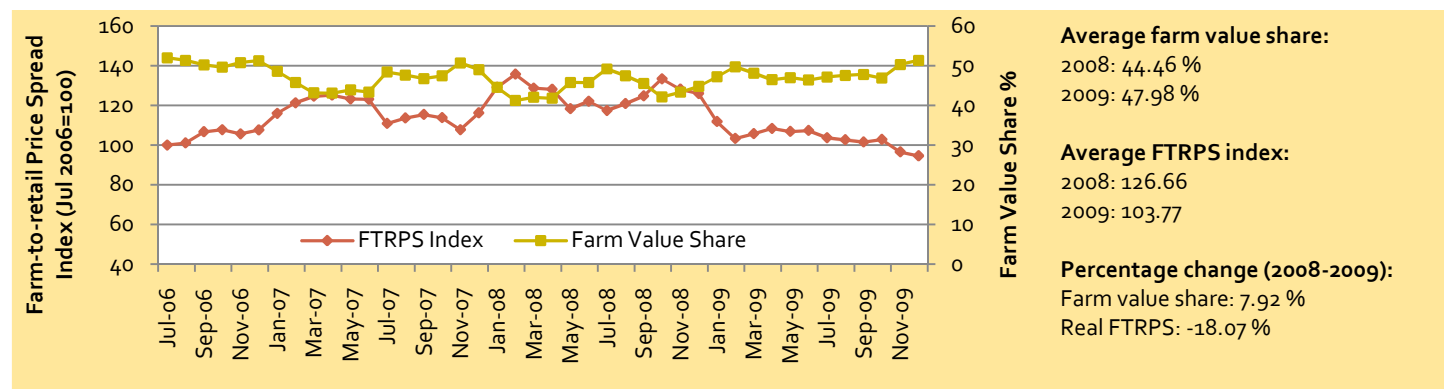


Figure 56: Index of real farm-to-retail price spread and farm value share of lamb chops

Source: Stats SA, 2010; AMT, 2010 and own calculations.

¹³ The term value represents the worth in rand terms of the total amount of meat found on an average 18 kg carcass of lamb that could be sold as loin chops at retail level assuming that a loin chop represents 8.3 % of the lamb carcass.

4.5.3 Real price trends in the pork value chain

As in the case with the lamb value chain, the NAMC only receives the retail price of pork chops from Stats SA and therefore the pork value chain calculations are shown in terms of the average kilograms of meat in a pork carcass that are used for pork chops. The same methodology was used as for lamb chops to determine the price trends in the pork value chain. Figure 57 shows the indices of the farm value, wholesale value and retail value of pork chops. The farm value¹⁴ index for pork chops increased on average by 1.65 % from 2008 to 2009. The average wholesale value index for pork chops decreased from 110.75 index points in 2008 to 102.05 index points in 2009 (i.e. 7.86 %). The average retail value index for pork chops in 2009 was 8.6 index points lower than the 119.76 index points in 2008 (i.e. -7.19 %).

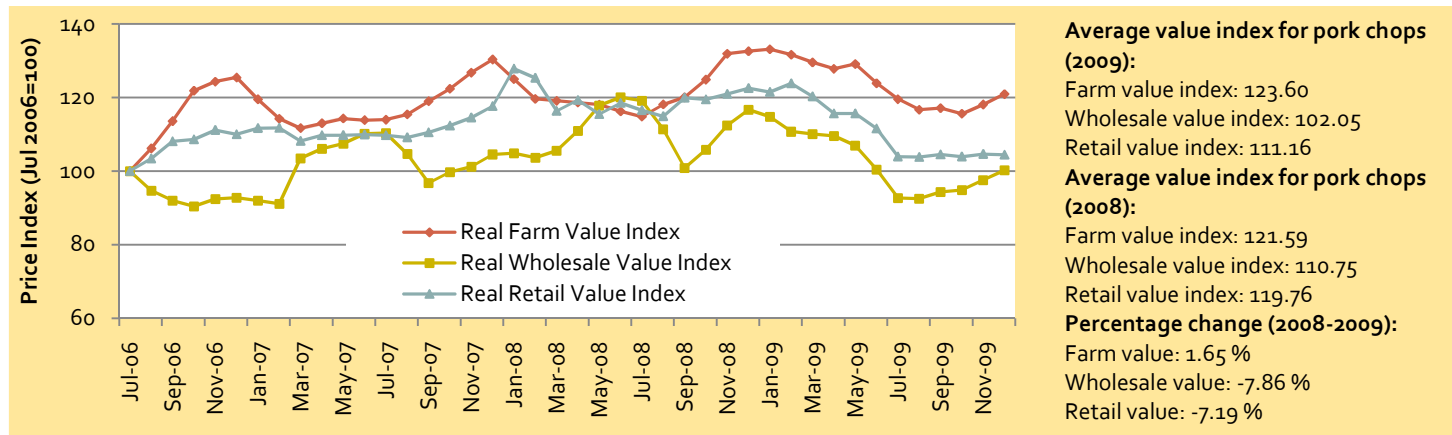


Figure 57: Index of real farm, wholesale and retail prices of pork chops (carcass equivalent)

Source: Stats SA, 2010; AMT, 2010; Pick and Pay, 2010 and own calculations.

Note: Real wholesale prices depicted in the graph include distribution and VAT.

Figure 58 shows the real FTRPS and farm value share for pork chops. Between 2008 to 2009, the average real FTRPS decreased from 118.99 index points to 105.93 index points, or 10.98 %. The farm value share, on average, increased from 30.01 % in 2008 to 32.90 % in 2009.

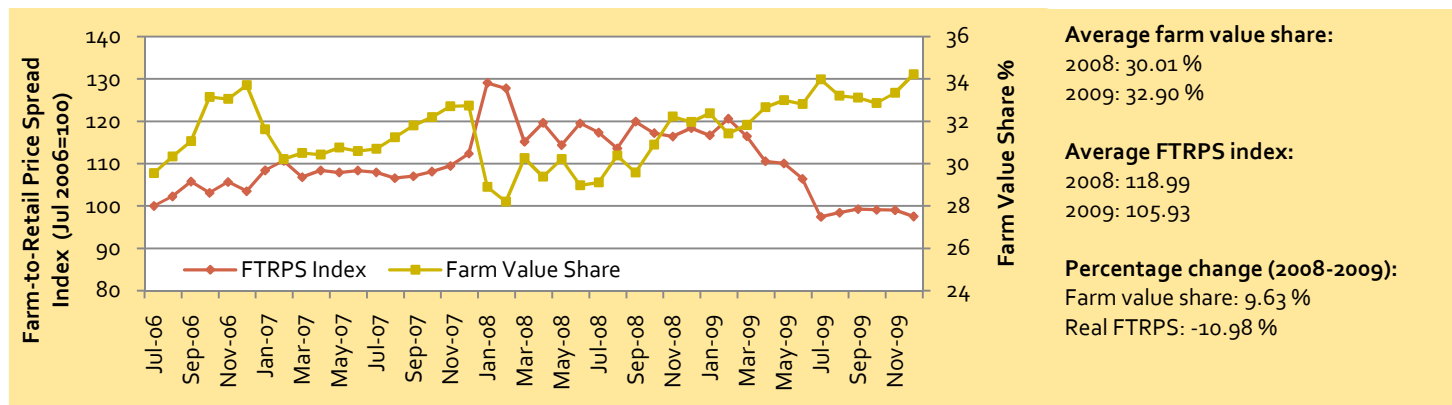


Figure 58: Index of real farm-to-retail price spread and farm value share of pork chops

Source: Stats SA, 2010; AMT, 2010 and own calculations.

¹⁴ The term value represents the worth in rand terms of the total amount of meat found on an average 51.57 kg carcass of pork that could be sold as chops on retail level assuming that a chop represents 17.98 % of the pork carcass.

4.5.4 Farm-to-retail price spreads of red meat

This section provides more insight into the off-farm costs of delivering red meat to the consumer. Cognisance should be taken of the fact that the red meat value chain has various different marketing channels from farm to retail level, each of which differs in terms of, amongst others, business systems, degree of integration and economies of size. In addition, similar differences exist between different business entities (farms, feedlots, abattoirs, wholesalers and retailers) in the red meat value chain. This makes it very difficult to establish a standard value chain to illustrate costs and margins at different levels of the red meat value chain in an effort to explain the FTRPS in the red meat value chain. In order to obtain more detailed information, specific sub-chains will have to be investigated, but the next two sub-sections only provides broad guidelines in terms of costs and margins in the red meat value chain at the abattoir and retail levels.

4.5.4.1 Abattoirs¹⁵

Various factors determine the income and cost structures of abattoirs. The most important of these factors include the lifetime of the infrastructure used, the degree to which the abattoir is vertically integrated up or down into the value chain, the degree to which the abattoir relies on capital investments in terms of technology or on labour, the capacity of the abattoir, the degree to which the abattoir adheres to certain rules and regulations relating to health and safety, the capacity utilised, the distance from input and output markets and procurement practices.

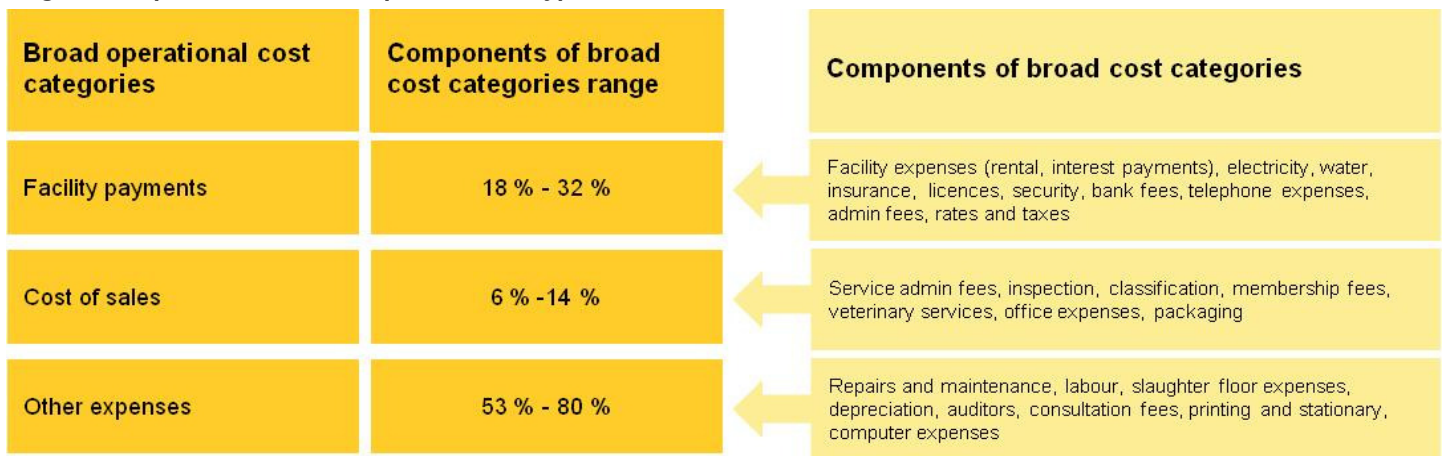
Diagram 4 provides a broad breakdown of the different costs associated with operating an abattoir. An important assumption is that the costs depicted in Diagram 4 represent a typical service abattoir, i.e. an abattoir that slaughters animals under a contractual agreement with either the producer, feedlot or wholesaler. In other words, the abattoir does not buy any animals from producers (no change in ownership of the animal) nor is it backward integrated and using own stock to increase throughput in the abattoir. This is an important distinction, since the procurement costs of animals or raising animals through backward integrated operations constitute the largest cost component of abattoirs characterised by also procuring animals in one way or the other. In addition, abattoirs can also have forward integrated operations where deboning and further processing of offal takes place.

A typical service abattoir can either take the 5th quarter (i.e. the offal and hide/skin), a slaughter fee or a combination of both as fee for the slaughter of animals to generate income for the abattoir. Abattoirs dependant on the 5th quarter as a sole source of income is highly vulnerable to seasonable fluctuations in the demand for offal and prices of hides/skins.

The costs shown in Diagram 4 exclude the costs commonly known as procurement costs of animals, and only represent a range of operating costs. Due to the uniqueness of the different abattoirs it was necessary to group different cost components into broad cost categories, which are expressed as a percentage of total operating costs. The arrows on the right-hand side of Diagram 4 give an indication of the costs that were included in the broad cost categories. The costs listed in the arrows might not be applicable to all operational configurations for all abattoirs.

¹⁵ Information pertaining to abattoirs was obtained through personal interviews with several abattoir owners and abattoir feasibility studies, as well as information supplied by the Red Meat Abattoir Association.

Diagram 4: Operational cost components of a typical service abattoir



Source: Own calculations.

As mentioned, the cost structures of different abattoirs can vary significantly, depending on the business configuration of the abattoir. Abattoirs that buy in the animals and take ownership of them face significant additional costs compared to abattoirs that slaughter on a contract basis. An abattoir that takes ownership of animals or raises its own animals must have the necessary capital available to cover the purchasing/backward integration costs, which includes significant interest payments to maintain overdraft facilities. In this type of abattoir, ownership costs of animals constitute the largest cost component, which could be as high as 70 % to 80 % of the total cost of running an abattoir. Additional costs for abattoirs using this business configuration include, but are not limited to, amongst others, levies, agent commissions and transport costs. The aforementioned entails that the operating costs depicted in Diagram 4 will make up a much lower component of the total cost to operate the abattoir.

Using the producer to wholesale price margin as a proxy and the cost elements described above, the net margin for abattoirs can vary between 2% and 7 %.

4.5.4.2 Retailer

Figure 59 gives an indication of the typical cost a retailer incurs after the meat has been bought at wholesale price. The different cost components are given as a percentage of the total costs incurred, excluding the cost of purchasing the meat or carcass. Retailers interviewed indicated that their gross margin can vary between 20 % and 30 %; this is also the guideline provided by SAMIC as a reasonable mark-up on a beef carcass. There are a range of costs that must be subtracted from the gross margin to determine the net margin per kilogram of meat sold. Net margins can range between 1 % and 5 %.

The largest costs that retailers face are labour costs, which represent on average 52 % of their total cost. The land costs and packaging costs are also large cost components; land costs represent 16.71 % and packaging costs 12.04 % of the total costs of retailers. Land costs are typically associated with the cost of the butchery unit to rent floor space from the bigger retail operation.

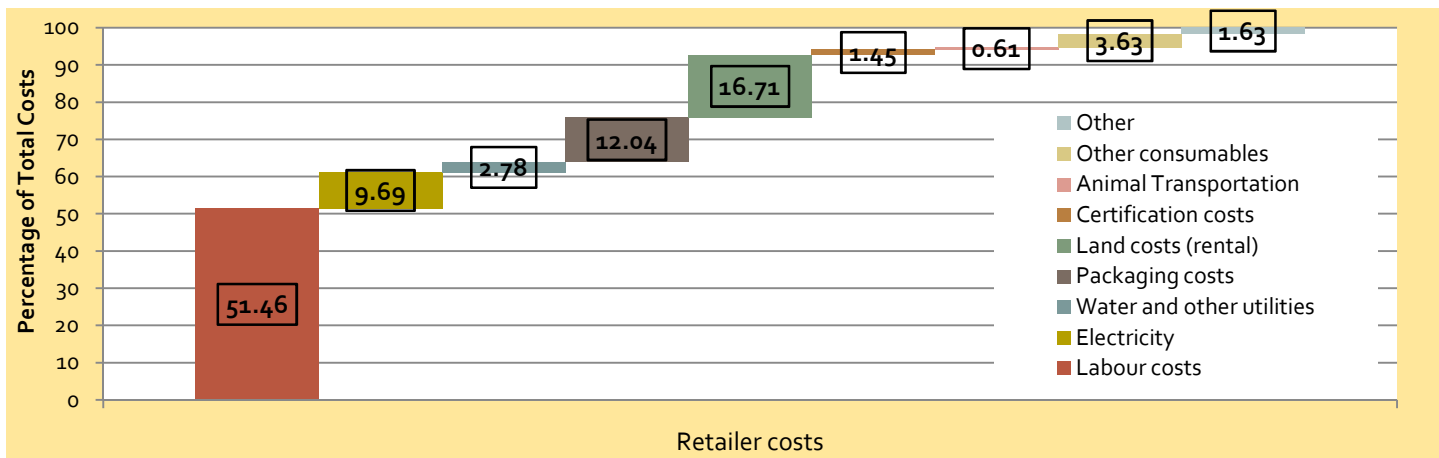


Figure 59: Breakdown of costs in selling red meat at retail level

Source: Own calculations, 2010.

Note: Examples of other consumables are knives, blades, sharpeners, etc.

4.6 Poultry value chain

The real producer price of poultry increased by 15.89 % on average from R16.68/kg in 2008 to R19.33/kg in 2009. During the same period the real retail price of poultry increased by 7.73 %.

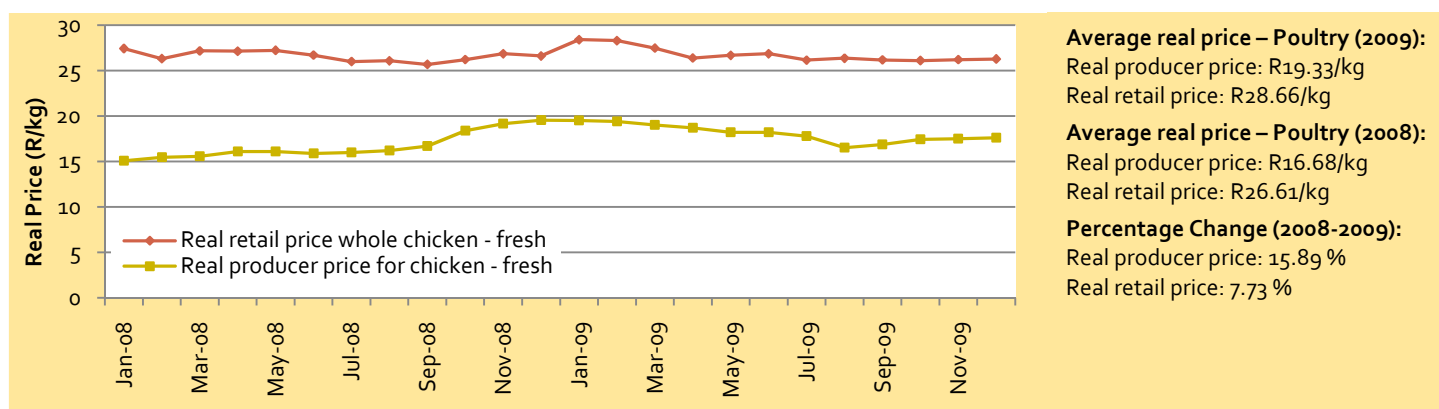


Figure 60: Real retail and producer price of poultry

Source: Stats SA, 2010; AMT, 2010 and own calculations.

The real FTRPS declined by 12.25 % on average from R9.93/kg in 2008 to R8.71/kg in 2009. The farm value share increased from 62.74 % in 2008 to 67.44 % in 2009.

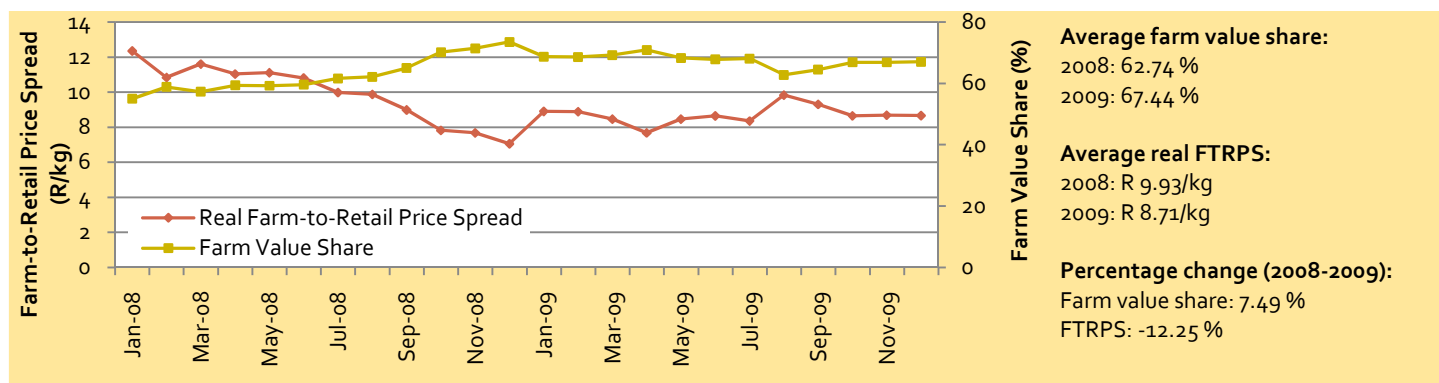


Figure 61: Real farm-to-retail price spread and farm value share of poultry

Source: Stats SA, 2010; AMT, 2010 and own calculations.

5 | Food security and the sustainability of agriculture

5.1 Food security issues in South Africa revisited

The attainment of national food security is an important objective for the South African government. Food security is also considered to be a global priority, and it is one of the Millennium Development Goals (MDGs) to decrease poverty and hunger by 50 % by 2015, of which South Africa is a signatory (UN, 2000; IFPRI, 2002; Cordell *et al.*, 2009). Food security exists “when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs for an active and healthy lifestyle” (FAO, 2005:1).

The advent of democracy in South Africa signalled a significant shift in various governmental policies. With reference to food security, the current South African agricultural policy is aimed at the attainment of food security as opposed to the Apartheid government’s policy of self-sufficiency in respect of food, fibre and beverages as well as the supply of raw materials to local industries at reasonable prices (RSA, 1984; Vink *et al.*, 2000). The policy of self-sufficiency that was pursued by the previous government, coupled with advances in technology, has led to increased productivity in agriculture. This in turn has led to increased per capita food production levels. The current government’s policy of food security has through a more open border approach culminated into further increases in productivity as a result of more competition on the local market and the availability of food from international sources. Hence, per capita food production/availability levels continued to increase. However, for food security to be termed successful, there are two major components that must necessarily both be present, namely, availability and access to sufficient, safe, and nutritious food. Thus, increasing per capita food production and availability levels does not necessarily mean household food security.

During the 2008 food crisis, it became clear that global governance systems on food security were unable to protect those who were most vulnerable. Embargoes on exports by certain countries led to food shortages elsewhere, particularly in Africa, alarming politicians with the prospect of a hungry electorate. Millions of rural people in South Africa depend on what they produce on a day-to-day basis in order to survive. But to protect them from food insecurity and the need for food aid, people in rural areas living in poor communities must be empowered with the means to produce a variety of food articles.

After a generation of neglecting agriculture, world leaders are realising that further food crises can only be averted if further and better investments are made in agriculture and farming in the developing world. However, the challenge remains to define the priorities for respective investments. The goal of food security remains an elusive one and is further confounded by macro-economic factors, such as disproportionately increasing food prices, as have been experienced recently. Figure 60 shows the trends in the South African FPI and illustrates how food prices have steadily grown, particularly from 2007 to 2009.

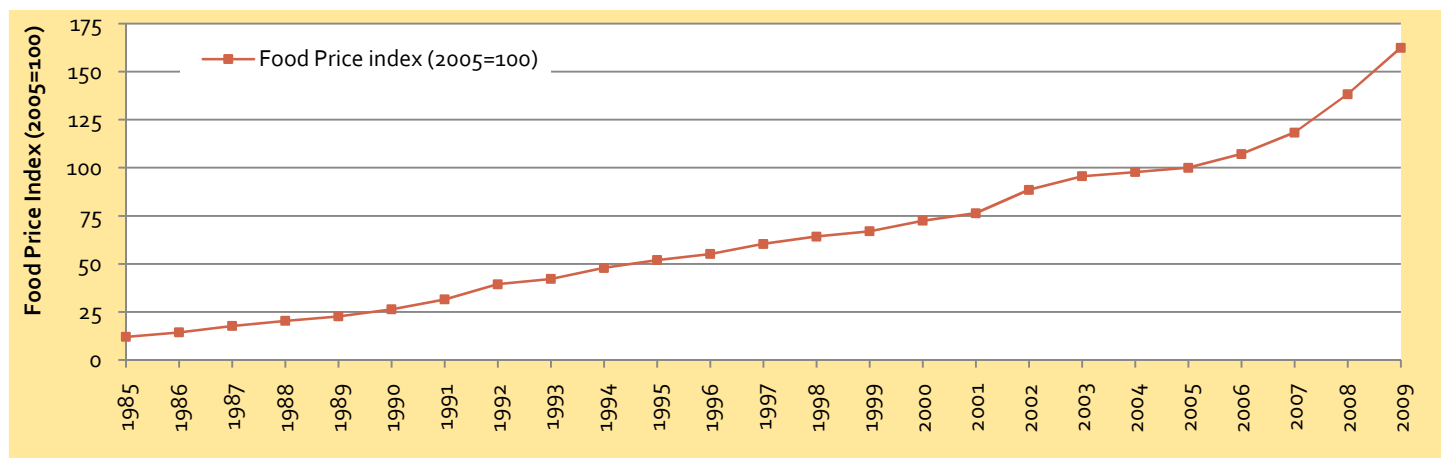


Figure 62: Trends in food prices in South Africa

Source: Own calculations based on the data from DAFF, 2010.

Although economic development is regionally disproportionate in South Africa, both urban and rural poverty remain a chronic obstacle to development. National data indicate that, despite relatively high levels of recent economic growth, the incidence of poverty has not decreased. Based on income/consumption expenditure surveys for the years 1993, 1995, and 2000, average monthly per capita values have declined in real terms (Table 31). As a further indication of persistent poverty, the percentage of the population living in households with consumption or income per person below the poverty line (H %) has also increased. Finally, although the Gini Coefficient¹⁶ has improved over this period, it has done so by only one point, indicating that economic inequality has remained significant and stagnant.

Table 31: Poverty indicators for South Africa: 1993-2000

Survey year	Mean income/ expenditure (US\$)	Poverty line (US\$/month)	H %	Gini Coefficient (%)
1993	172	38	24	59
1995	158	38	21	57
2000	153	38	26	58*

Source: PovcalNet, 2009; * the latest Gini Coefficient is 0.578, similar to that of 2000 (Rumney, 2010).

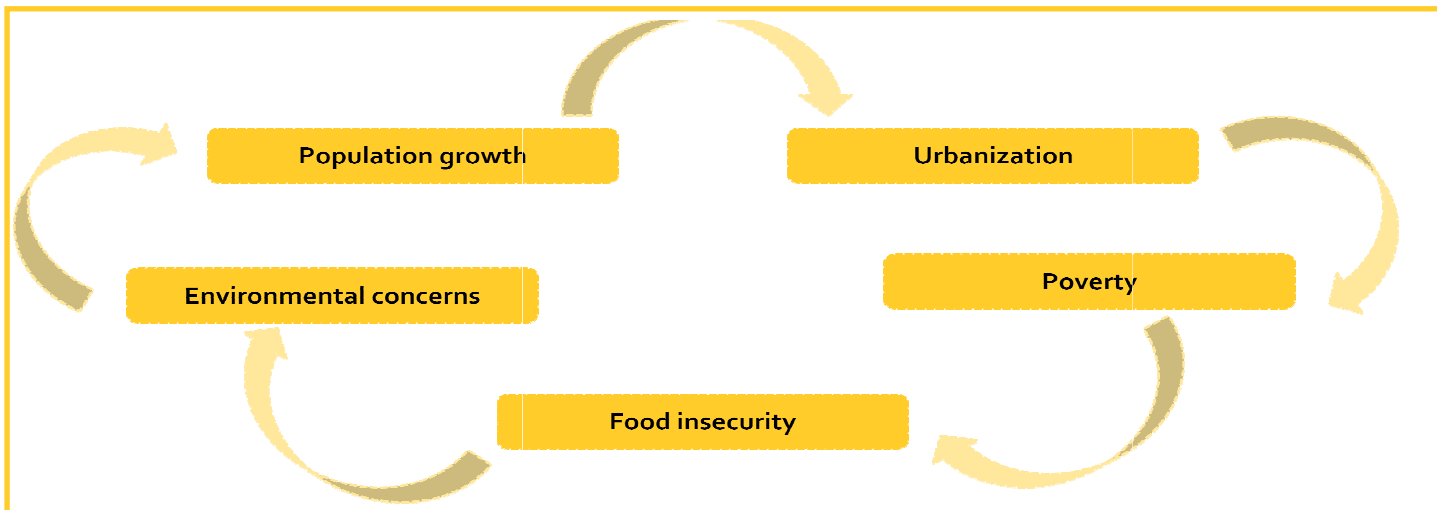
Although South Africa is in the process of establishing a national poverty line, it is clear from the ongoing discussion and analysis within government that at least half of all South Africans live in absolute poverty (Stats SA and National Treasury, 2007). Using a food-energy requirement approach, the per capita lower bound poverty line is R322 and the upper bound line is R593, both at year 2000 prices. The most recent adjustment of the lower bound poverty line is for 2006, from R322 to R431. Using the 2000 figures, it is estimated that at the lower bound number, 52.6 % of the national population is below the poverty line; this proportion increases to 70.4 % when the upper bound figure is used. Although these figures are only approximate and somewhat outdated, they do serve to quantify the general levels of poverty in the country. With the recent and ongoing global economic recession, job losses, and increases in food prices, it may be reasonable to assume that the proportion of people living in poverty has increased; likewise, the Gini Coefficient has probably increased.

In summary, Diagram 5 provides a graphic view of the food security challenge in South Africa. Endemic poverty is expanding as the country's population grows and the urbanisation process unfolds. Under current conditions, the ongoing failure of economic growth to lift the majority of people out of poverty is contributing directly to the inability of people to access sufficient food, resulting

¹⁶ The Gini Coefficient is a measure of inequality between zero (where everyone has the same income) and 100 (where the richest person has all the income).

in chronic food insecurity. At the same time, the evident process of urbanisation is leading to significant urban sprawl and in turn depleting rural areas of their economically active population. Repercussions include declining food production, increased cost of living in the city, destruction of valuable agricultural land and increasing demands for energy, water, and food. The ecological footprint (environmental degradation) of South Africa's cities is already large and comparable to that of cities in other industrial countries that are also ecologically unsustainable. However, it is possible to break this cycle of poverty and unsustainable growth, particularly in urban areas. One means of achieving this is through co-ordinated efforts from all levels of government that focus on food as the major requirement for well-being and sustainable equitable growth and development.

Diagram 5: The food challenge in South Africa

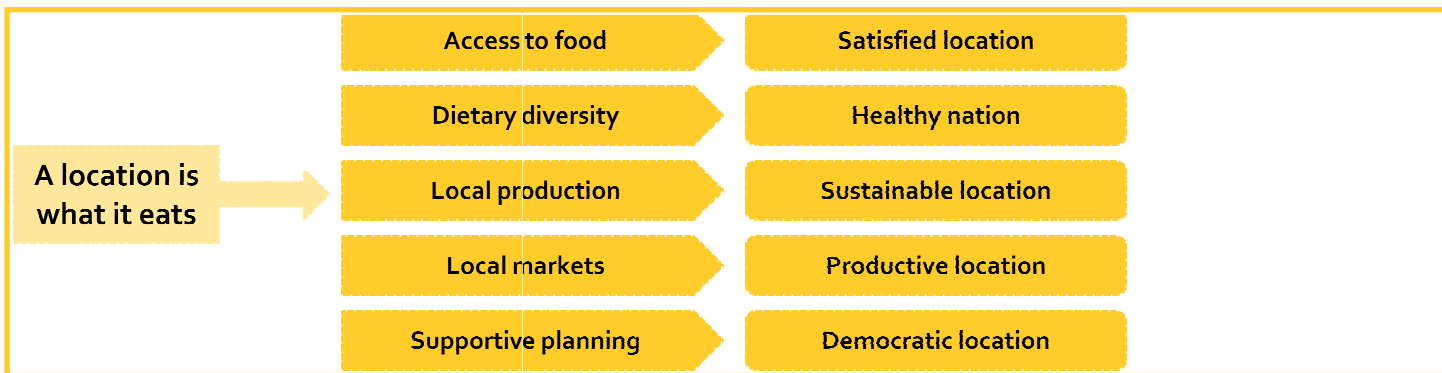


Source: Adapted from Frayne *et al.*, 2009.

5.1.1 Analysis and discussion of food security in South Africa

Wayne Roberts of the Toronto Food Policy Council asks why it is 'that so few people make the connection to the obvious: that a city is what it eats?' (Roberts, 2008:4). Roberts (2008) goes on to say that 'more than with any other of our biological needs, the choices we make around food affect the shape, style, pulse, smell, look, feel, health, economy, street life and infrastructure of the city'. This view reflects the complexity inherent in food systems, and provides a useful starting point for unpacking the dimensions of food security in both urban and rural areas of South Africa. There are a number of ways in which a country (or any locality, hereafter referred to as location) may be defined by what it eats (or does not eat). With reference to Diagram 6, while supply is generally adequate at the national level in South Africa, citizens do not have equal or universal access to sufficient food. Likewise, food that is consumed is often highly processed and devoid of good nutrition. If, rather than eating a calorific inappropriate and nutrient deficient diet, the 'location was able to eat well', citizens would move from the current state of chronic food and nutrition insecurity to a state of satisfaction and health. A move towards localised food production would help to promote livelihoods within the location, and to reduce environmentally costly food imports, while starting to close carbon-nutrient cycles, so helping to promote a more sustainable location for all. An increase in localised food production necessitates the development and support of local level, neighbourhood-accessible marketing systems to distribute produce throughout the location, to wealthy and poor alike. Using localised food production is therefore one important way of improving economic conditions for the country's poor. In order to realise the goals of creating a healthy, vibrant, and prosperous country around the basic need of food requires an enabling and supportive environment. Food (in all its complexity) must be fully integrated into the planning and management systems of the location (be it a city or municipality), further enabled and supported by provincial and national level line-function ministries (for example, the Department of Land Reform and Rural Development and DAFF). The discussion that follows uses this framework to identify the major food security dynamics and policy questions that arise.

Diagram 6: Conceptualising the ‘location is what it eats’



Source: Adapted from Roberts, 2008.

Food security is a necessary pre-condition for any equitable economic growth to take place that is driven by savings and investment from the local population. Conversely, for the larger population of South Africa to be able to save and thus invest in economic development, their basic needs (i.e. food security) will have to be met. However, currently, the South African poor spend a larger proportion of their meagre income on food, as is shown in Figure 63. Figure 63 illustrates the proportion of total expenditure that is spent on procuring food in real terms, using the food price index as a deflator.

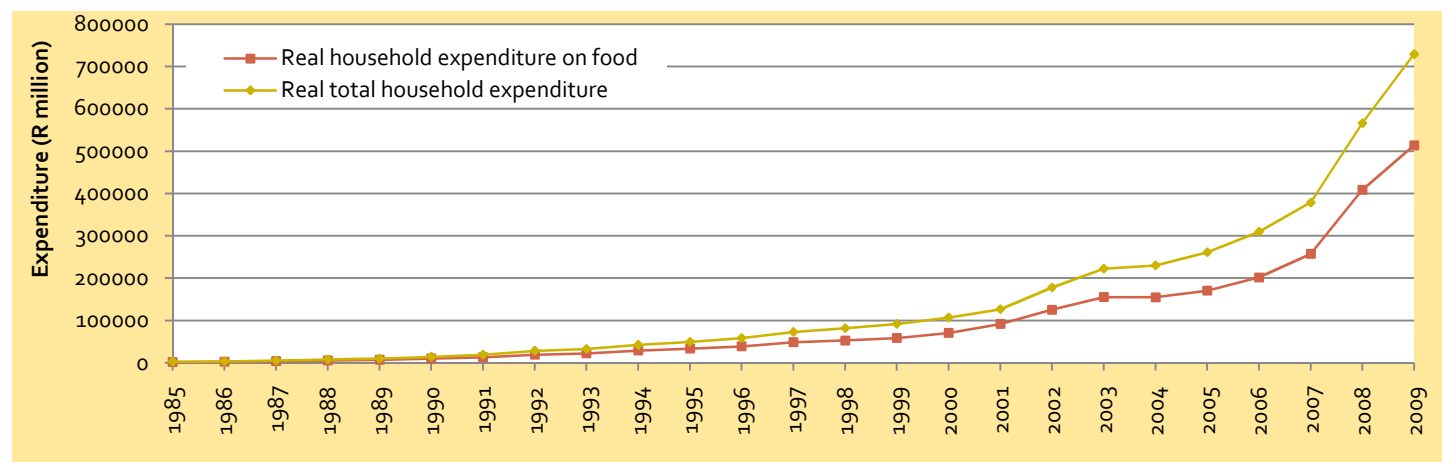


Figure 63: Household expenditure on food versus total household expenditure.

Source: Own calculations based on the data from DAFF, 2010.

5.1.2 Policy issues

- Policy issues in relation to access

The main issue from a policy perspective in terms of access is the high levels of chronic food insecurity. This chronic food insecurity can be explained by the attendant high levels of poverty that characterise a large portion of the population. These challenges are exacerbated by the high overall inflation and disproportionately high food inflation felt more by the poor. Moreover, women are clearly the most vulnerable to food insecurity, reflecting an inequitable society.

Sound policy actions for the short and long term are not necessarily the same. Increases in food prices have a dominant role in increasing inflation (Von Braun, 2009). It would be misguided to address these specific inflation causes with general macro-economic instruments. Primarily, it is specific policies that are needed to deal with the causes and consequences of high food prices. Although the issue of high food prices, and thus lack of accessibility to food by the poor, pose policy challenges on several

fronts, there are effective and coherent actions that can be taken to help the most vulnerable people in the short term, while working to stabilise food prices by increasing agricultural production in the long term.

While positive, *equitable* economic growth is necessary to reduce poverty and thereby reduce the food gap for poor households, social welfare provides a specific poor-oriented mechanism to relieve chronic hunger. Although this is already substantial, it is likely that there are people, especially in rural areas, who qualify for social grants of one kind or another, but are not accessing them for various reasons. Therefore, one way to increase income and access to food is to take steps to improve the take-up rate of grants within society. Specific food grants can also be considered as a means of improving food security among poor households, either through cash or voucher systems (for example, the means-tested food voucher system in the USA). There are also innovative alternatives to improving food security, like “working-for-food”, where individuals work and are given food parcels in return for their labour.

Two further options could be explored to support greater access to food. The first is self-production, for own consumption and/or for sale including urban agriculture, which has long been discussed as a food security strategy for the poor. However, until urban agriculture is mainstreamed into the urban planning and national development policies of South Africa, the activity will remain *ad hoc*, and the full potential of this sector for real economic and social development will not be realised.

- **Policy issues in relation to local production**

Local production is required to achieve ecologically and socially sustainable locations in South Africa. Unless the poor and the commercial operators are directly involved in producing food within and around their location, neither the goal of food security nor that of sustainable development will be achieved. From a policy perspective, this requires an entire re-orientation of the food system in relation to planning and social and economic development, at all levels of government.

In order to achieve long-term agricultural growth, the government should increase medium- and long-term investments in agricultural research and extension, rural infrastructure, and market access for small farmers (as espoused in the Comprehensive African Agricultural Development Programme (CAADP), of the New Partnership for African Development (NEPAD)). Rural investments have been sorely neglected in recent decades, and now is the time to reverse this trend. Fortunately, there seems to be improved good will and political will to address rural development in South Africa, as indicated by the formation of the Department of Rural Development recently. Many farmers, particularly smallholder farmers, in rural South Africa are operating in an environment of inadequate infrastructure in terms of roads, electricity, and communications; lack of storage and processing capacity; and little or no access to agricultural technologies that could increase their productivity and hence profits to improve their livelihoods. Recent unrest over perceived poor service delivery at local government level in the country may result in policymakers prioritising the interests of urban consumers over those of rural people, including farmers. However, this approach would be myopic and counterproductive in the long run. Given the scale of investment needed, the government should leverage state resources geared toward agriculture, rural services, and science and technology by forming public-private partnerships, including the donor community.

- **Local markets**

Markets are important to the food economy of any place. With the rise of a global food system over the past half century, markets have tended to become fewer and more centralised, at the expense of small, local operations (Atkins and Bowler, 2001). Large retail outlets have come to dominate the food landscape, resulting in a dichotomy between the large food retailers and the very small, often informal traders in South Africa, with little existing between these two extremes, both economically and geographically. Yet the ability of a nation to feed itself depends on a vibrant local-scale market system, as demonstrated throughout history (Steel, 2008). The systematic closure of small-scale food producers, processors, and retailers in urban centres, often in response to large, car-dependent supermarkets, follows the decline in healthy food and the marginalisation of the poor in relation to food.

Expensive transport and limited access to both distribution markets and to retail outlets (such as supermarkets) result in the urban poor having to rely on often expensive and nutritionally inadequate sources of local food. For poorer urban entrepreneurs, the opportunities to obtain food at wholesale prices from centralised markets, and to compete with the large retailers, are restricted, reducing their business reach and income potential (Frayne *et al.*, 2009).

- **Facing the challenges: A Summary**

South African agriculture is facing new challenges that, along with existing forces, pose risks for poor people's livelihoods and food security. This situation calls for policy actions in three areas:

- (iv) Comprehensive social protection and food and nutrition initiatives to meet the short- and medium-term needs of the poor;
- (v) Investment in agriculture, particularly in agricultural science and technology, infrastructure and improved market access of smallholders, at a national and global scale, to address the long-term problem of boosting supply; and
- (vi) Ensuring the sustainable use of natural resources.

The aforementioned should aim to create an enabling environment for the development of the agricultural sector in a socially, economically and environmentally responsible manner that will address the needs of producers (profitable and competitive) and consumers (national and household food security). In the face of rising food prices, both developing and developed countries have a role to play in creating a world where all people have enough food for a healthy and productive life.

5.2 Farming sustainability

The previous section discussed food security in South Africa. It indicated that food security has two major components that require co-existence for its success, namely, availability and access to sufficient, safe, and nutritious food. Access to sufficient food includes the ability to afford food. An interesting question therefore is what commodity and food trends are in real terms, i.e. without the effect of inflation. The real prices of commodities/food will give an indication of the affordability of food over the long term, but will also provide valuable insight into the long run economic viability of the agriculture sector to produce food.

Real international commodity price trends:

The FAO publishes the real international prices for the most important food commodities. The latest real international commodities price data published was for 2008. Although this FCR focuses mainly on the prices of 2009, the issue of farming sustainability is both important and relevant and therefore this section is included, even though the prices only go up until 2008.

Figure 64 shows the real prices of bulk commodities from 1957 to 2008. Apart from the price spikes experienced in the early 1970s due to the oil price crises, the real prices for bulk commodities show a downward trend. For the periods 1957 to 2008 and 1974 to 2008, the average real prices for bulk commodities decreased by 35 % and 51 % respectively.

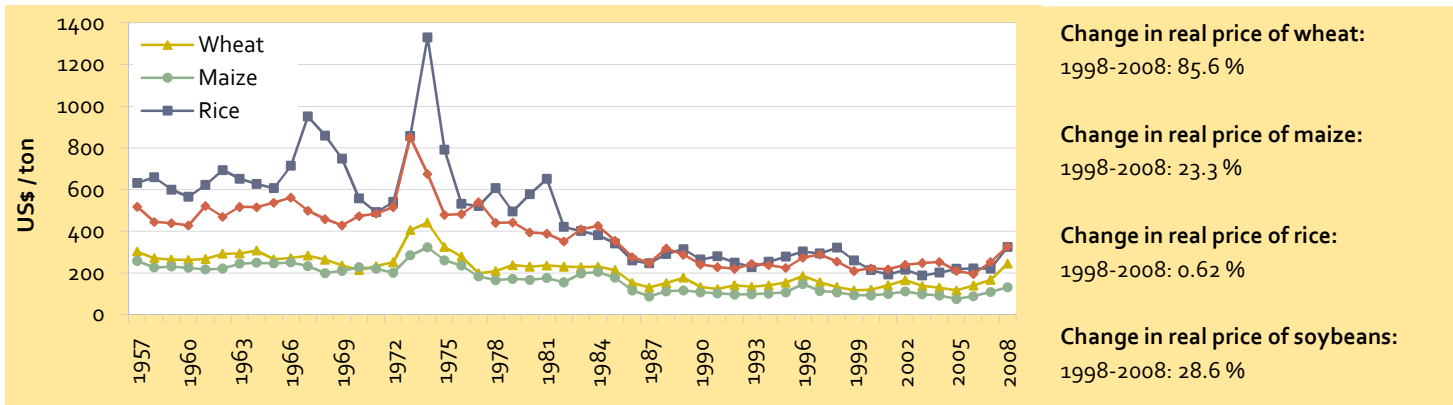


Figure 64: Real international prices of bulk commodities (1957–2008)

Source: FAO, 2010.

Figure 65 shows the real prices for vegetable oils from 1957 to 2008. Real vegetable oil prices also show a downward trend over the long term. From 1957 to 2008, average real vegetable oil prices decreased by 47 %, and from 1975 to 2008, prices decreased by 57 %.

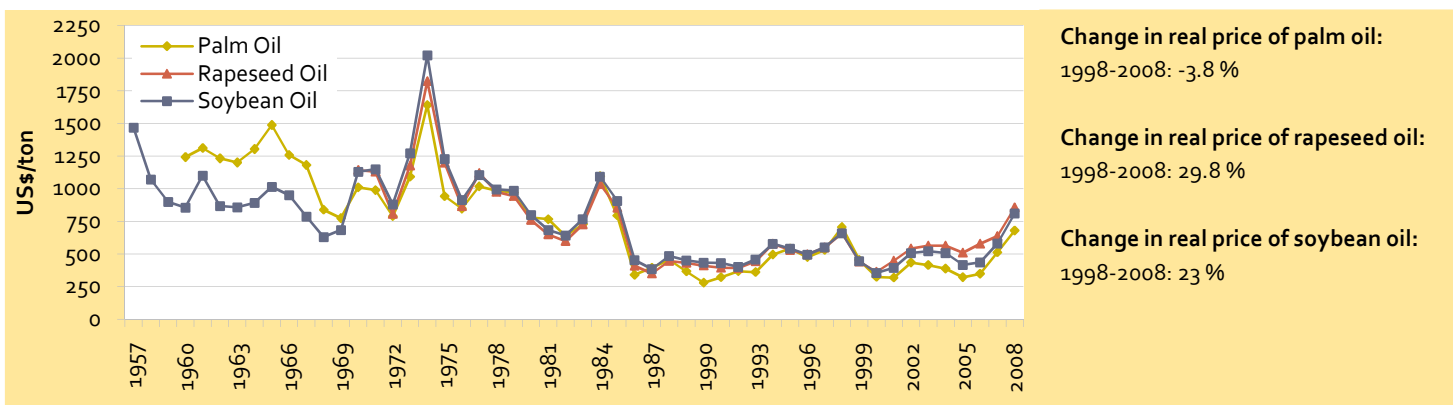


Figure 65: Real international prices of vegetable oils (1957–2008)

Source: FAO, 2010.

Figure 66 shows the real prices for beef from 1957 to 2008 and pigmeat and poultry from 1980 to 2008. The real price of beef declined by 42.52 % from 1957 to 2008. From 1975 to 2008 the real beef price declined by 55.71 % and the real price of pigmeat declined by 68.12 %. During the same period the real price of poultry increased by 11.05 %.

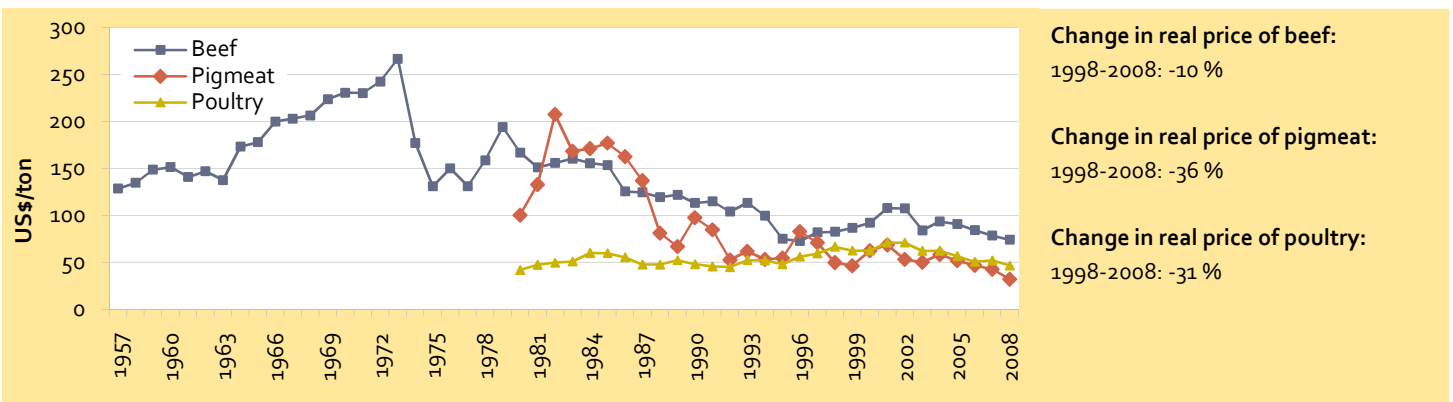


Figure 66: Real international prices of livestock commodities (1957–2008)

Source: FAO, 2010.

It is interesting to note that commodity prices show more volatility in real terms before the 1980s than after the 1980s. The downward trend in real commodity prices is cause for concern in that it has definite implications for the profitability of agricultural production, which in turn will affect the ability and willingness of producers to invest further and continue to farm. The challenge for producers to remain profitable in the long run in developing countries (and certain developed countries) is compounded by the fact that they receive very little support from their governments as opposed to producers in countries like the EU and the USA.

The terms of trade of the domestic agricultural sector:

Since liberalisation of trade policies the South African agricultural market is much more open to international competition, which also means that international price trends are transmitted to the local agricultural market. Hence, the trends described above, especially in recent years, would have found their way into local price formation. In order to provide more insight into the price-cost squeeze situation faced by local producers, Figure 67 depicts the terms of trade in agriculture. The domestic terms of trade in agriculture indicate whether prices received by the farmers have kept pace with the prices paid for farming inputs, and hence provides a proxy for the state of profitability of the primary agricultural sector. Figure 67 shows that the terms of trade in agriculture deteriorated by 15.1 % from 1990 to 2009. The long-run trend is downwards. The terms of trade recovered between 2005 to 2007 (i.e. there was an increase of 10.3 % between 2005 and 2006, and a further recovery of 11.9 % from 2006 to 2007). This recovery can mainly be attributed to higher commodity prices between 2006 and 2007, while input prices remained relatively stable. However, the terms of trade worsened again in 2008 on the back of lower commodity prices towards the end of 2008 and a significant increase in input costs, which rallied during the latter part of 2008. Lower commodity prices led to a further decrease of 2.7 % during 2009.

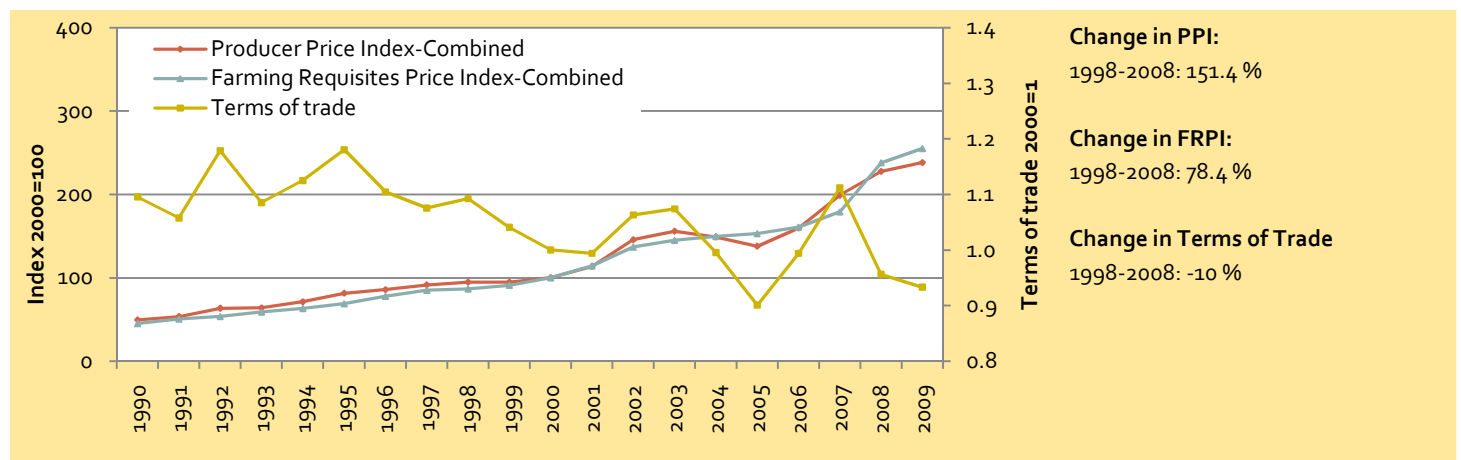


Figure 67: Terms of trade in agriculture

Source: Own calculations based on data from DAFF, 2010.

Figure 68 shows the real gross income, the real net farming income and real expenditure on intermediate goods and services since the 1980's. Real gross income showed an increasing trend since the early 1990s, but also higher variability than during the 1980s. Despite a marginal decrease in real expenditure on intermediate goods and services from 1981/82 until the early 1990s, it showed a significant increase since the mid-1990s. The result is that real net farm income has been moving side since the mid-1990s until 2006/07 after which it increased on the back of good commodity prices. The long term trend in real net farm income has been sideways since 1981/82.

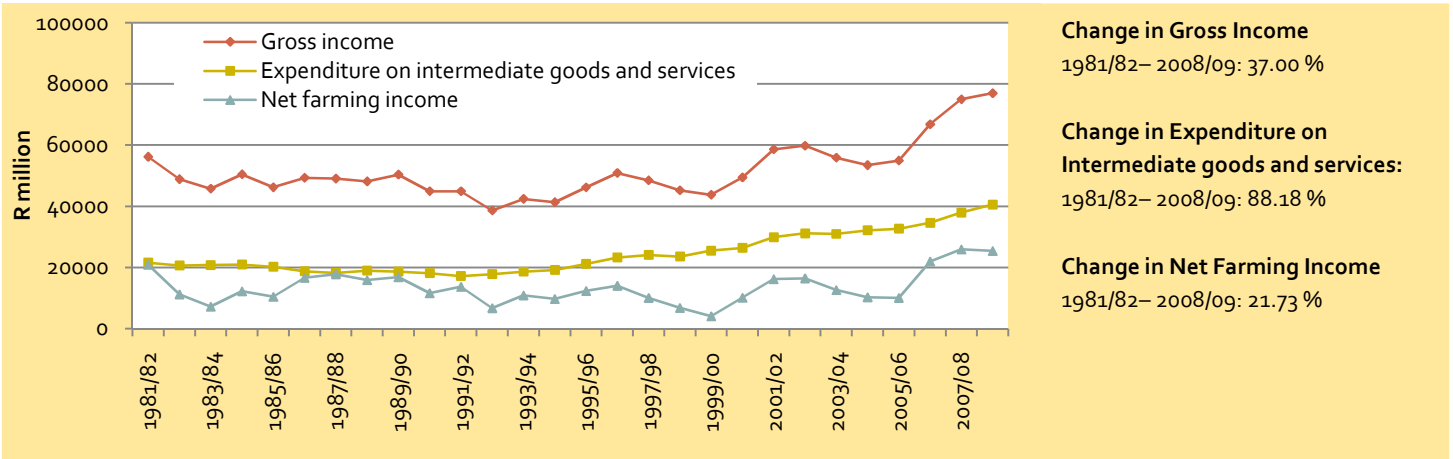


Figure 68: Real gross and net farm income in agriculture
Source: Own calculations based on data from DAFF, 2010.

In summary, the long run trend in net farm income is concerning since it will affect future investment in agriculture, directly and indirectly. This in turn holds serious implications for the country as far as sustainable rural development is concerned and the ability to produce affordable food.

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Appendix A: Methodology to calculate the costs and margins in the wheat-to-bread value chain

1. The farm gate price (also known as the producer price) is derived from:

Average SAFEX spot price wheat (2009) lagged by 4 months.

Minus

Average location differential (6)

Minus

Average storing cost for farmers (4)

Minus

Average handling, grading, procurement fee & 1% physical loss fee. (3)

Minus

Transport cost: farm gate to silo (2)

2. Transport cost: farm gate to silo: Was calculated as R1.03/km/ton wheat for an average of a trip of 20 kilometres to the silo and 20 kilometres back (Braun; 2010).
3. Average handling, grading, procurement fee & 1% physical loss fee: Was calculated as an average on the physical cost for 7 silo owners and a R30 procurement a 1% physical loss fee..
4. Average storage cost for the farmer: Was calculated as weighted average for one third stored for 0 days, one third stored for 60 days and one third stored on the yearly tariff. The above calculation is based on opinion from industry leaders.
5. SAFEX derived price for the producer: Was calculated as follow:

Average SAFEX spot price for wheat (2009) lagged with 4 months

Minus

Average SAFEX differential

6. Average location differential: Was calculated as an average of all the transport differentials for 2009 as published by the Johannesburg Stock Exchange's Agricultural Product Division of the future exchange Market (SAFEX) for all registered silo's handling wheat.
7. Average SAFEX spot price for wheat (2009) lagged with 4 months: Is an average for all the trading days from 01 September 2008 to 30 August 2009. Statistical testing proved that the level of correlation between the producer price and the consumer price is the highest when the producer price is lagged by four months. This implies that it takes four months from the moment the miller buys the wheat until it appears on the shelf of the retailer.
8. Storage and handling cost: Cost to the miller: Is based on opinions from industry players and is calculated as daily tariff times 120 days storage .
9. Transport costs: silo to mill door: It is the opinion of industry players that the bigger millers are very close to urban areas. Therefore there transport cost was calculated as 80% of the transport differential.
10. Income from sale of bran: The income from the sales of bran is based on an average of 80% of the yellow maize price.

11. Mill door price: Was calculated as follow:

Averages derived price for the seller/buyer at the silo

Plus

Storage and handling costs: Cost to miller

Plus

Transport costs: silo to mill door

Minus

Income from sale of bran

12. Mill site cost: The fixed and variable cost of manufacturing is based on opinions from the industry. The Mill site cost is the sum of the production cost, packing cost, packing material cost and losses.
13. Total mill site cost: Total mill site cost is distribution cost plus mill site cost.
14. Fixed capital cost: This cost is based on opinion of industry players.
15. Floating capital cost: This cost is based on opinion of industry players.
16. Total Manufacturing and Distribution Cost: This cost is the sum of all the manufacturing cost.
17. Total wheat flour cost for white bread: This is the total manufacturing and distribution cost.
18. Average extraction rate of flour: Is the ratio of bran: flour after manufacturing.
19. Total cost of white bread flour: Total Wheat flour cost rand/ton.
20. Extraction rate of white bread: This is the rate for 2 different scenarios of a bread with 420g flour used and a bread of 508g flour used.
21. Cost of flour per loaf: Total cost of white bread flour/ extraction rate of white bread flour.
22. Packaging: Average cost of between R0.22 and R0.24/loaf based on the opinion of industry players.
23. Other raw material: Average cost of between R0.38 and R0.42/loaf based on the opinion of industry players.
24. Production & maintenance: Average cost of between R0.88 and R0.95/loaf based on the opinion of industry players.
25. Distribution: Average cost of between R0.86 and R0.95/loaf based on the opinion of industry players.
26. Cost of producing white bread: Average cost of between R0.57 and R0.63/loaf based on the opinion of industry players.
27. Cost of producing white bread: Summation of Cost of flour per loaf + packaging + other raw material production & maintenance + distribution + overheads.
28. Bakers and millers margin: Wholesale price minus cost of producing white bread.
29. Wholesale price: Retail purchase price minus rebates, losses and returns.
30. Rebates, losses and returns: Is calculated as an estimate of 11% of the retailers purchase price.
31. Retailers purchase price: Retail price minus retail margin.
32. Retailers margin: Retailers margin is calculated as an estimate of 14% of the retailers purchase price
33. White/Brown bread retail price (Vat Excl): White/Brown bread retail price (Vat Inc):/1 + (Vat).
34. Vat (14%): Governmental legislation of 14% value added tax on white bread and 0% on brown bread.
35. White/Brown bread retail price (Vat Inc): Average retail price for 2009 monitored by Stats SA and published in the Food Price Monitor of the NAMC.
36. Margin between selling price and cost of producing a loaf of white bread: White/Brown bread retail price (Vat Inc) minus cost of producing white bread.

Appendix B: Methodology to calculate the costs and margins in the maize-to-maize meal value chain

1. The farm gate price (also known as the producer price) is derived from:
 - Average SAFEX spot price maize (Sept 08 to Aug 09) lagged by 4 months.
 - Minus**
 - Average Safex differential (6)
 - Minus**
 - Average storing cost for farmers (4)
 - Minus**
 - Average handling, grading, procurement fee & 1% physical loss fee. (3)
 - Minus**
 - Transport cost: farmgate to silo (2)
2. Transport cost: farmgate to silo: Was calculated as R1.03/km/ton maize for an average of a trip of 20 kilometres to the silo and 20 kilometres back (Braun; 2010).
3. Average handling, grading, procurement fee & 1% physical loss fee: Was calculated as an average on the physical cost for 7 silo owners and a R15 procurement and a 1% physical loss fee.
4. Average storage cost for the farmer: Was calculated as weighted average for one third stored for 0 days, one third stored for 60 days and one third stored on the yearly tariff. The above calculation is based on opinion from industry leaders.
5. SAFEX derived price for the seller /buyer at the silo: Was calculated as follow:
 - Average SAFEX spot price for white maize (2009) lagged with 4 months
 - Minus**
 - Average location differential
6. Average location differential: was calculated as an average of all the transport differentials for 2009 as published by the Johannesburg Stock Exchange's Agricultural Product Division of the future exchange Market (SAFEX) for all registered silo's handling maize.
7. Average SAFEX spot price for white maize (2009) lagged with 4 months: Is an average for all the trading days from 01 September 2008 to 30 August 2009. Statistical testing proved that the level of correlation between the producer price and the consumer price is the highest when the producer price is lagged by four months. This implies that it takes four months from the moment the miller buys the maize until it appears on the shelf of the retailer.
8. Storage and handling cost: Cost to the miller: Is based on opinions from industry players and is calculated as daily tariff times 120 days storage .
9. Transport costs: silo to mill door: It is the opinion of industry players that the bigger millers are very close to urban areas. Therefore there transport cost was calculated as 80% of the transport differential.
10. Income from sale of chop: The income from the sales of chop is based on an average paid by feedlots in 2009 on 40% of the product.

11. Mill door price: Was calculated as follow:

Averages SAFEX spot price for white maize (2009) four months lagged

Plus

Storage and handling costs: Cost to miller

Plus

Transport costs: silo to mill door

Minus

Income from sale of chop

12. Mill site cost: The fixed and variable cost of manufacturing is based on opinions from the industry. The Mill site cost is a summation of the Production cost, Packing cost, packing material cost and losses
13. Total mill site cost: Total mill site cost is distribution cost plus mill site cost
14. Fixed capital cost: This cost is based on opinion of industry players
15. Floating capital cost: This cost is based on opinion of industry players
16. Total Manufacturing and Distribution Cost: This cost is a summation of all the manufacturing cost
17. Conversion cost: This is the total manufacturing and distribution cost
18. Average cost of maize (mill door prize): This is the mill door prize for maize
19. Total super maize meal cost: Is the conversion cost plus the total manufacturing and distribution cost
20. Extraction rate for super maize meal: Is the ratio of chop: maize meal after manufacturing.
21. Average cost of maize (mill door prize): Extraction rate/ Total super maize meal cost
22. Miller to retail margin: Average monthly retail price (5kg Bag) **minus** the average cost of maize (mill door prize)
23. Average monthly retail price (5 kg and 12.5 Bag): A weighted price (30:70) between a 5 kg and 12.5 kg was calculated.

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The business offices of the NAMC are situated at:

536 Schoeman Street
Meintjiesplein Building
Block A, 4th Floor
NAMC

Tel: 012 341 1115

Fax: 012 341 1811 / 1911

Website: www.namc.co.za

The postal address is as follows:

Private Bag x935
Pretoria
001

Designed by *aMaizingPrint*

Tel: 012 654 4715 / 4717

