

PART 4

ANALYSIS OF SELECTED FOOD VALUE CHAINS

Introduction

Parts 4 and 5 of the Report address a core aspect of the terms of reference namely to understand the causes of food price increases. The investigation commences by focusing on aspects at producer level and, then, considers the main trends in producer prices based on a detailed investigation on the way producer prices are determined through the SAFEX futures market. This approach is taken because aspects surrounding the SAFEX agricultural commodity market created much suspicion and concern during 2002. These are being addressed in detail in Chapter 1.

From Chapter 2 onwards eight food value chains is analysed in detail. This is done in order to understand the pricing behaviour in each chain and to understand the factors contributing to various movements in prices within each of the chains. This analysis is also done in order to determine whether there has been any unjust price increases over the past 24 months. The value chains that are analysed are:

- €# Maize-to-maize meal
- €# Wheat-to-bread
- €# Red Meat
- €# Dairy
- €# Sunflower seed-cooking oil
- €# Sugar
- €# Potatoes
- €# Dry Beans

In Part 5 other but related aspects of the supply chains are investigated that might have had an impact on food prices.

CHAPTER 1

AGRICULTURAL PRODUCER PRICES: INVESTIGATING THE AGRICULTURAL FUTURES MARKET

1.1 Introduction¹

The analysis of pricing behaviour in the market for grains is the key focus of this Chapter. This follows from the argument raised in Part 2 that the sharp increase in the price of maize has been the most important driving force behind the increase in the food price inflation during 2002. In order to isolate the potential causes of the maize price increase in 2001/2002 it is, firstly, important to understand the working of the grain market. This will serve as a foundation for the remainder of the Chapter.

The working of the market for grains

The passing of the Marketing of Agricultural Products Act of 1996 paved the way for a new marketing order in the South African grain industry. Grain producers, traders and processors are now able to trade in a 'free' market; they can respond to the forces of supply and demand in setting prices. In practice, they all look to the prices generated through the formal commodities market that was established following the deregulation, namely the Agricultural Markets Division of the South African Futures Exchange (SAFEX) as the benchmark for the prices they will ask or offer in the 'spot' market of daily trading in maize.

SAFEX was formed in 1996/1997, and introduced the trading of derivatives (futures and options) for white maize, yellow maize, wheat, sunflower and beef (the contract for beef was later cancelled). The prices for future contracts and options are generated on the exchange market through 'bids' and 'offers' and reflect the views of market participants on the prices of the specific products at different dates in the future. These instruments are also used to hedge price risk. By using the SAFEX market effectively, market participants can minimize their price risk, which, in turn, lowers their cost of doing business.

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

¹ Parts of this Section draw heavily from the Vink and Kirsten report to National Treasury, June 2002.

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

The result is that, in theory, the price of maize on the domestic market can go no higher than the import parity price, as millers will merely increase imports at this point. Thus, the import parity price is a maximum price. In the same manner, the export parity price is the lowest possible price, i.e. it is a minimum price. It follows that the domestic price of maize will fluctuate between these two levels. This is illustrated in Figure 1.1.

The import and export parity prices form the upper and lower band. The SAFEX white maize spot price fluctuates between the upper and lower band. For example, if the exchange rate depreciates, South African maize producers will be able to sell at a higher price in foreign markets. If this price is high enough to cover the cost of exports, there will be an increase in exports of maize and a decrease in local supply, and, thus, an increase in the domestic price until the domestic price equals the price received from exports. The opposite result will arise if the local price rises above the ceiling price and the product can be imported for a lower price than it is produced locally. The actual level of the domestic price between this minimum and maximum level will depend on local (Southern African) supply as well as on demand in the local market, recognising that the latter is relatively stable in the short to medium term.

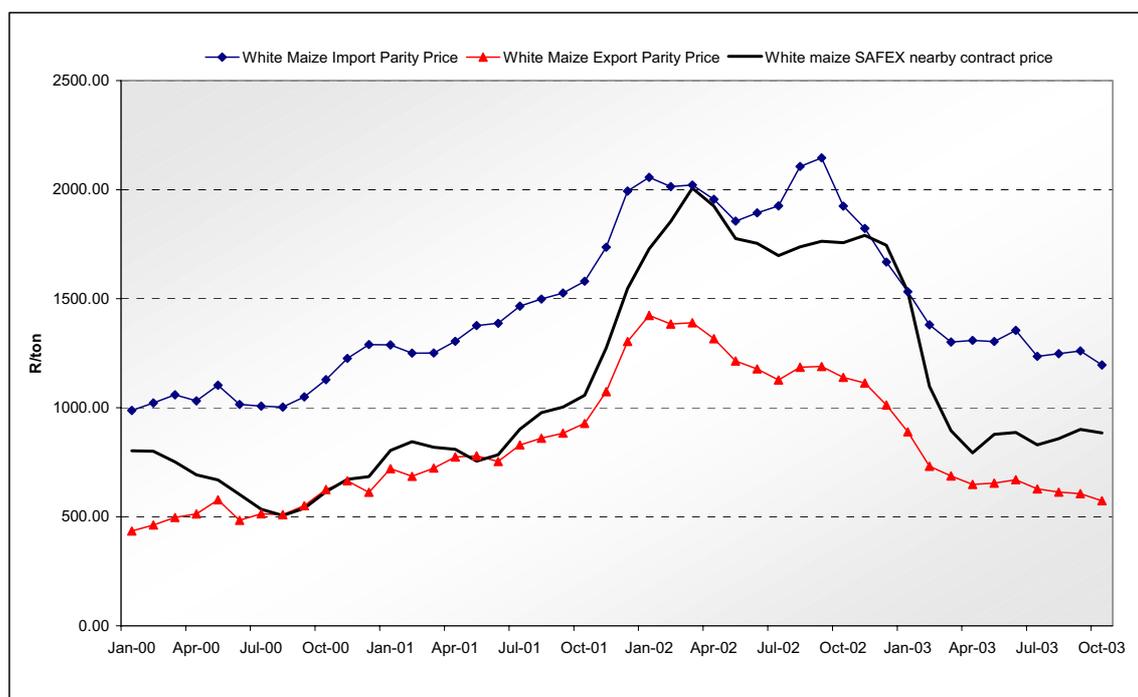


Figure 1.1: An illustration of how SAFEX spot prices fluctuate between import parity and export parity (Jan 2000 to Sept 2003)

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The determinants of the domestic price for maize

The illustration above shows that the main influences on the price of maize for a South African buyer is, normally, determined by the world price for maize, the exchange rate² and the relative size of the domestic maize crop. Maize that is physically located in the United States does not have the same value to a South African buyer, as does maize that is physically located in the EU or in South Africa. Hence, the price of maize on different markets must be adjusted to take account of the differences in transport costs, exchange rates, etc., in order to make comparisons possible. Such an adjusted price is called a reference price; it is calculated with respect to a reference point. In the case of grains in South Africa the commonly used reference point is Randfontein.

In order to adjust prices to this reference price, the international commodity price ('free on board' or FOB Gulf price³) has to be adjusted to take account of all the costs incurred in bringing the maize to Durban. This price, called the CIF price⁴, is adjusted to local currency using the current exchange rate. Once this is done, all local Rand based costs (off-loading, losses, interest, local transport costs) can be added resulting in a final landed (local) price per tonne at the point of consumption, or the reference point.

During the 2001/2002 period the dollar price of white maize increased by \$10.74/ton (from \$79.98 to \$90.72, or by 13.38%). During this time, the exchange rate also weakened, by 66.67% (from R6.96 to R11.61, or by R4.65). During August/September 2002 the dollar price for maize experienced a sudden surge from \$99/ton in July to \$113/ton in September. At the time, the exchange rate was still trading at R10.50 to the US dollar, which explains the peak in import parity prices for white maize in August to October 2003. The net result of an increase in world prices will be an increase in the domestic price of maize. Maize buyers in South Africa, e.g. millers, will have to buy maize from producers who can sell their produce overseas at the higher world price and with a more favourable exchange rate. Hence, they will bid up the domestic price of maize.

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

² The other costs (foreign currency costs of freight, insurance, etc, as well as the domestic costs) are important, too. Evidence shows, however, that they are more stable than the world price and the exchange rate.

³ This means that the supplier delivers the maize at a price that is equivalent to loading the maize onto a ship in the Gulf, i.e. the buyer will pay for the transport, insurance, etc. to get it to where they need it. The world price for maize is conventionally quoted as fob Gulf.

⁴ Cost, insurance, freight.

An additional factor that has to be taken into account in that period is the effect of the political turmoil in Zimbabwe, which resulted in a large drop in area planted with food grains such as maize there. Within two years, Zimbabwe changed from a surplus producer and exporter of maize to a deficit producer and importer. The combination of these two factors plus reports of crop failures in Zambia and Malawi changed the market sentiments from the surplus in 2000 to a predicted deficit in the whole SADC region in 2001/2002 (It should be noted that this shortage did not materialise mainly due to food aid from non-African sources). The predictable result was that the domestic price increased to the level of the import parity price within a year. Parallel to this, import parity prices increased by 73% for white maize and 75% for yellow maize from September 2000 to February 2002.

Thus, the rapid increase in the price of maize was the result of the effect that the weakening in the exchange rate and the increase in the world price had on the price band within which the domestic price moves. Because of the perceived shortage on the domestic market, fuelled by negative perceptions about Zimbabwe, the domestic price then increased within this band.

In Figures 1.2, 1.3 and 1.4 the recent trends in the SAFEX spot prices of maize, wheat and sunflower are compared with the trends in the exchange rate and the world prices. Figure 1.2 shows how white and yellow maize prices have decreased sharply since December 2002 despite the fact that the Chicago Board of Trade (CBOT) price only decreased marginally. The main contributing factors for this sharp decline in prices was the appreciation of the exchange rate as well as regional demand and supply factors. The anticipated exports to neighbouring countries did not realise and suddenly the domestic market had to cope with very high stocks levels of maize, that is, more than 2.5 million tonnes.

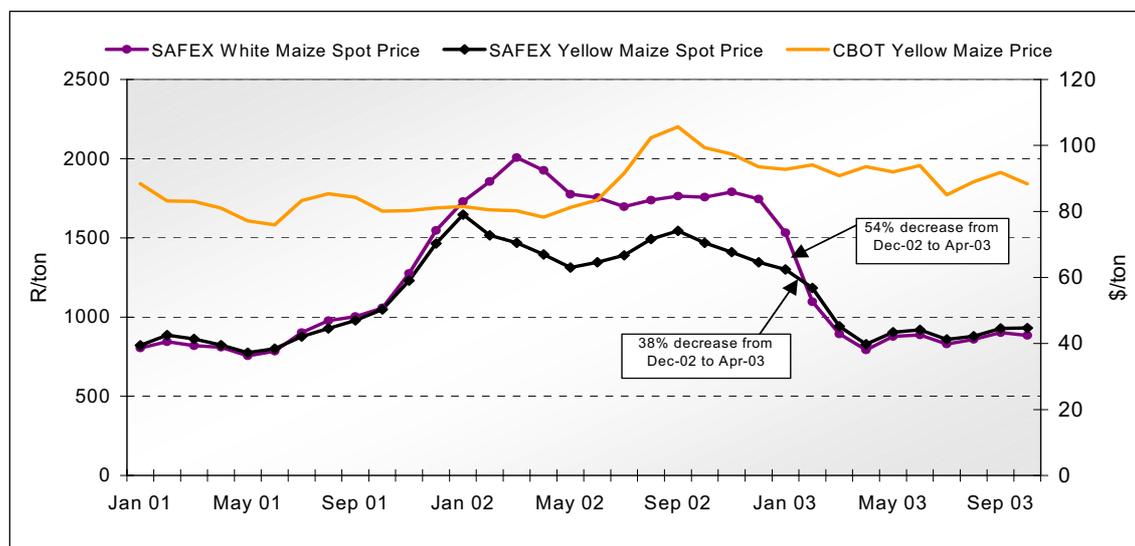


Figure 1.2: Recent trends in white and yellow maize spot prices and the world price of maize (Source: SAFEX, 2003)

Similar to the trends in maize prices, the price of sunflower seed also decreased by 48% in the period December 2002 to April 2003. Only in the past two months, the sunflower prices have increased. The high level of world crude oil prices was the

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main driving force for the extremely high sunflower spot prices in 2002. South Africa is a net importer of sunflower oil and, therefore, international prices have a direct impact on local price levels.

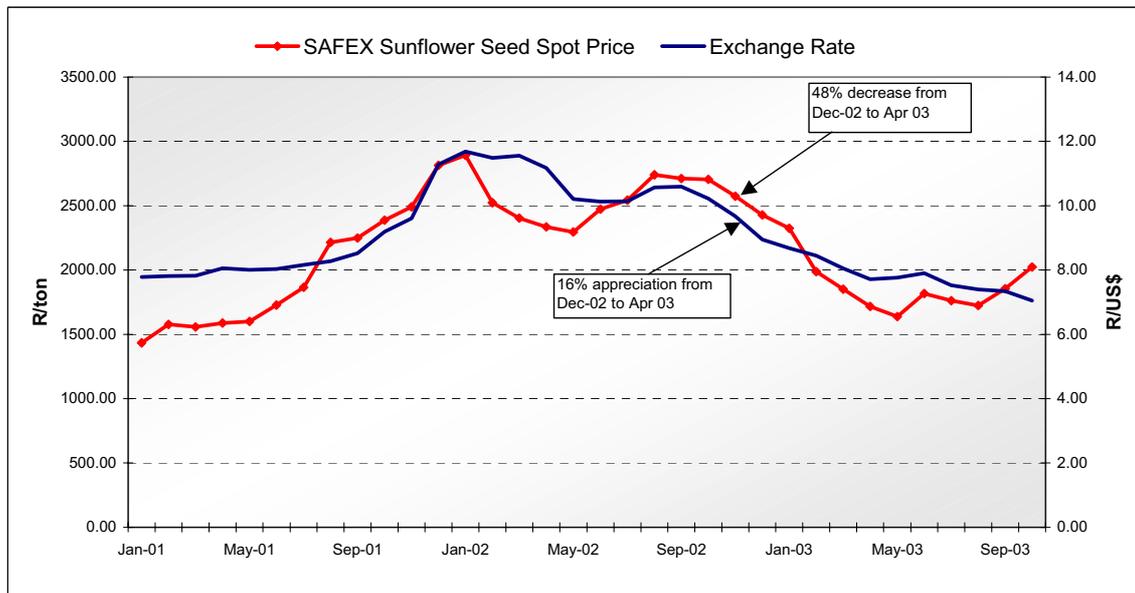


Figure 1.3: Recent trends in sunflower seed spot prices and the exchange rate
(Source: SAFEX, 2003)

Wheat prices also decreased sharply during the period December 2002 to April 2003. Recent unfavourable weather conditions influenced the views of participants in the market, however, who started trading on anticipated shortages due to a small crop. Therefore, the latest recovery in the prices of wheat was not only fuelled by a slightly higher international price but also by anticipated local demand and supply factors.

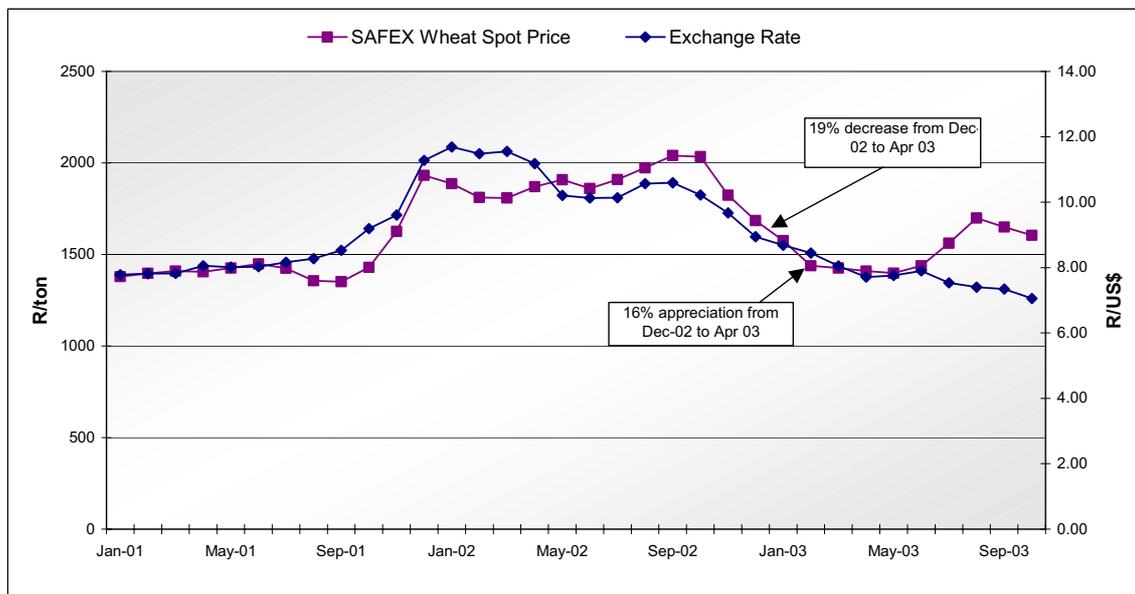


Figure 1.4: Recent trends in sunflower seed spot prices and the exchange rate
Source: SAFEX, 2003

Analysis of selected food value chains

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

Futures prices and spot prices

At any given point in time there will be more than one contract listed on SAFEX for the same commodity. The only difference between the various contracts is the date of expiry. For example, an April 2002 contract expires on 20 April 2002 and a March 2003 contract expires on 20 March 2003. The contracts will trade at different price levels with the contract with the latest expiry date trading at the highest price. It must be noted that this applies only to the current crops. With the new season commencing, contract prices for the new season crop might differ completely.

The difference in the price levels will equate to all costs (storing and financing costs) from one period to the next. For example, the September 2002 contract will trade at R1900/ton and the December 2002 at R1950/ton, the difference being R50 per tonne. The amount of R50/ton will roughly be equal to the costs involved in storing maize from September to December 2002.

One of the contracts being traded on SAFEX will always have an expiry date equal to the current month. For example, if the present month is September 2003 there will be a contract with an expiry date of 20 September 2003. This continued existence of a contract about to expire creates the constant delivery month contract. In other words, there will always be a contract that is ready for delivery, which implies that a producer can always find a contract on SAFEX against which he can deliver immediately. If producers happen to have maize ready for delivery in September 2003 they can take a September 2003 contract position on SAFEX, and delivery can proceed within a matter of days. For all practical purposes, the price of the deliverable contract (or delivery month contract) thus represents the current market price or spot price for SAFEX.

Contrary to the past days of the Marketing Boards, there is no longer any pan-seasonal or pan-territorial pricing⁵, or one single spot (producer) price for the country as a whole. There are as many different spot prices as there are points of delivery. An adjustment for transport cost is, therefore, done for each delivery point. Since all SAFEX prices are Randfontein-based, this means that if a producer can deliver or a miller can accept delivery at Randfontein, they will receive or pay the SAFEX price for the delivery month contract (the spot price). Since delivery usually takes place at points across the various producing regions, all spot prices will be a SAFEX adjusted price. For example if the transport costs between Randfontein and the silo where a producer chooses to deliver is R80/ton, the delivery price for the producer will be equal to the Randfontein price (the delivery month contract price) minus the R80/ton transport cost. The buyer will now collect the maize from the relevant silo at the

⁵ The Maize and Wheat Boards set a buying price for the product regardless of when or where it was delivered. The result was that the transport cost of farmers further away from the market was subsidized by those closer to the market, while no producer had an incentive to store the product. This had an enormous impact on liquidity management by the monetary authorities when the entire crop was purchased within a couple of weeks every year.

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SAFEX price minus the R80/ton. These transport cost differentials are calculated every year and are available from SAFEX. Thus, the SAFEX futures prices are indeed the true market or spot prices for every delivery month.

The discussion so far suggests strong arguments and evidence for showing that there is a close correlation between farm gate prices and the R/\$ exchange rate in the case of every commodity analysed.

Based on various econometric analyses, Vink and Kirsten (2002) concluded in their report to the National Treasury that the domestic price of maize reacted in a predictable fashion to the change in the exchange rate and the international price of maize, also to market perceptions of the relative scarcity of maize in Southern Africa and to the food crisis in Zimbabwe at the end of 2001. According to their findings, there was no evidence of price manipulation or of unfair price policies in determining the price of the basic commodity.

Prevailing concerns about SAFEX

Despite these conclusions, the suspicions about the SAFEX market continued and were even amplified by a Financial Service Board investigation into alleged irregularities by a broker firm losing large sums of investors' money on the SAFEX market.

In addition, the Food Pricing Monitoring Committee received a number of complaints regarding trader behaviour on the agricultural derivatives market of the JSE. Complaints to the office of the Deputy-Minister also came to the Committee's attention. The tremendous fluctuations and volatility in the agricultural commodity markets have had a major impact on many individuals, and on the South African economy as a whole. It was, therefore, seen as an important duty of the Committee to determine what actually took place in the commodity markets between December 2001 and April 2003. Role players in the market were therefore requested to provide the Committee with their understanding of price trends in the markets for white and yellow maize, wheat and sunflower. Comments were invited on the following issues:

- €# An assessment of the main reasons (excepting commonly known factors such as world prices and the exchange rate) which led to the rapid increase in commodity prices during 2002 and the rapid decrease in prices during early 2003 (pinpointing any trader behaviour or practices that contributed to these extraordinary runs).
- €# An explanation of the factors (events, information) that determined trading positions in the aforementioned period.
- €# An indication of price trends and trades (mentioning of specific days) that were not in line with the fundamentals. (For example: all fundamentals indicated that prices should go up but prices went down!).
- €# Any information on import and export deals that were reported but never were realised.
- €# An interpretation of the effect that the monthly crop estimates and the information on stock holding in silos and on farms had on the price trends in the markets.

Analysis of selected food value chains

- €# Suggestions on regulations that should be put into place by the JSE to reduce unnecessary speculation and adverse trader behaviour on the agricultural derivatives market.
- €# Opinions on portfolio managers using the agricultural derivatives market as a way of balancing their portfolio and spreading their risk.

By the deadline of 30 May 2003, only 6 written submissions had been received in addition to a response from the CEO of the Agricultural Products Division of SAFEX. This response is included in Box 1; it provides useful information about the events in the agricultural commodity market during the period in question. A subcommittee of the FPMC reviewed these submissions and then decided to invite certain traders to provide oral evidence in camera during the week of 17 – 20 June 2003. Fifteen representatives from institutions trading on SAFEX, or trading physical grain were interviewed.

In this Chapter, we provide a comprehensive assessment of the SAFEX price formation system and its consequences as highlighted by the traders during the interviews. This will be done in three parts:

- a) A summary of evidence from trader interviews on whether theoretically possible problems also exist in reality.
- b) Supply and demand ‘fundamentals’ based on available information.
- c) Theoretically possible problems with the futures and options trading price formation system.

1.2 Summary of the ‘evidence’ presented to the FPMC during the Interviews

SAFEX opinion

The CEO of the agricultural derivatives division of the JSE (SAFEX) accepts that there are gaps in the SAFEX rules for trading. Rough estimates of the price increasing effect of the lack of position limits on the size of trades and their volume range from 2% to 10%. SAFEX maintains that position limits will resolve this problem in much the same way that speed limits aim to control speeding.

The CEO believes that SAFEX prices remained high for a long period because of predictions about the exchange rate and the reports of poor rains from GrainSA. By implication, they feel that the lack of position limits did not play a substantial role. The CEO recommends that greater investment needs to be made into the National Crop Estimates Committee (NCEC).

The CEO points out that if the State were to operate a strategic reserve on SAFEX, it would also be subject to position limits. He was not able to provide any guarantees that position limits would work effectively. SAFEX is aware of the risk that trading entities may be split up under the maximum ceilings, but the CEO would not make any commitments to improved monitoring and reporting.

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Large milling companies and their maize trading activities

According to traders acting on behalf of the grain millers, and also based on the normal market gossip, the concern was that millers instructed their traders to 'buy at all costs' during 2002 because they believed there was going to be a shortage of maize and, consequently, they feared losing their brand-based market share. To some extent this appears to have led to a situation where large mills locked part of their overall maize grain purchases at high SAFEX prices compared to prices available to smaller millers who only entered the milling industry once prices dropped in early 2003.

Large millers aimed to save on margin costs and therefore got involved in 'exotic' options (e.g. Barrier options). Prices may have overshot on the futures market because of what was happening on the options market. There is a lack of trader skill and expertise in using exotic options.

Big trader dominance during 2001/2

Several traders reported on aspects of the trading activity of one large trading house that was described as 'the market leader' in 2002. This particular firm was well-known to the trading board and had adopted a controversially large position in support of the higher maize prices from May 2002 onwards, a position that most traders and market participants believed and followed. The firm's activities were supported by its ability to trade on behalf of the Joint Municipal Workers Pension Fund with backing from ABSA. The size of the position held by this firm led to a situation where it was improbable that other market participants would counter their position.

Certain trades by this firm may also have been in contravention of the SAFEX trading rules. This, however, requires further independent verification and legal advice. Related to this, verbal complaints made to the SAFEX management do not appear to have been followed up effectively. *[It should be noted that the firm, WJ Morgan, was expelled and fined by the JSE for contravening certain trading rules, in October 2003.]*

Box 1: Submission to the Food Price Monitoring Committee by the Agricultural Products Division, JSE Securities Exchange South Africa

Background

The fundamental objective of a commodity derivatives market is to provide participants in the market with an effective price determination mechanism and an efficient price risk management facility. In the absence of a derivatives market within a deregulated commodity market (where price is not controlled), participants in the market are subject to unscrupulous pricing behaviour and to massive price risk. A derivatives market sends out clear and transparent price signals to the whole market and enables market participants to hedge the risk inherent in commodities. The prices on a commodity derivatives market are determined by the interpretation of the information available to the market at any given point in time and are based on the principle of willing buyer, willing seller.

The price of grain, particularly that of white maize, on the South African commodity derivatives market is determined by the interpretation of the information related to the following factors:

- the domestic supply and demand situation;
- the regional supply and demand situation;
- the international supply and demand situation and international prices;
- the exchange rate.

Based on the information available at the time, and the interpretation thereof, the price of grains, particularly that of white maize, started to increase around June/July 2001. A brief synopsis of the most pertinent of the above noted fundamental factors would serve to substantiate price movements in the period mid 2001 to date.

Factor	June 2001 – Mar 2002: Price rise to maximum levels	April 2002 – Dec 2002: Continued high price off maximum levels	Jan 2003 to date: Fall off in prices
Domestic Supply	Reasonable supply	Crop estimate figures underestimated by 1mt. Reports of poor crop perspectives	Realisation that carry over stocks are in the region of 2m tons (SAGIS figures). Indications of 17% greater plantings of white maize and follow up increased NCEC crop estimates
Domestic Demand	Largely unchanged	Largely unchanged	Largely unchanged
Regional Supply	Reports of shortages as a result of drought and political unrest in Zimbabwe	Shortages as a result of poor harvests	Crop prospects looking better in certain countries
Regional Demand	Reports of extensive demand requirements in the upcoming season as a result of crop failures and political unrest	Continued reports of extensive demand requirements	Realization that regional demand was probably exaggerated and that “aid” maize had taken the place of potential commercial exports
International prices	Largely unchanged, Ranged between 200 and 205 c/bushel	Increased from around 200 to 240c/bushel	Largely unchanged in the region of 240c/bushel
Exchange Rate	Rand weakened significantly to the US\$ from 8.00 to 12.60 (in Dec) and then strengthened to 11.60	Rand strengthened from 11.50 to 9.10, but most media reports suggested the strengthening would be short-lived	Rand strengthened significantly from 9.10 to 7.20

It must also be noted that a market does not only trade on fundamental factors, but on perceptions and sometimes emotions. The situations during the specific time periods, as indicated above, created an atmosphere in which participants in the market took decisions which could easily have been motivated by the perceptions of those fundamental factors pertaining in the market.

Box 1 (continued): Specific questions

1. Do the rules of trading remain the same year in, year out? What is the role of position limits on speculators?

Answer

The answer to this question depends on what is meant and understood as “rules of trading”. If rules of trading mean willing buyer, willing seller and how the market works fundamentally, the answer is no. However, any market is dynamic and the exchange will modify the contracts and specifications to reflect what transpires on the underlying market with the aim of making the market more efficient. To this end, contract sizes can change, daily price limits can change, product specifications can change, margin requirements can change and if necessary, limits can be put in place. Position limits are used by certain exchanges primarily to ensure that no one participant “corners” the market with a view to squeeze the market (price) in a certain direction. Commodity exchanges generally use a system of subjective limits (whereby the exchange decides on limits for different participants) or a system of objective limits (whereby specific limits are in force across the market.) The JSE has approved the introduction of specific position limits for speculators in principle and will be introducing it shortly. It should be noted that a broking member or a clearing member of the exchange can introduce limits or raise margins for a particular client at any time should there be a need to manage risk.

2. Some similar futures exchange facilities worldwide have many other checks and balances to minimise abuse of the system, many of which are not applied in South Africa. For example: Why are false reports (like the export order of a million tonnes which came from international trading houses) not classified as manipulation.

Answer

The statement that “similar futures exchange worldwide have many other checks and balances so as to minimise abuse of the system, many of which are not applied in South Africa” is very broad and needs to be clarified. As regards the example noted, there is no doubt that decisions to buy and sell (and hence price impacting decisions) are influenced by information relating to the fundamental factors indicated above. The very fact that the overwhelming opinion among most economists was that the Rand would remain weak led to maize prices remaining high – can this be construed as manipulation? The overstating of food needs in the region impacted on the price of maize in South Africa – another case of manipulation? Certainly deliberate reports by market participants who would benefit from the price movement directly related to such reports could be construed as manipulation and possibly insider trading, but this could be difficult to prove. Perhaps the Insider Trading Directorate of the Financial Services Board could be approached in this regard. The Agricultural Products Division of the JSE Securities Exchange is not aware of the actual incident mentioned as an example in the question.

3. Why is there no central register of commodities in storage to guard against hoarding or any other form of market manipulation? The related question is – do you think traders use grain in storage to manipulate the market?

Answer

The JSE Securities Exchange cannot answer the question as to why no central register of commodities in storage exists. This is not an exchange issue as such and should perhaps be addressed by the National Department of Agriculture. SAGIS does register stocks as a global figure, but does not break this down to individual holdings. As to whether the JSE thinks that traders use grain in storage to manipulate the market, obviously “cornering” of a market takes place when a participant holds both large physical stocks and has an extensive long position on the derivatives market. As indicated above, The Agricultural Products Division of the JSE will be introducing position limits to limit the possibility of cornering the market from the exchange side (this does not cover physical stocks.)

It is certainly not the view of the exchange that the high maize prices experienced during the latter part of 2001 and during 2002 were the result of traders using grain in storage to manipulate the market, but rather the direct consequence of fundamental factors prevailing in the market.

4. What safeguards/corrections does the JSE/SAFEX believe are necessary, why and how would they be applied, through legislation/policy review, etc. How urgent are they?

Answer

The introduction of an operational system of position limits for speculators on agricultural commodity markets should be introduced (and will be) shortly by the JSE Securities Exchange. Obviously, a system whereby intentionally misleading reports can be dealt with should be looked into. Perfect markets do not exist and information will never be 100% accurate or 100% available, particularly as regards the future and derivative markets - markets must be allowed to work. Even with identical information, different people can have different interpretations thereof. The drive towards better and greater information should be supported, but on the way, caution should be taken to release information that is not 100% correct.

The correct understanding and use of a commodity derivatives market is hugely beneficial to a country’s economy. It provides the agricultural sector with a transparent price determination mechanism and an efficient price risk management facility on an economic basis. Price intervention by the state to achieve similar objectives is hugely costly and can easily create political difficulties. The National Department of Agriculture should be actively involved in educational and training campaigns to ensure a better and wider understanding of the operation of agricultural derivative markets.

Box 2: An extract from the written response from one SAFEX trader

“There are essentially two points of departure when drafting a response to the request for submissions. One is to comment on the issues / questions from the perspective of each being a question simply asked to elicit a response and gain insight into the workings of the market. The other is a background which I do believe is relevant in this case, being that this is somewhat of a fishing expedition in the hope that a party (be it a market participant or an exchange member) will, or will not, be found holding a “smoking gun”, enabling much of the blame for spiralling food price inflation to be laid before the door of an identified, or identifiable party, or parties.

I will to some extent comment from these perspectives separately as each has some value. Certainly there is certain activity that possibly resulted in **short term** price moves, which would otherwise not have resulted – but whether or not these moves were not justifiable is another question altogether. Ultimately the market both dictates and indicates whether a price move is justifiable and sustainable.

To a point the rallies of late 2001 / early 2002 were justifiable – after all the market continued to fuel the move. At a point, however the market move became unsustainable and the market “fell of its own weight” so to speak.

As with any “bubble” (boom or bust type activity) as evidenced throughout market histories (The South Sea Bubble, Tulip mania and even the Tech Stock Boom), moves become exaggerated as the market moves too far. Euphoria or gloom (greed or fear) sees exaggerated moves based on human emotion, which determines how far prices move. This may not be what a purist fundamentalist would be hoping to hear, but it is my firm view that price action is primarily a function of the emotional response of people (market participants, or representatives and decision makers working at market participants). Human involvement is the only constant factor of markets and is therefore the only determinable factor – one is assured of human nature, always. Accordingly, prices will always overshoot to both the upside and the downside.

Market activity is the end result of all factors influencing all market participants and their views at that time, such factors acting in concert to translate to certain price action / price levels. Accordingly, it is important to realise that any attempt to single out individual factors as the “cause” of a specific price move is in reality an exercise in futility. Various factors may have contrary effects and the price is a function of all of these factors. Nevertheless, and for fear of creating the impression that I view this information gathering exercise of the FPMC as “futile”, I believe that this process is necessary and desirable, even if only to confirm what many actively involved in this market have known all along. It is necessary to determine that markets will run their course – and that it is necessary and desirable to permit the operation of free markets to achieve this. To realise also that the benefits involved in such activity are in balance with the negatives and in fact outweigh them.

The very existence of a market assumes that there are participants with opposing views – if all participants at any time expect prices to increase there will be no sellers and hence no trade, and similarly if a decline is expected, there will be no buyers. It is the opposing views that make trade possible. I will embellish upon this later.

It should also be realised that commodity markets are notoriously volatile and prone to extreme moves. This is readily verified by an examination of the international grain exchanges. That being said there are certain factors worthy of mentioning although an objective quantification of the effect of these factors on prices may be impossible. Rather there should be a realisation of the fact that these factors **MAY** have had an effect on prices and, **IF** deemed appropriate, regulation or action with regards thereto becomes possible, although the benefits of such regulation and their implications as a whole would require careful consideration. I will not delve deeper into this aspect herein.

The Food Pricing Monitoring Committee should not - it is respectfully submitted – be too concerned with the exact effect of each market factor historically, but rather in ensuring that market efficiency is not compromised by certain structural, or market issues and that potential for undesirable practices by market participants is avoided. **It should also be considered that regulations already exist to limit and control the behaviour of members and market participants”**

1.3 Supply and Demand ‘Fundamentals’ and the SAFEX Market

During interviews, a lot of use was made of the term ‘fundamentals’ with many traders indicating that they do not expect any foul play and that the market reacted according to the ‘fundamentals’. They were clearly in the one camp while other traders were in the other camp suspecting that the large and shrewd trader with strong financial backing cornered the market and used the fear and inexperience of the market participants to create a ‘buffalo run’ up, as well as down. For the sake of clarity, the section that follows provides a description of supply and demand fundamentals and their sources of information as presented by the interviewees and interpreted by the committee.

Domestic Demand

The volume of domestic demand for white maize is understood by all market participants to be relatively level from year to year. Previously it was thought that if grain prices broke above approximately R1000 per tonne consumers would switch to yellow maize. This assumption proved wrong as consumers continued to buy white maize even though it was supplied to them at higher prices.

Despite a substantial price differential between SAFEX yellow and white maize prices in South Africa at the time, the ‘market’ does not appear to have made yellow maize meal or 10% blends of yellow and white available in a sufficient quantity to test the assumption that consumers are only buy white maize despite an increasing price. Previous experience with blends of yellow and white maize sold by larger millers during the 1991/1992 drought seems to have created the fear that supplying less than 100% white maize meal would result in a loss of brand-based market share.

This brings the debate about the reliability of import and export parity figures into closer focus, since the tariff for white maize and most import parity figures are calculated on the basis of a yellow maize price series reported on the Chicago Board of Trade. No similar price series exists for white maize and market information on the international white maize market and specifically the premium on white maize is dominated by one company in the US, which has close ties to some trading houses based in South Africa.

It is therefore conceivable that graphs could show SAFEX spot prices rising above the import parity price of yellow maize when there is a \$20/30 premium for white maize. It is also conceivable that SAFEX prices could rise above import parity for short time-periods because of time lags in actualising import orders from distant markets.

Regional Demand

International trading houses estimated that demand volumes in the region were grossly overstated well before December 2002. Their suggestion is that anybody who knew anything about the process of international aid would have assumed that the actual aid demand was much less than the volume reported by international aid agencies (for example some applied a 50% rule of thumb). As soon as orders for

regional maize began in May 2002, it was clear that regional demand was for the cheapest maize regardless of its colour (see Box 3 below).

Domestic Supply

Some concerns were expressed during interviews about the uneven ability to estimate the maize crop accurately because of uneven access to information. This applied specifically to the agricultural insurance industry and the agricultural input distributors, who mostly also advance loans and keep detailed GIS records about clients' farms. Reference was also made to companies involved in the supply of maize seed. Many of those interviewed felt that the National Crop Estimates Committee (NCEC) was not investing enough to make reliable official estimates possible.

BOX 3: "HOW WILL THE MAIZE GAP BE FILLED?"

Source: USAID Famine Early Warning System Network

Date: 17 May 2002

While maize production in South Africa is expected to increase by some 17% from last year, opening maize stocks this year are less than one-third of last year's level. Estimates of export potential this season vary, but are likely to be in the vicinity of one million MT for maize. Approximately half of this amount is normally earmarked for Botswana, Namibia, Lesotho and Swaziland, leaving perhaps half a million MT for other countries in the region. Securing price and availability for South Africa maize is possible using options on the South African Futures Exchange.

South Africa however, is not the only supplier of maize to SADC countries. East Africa is reporting availability of 180-220,000MT of white maize, which can be delivered to the SADC region competitively. Zimbabwe reports recent purchases of 30,000MT of white maize from Kenya, with a landed cost in Harare slightly below the landed cost of maize imports from South Africa. Uganda has recently provided Zambia with some 30,000MT of maize, although delivery rates have been slow.

Outside of Africa, the United States could have as much as one million metric tonnes of white maize to export this year. As the US planting season begins, prices are expected to remain low. At current parities, white maize from the US is competitively priced for the SADC region. South African traders have already begun importing some 80,000MT of US white maize, while there are reports that Swaziland and Botswana may also be importing maize directly from the US.

Elsewhere, maize prices in Argentina, where harvesting is underway, are also low despite a recent increase in export taxes to 20%, which could lead to higher prices over the short-term as farmers hold back supplies. South Africa is expected to import 280,000MT of yellow maize from Brazil and Argentina this season, while Zimbabwe has reportedly placed an order for an additional 20,000MT from Brazil. Zimbabwe has also reported purchasing 25,000MT of yellow maize from China, where prices are even lower than in the US."

The reasons for the 1 million tonnes official 'underestimate' by the NCEC were not established during the interviews, and neither was the actual impact on prices when the news of a revised crop size became available via SAGIS in August / October 2002.⁶

⁶ The NCEC admitted to its error in 2003 as follows: "The committee (NCEC) last week acknowledged it had underestimated last season's maize crop by 1-million tons. The size of the crop for the 2001-02 season was 9,7-million tons compared to the committee's prediction of 8,7-million tons." <http://www.businessday.co.za/bday/content/direct/1,3523,1326874-6079-0,00.html>

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Regional Supply

Crop estimates in the region are far more unreliable than crop estimates in South Africa.

International supply

Well before December 2002, traders involved in supplying to the region appeared to be more aware of the extent to which regional demand was being filled by overseas imports. Despite this information being freely available in May 2002, it was not widely communicated in the South African press. Some large imports also went unnoticed by those not involved in monitoring activity at South African and regional ports.

News released in May 2002 that 1 million tonnes of US white maize, normally destined for Mexico, was to be diverted to Southern Africa does not appear to have had the impact on SAFEX prices in South Africa that it should have had (also see Box 3).

Some traders argued that GMO imports of white maize were not possible in early 2003. This view on import constraint, however, is not borne out by SAGIS information or statements available at the time neither by the records of GMO permits granted during February 2002 (see Box 4 and 5). It has to be acknowledged, however, that, generally, there is a time lag between the time when import permits are granted and when they are implemented.

Summary of supply and demand from the 2000/2001 season onwards

The 2000/2001 marketing year saw a large harvest for white maize with producer prices close to export parity and with a large carry-over of stock into the 2001/2002 season. Prior to planting, producer prices were about R700 per tonne, but when it came to the actual harvest, producer prices went as low as R500 per tone. Maize farmers were not pleased by this development because they argued that this was below their costs of production.

Upon entering the 2001/2002 marketing year, maize farmers were deliberately more conservative in their maize plantings. In their organised attempts to avoid a repeat of the previous year's low producer prices and in combination with early warnings of inclement weather in parts of the country, the crop that was eventually harvested in 2001/2002 was significantly smaller (4.6 million tonnes).

In addition to reduced plantings as a result of low prices on SAFEX, the perception was also created that South Africa might export a large quantity (1 million tonnes) of white maize to the SADC countries over and above the normal export volume of about 800 000 tonnes. This perception played havoc with the domestic white maize price on the SA Futures Exchange and pushed prices to import parity in November 2001. Rapid exchange rate depreciation followed shortly thereafter. This encouraged millers to make bookings for white maize imports overseas as early as December 2001.

Supply and demand as it was interpreted from May 2002 onwards, centres on the fact that SAFEX did not respond to available information that exports to the region would be satisfied by cheaper maize from the US, China and Eastern Africa, and that domestic production levels were higher than initially projected in the media by Grain South Africa.

Box 4: South Africa imports US white maize, maybe more

SOURCE: Reuters, by Allan Seccombe

DATE: February 13, 2002 Ref: <http://www.gene.ch/genet/2002/Feb/msg00022.html>

South Africa traditionally imported maize from Argentina and the U.S., but the presence of genetically modified organisms (GMOs) in maize from those two countries put a stop to shipments, AFMA's Hansie Bekker said. The NDA should speed up the approval of applications to import GM maize to help push down local prices, he said. An application was submitted in 1999 to the NDA to import BT11 GM maize from Argentina, but approval had not yet been received.

JOHANNESBURG - South Africa will receive a shipment of about 30,000 tonnes of white maize from the United States in March as local buyers look for cheaper grain, stabilising maize meal price hikes, a trader said on Wednesday. "The deal is done. One cargo has been done of 25,000 to 30,000 tonnes of white maize from the States. It should arrive here in March," said a trader who declined to be named. "There may be one or two more cargoes but it depends on what Safex (South African Futures Exchange) prices do," the trader told Reuters.

Coastal millers buying U.S. white maize would save about 150-200 Rand a tonne. "If a lot of mills exporting flour claim a rebate on import duty then inland millers could also save that kind of money," he said. According to the South Africa Grain Information Service website, the current maize import tariff is 137.40 Rand a tonne.

The price of maize meal has been pushed sharply higher by soaring maize prices and the imports would hopefully stabilise price increases passed onto consumers, said Hilton Zunckel, the assistant executive director at the National Chamber of Millers. "Maize supplies are fairly tight and we will cross into the new season (marketing year) with very limited stock," Zunckel told Reuters. "Local maize prices are high and we are following the rules of the market and going where prices are lower."

U.S. BEST OPTION

Millers had looked closer to home for maize, he said, but the U.S. offered the best option. Kenya was reported to have white maize for export, but the logistics to bring it to harbours were too expensive, Zunckel said. Mexico was also considered, but there was doubt whether maize export permits would be granted by authorities, who were trying to balance their domestic supply and demand, he added. South Africa's National Department of Agriculture (NDA) was approached to get clearance for the import of white U.S. maize. White maize is a human staple for millions of South Africans. Yellow maize is predominantly used for animal feed.

The trader said he was confident the U.S. product would not contravene South Africa's tight controls on imports of genetically modified (GM) commodities. "The white maize from the U.S. is GM free. It is not a GM product. The product will be tested to be less than one percent GM. Preliminary tests show the product to be a lot less than one percent," he added.

South African maize prices have soared because of a perceived shortage going into the new marketing year with uncomfortably low stocks after heavy demand for the country's maize from southern African states where crops have failed because of adverse weather and political turmoil. Near-month white maize futures contracts spiked above 2,000 Rand (\$174.2) a tonne at the start of February, but have come down to around 1,860 Rand a tonne. South Africa produced 7.2 million tonnes of maize for the 2001/02 (May to April) marketing year compared to a bumper 10 million tonnes before. The latest crop planting data indicates South Africa may produce around eight million tonnes of maize in the current growing season.

The Animal Feed Manufacturers Association (AFMA) has said its members are also considering importing yellow maize because of high domestic prices. South Africa traditionally imported maize from Argentina and the U.S., but the presence of genetically modified organisms (GMOs) in maize from those two countries put a stop to shipments, AFMA's Hansie Bekker said. The NDA should speed up the approval of applications to import GM maize to help push down local prices, he said. An application was submitted in 1999 to the NDA to import BT11 GM maize from Argentina, but approval had not yet been received.

Box 5: GMO maize commodity import permitted in February 2002								
<i>Permit Number</i>	<i>Organism</i>	<i>Trait</i>	<i>Gene</i>	<i>Marker Gene</i>	<i>Origin</i>	<i>Volume</i>	<i>Purpose</i>	<i>Status</i>
Cargill-003	MaizeMON810, Insect & Cry1AbPat NptII T25, Bt11, Herb R				Argentina	200 000MT	Commodity import	Import permit issued
Seaboard-006	Maize< GMOs	1% -	-	-	USA	959 4 18MT	Commodity import	Import permit issued
L Dreyfus-003	Maize< GMOs	1% -	-	-	USA	300 000MT	Commodity import	Import permit issued
L Dreyfus-004	MaizeMON810, Insect & Cry1AbPat NptII T25, Bt11, Herb R				Argentina	600 000MT	Commodity import	Import permit issued

Imports of maize into South do appear to have had some impact on prices when a total of 321000 tons were delivered between April 2002 and October 2002. Some traders argue that prices remained high thereafter because they were still trading with a domestic shortage mindset on the back of dry weather during planting time (October – December) and comparatively low carry-over stocks into 2002/2003. Not all traders share this view. Some argue that SAFEX prices did not accurately reflect underlying supply and demand fundamentals after May 2002 because of the influence of one large trading house.

Table 1.1: Crop estimates compared to SAGIS supply and demand information

	<i>May 2001 to April 2002</i>			<i>May 2002 to April 2003</i>		
	White	Yellow	Both	White	Yellow	Both
First crop estimate (20 February)	3,719	2,816	6,535	5,343	3,836	9,178
Final crop estimate (20 August)	4,299	3,184	7,483	5,311	3,787	9,099
(a) Opening stock	1,273	842	2,115	559	643	1,202
(b) Acquisition	4,683	3,648	8,331	5,850	4,385	10,235
Deliveries directly from farms	4,636	3,300	7,936	5,576	3,734	9,310
Imports destined for RSA	47	348	395	274	651	925
(c) Utilisation	4,430	3,260	7,690	3,863	3,627	7,490
Human consumption	3,630	247	3,877	3,459	249	3,708
Animal feed/Industrial	446	2,700	3,146	105	3,050	3,155
(d) RSA Exports	812	523	1,335	817	371	1,188
(g) Stock stored at:	559	643	1,202	1,718	992	2,710
Storers, traders	453	524	977	1,555	854	2,409
Processors	106	119	225	163	138	301

Source: SAGIS and National Crop Estimate Committee

Notes: Crop estimates include figures for 'developing agriculture' in all cases except 20 February 2001

1.4 Potential problems regarding price formation on SAFEX

Interpreting the evidence and comments from the various traders it seems to the Committee that the SAFEX maize price formation system could, in the abstract, combine the following problems:

Analysis of selected food value chains

SAFEX potentially exaggerates price fluctuations (prices could potentially overshoot)

- ⚡ In an environment where a credible and reliable public information service on the weather as well as maize supply and demand do not exist, it is possible that market participants can:
 - exaggerate prices in a certain direction by releasing biased or misleading information;
 - exaggerate prices in a particular direction by ignoring or underemphasizing information.

- ⚡ Regardless of whether there is a credible and reliable public information service on maize supply and demand and on the weather, there may still exist serious information asymmetries between large market participants involved in input supply (seeds, chemicals and loans)/grain trading (import/export orders) and others who are not in a position to collect detailed information from their maize producing clients or who influence their hedging behaviour through loan repayment conditions.

- ⚡ In an environment where there are no restrictions on the size of trading positions, it may be possible for larger traders to ‘corner’ the SAFEX market and lead/herd it in a particular direction by making use of access to massive funds (in particular pension funds and overseas hedge funds).

- ⚡ Trading professionals or clients of traders might exaggerate prices through being greedy or possessing insufficient skills/knowledge.

- ⚡ In an environment where SAFEX does not spend sufficient resources on monitoring and enforcing its rules, it is possible for trading professionals or their clients to exaggerate prices by flouting SAFEX rules.

Exaggerating prices on SAFEX has knock-on effects

SAFEX maize futures and options may contribute to financial and currency market volatility.⁷

Equitable participation on the SAFEX market could be problematic

- ⚡ It could create entry barriers for small-scale producers or millers of maize, thereby promoting concentration of ownership in the medium to long-term.

- ⚡ In an environment where activities on the SAFEX market are not properly monitored and some self-regulation is not implemented in addition to the normal surveillance procedures of the JSE not being implemented, problems of fair adjudication could occur when a member of SAFEX lodges a complaint against another member.

⁷ Perhaps see Edward Chancellor – ‘*Mania, panics and crashes*’ where the collapse of equity markets in 1987 was linked to futures trading, or Roger Lowenstein – ‘*When genius fails*’ on liquidity gaps or Edwards – *Financial Analysts Journal* for info on futures markets and stock market volatility.

Box 6: Why could prices on SAFEX overshoot or fluctuations be exaggerated? A trader's perspective

Price overshooting is usually created when arbitrage is not possible – i.e. if trade is constrained. Factors, which inhibit the functioning of the principles of arbitrage, could, theoretically, contribute to unusual, extreme, or extraordinary price moves – either up or down. Structural issues in both government regulation and SAFEX rules **MAY** have had the effect of limiting arbitrage opportunities during the price run of early 2002, with the former (government regulation) more so than the latter.

During this period, domestic prices on the SAFEX derivatives exchange traded above theoretical import parity prices and accordingly the local grain prices in the physical market (as an alternative to the prices on the board) followed. This was because imports were not feasible due to the non-approval of the importation of genetically modified grain (this immediately moves one to GM free markets which generally carry a premium). Levels of BT11 “contamination” permitted, together with the certification required for imported corn was originally a limiting factor and saw many argue that importation of white corn would never be possible.

In theory, arbitrage opportunities mean that domestic consumers (or traders) who are long of physical stock will sell this grain into the domestic (or another market) and replace these stocks with cheaper grain from elsewhere. The above situation hampered the free application of the principles of arbitrage by market participants who were unable to import cheaper grain, and sell domestic grain, thereby forcing domestic prices down. Arbitrage opportunities would therefore operate (and eventually did so) via the physical grains market irrespective of the SAFEX Rules.

The SAFEX rules (recently revised with effect from the September 2003 Futures Contract) initially permitted delivery of only 100 mt (or multiples thereof) of grain, as reflected on a silo receipt issued by a recognised silo-operator in respect of stocks of **AFRICAN ORIGIN held at a SAFEX registered silo** on a SAFEX short position. This meant that utilisation of the principle of arbitrage in this regard (i.e. on SAFEX positions) was also removed – i.e. you could not for example purchase US white corn and deliver this on a SAFEX position.

In fact, even with the current revision of the SAFEX Rules one would in all probability struggle to deliver US corn (particularly white corn) to a SAFEX registered silo and have the silo operator segregate this stock as required (i.e. separate storage from other origins). Limited storage capacity and the very limited demand for such segregation would in theory make such storage prohibitively expensive to operate and detrimental to capacity. **In theory, however, arbitrage of international origins against local origins in the SAFEX market is now possible** and larger market participants with storage capacity, such as larger silo operators (e.g. Senwes, Afgri, etc.), are likely to make use of these opportunities in the future.

Another factor, which has an effect on price moves, and always will, is a given in derivatives markets. The gearing present in derivative instruments tends to result in an “overshoot” in price activity. Unlike markets where the instrument / subject matter is purchased and paid for in full, the purchaser of a March 2002 white maize futures contract during March 2002 would have obtained exposure to a commodity valued at as much as R 2000 / mt, by simply putting up a margin of R 100 / mt. Accordingly, positions **MAY** be taken far in excess of the financial means of the party compared to the situation were the party required to pay for the commodity in full. As a result, the market is capable of moving below the full value of the client's monetary investment (without the price of the commodity in the case of a purchase, for example, going below zero).

SAFEX prices are not an accurate reflection of average grain prices

SAFEX prices may give a misleading picture of actual average maize grain prices because of the existence of forward contracts entered into between larger farmers and millers. This is substantiated by millers' comments that their raw material prices could be substantially below the SAFEX maize spot price (~R200).

1.5 Debating possible recommendations

The following options for improving the food security situation were discussed with traders but they require more detailed consideration (see the final part of the Report):

Strategic grain reserves

Some traders were in favour of a virtual strategic grain reserve since it would increase their turnover and profitability as trading houses. Several traders expressed the concern whether a virtual grain reserve would have a meaningful impact on SAFEX prices because of the position limits.

In light of the concerns about the costs of implementing a physical strategic grain reserve and the difficulties of administering it, it may be more strategic to introduce a limit on the volume of maize held in storage. However, this option may involve problems with under-reporting or a lack of reporting.

Changing SAFEX rules

There was a consensus on the need for SAFEX to introduce position limits. However, there appeared to be less comfort with SAFEX's ability/willingness to monitor its own rules at a decentralised level. Thus, there may be a need for an independent body such as the JSE surveillance unit to monitor SAFEX traders more actively, and for a mechanism to provide for independent adjudication of complaints.

In this regard, the committee is planning to arrange a joint meeting with the JSE Executive, the SAFEX Agricultural Products Division of SAFEX and the Financial Services Board concerning alleged malpractices by traders

Improving information and access to information

There are several areas where improvements in information may result in a lower volatility on SAFEX. Some information strategies, such as reporting on import and export orders are already being implemented by SAGIS. Others information needs, however, for example, relating to the weather and rainfall patterns are not being addressed.

One way to prevent weather predictions from Grain South Africa or other organisations from unduly influencing prices in the future would be to improve official regular reporting on **actual** rainfall in the grain producing areas. It is also important to ensure that weather reports specifically tailored to maize production are

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produced independently and are subject to greater scrutiny and technical criticism from a range of independent experts. At present, there is no reliable system to adjust rainfall predictions by using actual rainfall and soil moisture information.

Given the confusion over who actually **owns** maize in storage, it is also necessary to require SAGIS to report information at a much more disaggregated level than it does at present.

As part of the PPI and CPI basket of prices, accurate millers' raw material costs (as opposed to wholesale maize-meal prices) and final retail/wholesale selling prices must also be collected by StatsSA.

Expanding demand side support

Several traders were in favour of Government introducing a system of food stamps as a way to subsidise 'the poor' and in so doing address the impact of high food prices..

1.6 Concluding remarks

Although this investigation has highlighted some specific trader behaviour that potentially could have caused SAFEX prices to overshoot, it was not possible and probably never will be possible to link specific price trends to specific actions by individual companies in the market. There was enough evidence, however, that points towards the market or the market sentiment being manipulated, which caused the market to overshoot or to overreact. It is, however, also likely that the initial underestimation of the June 2002 harvest, and the various statements by industry leaders about a negative outlook for the coming 2002/2003 season created a negative market sentiment. Apart from this, there was much disinformation about the extent of imports, exports and the situation in Zimbabwe and rest of the SADC region. Clearly, the conditions were such that the 'stage' was literally set for somebody to 'orchestrate' the direction of the market and cause what somebody called a 'buffalo run'.

The Committee is however satisfied that the broader concern by society, Government, in conjunction with the attention given by the Committee as well as the Financial Services Board (FSB) did convince the JSE to introduce new rules to prevent the possibility that traders hoard the market. The fines and suspension issued by the JSE, and the investigation by the FSB is an indication that they are serious about dealing with traders behaving badly, which could result in 'unjust' price increases.

Despite these reported irregularities, the Committee is of the opinion that lack of proper market information played a much greater role in creating the situation where manipulation was possible. To allow the proper functioning of this market, this aspect needs to be addressed. The Committee is also satisfied that there is sufficient evidence that much of the producer price trends accurately reflected the market fundamentals for most of the period under review, which suggests that, apart from certain periods, manipulation had minimal effect on the broader price trends. The Committee is also satisfied that the necessary regulations are now in place to prevent abuse of the futures market.