



Trade and Poverty Project  
Southern Africa Labour and Development Research Unit  
University of Cape Town

---

# A Trade and Poverty Case Study: The Effects of Trade Liberalization on the Wheat-Flour-Bread Value Chain in South Africa

By  
Stephen Hobson

2006

---

UNIVERSITY OF CAPE TOWN



**USAID**  
FROM THE AMERICAN PEOPLE



**the dti**

Department:  
Trade and Industry  
REPUBLIC OF SOUTH AFRICA

**DFID** Department for  
International  
Development

**Disclaimer**

Funding for this project was provided by the UK Department for International Development (through RTFP and the Trade and Industry Policy Strategies), the Department of Trade and Industry and USAID.

The views expressed in these papers do not necessarily reflect the views of the relevant funding agencies.

# A TRADE AND POVERTY CASE STUDY: THE EFFECTS OF TRADE LIBERALIZATION ON THE WHEAT- FLOUR-BREAD VALUE CHAIN IN SOUTH AFRICA

By: Stephen Hobson<sup>1</sup>

## Abstract

*This paper examines the impact of trade liberalization and deregulation on the wheat-flour-bread value chain and specifically the impact on the industry and poverty via three channels namely: price transmission; enterprises (employment and profits); and the governments fiscal position. Protection is currently based on a small 2% ad valorem tariff. The industry is very sensitive to exchange rates and international prices given that South Africa is a net importer of wheat. The impact has been mixed for producers (commercial and emerging). While substantial employment losses occurred in the primary wheat producing areas, gains were experienced elsewhere in the value chain. Prices for both wheat and bread have been decreasing in real terms. This is significant as bread forms an increasingly important component in the poor consumers' basket. Price transmission has generally been efficient and consumers have benefited from the liberalization process in the current environment of subsidized world prices and an appreciating Rand. In terms of lessons learnt it is argued that similar benefits to consumers could have been achieved had the deregulation process been implemented at a more gradual pace with more attention being paid to providing safety nets and mechanism to enable the disadvantaged parties to adjust to the new realities.*

## 1. Introduction and Methodology

This sector specific case study forms part of the broader Trade and Poverty Project which focuses on the net impact of trade reforms and specifically the fact that the expected benefits of trade reform do not accrue automatically or equally to all households. In this regard it is important to have a case study focusing on a basic food product such as wheat, which in the form of bread, is consumed by the poor.

A substantial amount of relevant and up to date information is available on the wheat value chain. The focus of the study will therefore be to interpret the literature and incorporate the existing information and findings into the trade and poverty framework.

This paper first provides a brief overview of the international and southern African wheat situation and then examines the role and institutional structure of the wheat industry in the South African. The wheat-flour-bread value chain is then set out. The stakeholders include wheat producers (commercial and emerging); the millers; the bakers; the retailers and the consumers. The changes in statutory control and trade arrangements and the level of support to the South African industry are then examined.

The impact of trade liberalization and deregulation on the wheat to bread value chain is examined via the McCulloch, Winters and Cirera (2001) framework which identifies three channels of influence through which trade liberalization affects poverty namely:

- Price transmission, as trade liberalization affects the prices of goods consumed and produced by the poor;

---

<sup>1</sup> Business Advisor and Agricultural Economist based in Stellenbosch. Case study prepared for the Trade and Poverty project and supported by DFID, the dti and USAID.



- Enterprises, as trade liberalization affects households through its impact on employment, wages and profits; and
- Taxes and state spending, as trade liberalization affects the government's fiscal position.

The paper finally draws appropriate conclusions and assesses the net effect of trade liberalization and deregulation in the wheat-flour-bread value chain.

## 2. International and Southern African Perspective

The major world wheat producing countries/regions are the USA, Canada, the EU, India, the former USSR, Australia, Eastern Europe, Argentina, and China, with some 60% produced in four countries, namely China (18,9%), the EU (17,7%), the USA (11,8%) and India (11,2%).

Although wheat is grown in a number of SADC countries, it is only South Africa and Zimbabwe that grow wheat on a meaningful scale. The SADC region is therefore a net importer of wheat. Erasmus & Flatters (2003) provide a comprehensive overview on the effect of the proposed "rules of origin" and other barriers to trade in wheat products in the SADC region.

From an international perspective it is now common cause that developing countries in general, and their agricultural sectors specifically, face a very unfair and hostile international trade regime. Most developed countries employ a combination of high agricultural import tariffs, enormous export subsidies and other support to their agricultural sectors. Domestic agricultural support in OECD countries amounts to more than US\$300 billion per year. The EU and USA are responsible for 84% and 13% respectively of the total OECD wheat subsidy (EWG, 2003).

Producer support estimates (PSEs) are calculated annually by the OECD and are indicators of the annual monetary value paid to producers by consumers and taxpayers, measured at the farm gate level. The table below shows the different components of PSEs for Australia, Canada, the EU and the USA on a per hectare basis for wheat. The figures for the EU and USA are for 2003 with Australia and Canada reflecting 2002 and 2004 figures respectively. While South Africa had a PSE of 14% in 1994 this decreased to almost zero from 1997 to 2002 as a result of the variable import levy and is now at around 2% based on the 2% ad valorem duty.

**Table 1: Analysis of government support (R/ha) for wheat**

	AUS	CAN	EU	USA
Producer Support Estimate (PSE)				
A. Market price support	0	105	114	0
B. Payments based on output	0	11	0	48
C. Payments based on area planted/animal numbers	1	75	4219	244
D. Payments based on historical entitlements	0	37	16	405
E. Payments based on input use	26	30	321	95
F. Payments based on input constraints	0	0	473	40
G. Payments based on overall farming income	9	69	0	33
H. Miscellaneous payments	0	16	-5	0
<b>Total PSE (R/ha)</b>	<b>36</b>	<b>342</b>	<b>5136</b>	<b>867</b>

Source: BFAP, 2005

The above table clearly shows the wide variety of support mechanisms and the massive support in the EU at R 5136 per hectare. The report also notes that all of the countries for which data was available had negative net margins before government assistance was taken into account.

From the point of view of producers in developing countries such as South Africa the distortions in global trade result in them losing firstly export opportunities, secondly markets in other countries that are importing the subsidized products and thirdly, local market share. It is therefore clear that global trade distorting agricultural policies have artificially depressed world wheat prices. This prevents



producers in developing countries from competing with the highly subsidized imports. Specific studies on wheat indicate that the removal of export subsidies, domestic support and import tariffs would result in an increase in world prices of 9.8% (Elbehri & Leetmaa, 2002) to 14% (Vanzetti & Peters, 2003).

From the point of view of consumers however conventional economic theory shows that the above scenario should result in welfare benefits to a country if it is a net importer of the product (as South Africa is of wheat). The downside of such a strategy is that the importing country becomes increasingly dependent on the imported product with the resultant exposure to the negative balance of trade effects and changes in world prices.

An important outcome of the Uruguay Round was the commitment of developed countries to lower subsidies and import duties. The free trade agreements were meant to improve access to markets. Much of the above has not transpired and the agreements generally had the effect of improving access for non agricultural products but not for agricultural products (De Villiers, 2004).

### 3. Overview and Institutional Structure of the South African Wheat Industry

South Africa is a net importer of wheat and has a self sufficiency index of between 80% and 85%. This means that demand is often greater than supply and that the shortfall must be imported. Note that South Africa is however a net exporter of wheat flour (mainly within southern Africa). This may give rise to contradictory policy implications.

Wheat is a core staple food in South Africa and is the most important grain crop after maize. Wheat contributes around 15% of the gross value of field crops and its annual production value was R2 648 million in 2003 (Winter Cereal Trust, 2004). Wheat production has ranged from 1.5 million tons to 2.5 million tons over the past 10 years. Annual consumption is in the region of 2.5 million tons which is second only to white maize at around 4 million tons (De Villiers, 2004). National bread consumption is estimated at 2 800 million loaves per annum which translates into approximately 62 loaves per person per annum (Wheat Strategy, 2004).

It is well known that food accounts for a major portion of the expenditure of the poor and that grain, and more specifically wheat products, form an important component of their total food expenditure. Table 2 below provides a clear indication of the relative importance of food in the expenditure basket of the poor as well as the percentage spent on wheat related products.

**Table 2: Expenditure on Food & Wheat products, 2001**

Total annual expenditure (Rand)	As % of total expenditure				As % of food expenditure		
	Food	Grain	Brown & white bread	Cake & bread flour	Grain	Brown & white bread	Cake & bread flour
0-R22 828	58%	26%	5%	3%	44%	9%	5%
> R254 245	13%	1%	<1%	<1%	14%	5%	2%

Source: Data provided by Lawrence Edwards and calculated using the 2000 Income and Expenditure survey

The grain industry has access to a fairly extensive institutional support network. As a result of the deregulation of the agricultural sector in general, and specifically after the Wheat Board was abolished, several organizations took over the various functions that were formerly carried out by the Board. Note that these organizations have a wider mandate than only wheat. They include:

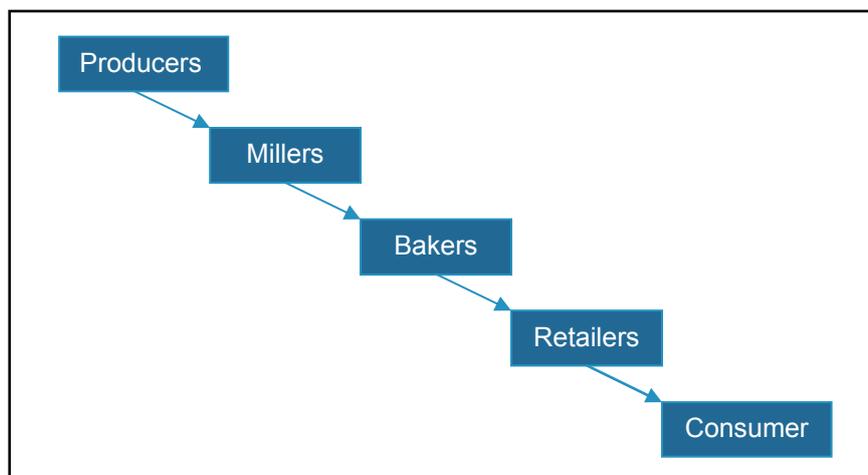
- The **Winter Cereal Trust**, which has the principal role of ensuring that scientific, technical and industrial research on winter cereals in South Africa is undertaken and financially supported. The Trust also has to ensure that a sound database for the Wheat Industry is kept in place, and has been charged with the responsibility to promote market growth for South African winter cereals and provide support to the Wheat Forum.



- The **Wheat Forum** is an avenue for communication between members of the industry and its stakeholders. It plays a consultative role to all the other industry service organizations, and deals with issues of common concern to the industry such as tariffs and levies for development.
- **South African Grain Information Service (SAGIS)** provides information on wheat, maize, oilseeds, and sorghum.
- **Southern African Grain Laboratory (SAGL)** is the official grain laboratory for the Wheat Industry. It undertakes laboratory analyses for the tri-annual flour survey of the National Chamber of Milling and the South African Chamber of Baking.
- **Grain South Africa (GSA)** provides information services to stakeholders about grain imports and exports, the local and international trading environment, tariffs, transport, crop estimates and other market information
- **Grain Silo Industry (GSI)** is the secretariat of the commercial grain silo owners. The philosophy of GSI is to store grains for all farmers regardless of size. The main function of GSI is to ensure that grains are stored safely and that the Code of Conduct for Silo owners is adhered to.
- The **Small Grain Institute (SGI)**, part of the Agricultural Research Council (ARC), undertakes research on all aspects of small grain production, including breeding of cultivars, soil testing and fertility monitoring and pest control.
- The **National Chamber of Milling (NCM)**, which is a not for gain trade association, representing the interest of the South African flour and maize milling industry. Its core business is white maize and wheat flour, but it is also involved in baking, pasta, wet milling, animal feeds and barley and sorghum malting. NCM promotes, encourages and assists its membership in the common interest of the milling industry in South Africa on issues related to policy, trade, global competitiveness, technical skills and information compilation, publication and dissemination.
- **South African Chamber of Baking (SACB)**, whose mission is to serve and promote all sectors of the baking industry, has a primary objective to provide quality bakery products at affordable prices so as to ensure long term growth and prosperity of the industry and its stakeholders.

#### 4. The Wheat-Flour-Bread Value Chain and Stakeholders

Wheat is mainly produced for human consumption in South Africa and there is therefore a fairly direct value chain from producer to consumer. There are a range of players such as input suppliers, silo's and the animal feeds industry that are involved in the value chain. For the purpose of this study the essence of the value chain runs from the producer to the millers to the bakers to the retail sector and on to the final consumers. This is shown below and then briefly discussed.





## 4.1. Producers (Wheat farmers)

### 4.1.1. Established commercial producers

For many years, the south-western parts of the Western Cape with its reliable winter rainfall, was the most important wheat producing area in South Africa. It is however far from the main market in Gauteng. The Free State has now overtaken the Western Cape as the major wheat producing area although it suffers from erratic summer rainfall. A greater variety of crops can also be produced in the summer rainfall area and other crops often substitute wheat based on the relative profitability. The Free State is to a large extent protected from imports by the transport costs of getting imported wheat to Gauteng. The Western Cape on the other hand is the most vulnerable to imported wheat. Wheat can be planted under dry land conditions or irrigated. It is important to note that wheat is usually only one of the activities on a farm and is often used in rotation with other crops. Policy changes impacting on wheat therefore only have a partial impact on the overall farm business.

The NAMC (2004) puts the number of commercial wheat farmers at between 5000 to 6000. The Winter Cereal Trust (2004) estimates the number at around 4000. Nonetheless the primary wheat industry provides employment opportunities to about 28 000 people (Wheat Steering Committee, 2003).

### 4.1.2. Emerging black producers

There are approximately 640 small, emerging and commercial black wheat farmers in South Africa. Although this constitutes almost 15% of wheat farmers, they account for only 3,6% of the wheat produced. While this number varies, research by the Winter Cereals Trust (2004) established that the number is declining due mainly to the lack of profitability of the industry and the fact that the current structure of the industry does not lend itself to production on a small scale.

**Table 3: The number of black wheat farmers in South Africa (2004)**

Region	Number of farmers	Avg. area planted (hectares)
Eastern Free State (Qwaqwa)	> 150	50 to 60 ha dryland
Vaalharts	3 Trusts (249 members)	23 to 120 ha irrigated
Marble Hall	201	1 to 5 ha irrigated
Groblersdal	30	5 to 7 ha irrigated
Western Cape	8	10 to 450 ha dry land
<b>Total</b>	<b>638</b>	<b>1 to 450 ha</b>

Source: Winter Cereal Trust, 2004

## 4.2. Milling industry

The milling industry converts wheat to flour for various baking purposes. The main products are cake flour, brown bread flour and white bread flour. Cake flour and white bread flour make up almost 70% of sales. On average imported wheat constitutes 23% of wheat milled for human consumption (SAGIS, 2003).

The milling industry employs approximately 3800 people and has a capital investment of around R30 billion. Surplus milling capacity is estimated at 460 000 tons (Meyer, 2005).

The milling industry is relatively concentrated and is essentially controlled by four milling companies whose approximate market share is as follows: Genfood (30%), Pioneer (27%), Tiger (20%) and Ruto (10%). The remaining 13% of the market is attributable to small millers (NAMC, 2004).

## 4.3. Baking industry

The baking industry includes wholesale (industrial) bakeries; independent stand alone bakeries; retail in store bakeries and “emerging” bakers using less than 1000kg of flour per week.



#### 4.4. Retailers

The retail market for wheat products is comprised of individual retail stores that sell wheat products directly to customers.

### 5. Changes in Statutory and Trade Arrangements

#### 5.1. Overview of historical statutory control and support

The South African agricultural sector experienced a long history of state intervention which was underpinned by the Marketing Acts of 1937 and 1968. Wheat was no different and the entire wheat value chain was highly controlled by government during the period 1936 to 1991. This included the fixing of prices; storage costs; transportation arrangements; registration of mills, bakeries and silo owners; as well as control over wheat flour and the wholesale and retail price of bread.

Under the single channel marketing scheme wheat farmers were guaranteed a fixed producer price at the beginning of the season irrespective of the transaction costs incurred in delivering the product. There were also strict quantitative controls on imports and exports via the Wheat board.

The 1980's saw a shift toward deregulation and market based pricing systems. This was underpinned by the GATT negotiations and the "Kassier report" on agricultural marketing policy in 1994. The milling and baking industries were deregulated in 1991 with the total value chain being deregulated by 1997. This included terminating the activities of the wheat board and abolishing price control for wheat. This constituted a radical change to the marketing system which in turn had a profound impact on the stakeholders in the industry. The net result is that the South African wheat market is currently one of the freest in the world and has very limited support.

**Table 4: The history and deregulation of the wheat to bread chain**

1935	Wheat industry control board established
1937	Wheat control scheme promulgated. Single channel fixed price system
1939	Introduction of the bread subsidy
1991	Termination of bread subsidy & price control on bread & flour
1995	Quantitative import control replaced with tariffs
1997	Wheat board abolished & single channel fixed price system revoked

Source: NAMC, 1999

#### 5.2. The variable import levy

The above quantitative restrictions were replaced by a system of tariffs which was effectively implemented during February 1998 and repealed in July 2005. The tariff was in the form of a variable import levy which was calculated according to a formula determined by the Board of Tariffs and Trade (BTT).

The variable import levy for **wheat** worked as follows. A reference price, which was tied to the international import price of wheat and which was high enough to protect the domestic price, was set. The levy then only became effective when the world price fell below the reference price. This had the effect of setting a floor price for wheat in South Africa. In practice this had little benefit for wheat producers as the South African domestic price was generally below that of equivalent imports before tariff.

In a similar fashion the import duty on **wheat flour** was set at 1.5 times the duty on wheat. This was to account for its higher value and to assist the milling industry to improve levels of competitiveness and efficiency in converting wheat to flour. The flour tariff also enabled the milling industry to compete



with subsidized flour exports into the neighbouring countries. (Meyer, 2004). It is important to note that the South Africa is a net exporter of wheat flour. The underlying rationale for protection is therefore different to wheat as South Africa is a net importer of wheat.

In theory the variable import levy was an improvement on the traditional tariffs and quotas as it did not protect price guarantees as such but rather provided protection when international oversupply forced prices below the 15 year average. The 2005 BFAP report however concluded that the variable import levy “is inefficient in that it serves neither the interest of producers, processors, or other participants in the trade, nor does it serve the interests of consumers. Furthermore, it does not remove uncertainty from the market, as it allows relatively large swings in the domestic price of wheat” (BFAP, 2005). It was in fact argued that the variable levy system resulted in super tariffs at the time that producers did not need protection and no tariffs at the time when producers needed the protection against cheap imports (Meyer, 2004).

Meyer (2005) therefore proposed an alternative wheat tariff dispensation which was based on based on three basic arguments, namely that:

- The world reference price must take world subsidies into account to be a true reflection of the actual price of wheat;
- The mechanism must be rand based and not dollar based due to the volatility of the exchange rate; and
- The tariff must be triggered and published on much more frequent and transparent basis.

While supporting the above proposal the wheat industry also requested that a 30% ad valorem tariff on wheat be considered in the event of the above proposal not being accepted. It is also worth noting that according to the WTO Minimum Market Access (MMA) commitments, South Africa is only obliged to allow the importation of 100 000 tons of wheat a rate of duty of a maximum of 14.4 per cent ad valorem (ITAC, 2005).

### 5.3. Implementation of 2% ad valorem duty

All of the above issues were considered in “A review of the existing tariff dispensation for wheat, wheat flour and downstream products thereof” which was recently completed by ITAC (2005). The commission, perhaps surprisingly, found that South African wheat and flour producers do not experience price disadvantages against foreign competitors. The commission’s recommendations are set out below and were approved by the Minister of Trade and Industry on 27 July 2005.

- The current system for wheat and wheat flour is replaced with appropriate ad valorem duties. The level of 2% was found to be appropriate, as this level is the existing ad valorem equivalent duty for wheat and wheat flour.
- The rates of duty on other wheat products are maintained.
- The provision for rebate of the duty on wheat imported by the SACU partners is maintained to support their downstream industries.
- Should there be evidence of possible subsidized importation, it should be addressed by using the appropriate trade remedy instrument, ie a possible countervailing duty application and not and increase in ordinary tariffs.
- The problem of exchange rate fluctuations cannot be addressed by way of the tariff.
- The wheat and downstream industries are at liberty to approach the Commission for duty reductions on intermediate inputs for a possible solution to the high cost structures encountered by the wheat industry.

## 6. The Impact of Trade Liberalization and Deregulation

This section assesses the impact of trade liberalization and deregulation on the wheat to bread value chain via the three channels of influence through which trade liberalization affects poverty namely price transmission, enterprises and government spending.



## 6.1. Distribution channel (price transmission)

Given that price is the primary mechanism that links the various levels of the value chain it is important to gain an understanding of the effectiveness of the price transmission system. An efficient price transmission system will support policy and result in a fair proportion of the gain from trade being passed through to poor consumers. On the other hand, an inefficient price transmission system will result in a disproportionate share of the gain from trade being captured by players in the value chain. This section firstly looks at the price formation mechanism of SAFEX and then examines the effectiveness of price transmission and the pass through of price benefits.

### 6.1.1 SAFEX (South African Futures Exchange)

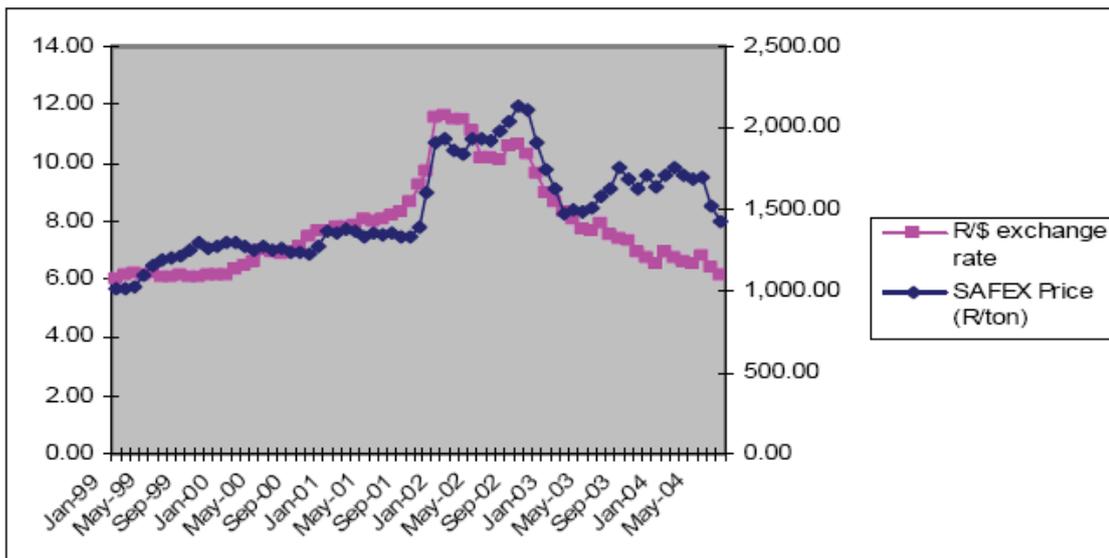
Under the single channel system the price of wheat and bread was effectively set by the government. In the current deregulated market the producer price for wheat is determined through SAFEX. The first wheat contracts were introduced to SAFEX during 1997. This means that grain producers, traders and processors now trade in a 'free' market and must respond to world wide supply and demand forces in setting prices. These forces inter alia include weather conditions, consumer preferences, government policy, trade agreements, exchange rate fluctuations, changes in living standards and technology.

Given that South Africa is a relatively small player on the world market, and is a net importer of wheat, the producers are subjected to global pricing pressures, and generally follow the import/export parity calculations to determine prices. There is, for example, little incentive for wheat grain millers to pay South African producers more than what they can import wheat for (including the cost of transport, insurance, the tariff and the exchange rate). This is called an *import parity price* and effectively becomes the maximum producer price.

It is also important to understand the role of the exchange rate and the so called "transport differential" in the pricing of wheat.

The exchange rate is a major driver of the price of wheat. Figure 1 shows the strong correlation between the producer price of wheat and the R/\$ exchange rate plotted from January 1999 to May 2004. Thus as the exchange rate appreciates the producer price goes down and vice versa. The exchange rate is clearly the major driver although other factors such as heavily subsidized international wheat prices also play a role. The temporary divergence at the beginning of 2003 was mainly due to the total crop declining from 2438 tons in 2002 to 1547 tons in 2003.

Figure 1: Wheat producer price versus the R/\$ exchange rate, January 1999 to May 2004.



Source: Winter Cereal Trust, 2004



In terms of the transport differential it must be noted that the price quoted on SAFEX is a reference price and is quoted in relation to a reference point, in this case, Randfontein. The price of wheat is adjusted in different markets to take account of the differences in transport costs. In order to adjust all prices to this reference price, the international wheat FOB ('free on board') price has to be adjusted to take account of all the costs incurred in bringing the wheat to Durban. This price, called the cost insurance and freight (CIF) price is adjusted into local currency using the current exchange rate. Once this is done all local Rand based costs (off-loading, losses, interest, local transport costs) can be added to result in a final landed (local) price per ton at the reference point. In practice this means that there is a "transport differential" at each of the approximately 20 silo's in South Africa.

### 6.1.2. Price transmission

Relatively detailed quantitative information on the impact of changing the tariff level and structure is available from the Bureau for Food and Agricultural Policy Research (BFAP)<sup>2</sup> and the Provincial Decision-Making Enabling (PROVIDE) Project<sup>3</sup> who did an economy wide computable general equilibrium model (CGE). The Food Price Monitoring Committee (NAMC, 2004) also undertook a modeling exercise to determine the value adding and price transmission at the five levels of the value chain as set out in section 4. This was updated in the 2005 BFAP report.

These studies relied on a number of assumptions including that they combined the margins for milling and baking and that they had no information on the retailers' costs for selling bread. A separate supply chain was calculated for white and brown bread due to the differing extraction rates and the fact that value added tax (VAT) is paid on white bread but not on brown bread. Detail on the supply chain for white bread is taken from the BFAP, 2005 report and shown below to illustrate the working of the price mechanism through the value chain.

**Table 5: White bread supply chain (Average Jan 2002-Dec 2004)**

Wheat average producer price lagged 4 months	R/ton	1552.63
Mill door price	R/ton grain	1623.23
Milling Costs	R/ton grain	735.99
Cost of flour per loaf	cents/loaf	145.40
Baking costs per loaf	cents/loaf	126.81
Cost of producing white bread	cents/loaf	272.21
Bakers margin	cents/loaf	111.77
Wholesale price	cents/loaf	383.97
Retailers margin	cents/loaf	59.52
Retail price	cents/loaf	443.49

Source: BFAP, 2005

Figure 2 below shows the share of each level in the retail price (BFAP, 2005). It is clear that the cost of the raw material flour has the largest share in the retail price followed closely by the costs of

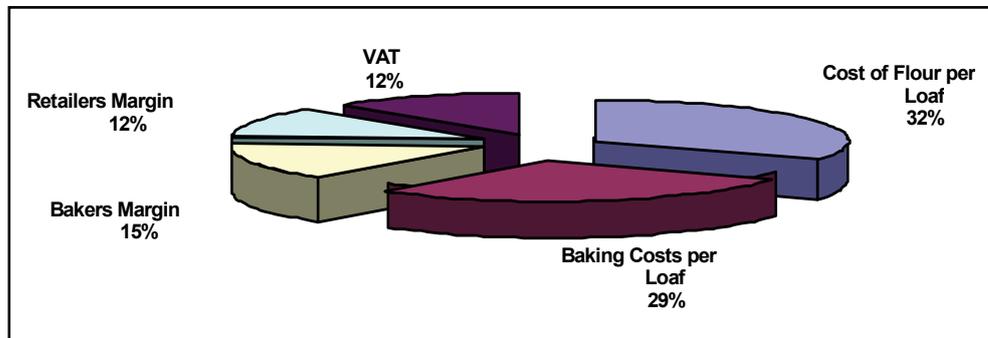
<sup>2</sup> A joint initiative between the Department of Agricultural Economics, Extension and Rural Development at the University of Pretoria and the Department of Agricultural Economics at the University of Stellenbosch. BFAP was established with the objective of creating a system of modeling tools whereby scenarios for the agricultural sector can be developed and simulated.

<sup>3</sup> A project to facilitate policy decision-making at national and provincial level by supplying policymakers and decision makers with quantitative policy information. The nine provincial departments of agriculture and the Department of Agriculture (national) are the stakeholders and funders of the project.



baking. If however one takes into account both the cost of baking and the bakers' margin then the making operation in the supply chain has the largest share in the retail price of bread.

**Figure 2: Share in the cost of white bread**



With regard to price transmission further up the value chain it is generally recognized that changes in farm and wholesale prices are not evenly transmitted to consumer prices. A common feature here is that retailers may quickly pass on price increases while price decreases have a longer lag and are not fully passed on to the benefit of the consumer. The extent of this will largely be determined by factors such as the relative level of concentration and competition in the particular segment of the value chain. Studies on bread have shown that since the abolition of price control in 1991, the retail sector share of the actual bread price has been increasing; it grew from 3% to 12% in 1998/1999. The Food Price Monitoring Report (2004) also reported that a larger share of the miller to retail margin may be going to the retailer.

The BFAP 2005 report used a time series model to test for asymmetric price transmission and concluded that the retail price of bread is indeed closely correlated to the SAFEX wheat price although there is a lag of approximately 4 months. It is therefore important to note that while the milling industry has a concentration of marketing power, this does not necessarily imply that there is "abuse of power".

The same model was used to estimate the impact of an import tariff on the retail price of bread. In essence an import tariff of say R300 per ton of wheat (ie a 23% increase from R1300 per ton to R1600 per ton) will only result in an increase of 3,2% in the price of white bread (ie an increase of 15 cents from R4.77 to R4.92) (BFAP, 2005). This is mainly due to the fact that the price of wheat forms a relatively small percentage of the final price of a loaf of bread. So while it is technically possible for certain players in the value chain to extract "super" profits, the evidence indicates that the price transmission mechanism is fairly effective.

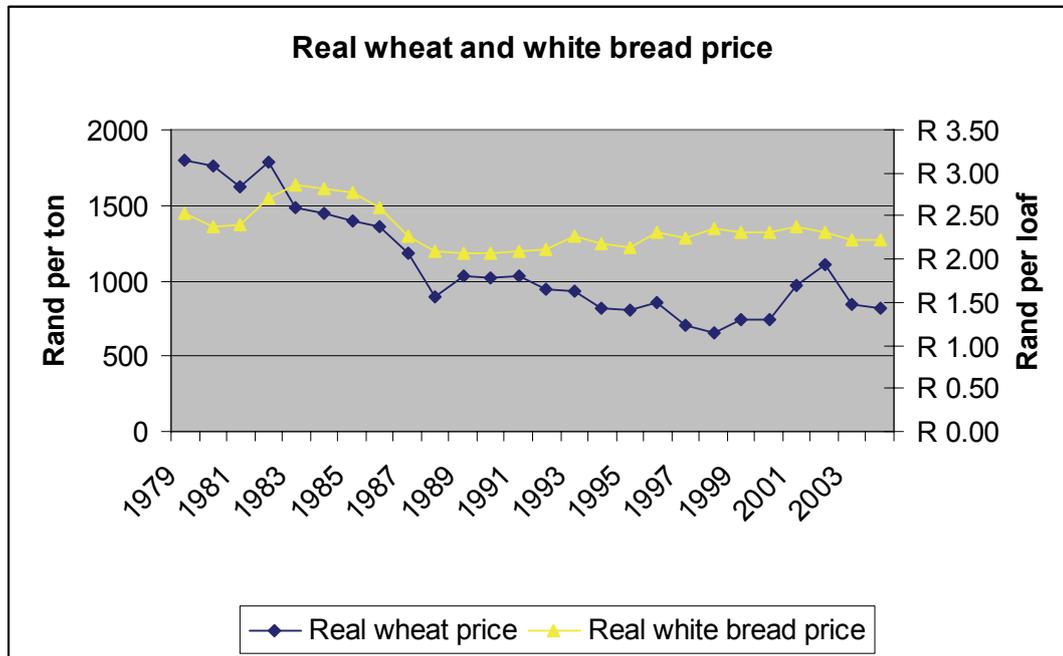
The Food Price Monitoring Report (2004) confirmed that prices have increased for both white and brown bread, but also that the gap between white and brown bread has decreased from 22% in February 2000 to 10% in July 2003. Given that it is cheaper to produce brown bread and that brown bread is zero rated for VAT, one would expect the price of white bread should be at least 14% less than brown bread.

Producers and consumers often tend to blame low and high prices respectively on the futures exchange. The BFAP (2005) report however concludes that the SAFEX price formation for wheat is efficient and is a true reflection of prices for the domestic wheat market. By using the SAFEX market effectively, market participants can minimize their price risk, which in turn lowers their cost of doing business. These savings can then theoretically be passed onto the consumer in a form of lower prices for bread. Unfortunately many farmers cannot make full use of these market instruments as they require substantial legal and financial knowledge, computer literacy and infrastructure such as electricity and access to the internet.



It is nevertheless clear that deregulation and liberalization have resulted in the real price of both wheat, and to a lesser extent bread, decreasing over time. This is shown in figure 3 below. While this trend has directly benefited the consumer it has generally been to the disadvantage of the producer.

Figure 3: Real wheat and white bread price



Source: Figures derived from National Department of Agriculture and SAFEX

## 7. Enterprise channel (wages and employment)

Changes to the trade regime effect the profitability (positively and negatively) of businesses throughout the value chain. It appears as though the overall value chain has experienced a flattening in product prices and a decrease in profitability. Here specific attention should be paid to the impact on producers, millers and bakers and the related knock on effect in terms of employment and wages.

### 7.1.1. Producer level

South African wheat farmers are in essence being squeezed by the impact of the strengthening rand on the one hand and the heavily subsidized world price of wheat which allows millers to import at a price lower than the South African cost of production. The 2005 BFAP report compares profitability of wheat production in the Western Cape to that of the major wheat producing countries including Argentina, Australia, Canada, Germany, the United Kingdom and the USA. The major finding is that although the Western Cape delivers wheat yields comparable to that of low-yield-low-cost countries, the variable costs of wheat production in the Western Cape exceed those of their international counterparts. The 2005 BFAP report concludes that the South African wheat industry is inherently healthy, *inter alia* because:

- While the input costs of South African wheat farmers are higher than those of other low-yield countries, and our yields are lower than those of other high-cost countries, our distance from the rest of the world provides a buffer against foreign competition. This is especially true for farmers in the interior, who are also closer to the most important consumer markets.
- Farmers have generally adapted well to the changing business climate that resulted from deregulation. Wheat yields, for example, were only 50% of the world average in the 1960s, yet are now 85% of the global average. As a result, total wheat production has increased even while



farmers are using less land and less but more skilled labour, and fewer capital and intermediate inputs.

It is likely that the substantial productivity improvements in wheat production are at least partially due to deregulation and liberalization. Table 5 provides an indication of the total area under wheat production as well as the wheat yields from 1980 through to 2003.

**Table 6: Wheat plantings, production and yield from 1980 to 2003**

Season	1980	1985	1990	1995	2000	2003
Area (ha)	1627	1983	1563	1363	934	748
Production (000t)	1490	1691	1709	1977	2428	1434
Yield (ton/ha)	1.09	1.17	1.09	1.45	2.60	1.91

Source: Trends in the agricultural sector (2003)

This clearly indicates that the area planted has halved since 1980. Yield increases have however improved sufficiently to keep output rising at a steady pace. The improvement in yield can largely be ascribed to planting on the better soils with marginal soils being left fallow. So while there has undoubtedly been a large increase in yield per hectare it is debatable as to whether the productivity of a farming unit as a whole has improved as the marginal land has been left fallow and is generally not being used for any other productive purpose. The innovative move to “minimum tillage” has also decreased costs and came about as a result of the squeeze on profitability in the industry.

Labour trends are difficult to quantify with accuracy. It is however certain that substantial labour shedding occurred as a result the decreasing profitability of wheat as well as increased employment costs. This was most likely accompanied by some casualisation of labour. Employees on both large and small farms bore the brunt of these adjustments. This is due to the fact that many smaller producers went out of business while many of the bigger producers survived by inter alia utilizing economies of scale and substituting labour for machinery.

There is also no evidence to suggest that the current larger commercial production systems are increasing demand for labour. It is also, given the environment in which the wheat industry operates, highly unlikely that smaller scale production as a result of land reform will improve labour absorption.

In context of the above the question remains as to whether it makes sense to provide some further support to especially wheat producers. The BFAP (2005) report modeled a number of different scenarios based on a higher wheat tariff and came to the following conclusions:

- The welfare loss to the economy (i.e. the net effect of the gains to wheat producers and the losses to the rest of the economy as well as to consumers) would be around R254 million. Note that this was based on an extremely high tariff scenario of 60%.
- While the tariff increases employment in those provinces where wheat is grown, it would result in a small net decrease in employment throughout the economy.
- Government revenue would decrease, as the tariff income decreases with the decline in imports, despite the higher tariff rate.
- Nevertheless none of these effects are large relative to the size of the South African economy, even when the effects are modeled at tariff rates far higher than those proposed.

The BFAP report argues that there may be some room to provide additional protection for producers without a too great adverse effect on consumers. This is partly because wheat forms a relatively small part of the final price of bread. It must however be accepted that any measure to protect the producer will generally be at the expense of the consumer. It is also not clear that additional support to producers would have the effect of increasing production or directly improving the livelihoods of employees.



### 7.1.2. Milling

Deregulation has benefited the millers in that they can source wheat internationally. This has probably resulted in some power shifting from the producers and cooperatives to the millers.

While millers are negatively impacted by the protection on wheat which has the effect of increasing their input prices, they are positively effected by the duties on imports of flour. The miller's effective protection is positive given that the ad valorem equivalent rate on flour is higher than on wheat. In this regard (Erasmus & Flatters, 2003) argue that the milling industry is the main beneficiary of protection for the wheat and flour industries.

There are 103 mills in South Africa, 70 of which are small and 33 larger mills. The number of large industrial mills decreased from 6 to 4 between 1996/7 and 1998/99 at a time that the number of milling units declined from 137 (Winter Cereal Trust, 2004). On the other hand it can be argued that the deregulation of the industry has improved access for small millers and improved competition. A number of milling companies have also vertically integrated into plant bakeries.

### 7.1.3. Baking

At the time of deregulation approximately 3000 bakers were registered with the wheat board and approximately 80% of the bread production was in the hands of 6 large baking groups.

Deregulation clearly had an enormous impact on the above situation as can be seen from the following statistics. Currently, the number of baking units is estimated at 7900, of these 85 are wholesale bakeries, 600 are in-store corporate bakeries, 3700 are independent bakers, and 3500 are franchise bakers (this includes franchise in-store bakeries, biscuit, pie and pizza outlets). The main growth in the number of bakeries arose from the franchise in-store bakeries. It is estimated that 53,200 informal bakers operate in non-licensed premises although this figure includes people baking for home industries and cake decorators (NAMC, 2004).

Though detailed employment figures are not available it is highly likely that the expansion in the baking industry has absorbed significant amounts of semi-skilled labour.

## 7.2. Government channel (taxes and government expenditure)

Although the industry is still well supported by the various institutional structures (see section 3) there appears to have been an overall decline in government services and funding for research in the wheat-flour-bread value chain.

The amount of revenue accruing to the government revenue from tariffs can be expected to decrease as the level of tariffs decreases. This is however offset to a degree as more wheat is imported as tariffs are decreased.

It is perhaps also a bit of an anomaly that government still imposes a 14% value added tax (VAT) on white bread while brown bread is exempt from VAT.

## 8. Concluding Comments

ITAC (2005) is of the opinion that the period following deregulation saw an improvement in cooperation between participants in the value chain. The quality of products improved substantially and there was a large increase in product ranges available to the consumer. Competition increased and, coupled with innovation, consumers benefited. An overall negative is that deregulation greatly increased the volatility in the price of wheat and bread. This is partly due to changes in international prices but also due to the effects of changes in the exchange rate.



Commercial producers are generally worse off due to the decrease in protection, increased competition from imports and decreasing real prices for wheat. This has however also resulted in substantial improvements in productivity. The largest, more efficient producers have not been as badly affected as they have been able to purchase additional smaller farms and have benefited from economies of scale. This has however often involved a substitution of labour for capital.

The changing trade and policy environment appears to have had the greatest negative impact on smaller producers as well as emerging black producers. It is however important to note that low profitability is only one of the constraints facing emerging farmers. Other issues such as access to land, financing, technology and management skills, extension services and rural infrastructure are just as important. An improvement in the price of wheat is therefore a necessary but not sufficient condition for the establishment of black wheat producers. It is nevertheless clear that in the absence of policy intervention more farmers will shift away from the production of wheat.

While employment losses occurred in the primary wheat producing areas, gains were experienced higher up in the value chain, especially in the baking industry.

It appears as though the milling industry has had sufficient flexibility and power to at least protect its margins, while the baking and retail parts of the value chain have secured a greater portion of the value add over time.

In the specific case of wheat, as a net imported basic foodstuff, it is clear that deregulation and liberalization has benefited the consumer in general and the poorer consumer in particular. The available evidence indicates that the price benefits have generally been passed down through the chain with the result that consumers as a whole have benefited due to the decreasing real price of bread. The poorest households have benefited most given that food makes up 58% of their basket of expenditure and that wheat products make up about 14% of this food expenditure. There is also anecdotal evidence that consumption of white maize is decreasing and being replaced by especially bread, potatoes and rice. This trend is likely to accelerate as urbanization continues and consumers move away from staples such as maize meal to convenience foods such as bread.

In terms of lessons learnt it is argued that similar benefits to consumers could have been achieved had the deregulation process been implemented at a more gradual pace with more attention being paid to providing safety nets and mechanism to enable the disadvantaged parties to adjust to the new realities.

It should also be noted that the above positive outcome has played out in more recent times within the environment of a strengthening Rand. Consumers will also be exposed to a pass through of rapidly increasing prices should the Rand weaken substantially.

## References

Bureau for Food and Agricultural Policy Research (BFAP). April 2005. The profitability and competitiveness of wheat production in the Western Cape, South Africa.

De Villiers J. June 2004. Trends in the grain trade – effects on the South African food and feed milling industry. IGC Conference, London.

Elbehri A & Leetmaa S. 2002. How significant are export subsidies to agricultural trade? Trade and welfare implications of global reforms. *Paper presented as a Selected Paper at the 5<sup>th</sup> Annual Conference on Global Economic Analysis*, Taipei, Taiwan.

Environmental Working Group (EWG). 2003. EWG Farm Subsidy database, Wheat subsidy in USA.

Erasmus E & Flatters F. April 2003. Rent-seeking in SADC trade liberalization: Rules of origin and other barriers to trade in wheat products.



International Trade Administration Commission of South Africa (ITAC). May 2005. Review of the customs tariff dispensation on wheat, wheat flour and downstream products thereof. Report no. 112.

McCulloch N, Winters LA & Cirera X. 2001. Trade Liberalization and Poverty: A Handbook. CEPR and DFID, London.

Meyer F. March 2005. An alternative tariff dispensation for the South African wheat industry. Bureau for Food and Agricultural Policy Research (BFAP).

NAMC. 1999. The Wheat to Bread Value Chain. Section 7 Committee evaluating the deregulation process, National Agricultural Marketing Council, Pretoria.

NAMC. 2004. Final report of the Food Pricing Monitoring Committee. National Agricultural Marketing Council, Pretoria.

NDA (2003). Trends in the Agricultural Sector: <http://www.nda.agric.za>

NDA (2004). Crop Estimates Committee. <http://www.nda.agric.za>

NDA (2004): Agricultural Statistics. <http://www.nda.agric.za>

South African Grain Information Service (SAGIS). 2003.

Standard Bank AgriReview. 2<sup>nd</sup> quarter 2005. Possible effects of increased tariffs.

Statistics South Africa. 2000. Income and Expenditure Survey, Pretoria.

Troskie, DP. 2001. Structural adjustments in the wheat industry of the Western Cape province.

Vanzetti D & Peters R. 2003. An Analysis of the Proposals by the World Trade Organization, the US and the EU on agricultural reform. United Nations Conference on Trade and Development, Geneva.

Wheat Steering Committee. 2003. Strategy document for the South African Wheat to Bread value chain. <http://www.namc.org.za>

Vink, N. & Kirsten, J. 2002. Pricing Behaviour in the South African Food and Agricultural Sector. A Report commissioned by the National Treasury and conducted with additional technical support from the National departments of Agriculture, Trade and Industries and The Competition Commission.

## People Interviewed

Prof Nick Vink: Chair. Department of Agricultural Economics, Stellenbosch.

PG Strauss: University of Pretoria and ABSA Bank.

Ferdi Meyer: University of Pretoria

Melt van Schoor: PROVIDE project, Eisenberg.

~~~~~

---

# The Southern Africa Labour and Development Research Unit

---

The Southern Africa Labour and Development Research Unit (SALDRU) was established in 1975 as part of the School of Economics. SALDRU conducted the first national household survey in 1993 (the Project for Statistics on Living Standards and Development). More recently, SALDRU ran the Langeberg Integrated Family survey (1999) and the Khayelitsha/Mitchell's Plain Survey (2000). Current projects include research on public works programmes, poverty and inequality.

## The Trade and Poverty Project

South Africa is currently engaged in various trade negotiations at the multilateral, regional and bilateral level. The net impact of the resulting trade reforms should be to contribute to growth, employment and raising average incomes. But this net impact conceals a range of differential effects: the benefits of reform do not accrue automatically and equally to all households or communities, and in some cases poverty and unemployment may rise. Policy makers need to be aware of these different effects and implement trade reforms in a way that maximizes the benefits for the poor.

The objective of the South Africa Trade and Poverty Research Project is to analyse the impact of specific trade reforms on poverty in South Africa. The project includes a number of studies that explore various linkages through which trade reform affects prices, consumption, production, and employment. These studies fall under 5 broad sections:

1. Review of trade and poverty in South Africa
2. Industry level analysis of trade, enterprise production and employment
3. Household level analysis of trade and poverty
4. Sector specific analysis and case studies
5. Policy simulations

The project is funded by the Department for International Development (through the Trade and Industrial Policy Strategies and the RTFP), USAID and the Department of Trade and Industry. All papers can be accessed via the project home page:

[http://www.saldru.uct.ac.za/saldru\\_trade&poverty.html](http://www.saldru.uct.ac.za/saldru_trade&poverty.html).

---