



tralac | trade law centre

Terms of trade in agricultural trade

by Xolisiwe Yolanda Potelwa,
Tshimangadzo Mugobi and
Ron Sandrey

TRADE BRIEF

tralac Trade Brief
No. D13TB03/2013
October 2013



Please consider the environment before printing this publication

www.tralac.org | info@tralac.org | Twitter [@tradelawcentre](https://twitter.com/tradelawcentre) | Copyright © tralac, 2013.

Readers are encouraged to quote and reproduce this material for educational, non-profit purposes, provided the source is acknowledged. All views and opinions expressed remain solely those of the authors and do not purport to reflect the views of tralac.

Copyright © tralac, 2013.

Readers are encouraged to quote and reproduce this material for educational, non-profit purposes, provided the source is acknowledged. All views and opinions expressed remain solely those of the authors and do not purport to reflect the views of tralac

This publication should be cited as: Potelwa, X. P., Mugobi, T. and Sandrey, R. 2013. *Terms of trade in agricultural trade*. Stellenbosch: tralac.

tralac gratefully acknowledges the financial support of the Danish International Development Assistance (Danida) for the publication of this Working Paper



www.tralac.org | info@tralac.org | Twitter [@tradelawcentre](https://twitter.com/tradelawcentre)

Readers are encouraged to quote and reproduce this material for educational, non-profit purposes, provided the source is acknowledged. All views and opinions expressed remain solely those of the authors and do not purport to reflect the views of tralac

Terms of trade in agricultural trade

*by Xolisiwe Yolanda Potelwa, Tshimangadzo Mugobi
and Ron Sandrey¹*

South Africa has traditionally been a net exporter of agricultural products, but in recent years the gap between these exports on the one side and imports on the other has been narrowing, even slightly favouring imports. Indeed, if South Africa followed the international norm and assessed import values as including costs of freight and insurance the reverse situation would apply as South Africa would become a net importer of agricultural products.

The objective of this paper was to assess whether South African agricultural export prices had on average risen more than the comparable import prices in the last six years, a period leading up to and immediately following the global commodity crisis. We find that this has indeed been the case for the last three years but that for the two–year period 2008-2009 import prices rose faster.

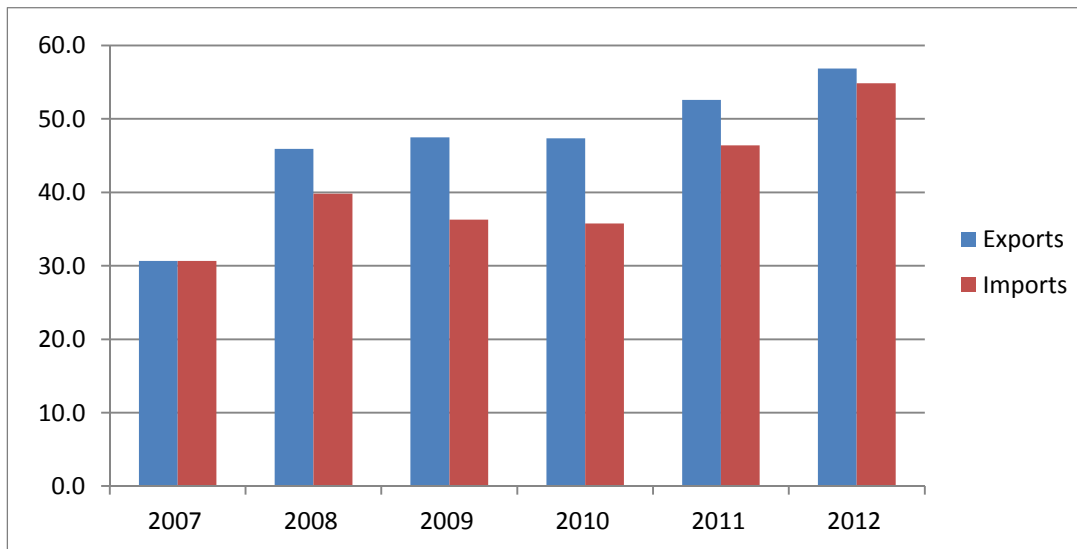
We use the Global Trade Atlas data, with this data denominated in Rand (ZAR).

Background and big picture

Agricultural trade has always been important to South Africa. Historically, the balance of trade was positive, but in recent years the gap has been narrowing. This is shown in Figure 1 for the period 2007 through to and including 2012 (the period we will be using for our terms-of-trade analysis). Note that we will be using the World Trade Organisation (WTO) definition for agricultural trade, a definition that basically refers to Harmonised System (HS) codes 1 (live animals) through to 24 (tobacco) inclusive, minus the fisheries products, plus other categories such as caseins, hides, and wool and cotton.

¹ Ms Xolisiwe Yolanda Potelwa is from the National Agricultural Marketing Council (NAMC), Ms Tshimangadzo Mugobi is from Department of Agriculture, Forestry and Fisheries, and Ron Sandrey is a tralac Associate. This paper was compiled during data training ('Geek Week') at the Trade Law Centre from 9 to 13 September 2013.

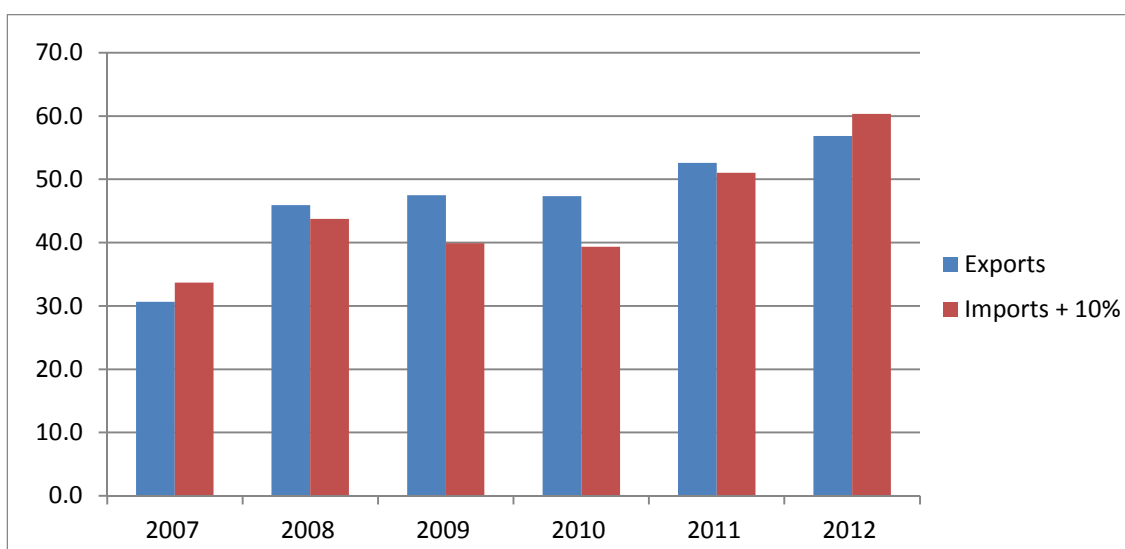
Figure 1: South African Agricultural trade 2007 to 2010, Rand (million)



Source: Global Trade Atlas, tralac analysis

Caution needs to be taken, however, in interpreting this export dominance too literally, as South Africa is one of very few countries that report its imports in terms of free on board (f.o.b.) values. Most countries add the costs of freight and insurance to give the cost, insurance, and freight (c.i.f.) values to these imports. Given that the difference could be around 10% overall (and significantly higher for some products) the actual costs to South Africa of these imports would be closer to the export figure and indeed possibly above it in some years. This is shown in Figure 2 where we duplicate Figure 1 but add 10% to import values to reflect this definitional difference.

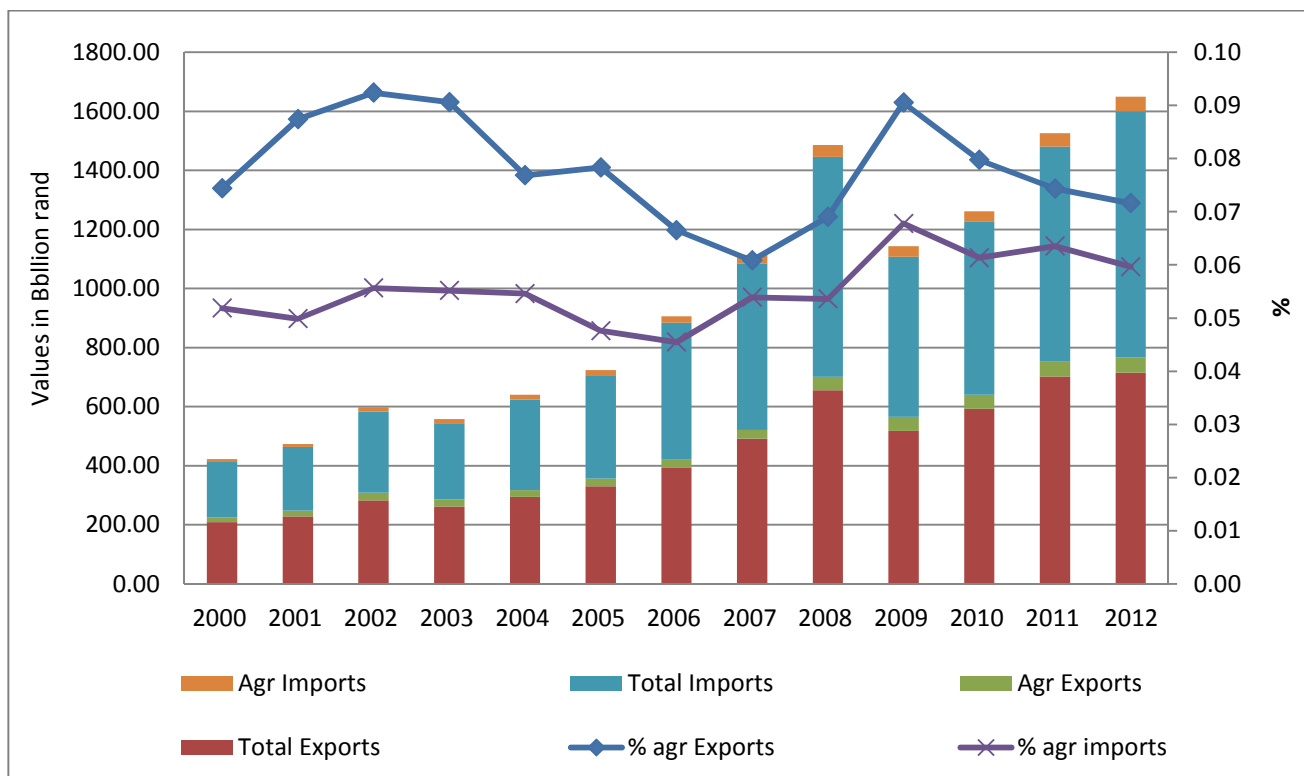
Figure 2: South African Agricultural trade 2007 to 2010, Rand (million) – with 10% added to import values



Source: Global Trade Atlas, tralac analysis

This data is brought together in Figure 3 where the relative shares of agricultural exports and imports (as reported) in the total trade are introduced. The rand values are shown in billions on the left-hand axis while the shares are shown on the right-hand axis. These shares are re-examined and discussed in the next two tables. Following the downturn in the 2008 global crisis both agricultural exports from and imports into South Africa have been showing increasing values although both their relative shares of the South African total trade are declining. Thus, while agriculture is doing well it is losing ground overall. This is especially so in the export shares, as agriculture consistently lost ground through from 2002 to the pre-crisis year of 2007 when it went close to converging with the import share.

Figure 3: South Africa agricultural trade performance, Rand (billion) and share of total trade



Source: Global Trade Atlas (GTA)

The next series of tables extend the big-picture analysis by showing firstly the import profile followed by the export profile for the most recent 2007 to 2012 years inclusive. Table 1 shows that as a percentage of total import trade the agricultural share increased over the period to end at 6.58%, marginally below the high point of the 6.70% share in 2009. Similarly, the percentage share of the top 15 HS 4 trade lines shown has marginally increased to 54.06% of the total agricultural imports over the period. By HS 4 codes, the imports are headed by rice, a product that has been at the top except for the 2011 year when wheat took the top place.

Table 1: South African agricultural import details, Rand (million) and % shares of total imports

	Imports South Africa Rand (million)					
	2007	2008	2009	2010	2011	2012
Total, R (million)	5,622,252	7,446,572	5,419,814	5,856,946	7,263,522	8,330,209
Agriculture, R (million)	30,645	39,794	36,294	35,759	46,412	54,836
% agriculture	5.45%	5.34%	6.70%	6.11%	6.39%	6.58%
Top 15, R (million)	13,469	20,223	18,542	19,007	25,074	29,642
Top 15 % agri	43.95%	50.82%	51.09%	53.15%	54.02%	54.06%
Description						
Rice	2,046	3,698	3,704	2,985	3,496	5,566
Wheat	1,815	3,612	2,337	2,003	4,346	3,761
Palm oil	1,376	2,435	1,963	2,188	2,992	3,336
Soybean oilcake	1,477	2,596	2,466	2,477	2,606	2,808
Chicken	1,215	1,259	1,191	1,076	1,795	2,494
Whiskies	1,490	1,710	1,637	1,904	2,144	2,295
Soybean oil	672	1,202	552	1,616	2,180	1,869
Sunflower oil	795	407	714	749	806	1,844
Preps NESOI*	960	1,178	962	943	1,141	1,323
Tobacco	483	732	1,342	1,045	1,021	929
Sugar	32	163	281	221	341	758
Beans	356	333	428	437	451	697
Pork	289	266	357	415	553	679
Chicken meat	122	39	123	445	646	679
Animal guts	340	591	483	504	555	605

Source: Global Trade Atlas, tralac analysis

* **NESOI** means ‘Not Either Specified or Included’

Table 2 extends the import analysis and shows that by absolute value (as measured by market share) the big increase has been in rice (up by 3.5 percentage points), followed by palm oil and sugar with increases of 1.6 and 1.3 percentage points respectively. Both whisky and food preparations not elsewhere specified declined by 1.7 percentage points. The top five HS 4 lines have represented 30% or above over the last five years.

Table 2: South African commodities by % shares of total agricultural imports at HS 4

Description	% share of imports					
Rice	6.7%	9.3%	10.2%	8.3%	7.5%	10.1%
Wheat	5.9%	9.1%	6.4%	5.6%	9.4%	6.9%
Palm oil	4.5%	6.1%	5.4%	6.1%	6.4%	6.1%
Soybean oilcake	4.8%	6.5%	6.8%	6.9%	5.6%	5.1%
Chicken	4.0%	3.2%	3.3%	3.0%	3.9%	4.5%
Top five	25.9%	34.2%	32.1%	30.0%	32.8%	32.8%
Whiskies	4.9%	4.3%	4.5%	5.3%	4.6%	4.2%
Soybean oil	2.2%	3.0%	1.5%	4.5%	4.7%	3.4%
Sunflower oil	2.6%	1.0%	2.0%	2.1%	1.7%	3.4%
Preps NESOI	3.1%	3.0%	2.7%	2.6%	2.5%	2.4%
Tobacco	1.6%	1.8%	3.7%	2.9%	2.2%	1.7%
Sugar	0.1%	0.4%	0.8%	0.6%	0.7%	1.4%
Beans	1.2%	0.8%	1.2%	1.2%	1.0%	1.3%
Pork	0.9%	0.7%	1.0%	1.2%	1.2%	1.2%
Chicken meat	0.4%	0.1%	0.3%	1.2%	1.4%	1.2%
Animal guts	1.1%	1.5%	1.3%	1.4%	1.2%	1.1%

Source: Global Trade Atlas, tralac analysis

As displayed in Table 3, oranges moved into the top export spot in 2012. Wine declined and maize did not duplicate its 2011 export levels. Again, the exports are concentrated with the 2012 top 15 HS lines representing over 50% of the total in each year. Notable is that imports of sugar from Table 1 are closing in on the traditionally strong export values of that commodity as shown in Table 3.

Table 3: South African agricultural export details, Rand (million) and % shares

	Exports South Africa million					
	2007	2008	2009	2010	2011	2012
Total, R (million)	491,462	656,154	518,229	592,691	701,747	715,610
Agriculture, R (million)	30,643	45,903	47,483	47,350	52,593	56,867
% agriculture	6.23%	7.00%	9.16%	7.99%	7.49%	7.95%
Top 15, R (million)	16,087	24,238	24,523	24,615	29,289	29,855
Top 15, % agri imp	52.50%	52.80%	51.65%	51.99%	55.69%	52.50%
Description						
Oranges	2,778	3,696	3,365	4,401	4,475	4,782
Wine	3,651	4,545	4,343	4,014	3,657	3,633
Grapes	2,201	2,585	3,022	3,071	3,107	3,532
Maize	111	3,911	3,444	1,929	5,561	2,950
Apples	1,495	1,978	1,957	1,821	2,113	2,595
Wool	1,030	1,143	1,227	1,240	2,026	2,299
Wine	981	1,533	1,473	1,481	1,600	2,071
Pears	845	916	1,163	1,178	1,224	1,308
Prep NESOI	491	641	699	811	1,099	1,096
Soybean oil	4	20	52	195	558	955
Sugar	542	716	1,059	929	719	950
Ethyl alcohol	628	854	823	1,339	741	930
Cigarettes	510	476	674	741	700	926
Mandarins	426	572	599	662	740	924
Lemons	393	653	622	802	969	901

Source: Global Trade Atlas, tralac analysis

By absolute value (as measured by market share) the big increase has been in maize exports which are up by 4.8 percentage points, although 2007 was a low point (Table 4). Wine was the ‘biggest loser’, declining by 5.5 percentage points over the period.

Table 4: South African commodities by % shares of total agricultural exports at HS 4

Description	% share of exports					
Oranges	9.1%	8.1%	7.1%	9.3%	8.5%	8.4%
Wine	11.9%	9.9%	9.1%	8.5%	7.0%	6.4%
Grapes	7.2%	5.6%	6.4%	6.5%	5.9%	6.2%
Maize	0.4%	8.5%	7.3%	4.1%	10.6%	5.2%
Apples	4.9%	4.3%	4.1%	3.8%	4.0%	4.6%
Top five	33.4%	36.4%	34.0%	32.2%	36.0%	30.8%
Wool	3.4%	2.5%	2.6%	2.6%	3.9%	4.0%
Wine	3.2%	3.3%	3.1%	3.1%	3.0%	3.6%
Pears	2.8%	2.0%	2.4%	2.5%	2.3%	2.3%
Prep NESOI	1.6%	1.4%	1.5%	1.7%	2.1%	1.9%
Soybean oil	0.0%	0.0%	0.1%	0.4%	1.1%	1.7%
Sugar	1.8%	1.6%	2.2%	2.0%	1.4%	1.7%
Ethyl alcohol	2.0%	1.9%	1.7%	2.8%	1.4%	1.6%
Cigarettes	1.7%	1.0%	1.4%	1.6%	1.3%	1.6%
Mandarins	1.4%	1.2%	1.3%	1.4%	1.4%	1.6%
Lemons	1.3%	1.4%	1.3%	1.7%	1.8%	1.6%

Source: tralac analysis

The main suppliers of imports and destination of exports

South Africa’s main agricultural trading partners are shown below, first in Table 5 for import sources and secondly in Table 6 for export destinations. Since 2009 the European Union (EU) has regained its top position as agricultural import source from the Mercado Comun del Sur (Mercosur)², mainly by virtue of its consistent share as Mercosur soared and then faded somewhat. Both Asean and Africa in second and third places respectively have had consistent shares over the period.

² Argentina, Brazil, Uruguay and Paraguay.

Table 5: Main sources of South African agricultural imports, Rand (million) and % shares

Agricultural Imports from, R (million)						
	2007	2008	2009	2010	2011	2012
Total agr	30,645	39,794	36,294	35,759	46,412	54,836
EU	6,920	8,918	9,655	10,298	13,229	15,709
Mercosur	9,068	10,773	8,709	7,116	9,367	11,503
Asean	4,139	7,905	6,475	6,447	7,661	7,751
Africa	1,966	2,131	2,140	2,284	2,790	3,438
Top 4 as % agr	72.1%	74.7%	74.3%	73.1%	71.2%	70.0%
% shares of agricultural imports						
EU	22.6%	22.4%	26.6%	28.8%	28.5%	28.6%
Mercosur	29.6%	27.1%	24.0%	19.9%	20.2%	21.0%
ASEAN	13.5%	19.9%	17.8%	18.0%	16.5%	14.1%
Africa	6.4%	5.4%	5.9%	6.4%	6.0%	6.3%

Source: GTA data, tralac analysis

Export destinations shown in Table 6 highlight that two main aggregate destinations, Africa and the EU, account for over 60% of the total exports, although that figure has been moving down from the high of 70.3% in 2008. Similarly, the EU's relative share has been declining over the period and is now almost two percentage points below Africa despite that in 2007 it has doubled the Africa share. Sandrey and Gill (2013) discuss and analyse this declining export share of South Africa's agricultural exports to the EU despite fairly favourable access terms under the Trade, Development and Cooperation Agreement (TDCA).

Table 6: Main destinations of South African agricultural exports, Rand (million) and % shares

Agricultural exports to, Rand (million)						
	2007	2008	2009	2010	2011	2012
Total agriculture	30,643	45,903	47,483	47,350	52,593	56,867
Africa	6,652	14,805	15,802	14,552	15,347	18,144
EU	13,912	17,453	16,326	16,483	16,576	17,063
Top 2 as % agr	67.1%	70.3%	67.7%	65.5%	60.7%	61.9%
% shares of agricultural exports						
Africa	21.7%	32.3%	33.3%	30.7%	29.2%	31.9%
EU	45.4%	38.0%	34.4%	34.8%	31.5%	30.0%

Source: GTA data, tralac analysis

Trade details

The next series of tables look at, firstly, the main imports by HS 4 for these top four import sources and, secondly, the main exports to the top two export destinations. Using HS 4 lines alleviates the problems that we will discuss later when we assess the average prices by HS 6; the reason is that only HS 6 and not HS 4 codes changed in agriculture during 2012. We start with imports from the EU, the main import source shown in Table 7. The large increases in recent years have been in soybean oils and chickens. The latter is proving problematic as these imports have been adding to the traditional imports from Mercosur and causing consternation in South African farming and trade-policy circles.

Table 7: Agricultural imports from the EU, Rand (million) and market shares

From EU	2007	2008	2009	2010	2011	2012
Total	189,462	232,914	174,296	188,107	222,809	239,101
Agricultural	6,920	8,918	9,655	10,298	13,229	15,709
Agri as % total	3.65%	3.83%	5.54%	5.47%	5.94%	6.57%
Commodity						
Ethyl alcohol	1,473	1,754	1,700	1,968	2,225	2,430
Soybean oil	25	162	54	1,326	2,193	1,916
Meat, poultry	32	37	29	83	760	1,456
Preps NESOI	541	647	558	518	643	777
Animal feed	277	365	348	418	555	650
Top 5 as % agriculture	33.9%	33.2%	27.9%	41.9%	48.2%	46.0%

Source: GTA data, tralac analysis

Imports from Mercosur are heavily concentrated, with the top five HS 4 lines contributing some 78% of the total during 2012 (Table 8). As outlined above, the imports of chicken are causing problems in South Africa, and the imports of sugar are relatively recent and go a long way to forcing open the Southern African Customs Union's (SACU) protected sugar sector. Imports of wheat vary by source between years, and this accounts for the large changes in Mercosur imports as shown.

Table 8: Agricultural imports from Mercosur, Rand (million) and market shares

From Mercosur	2007	2008	2009	2010	2011	2012
Total	19,279	22,580	18,209	16,998	20,422	22,685
Agricultural	9,068	10,773	8,709	7,116	9,367	11,503
Agri as % total	47.0%	47.7%	47.8%	41.9%	45.9%	50.7%
Commodity						
Soybean oilcake	1,475	2,520	2,437	2,473	2,606	2,808
Wheat	476	1,948	502	273	1,558	2,403
Chicken	1,328	1,344	1,310	1,451	1,638	1,670
Sunflower seed, oil, etc.	881	451	762	582	400	1,187
Sugar	212	417	403	276	689	883
Top 5 as % agri	48.2%	62.0%	62.2%	71.0%	73.6%	77.8%

Source: GTA data, tralac analysis

Imports of palm (and other products associated with coconut oils) oil and rice dominate the commodity mix from the Association of South-East Asian Nations (ASEAN) as shown in Table 9. Coffee has been stable while imports in nuts are growing rapidly. Again, the imports are highly concentrated with around 80% represented by the top five lines.

Table 9: Agricultural imports from ASEAN, Rand (million) and market shares

From ASEAN	2007	2008	2009	2010	2011	2012
Total	28,902	39,311	33,188	37,078	45,108	57,782
Agricultural	4,139	7,905	6,475	6,447	7,661	7,751
Agri as % total	14.3%	20.1%	19.5%	17.4%	17.0%	13.4%
Commodity						
Palm oil	1,358	2,414	1,957	2,172	2,932	3,221
Rice	1,379	3,191	2,765	2,406	2,512	2,073
Coconut oil, etc.	188	392	217	295	409	376
Coffee	178	391	178	208	259	242
Nuts	47	90	75	77	151	142
Top 5 as % agri	76.1%	81.9%	80.2%	80.0%	81.8%	78.1%

Source: GTA data, tralac analysis

The imports from Africa largely exclude intra-SACU imports as these are only partially reported in the Global Trade Atlas data for South Africa. Cotton, tobacco and tea have traditionally been the dominant trading lines and they have been relatively consistent through the time period (Table 10).

Table 10: Agricultural imports from Africa, Rand (million) and market shares

From Africa	2007	2008	2009	2010	2011	2012
Total	44,182	72,378	43,259	45,765	55,639	82,263
Agricultural	1,966	2,131	2,140	2,284	2,790	3,438
Agri as % total	4.45%	2.94%	4.95%	4.99%	5.01%	4.18%
Commodity						
Cotton	373	422	397	372	651	498
Tobacco	257	415	407	357	488	394
Tea	150	196	296	288	255	315
Oilcake	97	145	134	133	92	237
Bran	64	91	51	50	98	179
Top 5 as %	47.9%	59.5%	60.0%	52.5%	56.8%	47.2%

Source: GTA data, tralac analysis

As discussed earlier, agricultural exports to the continent have grown rapidly in recent times, and this is highlighted in Table 11. Notable is the large increase in soybean oil exports from virtually a zero base, a commodity which South Africa itself imports in substantial quantities. Sugar exports have been consistent, and need to be viewed in conjunction with South African sugar imports from Mercosur (Brazil).

Table 11: Agricultural exports to the Africa, Rand (million) and market shares

To Africa	2007	2008	2009	2010	2011	2012
Total	63,185	95,562	85,343	85,538	100,372	119,197
Agricultural	6,652	14,805	15,802	14,552	15,347	18,144
Agri as % total	10.5%	15.5%	18.5%	17.0%	15.3%	15.2%
Commodity						
Sugar	1,032	1,079	1,388	1,443	1,162	1,187
Preparations NESOI	417	559	623	765	972	1,040
Apples & pears	314	485	459	564	768	943
Sunflower oils, etc.	60	204	491	711	664	624
Soybean oil	4	22	55	200	608	1,005
Top 5 as %	27.5%	15.9%	19.1%	25.3%	27.2%	26.4%

Source: GTA data, tralac analysis

As one would expect with such a long history the South African agricultural exports to the EU have been consistent over this period. The traditional fruits continue to dominate (if wine is regarded as a fruit product), and the market share of the top five lines shown in Table 12 has consistently been around 66%.

Table 12: Agricultural exports to the EU, Rand (million) and market shares

To EU	2007	2008	2009	2010	2011	2012
Total	14,8292	19,2611	124,995	140,074	153,916	145,941
Agricultural	13,912	17,453	16,326	16,483	16,576	17,063
Agri as % total	9.4%	9.1%	13.1%	11.8%	10.8%	11.7%
Commodity						
Wine	3,536	4,503	4,450	4,003	3,697	3,712
Citrus	1,992	2,696	2,224	2,628	2,726	2,932
Grapes	1,993	2,334	2,585	2,434	2,340	2,579
Apples & pears	1,507	1,597	1,730	1,433	1,435	1,532
Dates, avocados, etc.	278	334	275	404	271	602
Top 5 as %	66.9%	65.7%	69.0%	66.1%	63.2%	66.6%

Source: GTA data, tralac analysis

Terms of trade

Of special interest for this paper are the agricultural terms of trade as expressed as the average unit values of imports vis-à-vis the corresponding index of average unit values in exports. Our objective is to provide a broad view of the agricultural trade in recent years and to examine the components of these terms of trade. In essence, are export prices increasing faster than import prices overall? Our data source is the Global Trade Atlas data and we use the 2007 to 2012 December-year periods as our analysis period. The data is expressed in South African Rand, and this can possibly give a distorted picture when the rand depreciates as it has over the last year or so. However, the index that we use combined with our presentation in Figure 1 of agriculture's share of total trade alleviates many of these problems.

The Global Trade Atlas gives the absolute value of trade at the HS 6 line level along with the volume and consequently average unit value data. We use this unit value data and index the first 2007 average values to 100. From there we assess the relative changes from the index on a line-by-line basis, and to obtain the final index values we weight each of the import and export Index values by their share of the agricultural trade to give an annual figure for each. This indexing allows different absolute price

levels and average values expressed in terms of kilogram, for example, to be adjusted to form an overall index.

Note that our index is based on the initial 2007 year, and possibly an anchor to the most recent 2012 year may give a slightly different result. In technical terms, this is the dilemma of the **Paasche index** is also called a “current weighted index” (a weighted harmonic average of the price relatives that uses the actual expenditure shares in the later period t as weights)

Versus the **Laspeyres index** (the weighted arithmetic average that uses weights from a previous period). The weights we used to calculate the index are the Laspeyres index based on the 2008 weights, and this will give an index marginally above the Paasche Index. This is explained in technical detail by Statistics South Africa at their website.³

A problem that arose was the changes to the international HS codes during 2012. Several of the codes (and some for significant trade lines) were affected, and this necessitated an adjustment to the data to reconcile the new codes against the old codes. This problem did not arise in the analysis to date, because to date we have been using the HS 4 codes. We are confident, however, that we were able to reconcile the data to an acceptable level.

Table 13 forms the essence of this paper. When indexed to 2007 the weighted average of the prices per line shows that at 2012 the export price index of 192.3 was ahead of the import index of 179.2. This was also the case for the previous two years, but was not the case for 2008 and 2009. Figure 4 shows the same data presented in graphical form.

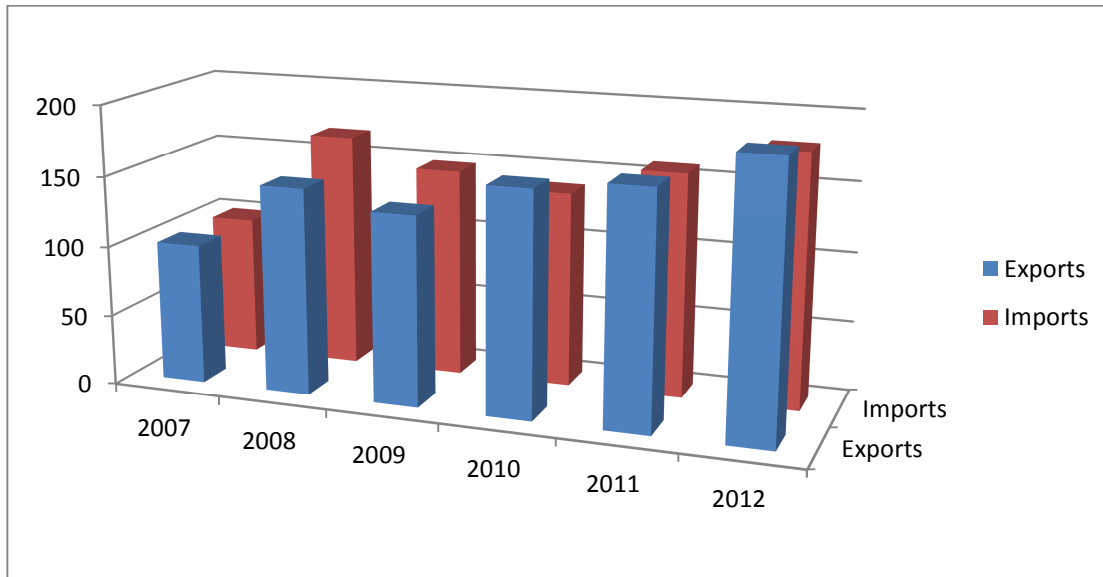
Table 13: Weighted average price Index for South African agricultural exports and imports

Year	2007	2008	2009	2010	2011	2012
Exports	100	146.8	134.9	159.2	166.4	192.3
Imports	100	167.1	148.4	138.7	158.9	179.2

Source: GTA data, tralac analysis

³ http://www.statssa.gov.za/cpi/documents/Note_on_CPI_Laspeyres,_Paasche_and_Fischer_indices_2013.pdf

Figure 4: Weighted average price Index for South African agricultural exports and imports



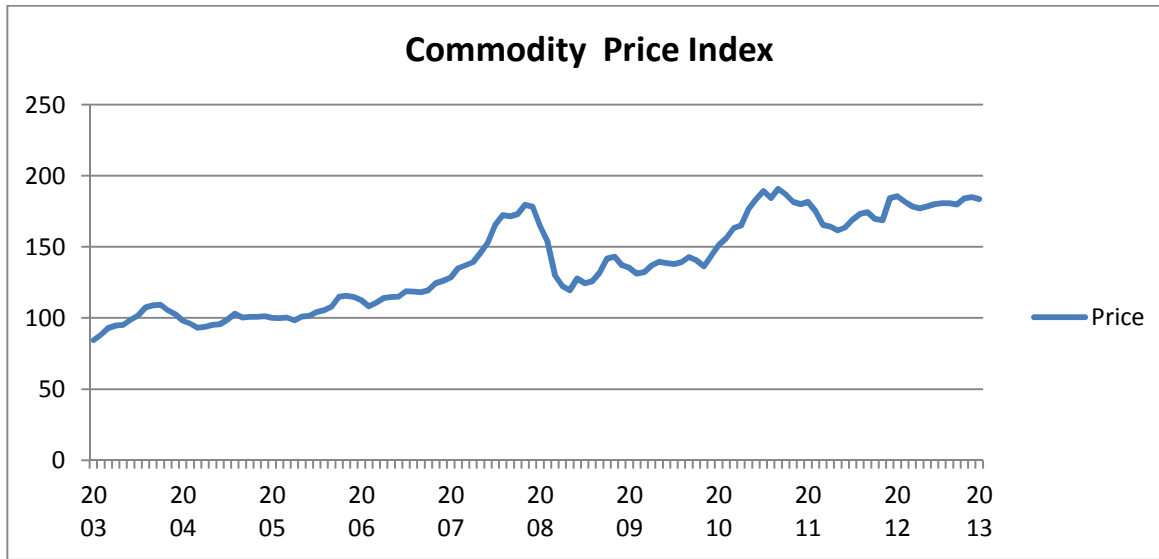
Source: GTA data, tralac analysis

Overall, our analysis suggests that since the global commodity price crisis of 2008 South Africa has emerged with its agricultural export price weighted index marginally above that of its import price index. This analysis is, of course, a static one and says little about responses to the price changes except to state that as a weighted average these changes are partially taken into account.

A wider perspective on global average prices is given in Figure 5. This data is sourced from Index Mundi and gives us the monthly values as distinct from the annual data available from GTA under our subscription agreement. The IndexMundi includes cereal, vegetable oils, meat, seafood, sugar, bananas, and oranges price indices, so it has a reasonable approximation to South African trade. Note the large price jump in mid-2008 below the decline to lower levels before gradually moving back to a more consistent line around the mid-2008 highs.⁴

⁴ <http://www.indexmundi.com/commodities/?commodity=oranges&months=120>

Figure 5: The IndexMundi global commodity food prices

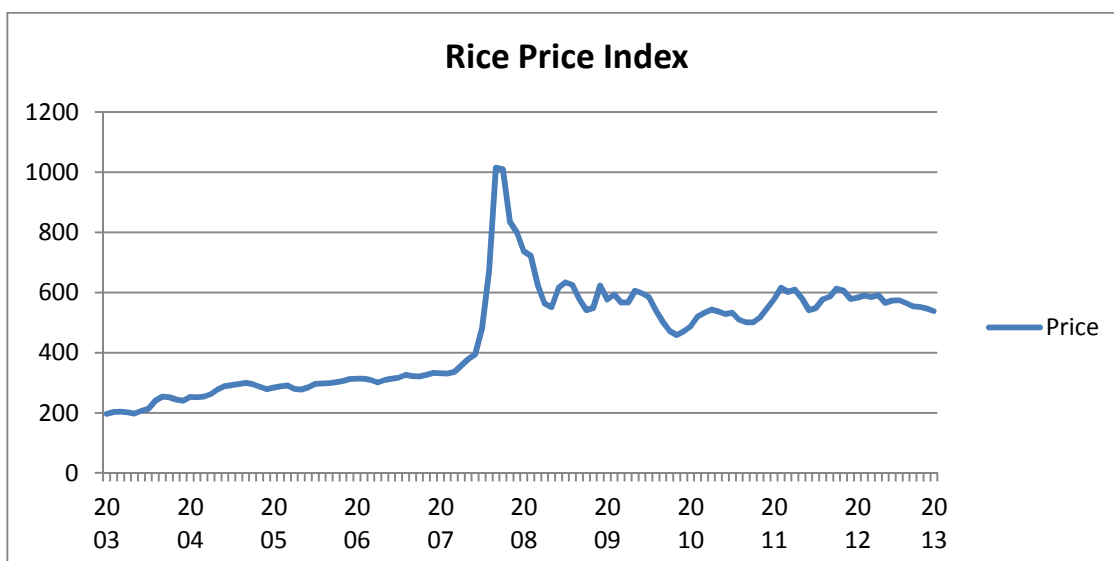


Source: IndexMundi (www.indexmundi.com)

Note: The index includes cereal, vegetable oils, meat, seafood, sugar, bananas, and oranges price indices.

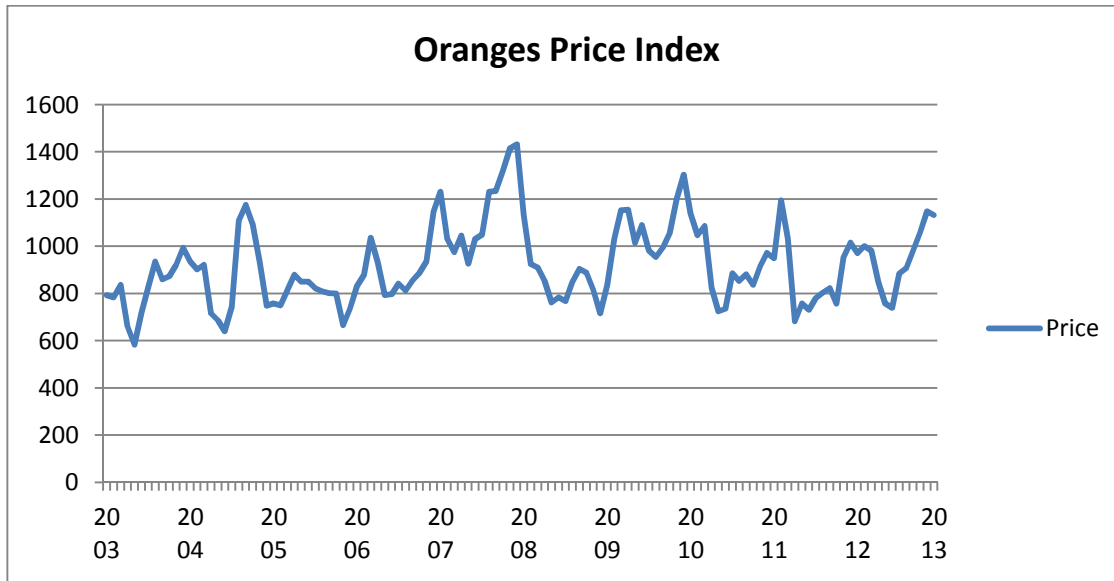
To further illustrate the price changes we introduce two further graphs from the IndexMundi. The first of these in Figure 5(a) shows the global rice price index, and given that rice has been the major import into South Africa over the period this index will have a significant bearing on our weighted index values. Note that the rice index rapidly declined to around half of its mid-2008 peaks before stabilising. Conversely, in Figure 6 the orange index declined but not by nearly as much. Also note the seasonal variation in the orange index, but again given that we are working with annual data we cannot duplicate that index.

Figure 5(a): The IndexMundi global rice price



Source: IndexMundi

Figure 6: The IndexMundi global orange price



Source: IndexMundi

An overview of import and export products is shown below in Tables 14 and 15. Note that these products are analysed at the HS 6 line level and thus may not reconcile with our broader HS 4 aggregations used to date. The trade values are shown for each line over the six-year period along with the unit value index of the prices. We note that these prices are as obtained from the South African Revenue Service (SARS), and as it is a statutory declaration to present accurate data on these trade items we have to assume that the data is correct. The two top import source and export destinations (as downloaded from the International Trade Centre – ITC) are also shown for each line.

Table 14: South African agricultural imports of selected products

Product	Index average price of imports						Imports in Rand (million)						
	2007	2008	2009	2010	2011	2012	2007	2008	2009	2010	2011	2012	Main suppliers 2012
Rice	100	272	234	191	184	200	2,046	3,698	3,704	2,985	3,496	5,566	Thailand (34.5%), China (32.8%)
Palm oil	100	168	128	136	177	180	1,376	2,435	1,964	2,188	2,992	3,336	Indonesia (50.2%), Malaysia (46.2%)
Soy oilcake	100	178	202	165	176	235	1,477	2,596	2,466	2,477	2,606	2,808	Argentina (100%)
chicken cuts	100	123	116	163	181	208	1,215	1,259	1,191	1,076	1,795	2,495	Brazil (29.3%), Netherlands (25.9%)
Whiskies	100	115	124	129	128	131	1,490	1,710	1,637	1,904	2,144	2,295	UK (82.1%), Ireland (8.8%)
Soybean oil	100	174	122	134	176	198	672	1,202	552	1,616	2,180	1,869	Netherlands (39.2%), Spain (35.5%)
Sunflower seed	100	174	118	132	184	188	795	407	714	749	806	1,844	Argentina (59%), Ukraine (17.3%)
Food preps NESOI	100	116	140	120	132	136	960	1,178	962	943	1,141	1,323	US (18.6%), Netherlands (12.3%)
Tobacco	100	127	189	167	152	178	483	732	1,342	1,045	1,021	929	Brazil (29.8%), Zimbabwe (26.6%)

Source: GTA (2013); ITC (2013) and own calculation

Table 15: South African agricultural exports of selected products

Product	Index average price of exports						Exports in Rand (million)						
	2007	2008	a009	2010	2011	2012	2007	2008	2009	2010	2011	2012	Main destination
Oranges	100	125	119	145	166	159	2,778	3,696	3,365	4,401	4,475	4,782	Netherlands (17.7%), Russia (10.6%)
Wine	100	150	128	140	146	182	3,651	4,545	4,343	4,014	3,657	3,633	UK (15.9%), Germany (11.3%)
Grapes	100	128	145	154	163	174	2,201	2,585	3,022	3,071	3,107	3,533	Netherlands (42.8%), UK (19.5%)
Maize	100	218	112	83	116	157	111	3,911	3,445	1,929	5,561	2,951	Mexico (88.3%), Mozambique (5.7%)
Apples	100	123	129	133	141	149	1,495	1,978	1,957	1,821	2,113	2,595	UK (26.8%), Malaysia (11.9%)
Wool	100	102	89	105	150	166	1,030	1,143	1,227	1,240	2,026	2,299	China (63.2%), Czech Republic (16.1%)
Wine	100	173	195	197	207	200	981	1,533	1,473	1,481	1,600	2,071	UK (25.2%), Germany (17.2%)
Food preps NESOI	100	86	93	95	92	98	491	641	699	811	1,099	1,097	Zimbabwe (20.1%), Nigeria (11.7%)
Soybean oil	100	290	178	176	215	246	4	20	52	195	558	955	Zimbabwe (94.5%), Zambia 3.35%)
Cane sugar	100	66	219	242	298	309	542	716	1,059	929	719	950	Mozambique (25.7%), Zimbabwe (22.7%)

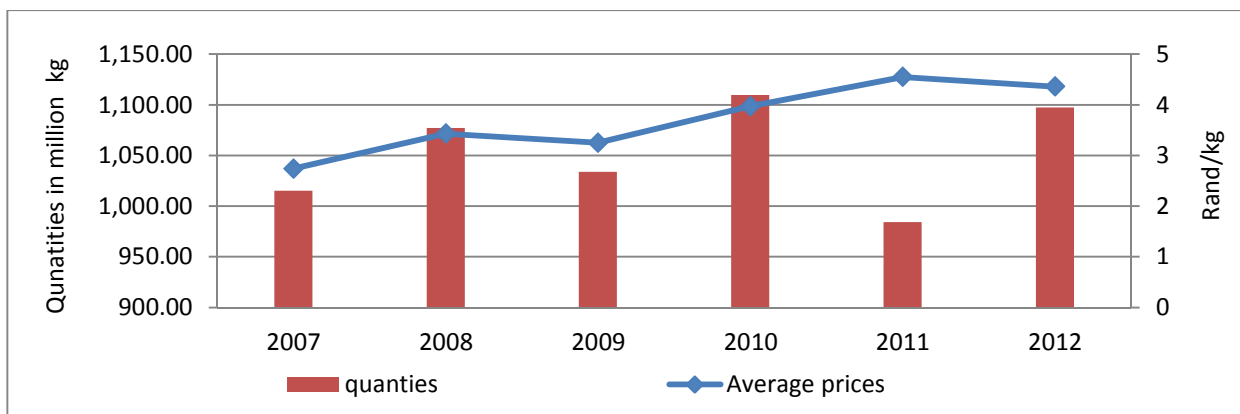
Source: GTA (2013); ITC (2013) and own calculation

Selected details of the South African Agricultural import and export prices and volumes

South African agricultural exports

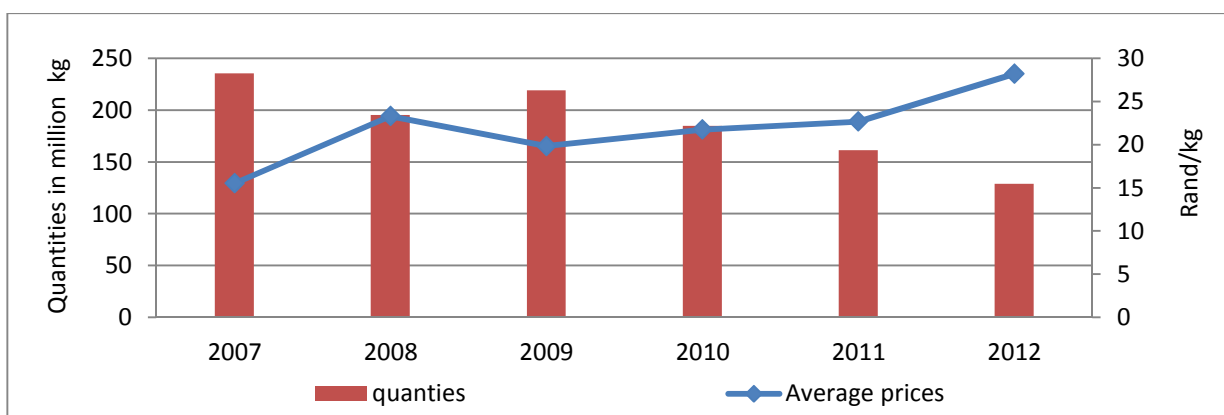
In this section we augment the trade data discussed above by showing the changes in quantities along with the average value index data for the export commodities of oranges, wine, grapes, maize and apples. Again note that this data is at the HS 6 detailed line level, and is again expressed in rand for values and in kilogram (million) for volume. The volumes are, of course, only of comparable relevance for the particular HS 6 line and direct comparison between commodities is not possible, except, of course, in general terms. We present that data with no comments upon it.

Figure 7: Oranges (HS 080510)



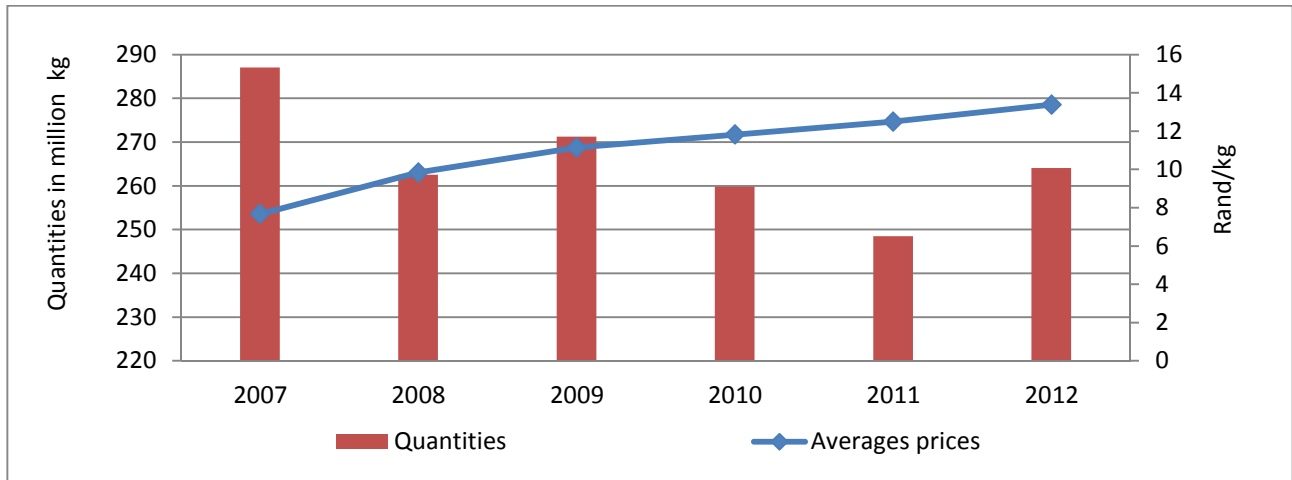
Source: Global Trade Atlas (GTA)

Figure 8: Wine (HS 220421)



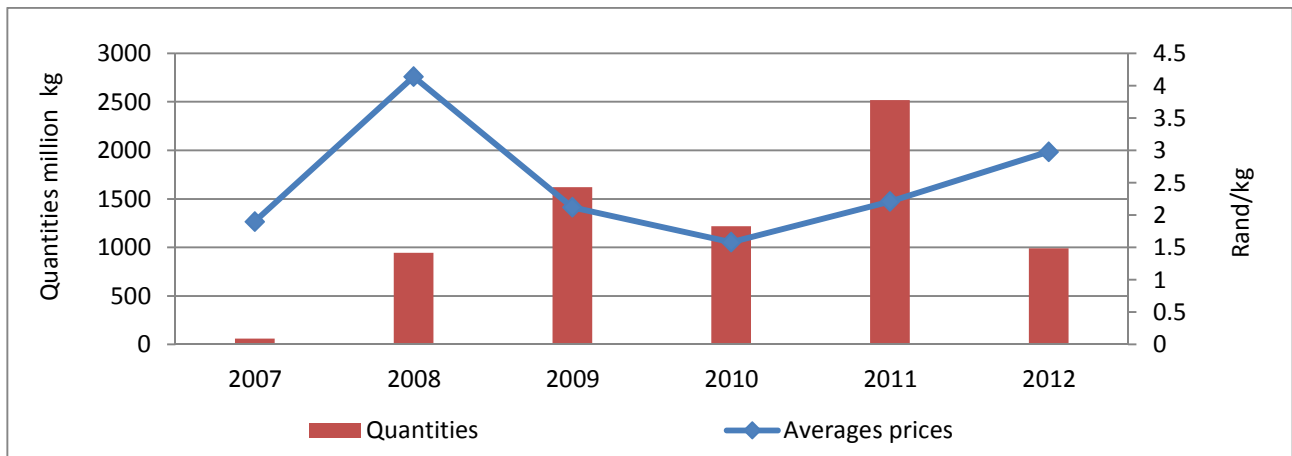
Source: GTA

Figure 9: Grapes, fresh (HS 080610)



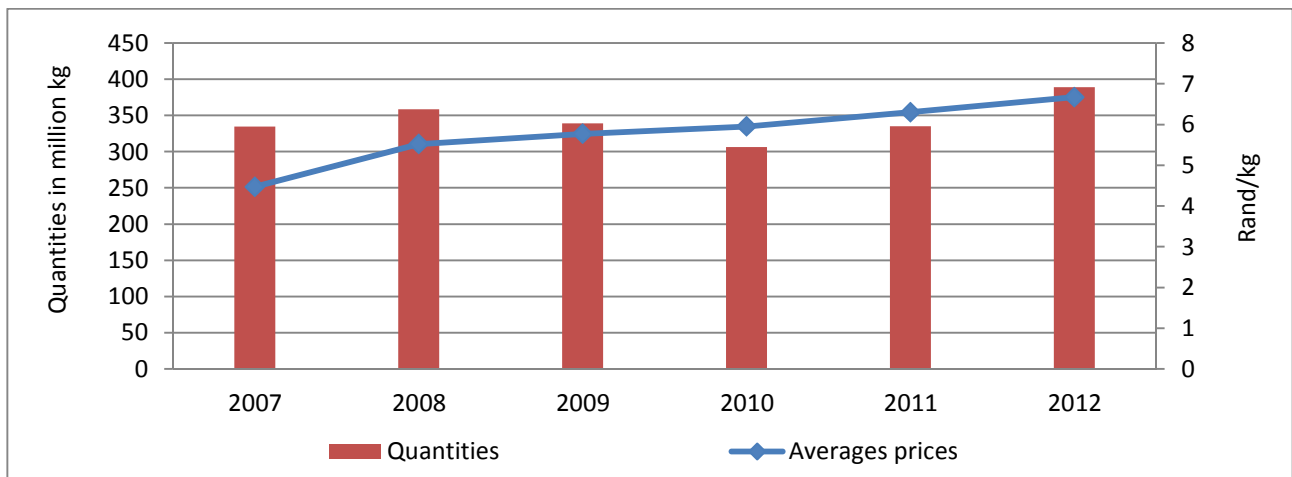
Source: GTA

Figure 10: Maize (HS 100590)



Source: GTA

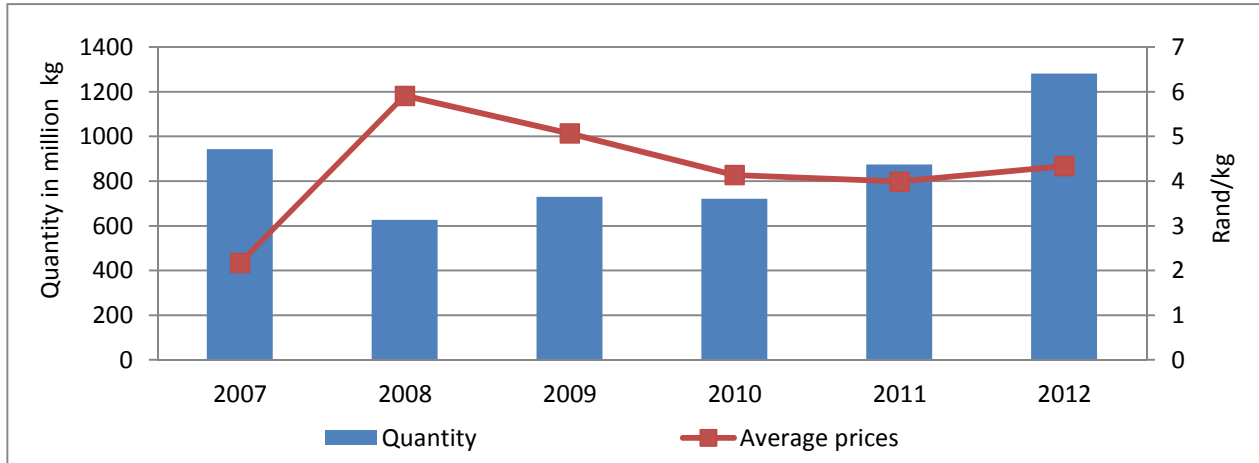
Figure 11: Apples (HS 080810)



Source: GTA

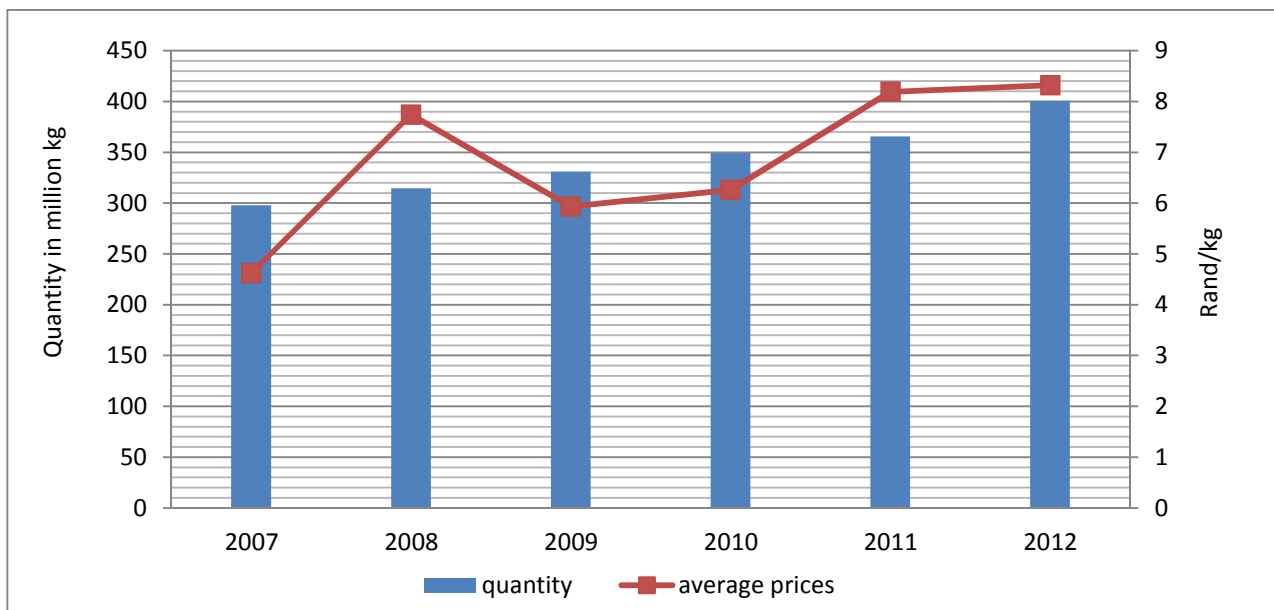
South African agricultural imports

Figure 12: Rice, semi- or wholly milled, polished, etc. or not (HS 100630)



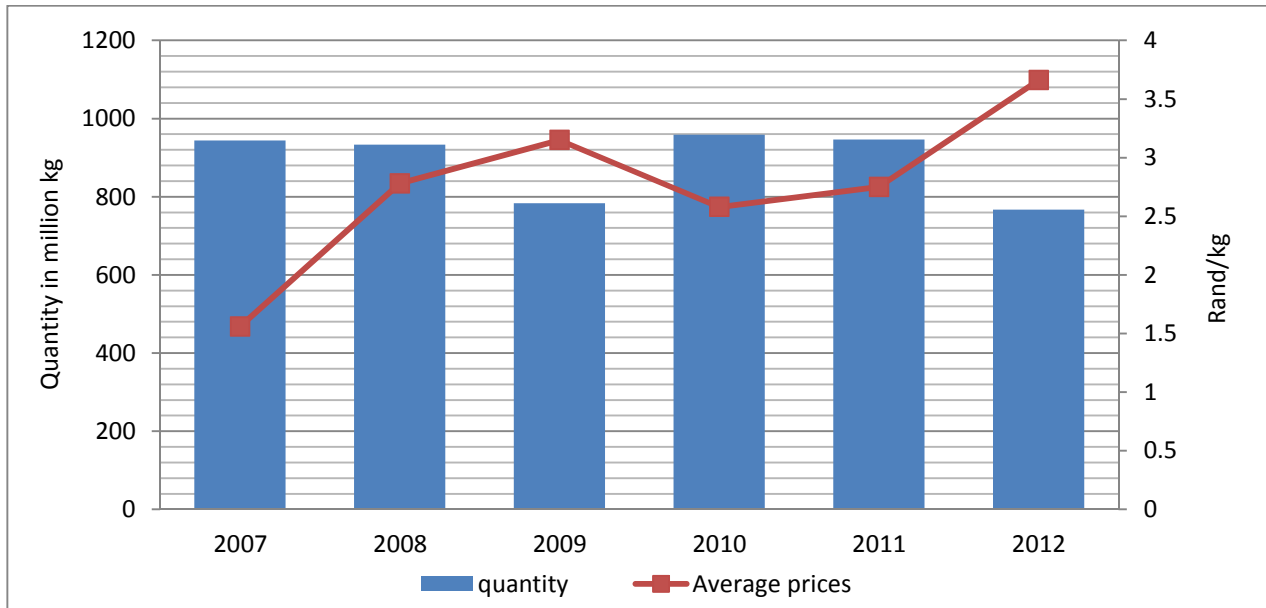
Source: Global Trade Atlas

Figure 13: Palm oil (HS 151190)



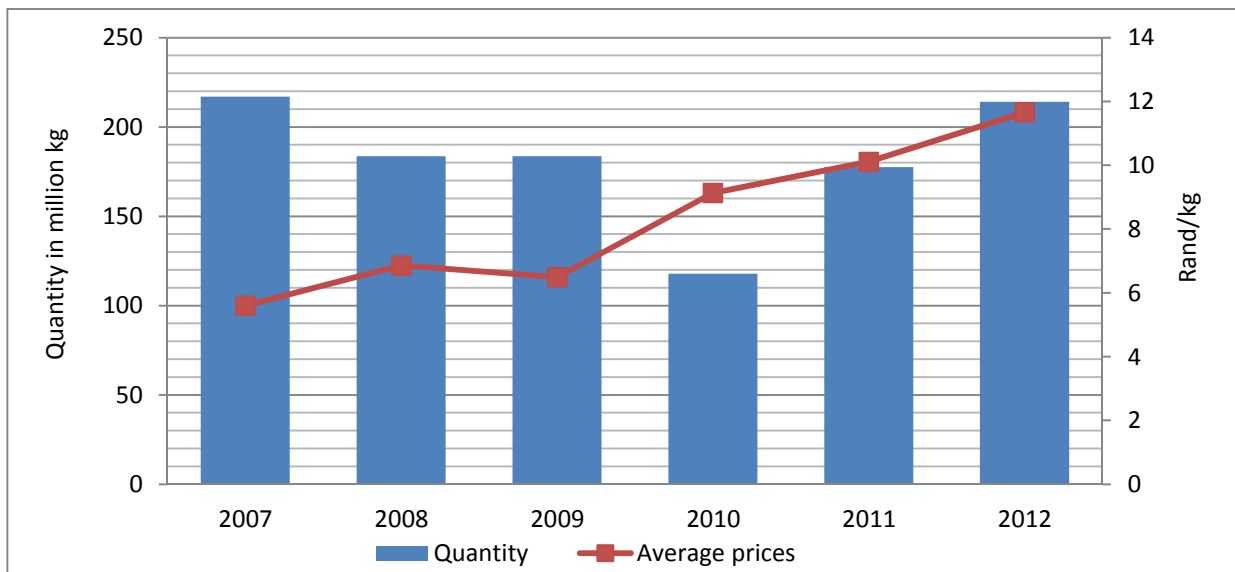
Source: Global Trade Atlas

Figure 14: Soybean oilcake (HS230400)



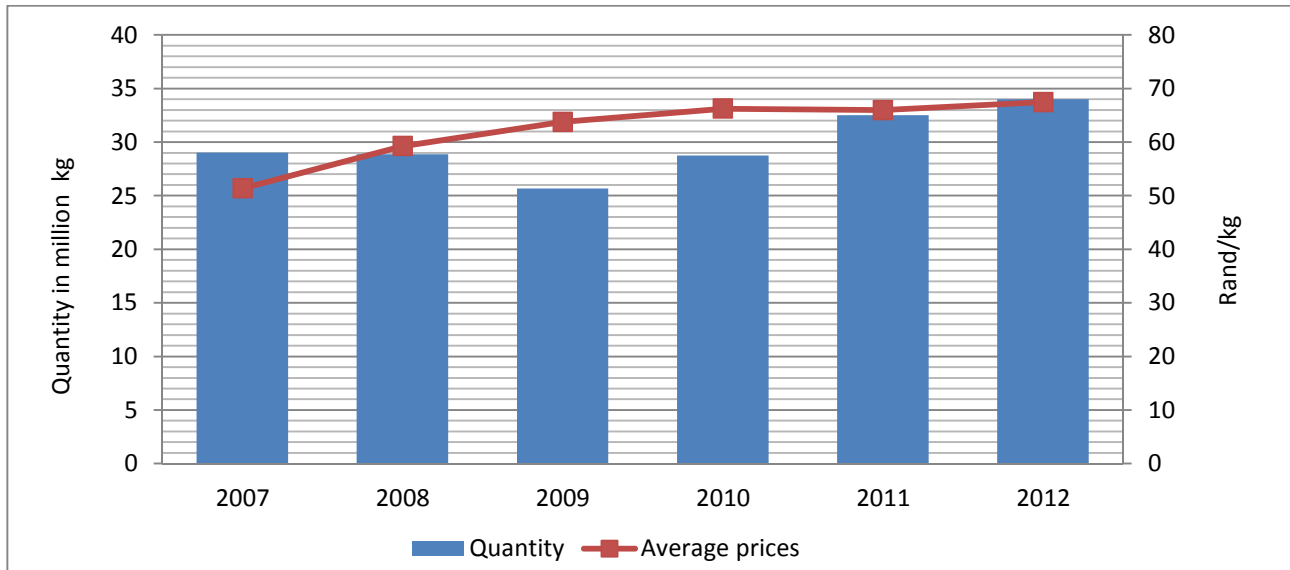
Source: Global Trade Atlas

Figure 15: Chicken cuts (HS 020714)



Source: Global Trade Atlas

Figure 16: Whiskies (HS 220830)



Source: Global Trade Atlas

Brazil

Using the same Global Trade Atlas (GTA) data source we were able to assess the relative performance of Brazilian agriculture against the analysis we have presented for South Africa. Table 16 shows the export mix and performance of Brail over the same six-year period, with the data expressed in South African Rand (ZAR) to make it comparable. Indeed, in the lower two lines we have shown the South African agricultural exports by value (also rand in million) and the relative size of Brazil compared with South Africa. The Brazilian exports are about ten times the value of South Africa's.

The top ten HS 4 agricultural exports from Brazil during 2012 are listed in Table 16, and these ten exports account for 80% of the total agricultural exports in recent years. Soy products (including chickens that are, as it were, walking soy bean products) and sugar dominate the top positions, and most of the commodities shown have performed consistently over the period.

Table 16: Brazilian agricultural exports, R million and % shares

		South Africa Rand (million)					
		2007	2008	2009	2010	2011	2012
Total exports		1,130,429	1,631,293	1,272,091	1,471,798	1,861,442	1,992,273
Agricultural exports		313,626	478,201	454,286	464,172	592,829	684,818
agricultural exports % Total		27.7%	29.3%	35.7%	31.5%	31.8%	34.4%
HS 4	Commodity						
1201	Soybeans	47,367	87,294	95,697	82,035	115,785	141,522
1701	Sugar	35,945	46,288	68,478	92,818	109,165	106,835
0207	Poultry	30,658	49,286	41,185	43,458	52,722	57,063
2304	Soy oilcake	20,819	35,884	38,072	34,470	41,171	54,444
0901	Coffee	23,951	35,072	31,693	37,679	58,799	47,106
1005	Corn (Maize)	13,392	11,941	11,013	15,726	20,342	45,510
0202	Beef	19,069	30,276	22,049	24,749	25,515	30,286
2401	Tobacco	15,425	22,337	24,467	19,808	20,963	26,341
2009	Fruit juice	16,723	17,866	14,791	13,997	18,730	20,066
2207	Ethyl alcohol	10,429	19,894	11,010	7,377	11,121	18,288
Top 10% of agr exports		74.5%	74.5%	78.9%	80.2%	80.0%	79.9%
SA agricultural exports							
SA agricultural exports R billion		30,643	45,903	47,483	47,350	52,593	56,867
SA agriculture as % of Brazilian		9.77%	9.60%	10.45%	10.20%	8.87%	8.30%

Source: GTA data, tralac analysis

The relative change in Brazilian export prices against the South African Index is shown in Table 17. Over the last three years South Africa has been above the Brazilian average values across all products, but Brazil did better in the commodity boom of 2008 and its immediate aftermath in 2009. Computing the Brazilian index for imports would be of little relevance, as Brazil imports very few agricultural products – what do you give somebody who has everything?

Table 17: Brazilian and South African export price index comparison

Year	2007	2008	2009	2010	2011	2012
Brazil Export Index	100	152.4	143.9	145.7	185.6	203.7
SA Export Index	100	146.8	134.9	159.2	166.4	192.3

Source: GTA, tralac calculations.

Reference

Sandrey, R. and Gil, T. 2012. An assessment of the TDCA. *In* Hartzenberg, T. et al. (eds.), *Monitoring Regional Integration*. Stellenbosch: tralac and Konrad Adenauer Stiftung publication.

- - -