Chapter 8

The rise and rise of Brazilian agriculture: what does it mean for South Africa?

Ron Sandrey and Nick Vink

A feature of global agricultural trade in recent years has been the export performance of Brazil, and the objectives for this chapter are to analyse Brazilian agriculture. In particular, we will examine the policies that have driven Brazil's agricultural performance, how this performance may impact upon South Africa in the future, and what lessons South Africa may learn from Brazil.

The most visible aspect of Brazilian agriculture in recent years has been its performance as an exporter, that ultimate test of international competitiveness (and especially so when this takes place in a non-subsidised environment, as we will show later). Figure 1 shows the top six global exporters during 2009, the most recent comparable data from the Food and Agricultural Organisation (FAO) database[1]. The top position is held by the United States (US), with Brazil in fifth place, and with the three European Union (EU) countries of the Netherlands, Germany and France in second, third and fourth place – although note that the EU data includes intra-EU exports.

---

[1] The data uses the FAO definitions of agriculture that refers to food and agriculture products, excluding fishery and forestry products that includes only the food and agriculture products. This definition differs from the WTO definition that we use elsewhere in this chapter.

Figure 1: Top global agricultural exporters, 2009, $ million
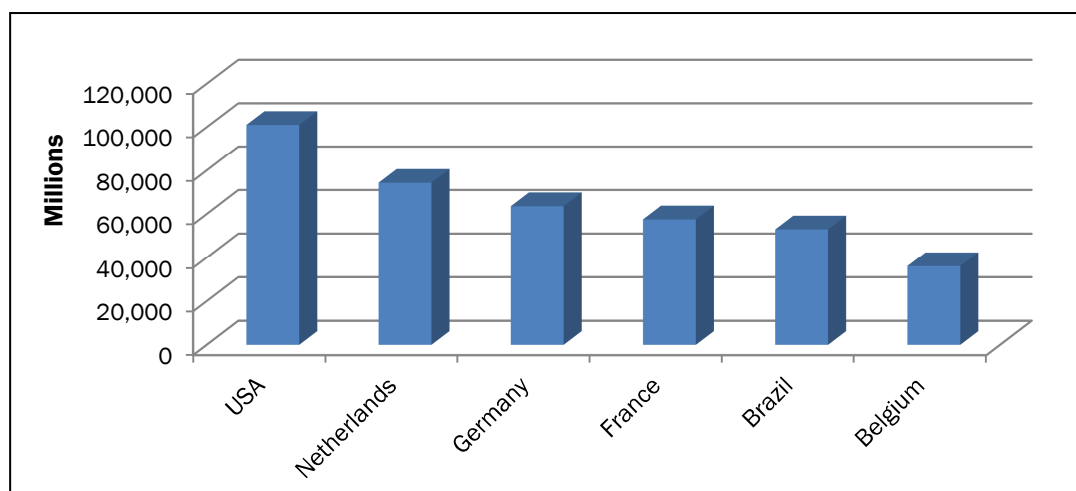
Source: FAO database

To put this trade in perspective we display the FAO export value indexed at base prices[2]. Values on the left-hand side of Table 1 represent the indexed values of the exports over the 2009, 2000, 1990 and 1980 periods. The values on the right-hand side of the table show the changes in these values, with the first set showing the changes in 2009 over 1980, 1990 and 2000, while the second set on the right-hand side shows the changes in 2000 over firstly 1980 and then 1990. This gives a perspective on the relative changes, both over the entire period and between selected times. The top 15 exporters for 2009 plus South Africa are shown. Of importance are the ratio values showing changes over the different periods, as only Indonesia has higher or equal ratios in every period. Performances from both Spain and China have been stellar, while, conversely, performance from the US, France, Canada, Italy, and Australia and, at the bottom of the table, South Africa, have all been modest.

Figure 2 shows the real growth of the Brazilian exports relative to those of South Africa from 1997 to 2011 inclusive, with the data sourced from the Global Trade Atlas (GTA) and expressed as a ratio of Brazilian agricultural exports over South African agricultural exports. From 1997 through to 2003, the ratios tracked relatively closely, varying between South Africa's best performances of the ratio of Brazil's 5.8 to South Africa's, to the worst of a 6.9 to one ratio in 2001. From 2004, Brazil outstripped South Africa, with the ratio rising to a final 11.3 in 2011.

---

[2] The FAO Unit Value indices for the aggregate agricultural and aggregate food products represent the changes in the quantity-weighted unit values of products traded between countries. The weights are the quantity averages of 1989-1991. The formulas used are of the Laspeyres type. Indices for food products include commodities that are considered edible and contain nutrients, except for animal feed products and alcoholic beverages. Coffee and tea are also excluded because, although edible, they have practically no nutritive value; given that coffee is a major export from Brazil this will impact upon the Brazilian values.

Table 1: Indexed global agricultural exports, $ million and ratios between periods

Country	Value $m 2009	Value $m 2000	Value $m 1990	Value $m 1980	Change in 2009 over (ratio) 1980	1990	2000	Change, 2000 over 1980	1990
US	62,144	56,880	49,272	57,835	1.1	1.3	1.1	1.0	1.2
Netherlands	46,114	27,606	27,641	16,585	2.8	1.7	1.7	1.7	1.0
Germany	42,798	36,300	20,282	12,524	3.4	2.1	1.2	2.9	1.8
France	39,829	42,892	36,304	23,706	1.7	1.1	0.9	1.8	1.2
Brazil	**37,207**	**14,227**	**8,089**	**6,232**	**6.0**	**4.6**	**2.6**	**2.3**	**1.8**
Spain	24,631	18,694	10,390	5,769	4.3	2.4	1.3	3.2	1.8
Belgium	24,475	21,525	0	0			1.1		
Canada	23,584	18,870	14,548	12,963	1.8	1.6	1.2	1.5	1.3
Italy	22,618	21,803	14,750	11,831	1.9	1.5	1.0	1.8	1.5
Australia	17,437	20,706	12,959	14,365	1.2	1.3	0.8	1.4	1.6
Indonesia	15,668	6,102	3,384	1,969	8.0	4.6	2.6	3.1	1.8
Argentina	15,130	13,518	7,019	4,707	3.2	2.2	1.1	2.9	1.9
China	14,829	15,377	9,516	3,451	4.3	1.6	1.0	4.5	1.6
Thailand	13,658	9,503	9,299	6,099	2.2	1.5	1.4	1.6	1.0
Denmark	13,067	11,292	12,610	6,397	2.0	1.0	1.2	1.8	0.9
South Africa	4,124	2,711	2,692	3,627	1.1	1.5	1.5	0.7	1.0

Source: FAO

Figure 2: Ratio of Brazilian agricultural exports to those of South Africa
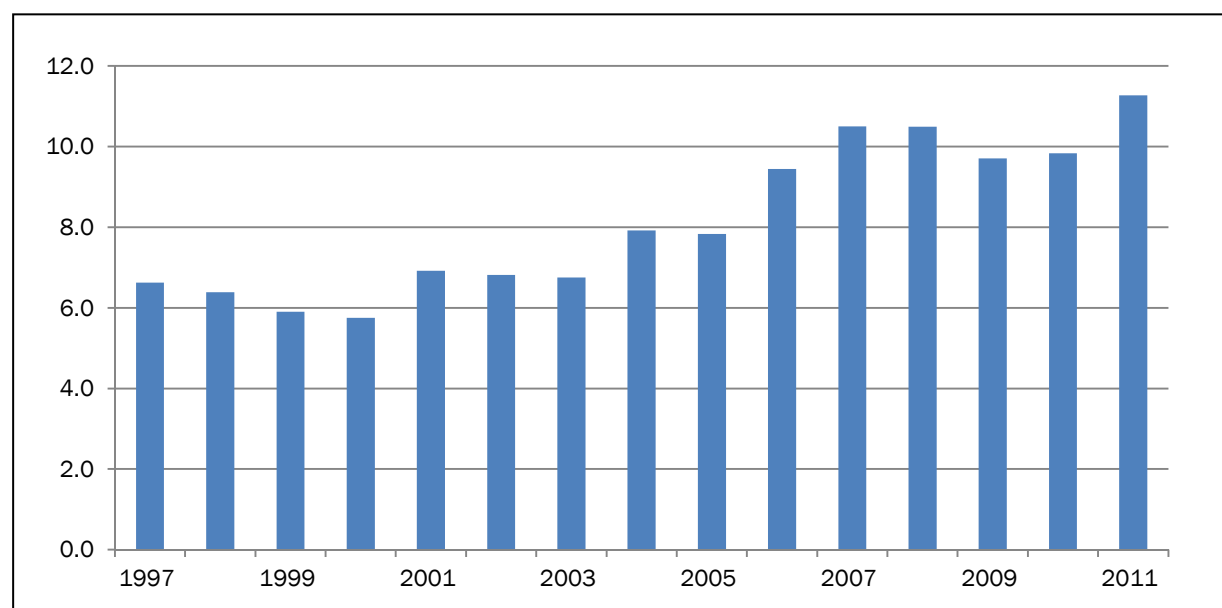
Source: Global Trade Atlas, World Trade Organisation definition of agriculture

Table 2 shows the destination of these Brazilian exports, as ranked on 2011 trade data. Key points are: 1) the EU has consistently been the number one destination; 2) the rapidly growing market of China is now number two; and 3) the share of these top 10 markets declined from 74% in 1997 through to around 65% in the two most recent years, thus indicating a broader export diversification.

Table 2: Brazilian exports of agricultural products, as classified under WTO (US$ millions)

Partner Country	1997	2000	2003	2006	2009	2010	2011
World	16,659	12,899	21,247	36,516	54,609	63,486	81,469
EU -27	7,461	5,498	7,857	10,569	13,981	13,912	16,560
China	651	438	1,698	2,799	7,420	9,326	14,602
United States	1,429	1,098	1,443	3,042	2,539	2,926	4,456
Russia	686	405	1,421	3,125	2,769	4,039	4,016
Japan	914	641	800	1,156	1,590	2,095	3,201
Saudi Arabia	251	265	500	817	1,479	1,926	2,391
Spain	606	490	717	862	1,385	1,546	2,211
Venezuela	39	81	78	517	1,442	1,999	2,177
Iran	157	247	745	1,374	1,091	2,061	2,120
Egypt	157	107	231	794	734	1,303	1,879
Top 10 as % total	**74.1%**	**71.9%**	**72.9%**	**68.6%**	**63.0%**	**64.8%**	**65.8%**

Source: Global Trade Analysis data

The Brazilian export commodities

Table 3 shows the top 20 commodity exports from Brazil in 2011, along with the earlier 1997, 2000, 2003, 2009 and 2010 values and again the ratio of exports expressed as the 2011/2010 exports over the 1997/1998 exports in the right-hand column. These top 20 exports represented 92.9% of the total agricultural exports in 2011 as calculated in the bottom line, a figure that has been inching up over the period indicating slightly more concentration. Indeed, although not shown, the top five exports represented 64.1% of all exports in 2011. Soybeans and sugar dominate the commodities,[3] with large increases from several others in recent years. This latter group includes beef, corn, and cotton in the top half of the table and almost all the commodities in the lower half of the table. This indicates that although soybeans, sugar, coffee and poultry dominate, there are several alternative commodities that, on these

---

[3] This is even more apparent when soybean oilcake and soybean oil are added to soybeans, as the combined soybeans then add to just about 30% of the total exports.

projections, are likely to continue to contribute to Brazilian exports. The juggernaut is showing no sign of slowing down.

Table 3: Brazil's global agricultural exports at HS 4 level, all commodities

| HS code | Description | US dollars (millions) | | | | | | | Change |
		1997	2000	2003	2006	2009	2010	2011	1997-8/ 2010-11
	Total agriculture	16,659	12,899	21,247	36,516	54,609	63,486	81,469	4.52
1201	Soybeans	2,452	2,188	4,290	5,663	11,424	11,043	16,327	5.9
1701	Sugar	1,774	1,199	2,140	6,167	8,378	12,762	14,942	7.5
0901	Coffee	2,749	1,563	1,316	2,953	3,791	5,204	8,026	2.6
0207	Poultry	918	879	1,862	3,039	4,945	5,952	7,243	7.8
2304	Soybean oilcake	2,681	1,651	2,602	2,419	4,593	4,719	5,698	2.4
0202	Beef, frozen	148	333	727	2,468	2,655	3,376	3,518	18.8
2401	Tobacco	1,091	813	1,052	1,694	2,992	2,707	2,879	2.8
1005	Corn (maize)	52	9	375	482	1,302	2,216	2,716	77.1
2009	Fruit juice	1,058	1,090	1,250	1,570	1,752	1,925	2,566	1.9
1507	Soybean oil	597	359	1,233	1,229	1,234	1,352	2,129	2.4
5201	Cotton	0	32	189	338	685	822	1,590	large
2207	Ethyl alcohol	54	35	158	1,605	1,338	1,014	1,492	27.8
1602	Prepared meat	253	288	434	1,097	1,438	1,269	1,488	4.8
0203	Pork	142	163	527	990	1,112	1,227	1,286	8.7
2101	Extracts coffee	385	222	231	411	490	563	710	1.9
1001	Wheat	0	0	7	64	63	227	699	large
0210	Prepared meat, etc.	3	5	8	21	531	564	659	large
0201	Beef, fresh	49	170	428	667	367	485	652	10.7
1006	Rice	2	7	5	60	268	163	613	large
0102	Live cattle	0	0	1	73	444	659	445	large
Top 20		14,408	11,006	18,835	33,010	49,802	58,249	75,678	4.9
Top 20 as % of all		**86.8%**	**85.3%**	**88.8%**	**90.4%**	**91.4%**	**91.7%**	**92.9%**	

Source: Global Trade Analysis data, tralac calculations

Examining the data we find that China is the number one destination for soybeans, taking over half of the total in recent years, while sugar exports are more diversified, with China at number two behind Russia for 2011. For coffee, the main destination was the US, while nine of the top 11 destinations were in the EU. For soybean cake, the top three were European countries followed by Thailand and Korea, while for chickens, the rankings were Japan, Hong

Kong and China and then the two Middle East countries of Saudi Arabia and the United Arab Emirates (UAE) (with South Africa in seventh place). For beef, the main destination was Russia, while for refined cane sugar the main destination was the UAE, with six of the top 10 destinations being African countries.

Brazilian agricultural trade: the 2012 update

Trade data for Brazil for the 2012 year became available as this chapter went to print. Overall, merchandise exports were down by 5%, with those to Argentina down 21%. Global imports were virtually unchanged with a 1% decline and no major source changes. There are, however, significant changes in the all-important agricultural exports, as these were down by 33% overall. This included declines of 78% to China, 37% to Africa in total, and 23% to South Africa, by destination, and a massive decline in sugar and soybeans global exports as they went from the two top commodities in 2011 to virtually nothing in 2012. The main changes in Brazilian agricultural exports to South Africa were declines by 22% in chicken cuts and edible offal (perhaps in the face of threatened action from South African authorities against these imports, action which has now been dropped) and significant increases in the export of both sugar and turkey meats. The relatively insignificant import of agricultural products from South Africa did increase by 50%, but this was from $12 million in 2011 to $18 million in 2012.

The declines of 78% in Brazilian agricultural exports to China are significant, and they are confirmed by Chinese 2012 agricultural import data from Brazil where imports declined by 374% in 2012 over 2011 data. Brazilian data shows declines of 98.6% and 99.7% for soybeans and sugar, respectively, in 2012 over their 2011 values (where as the top two exports they contributed 83% of Brazilian agricultural exports to China). China import data is consistent and shows zero imports for the same two commodities. Furthermore, there is no evidence of a HS 6 line classification change – these two large trade items into China ceased, and this seems consistent with Brazil's world exports, thus pointing to supply problems during 2012 in Brazil.

Brazilian agricultural production

Table 4 puts the growth of Brazilian agriculture over the period from 1985 to 2010 in perspective by comparing the indexed growth of Brazil with selected other countries of

particular interest to South Africa. The left-hand side of the table shows that Brazilian production in 2010 was 120.75 when assessed against the base of 1000 for the 2004-2006 period. This is a commendable performance but still marginally below that of India. Conversely, the right-hand side of the table shows that while Brazil rose from a 1985 level of 47.89, the performance of China was even more spectacular over this earlier period. South Africa's performance has been just above the world average since 2004-2006 but below the average before then.

Table 4: Global agricultural production index

Net Production Index, 2004-06 = 1000						
	2010	2009	2004-06	1995	1990	1985
Argentina	115.61	96.68	100	73.81	65.11	61.52
Australia	99.96	101.84	100	88.12	80.31	72.34
Brazil	**120.75**	**116.85**	**100**	**64.72**	**51.8**	**47.89**
China	118.51	115.52	100	66.63	49.67	38.86
India	123.66	114.1	100	80.88	69.96	59.21
Russia	100.21	113.21	100	93.16		
South Africa	115.99	113.7	100	71.92	81.22	72.54
US	107.91	107.19	100	83.94	77.89	77.62
World	112.61	110.7	100	77.31	70.96	63.58

Source: FAO database

From the FAO database we were able to extract the values of the top 10 Brazilian agricultural products. These are shown in Table 5, where the values are ranked by 2010 and expressed in US dollars (millions). The right-hand section of the table shows the values for the same products for earlier years, while the right-hand column shows 'change' as defined by the ratio of the 2010 output to that of 1990, representing the take-off point for the sector. Beef, sugar, and soybeans have consistently been the top three products, but the rankings have changed in other products. Chickens have moved to number four as a result of the growth over the period, while maize at number 10 has also displayed dramatic growth. Not shown is that bananas and cassava were in the top 10 during 1980, and that these products had been replaced by coffee and maize (although coffee was number 11 in 1980). Beans have also been 'there or thereabout' in most periods as well. Note that four of the top six products are the three meat products of beef, chicken and pig meat, and cow's milk. The FAO ranks Brazil as being the number one producer of sugar cane, oranges and coffee; number two in beef and soybeans;

number three in chicken meat and maize; number four in cow's milk; number five in pig meat; and number nine in rice. Note also that, as discussed below, while sugar is, of course, an agricultural product, a significant percentage of the output in Brazil is used for ethanol fuel production.

Table 5: Brazilian agricultural production, $ million

	2010	2009	2008	2005	2000	1995	1990	1985	1980	Change
Beef	25,193	25,691	24,590	23,276	17,738	15,202	11,071	9,392	7,677	2.3
Sugar	23,362	22,513	20,993	13,823	10,597	9,808	8,350	7,914	4,609	2.8
Soybeans	16,800	15,358	16,027	13,669	8,665	6,780	5,074	4,829	3,964	3.3
Chicken	15,288	14,206	14,596	11,239	8,533	5,772	3,356	2,122	1,952	4.6
Milk	9,489	8,986	8,786	7,842	6,296	5,247	4,614	3,847	3,694	2.1
Pig meat	4,733	4,811	4,635	5,431	3,997	2,429	1,614	1,199	1,506	2.9
Oranges	3,498	3,405	3,583	3,450	4,122	3,834	3,386	2,747	2,105	1.0
Coffee	3,122	2,622	3,005	2,299	2,045	999	1,574	2,053	1,140	2.0
Rice	3,072	3,467	3,300	3,613	3,024	3,059	1,978	2,396	2,595	1.6
Maize	2,962	2,380	2,353	927	621	1,213	572	747	586	5.2

Source: FAO database

Agricultural policy in Brazil

Our focus will now shift to the examination of what lies behind the rise and rise of Brazilian agriculture in recent years. Two seminal pieces of research in this area have been undertaken: one by the World Bank by Anderson and Valdes (2008) and the other by the Organisation for Economic and Cooperation Development (OECD). This research provides the foundation for the Brazilian agricultural policy analysis. Anderson and Valdes examined the history of distortions to agricultural incentives caused by price and trade policies in Latin America, and they emphasise the two distinctive periods of Brazilian agricultural policies in recent years. The first period from the 1960s to around the late 1980s-early 1990s was characterised by policy interventions to promote industrialisation in Brazil through an import substitution regime that resulted in both direct and indirect taxation of the agricultural sector. This led to a chronically overvalued exchange rate that was accentuated by direct export taxes. Agriculture remained effectively closed to trade thanks to the set of trade policy instruments that skewed prices on import-competing crops by direct intervention and measures ranging through to outright bans on exports. Overall, the economy in general and the rural sector in particular

stagnated, and the legendary inflation of the time created problems for the rural sector that have not yet been fully alleviated.

The second period, from around the very late 1980s, has seen macroeconomic stability (and, most importantly, a stable exchange rate) coupled with trade liberalisation and generally much less intervention in agricultural markets. The first direct changes were from 1989 to 1992 when unilateral trade liberalisation was adopted with policies that included the elimination of controls and taxes over exports and reduced tariffs on imports. Shortly after this, the economy-wide stabilisation programmes started focusing on the exchange rate and government expenditure, albeit with the side effect of increasing real[4] exchange rates of the *real*. Anderson and Valdes (2008) report that these policy reforms and their implications were again themselves effectively split into two periods. The first was a transition period from 1990 to 1999 when the newly-freed imports that were accentuated by an appreciating exchange rate depressed local prices in an environment whereby farmers were provided little support. The second was post-2000 when a devaluing local currency and higher international prices allowed the larger commercial farmers with their technological enhancements to significantly increase production and consequently exports. Brazil increasingly became a major international agricultural exporter with much of this result credited to enhanced productivity flowing from fresh investment in agricultural research and currency stability in a more neutral policy environment.

Associated with these changes was the related issue of agricultural debt as the rising inflation of the 1980s and the policy attempts to alleviate the situation resulting in a chasm between interest rates on loans and farm revenues. General insolvency and restricted credit availability resulted, and by the mid-1990s, as the debt worsened, the Brazilian Government instigated a rescheduling programme. The repayment period for the overdue debt was extended by 20 or 24 years, and the interest rate was set at below-market rates. In the early 2000s, further rescheduling measures extended repayments for small farmers and land reform beneficiaries at reduced interest rates, as well as for partial write-offs and some rebates. The OECD (2011) reports strong intervention in the credit sector via interest rate subsidies and the requirement that banks allocate at least 29% of their demand deposits to agricultural lending. This is of little consequence for larger farmers who can borrow on international markets, but it imposes

---

[4] Care must be taken not to confuse the Brazilian currency, the *real* exchange rates in nominal terms, with the common economic measure of the real exchange rate or the inflation-adjusted rate of the *real*. Key to Brazilian reforms has been the very successful *Real Plan*, the currency stabilisation plan.

a burden on medium-sized farmers and other industries obliged to borrow domestically at market rates.

The main objective of the World Bank project was to estimate the assistance (be it positive for supports or negative for taxation) provided directly or indirectly to the agricultural sector. Their measure is the nominal rate of assistance (NRA), a measure that includes an adjustment for inputs such as fertiliser price distortions and credit supports. Estimates are given in Table 6 for both exportables, such as beef and sugar, and importables such as maize and rice. For exportables, the patterns are similar for all products except sugar, with negative estimates in the earlier periods which reflect a high taxation effect and these estimates generally changing to modest supports following the reforms just outlined. For importables, there is a longer time frame given and there is much more variability between products and time periods. Wheat was heavily supported in the early years before settling into a pattern similar to that of the exportables, following radical deregulation in 1990; maize was really neutral early on, taxed in the middle periods and generously (by recent Brazilian standards) supported in recent years. Rice was taxed early on but again generously supported in more recent times due to its function as a staple crop where governments strove to keep the prices low for consumers. In aggregate, exportables were heavily taxed through to the reforms and lightly supported since, while importables were almost neutral in the early periods, heavily taxed in the middle, and more generously supported in the latter periods.

The OECD data[5] is provided on the right-hand side of Table 6 (albeit with a minor difference in the OECD time periods), and this represents the supports as measured by the producer support estimate (PSE) expressing the assistance as a percentage of the gross value of production. It is a similar but different measure from the World Bank estimates and therefore not directly comparable.[6] These OECD estimates are generally very low, and much lower than the more comprehensive World Bank estimates. Note, however, the taxation of the sugar sector in the late 1990s, where the signs are consistent with the World Bank but the estimate of the taxation is greater.

---

[5] More information on the OECD estimates of support is given in the next section.
[6] Details of the definitions are provided in the Annex.

Table 6: Assistance to Brazilian agriculture, World Bank and OECD estimates

	World Bank					OECD*	
	1996-9	1975-9	1985-9	1995-9	2000-05	1995-9	2000-05
Exportables	**-8.4**	**-30.0**	**-29.5**	**0.4**	**1.3**		
Beef			2.7	4.4	3.1	**0.0**	**0.0**
Coffee			-25.0	6.8	6.3	0.1	0.1
Poultry			-13.7	1.0	2.3	0.0	0.0
Soybeans	0.0	-15.6	-20.8	-1.2	-2.5	0.1	0.0
Sugar		-52.4	-55.3	-10.3	1.7	-25.6	0.0
Importables	**1.4**	**-1.9**	**-22.5**	**8.3**	**12.0**		
Maize	-9.0	-26.0	-33.9	4.0	na	5.1	5.8
Rice		-11.1	3.8	17.2	16.6	8.4	3.1
Wheat	41.4	65.8	-5.8	8.2	0.3	3.1	1.4

Source: Anderson and Valdes for World Bank, OECD (2005)

The OECD

Another authoritative review of Brazilian agricultural policy in recent years has been the OECD (2005) report which aimed 'to strengthen the policy dialogue with OECD members on the basis of consistent measurement and analysis, and to provide an objective assessment of the opportunities, constraints and trade-offs that confront Brazil's policy makers'. The highlights from this report reinforce the low levels of government support to the sector in recent years and the radical transformation of the economy in general in recent years leading up to 2005 that included, *inter alia*, currency stabilisation and infrastructural developments, the impacts of these changes upon firstly production and consequently new export opportunities, and a recognition that high tariffs, tariff escalation and non-tariff measures in the richer OECD markets are inhibiting future developments in Brazil. We have, however, seen from the analysis above that since 2005 the sector has continued its general growth patterns, and as the OECD noted back then, this growth has been fuelled by non-traditional Brazilian products into newer (and especially Asian) growth markets.

The analysis of policy supports to agriculture is continued and updated through the OECD support measures as shown in Table 7, where perhaps the most relevant measure is the Producer Support Estimate (PSE)[7] that was used in the OECD comparisons with the World

---

[7] See Annex for definitions.

Bank estimates used above. The PSE values are low, and, importantly, they have moved from negative values in the early periods shown (indicating that farmers have effectively been taxed rather than supported) to modest positive values from 2000 onwards. To put these PSE values in perspective internationally, Brazil belongs to a group of countries that provide minimal support to agriculture as indicated by a PSE at around 5.0 in recent years. These countries are New Zealand, the lowest at 1%, and Australia, Chile and South Africa. Conversely, the highly protected EU averages around 22%. The salient point is that Brazilian agricultural expansion has not been driven by direct supports.

Table 7: Supports to Brazilian agriculture

Indicator/Yr	1995	1997	1999	2000	2002	2004	2006	2008	2009	2010
Value gate BRL million	50 576	60 104	74 222	84 661	126 597	185 126	175 401	252 278	260 819	275 161
Percentage PSE	**-6.8**	**-1.5**	**1.3**	**6.4**	**4.9**	**4.5**	**6.1**	**4.1**	**6.5**	**4.5**
Producer NPC	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Producer NAC	0.9	1.0	1.0	1.1	1.1	1.0	1.1	1.0	1.1	1.0
Percentage CSE	4.9	5.3	3.8	-3.0	-0.9	-1.6	-2.8	-1.3	-5.5	-3.1
Consumer NPC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0
Consumer NAC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0
% TSE (as % GDP)	-0.2	0.3	0.3	0.6	0.6	0.7	0.7	0.5	0.7	0.5

Source: OECD database

If direct supports have not driven Brazilian agriculture, what has? The OECD agrees with the World Bank in that the general economy-wide transformation of the Brazilian economy over the last 20 or so years has certainly been a major factor in its expansion. The Real Plan brought about the budgetary restraints needed to bring the notorious Brazilian inflation under control and provided (initially) a relatively undervalued exchange rate that contributed to exports, structural reforms such as a privatisation programme and the deregulation of domestic markets, and policy changes that included deep tariff cuts and a large reduction in non-tariff barriers. The OECD also agrees with the World Bank that current policy challenges concentrate upon improvements in infrastructure and the Brazilian credit and taxation

systems, the challenge of improved access to global markets, and the issue of rural poverty in the poorer subsistent sector.

There continues to be extreme disparities in the agricultural sector between the export-oriented large-scale commercial sector and the very poor and numerically strong subsistence sector.

Productivity

Examining Brazilian agricultural policy and productivity by using Brazilian census data, Rada and Buccola (2012) assess that technical progress has been significantly greater in the livestock sector than in the crop sector. They acknowledge the contribution of economic reform to the sector's recent growth, but confirm that public research and infrastructural policies have made a major contribution by enhancing on-farm technical efficiency. Using the same census data foundation, these researchers concur and assess that Brazil could substantially boost its shares in global production and trade still further by raising its low 2006 average-farm efficiency by matching a level closer to what the most efficient producers are achieving: the average farm produced 93% relative to the most efficient farms in 1985, but only 64% in 2006. Therefore, despite remarkable gains, it seems that Brazil has ample capacity for further productivity improvements.

This importance of Research and Development (R&D) in these technological gains is backed by Pereira et al. (2012) and Martha and Filho (2012) who consider that three of the main policies that played a central role in the process of agricultural modernisation in Brazil were 1) the availability of subsidised financial credit, 2) the rural extension, and 3) the provision of support for agricultural research (the National Agricultural Research System – Embrapa). The development of the Brazilian savannah (Cerrado) into agricultural land required a portfolio of technologies that have made the region one of the top grain- and beef-producing regions in the world. These technologies concentrate upon 1) biological nitrogen fixation for soybeans on poor acid soils of the Cerrado; 2) new plant varieties and hybrids and the use of no-tillage systems; and 3) the integrated crop-livestock systems and the adoption of double-cropping where possible.

Consequently, the total factor productivity (TFP) for Brazilian agriculture increased steadily from 1970 to at least 2006. Compared with 1970, TFP increased by 124%, production rose by

243%, and inputs grew by 53%. Gains in productivity represented 65% of agricultural output in the period 1970 to 2006, and inputs accounted for 35%. These productivity gains made a massive contribution not only to Brazilian output but also, in effect, to conserving forestation in Brazil. Pereira et al. furthermore reported that during the period 1950 to 2006, productivity gains accounted for 79% of the growth in beef production in Brazil and supported a land-saving effect equivalent to 525 million hectares. This is equivalent to an additional pasture area 25% larger than the Amazon biome in Brazil that would have been needed to meet 2006 levels of Brazilian beef production. In addition, during this same period, production of Brazilian grain, oilseeds, and sugarcane provided an additional land-saving effect of 78 million hectares. Janks (2012) provides comparative global data for increases in agricultural productivity over the 45-year period from 1960 through to 2005, and here Brazil heads the list with an average of 2.0%, followed by China's 1.8% and India and Argentina's 1.5%. Martha and Filho (2012) confirm that this Brazilian rate is continuing, as they report that by using census data, the average annual growth for agricultural total factor productivity in Brazil between 1995 and 2006 was 2.13%. Until Brazilian agricultural researchers and partners developed new crops and forage varieties allied with agricultural practices tailored for tropical agriculture, it was thought that only temperate regions could feed the world, but research and entrepreneurial efforts combined in Brazil to develop and cultivate soybean varieties that are producing yields comparable or even higher than those of temperate regions. This perception has therefore changed (Martha and Filho, 2012). Indeed, in discussing Brazilian agriculture growth, it was stated in The Economist (2010): 'If you want the primary reason in three words, they are Embrapa, Embrapa, Embrapa[8]'.

Martha and Filho (2012) also emphasise that often forgotten is the role played by agriculture in improving income levels and distribution. Inflation control ensures the currency's average buying power and income transfer makes purchasing power available to the target population. If the beneficiaries of inflation control and income transfer programmes largely depend on the supply of goods of agricultural origin, it is important, for the distribution to be effective, to make sure that relative prices in this sector will not increase as transfers take place. Furthermore, if production increases as a result of productivity growth, greater distribution is created by a drop in relative prices. This is the case in the recent experience in Brazil. Previously, the Real Plan measures to redistribute income and reduce poverty lost their effectiveness due to high inflation rates. After the Real Plan, redistributive measures were

---

[8] The National Agricultural Research System.

intensified, the currency inflation corrosion reduced, and an increasing availability of goods and services for the majority of the population contributed to the effectiveness of these measures. Brazilian society relies on a competitive agricultural and agro-industrial system that is extremely relevant in the international scenario today. The country will play an even more strategic role in the future because it is home to a substantial percentage of the world's remaining stocks of natural resources, and learning how to use this stock wisely is the biggest challenge ahead.

The sugar sector

Of special interest to South Africa is the Brazilian sugar sector, and Brandao (2007) provides a very good background to the sugar/ethanol interactions in Brazil and discusses how future growth of the sector depends on both sugar exports and domestic sales of ethanol. Expansion in the sector was driven by exports of sugar and the domestic market for fuel ethanol following the first oil shock in 1973. The share of ethanol in sugar cane production increased sharply from the beginning of the gasohol programme (Proálcool) in 1975 until 1985, when 70% of sugar cane was devoted to ethanol. This slowly declined to 2001 when the sugar/ethanol ratios converged to be almost exactly equal right up to 2006. Early government intervention was a trademark of the ethanol industry for many years, with this based on production quotas, price controls and the gasohol programme that granted special tax treatment for ethanol-fuelled cars, which determined the volume of anhydrous ethanol to be added to gasoline, and guaranteed purchases of the ethanol production. Intervention was phased out after 1990 and the government was left with two instruments: the ethanol gasoline mix and auctions where Petrobras purchases ethanol.

Brazil remains the lowest-cost sugar producer in the world, but the cost competitiveness of Brazilian sugar has been affected by the valuation of the Brazilian real during the 2000s. In 2004/05, all low-cost cane producers (mostly Centre/South Brazil) had costs 29% lower than the weighted average of major sugar exporter competitors Australia, Colombia, Guatemala, South Africa and Thailand. By 2009/10, this advantage had fallen to 11% (Rada and Valdes 2012). Czarnikow[9], the London-based global sugar merchant, reported that, while production costs varied, with the weaker Brazilian real the range for a good Brazilian mill was about 19 to 21 cents a pound. Weisser (2012), CEO of commodity trader Bunge, went as far as to say,

---

[9] See http://www.czarnikow.com/

'I think most people don't realise that today sugar is cheaper to be grown and produced in Europe. It worries me. Brazil is becoming very, very expensive'. There seems to be a classic 'Dutch disease' effect in play, as the success of Brazil and an agricultural behemoth in recent times contributed to its own currency appreciation erosion. This is confirmed by data from the Least Developed Country (LDC) International Survey in Figure 3 that shows how the real exchange rate in Brazil is eroding its competitive edge in world markets.

Figure 3: Centre/South Brazil sugar costs
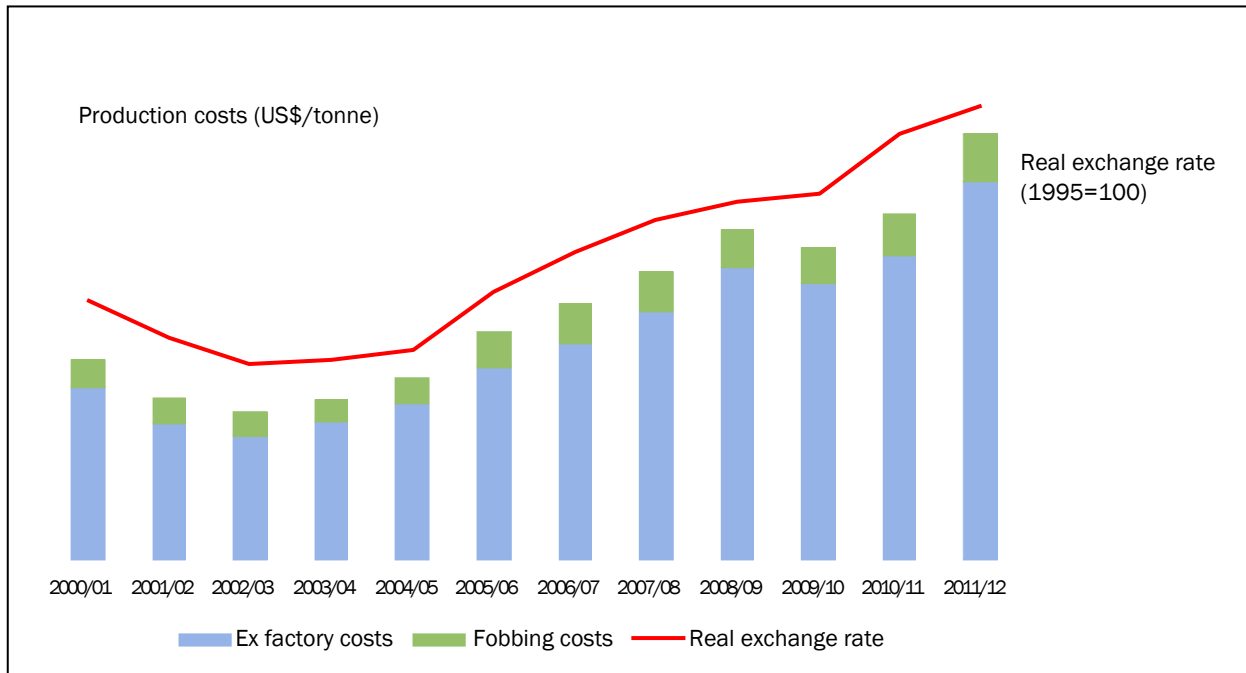
Source: LMC International

Land issues in Brazil

Central to Brazilian sugar expansion is the issue of land clearance; the perception that this expansion is detrimental to the rainforest is refuted by Brandao (2007). He considers that Brazil has land available to support such an expansion without causing damage to the Amazon forest, as Brazil still has vast amounts of land available for agricultural expansion. The seven million hectares planted with sugarcane in 2007 were a relatively small percentage of total crop area of 61 million hectares and much lower than the soybean and corn acreages of 22 and 13 million hectares, respectively. He outlines that there are around 178 million hectares of pasture land in Brazil, of which around 78 million hectares were natural pastures that were currently very low carrying capacity that is generally suitable for agriculture; and, indeed, the expansion of the sugar ethanol complex was mostly on this pasture land. It seems

that the majority of deforestation in the Amazon is for subsistence agriculture or for larger landowners to expand their cattle-ranching operations, as cattle operations are moving northward. These daunting figures are supported by reports from the American Soybean and Corn Advisory[10] and by Janks (2012) who asserts that there are some 330 million hectares of potentially arable land in Brazil from a total land area of 851 million hectares (with some 496 million hectares protected).

Is the expansion of Brazilian soybean and sugar production contributing to Amazon land clearing? The answer seems to be an unequivocal 'yes' and 'no': 'no' because the crop area seems to be taking over previous pastoral land that was being use for cattle production; 'yes' because this in turn is pushing the cattle ranching further north and at times into newly cleared land at or contiguous to the Amazon forests. Mahr (2011) used satellite data to map cropland expansion and multi-crop intensification in the crucial Mato Grosso area from 2000 to 2010. The study found a 25,095 square kilometre expansion of cropland over this period, while the percentage of this total area classified as multi-cropping increased from 37.6% to 64.4%. The Mato Grosso rapidly climbed to the second most important cropland state in Brazil and the leading soybean producer from 1990 through to 2004, with improved infrastructure, crop technology, a deregulation of the agricultural sector, and increased world demand driving the increase. In particular, this study found that the change correlated most closely with the Brazilian real to the exchange rates of the main markets, the EU and China, and the significant appreciation of the real since 2009 would suggest a slowing of the expansion.

At a Financial Times conference on sustainable agriculture in Brazil held in London at the end of March 2012,[11] John Clarke, European Commission international affairs director for agriculture, expressed his concerns about the social and environmental impact of Brazilian farming. He realised that problems still existed and logging continued to destroy the rainforests as soybeans and sugarcane were pushing displaced ranchers into the Amazon basin. Farmers and officials in Brazil objected to being lectured at by Europeans whose ancestors had long since chopped down almost all their primeval forests, and they argued that most of Brazilian agriculture took place hundreds of kilometres from the Amazon forest.

---

[10] See http://www.soybeansandcorn.com
[11] Papers available at http://www.ftconferences.com/sustainableagri/

How much land is there in Brazil?

Table 8 shows the FAO data that is relevant to the Brazilian agricultural land question. In the first section, the quantity of agricultural land is shown, where agricultural land refers to the share of land area that is arable, under permanent crops, and under permanent pastures. The countries are ranked by their available agricultural land. Here it can be seen that Brazil is ranked number four with 5.42% of the global total. It is behind China, Australia and the US but ahead of Russia. South Africa is included for comparative purposes. In the middle section arable land is shown, where this includes land defined by the FAO as land under temporary crops, temporary meadows for mowing or for pasture, land under market or kitchen gardens, land temporarily fallow, and land under permanent crops such as cocoa, coffee, rubber, flowering shrubs, fruit trees, nut trees, and vines. Notable here is that Brazil has a 4.43% share of the total global agricultural land, indicating that its share of arable land is about 80% of the global average (5.42% of total land and 4.43% of arable land). The two extremes in this section are Saudi Arabia, with a very small percentage of arable land, and India at the other extreme with a very high percentage. In the bottom row the data suggests that around half of South Africa's agricultural land is arable. Finally, the right-hand column shows the percentage share of the world land area held by each country shown. This has some insights into the relative average land quality of each country. Not shown is that Brazil has around 1.44% of the world's land 'equipped for irrigation' (while India and China have 21.40% and 20.70%, respectively) according to the FAO.

The Economist (2010) concurs that Brazil has more 'spare' farmland than any other country, as Brazilian official figures put the available land at 300m hectares. Using FAO data, they contend that Brazil has as much 'spare farmland' as the next two countries of Russia and America together, and while Brazil is accused of destroying rainforest to create farms, almost all of this new land is Cerrado. Furthermore, Brazil has more available renewable fresh water than any other country (more than the entire Asian continent) and critically this is well spread: the country has about the same quantity of farmland with at least 975 mm of rain each year as does the whole of Africa. Martha and Filho (2012) reinforce this and go further by considering that as well as providing vital environmental services to the world in the form of the Amazon Basin, Brazil contains 13.5% of the world's equivalent potential arable land and 15.2% of the world's renewable water.

Table 8: Brazilian agricultural land in perspective, 1000 ha and % share

1000 ha	Agricultural land		Arable land		Total area
World	4,882,713	% world	1,381,204	% world	% world
China	524,321	10.74%	109,999	7.96%	7.13%
Australia	409,029	8.38%	47,161	3.41%	5.75%
United States	403,451	8.26%	162,751	11.78%	7.30%
Brazil	264,500	**5.42%**	61,200	**4.43%**	**6.33%**
Russia	215,561	4.41%	121,750	8.81%	12.70%
Kazakhstan	208,480	4.27%	23,400	1.69%	2.02%
India	179,963	3.69%	157,923	11.43%	2.44%
Saudi Arabia	173,435	3.55%	3,200	0.23%	1.60%
Argentina	140,500	2.88%	31,000	2.24%	2.07%
Sudan	136,731	2.80%	20,160	1.46%	1.86%
South Africa	99,228	2.03%	14,350	1.04%	0.91%

Source: FAO database

Implications for Africa

Sandrey et al. (2012) examined the agricultural export performance of the BRICs (Brazil, Russia, India and China) into the African market to assess this performance against that of South Africa and to examine where the BRICs may be a threat to South Africa. That analysis showed that South Africa has been losing market share *vis-à-vis* the original BRIC members in virtually all African markets except Zimbabwe in recent years, and in all products except fats and oils. While Brazil is the biggest overall threat to South Africa, China and India are competing strongly in different markets and products. Crucially, when the BRIC competition in the important processed-food products is examined, Brazil, China and India are all becoming increasingly competitive in most of these value-added products. Overall, there are few bright spots in South Africa's recent agricultural export performance on the African continent.

There are potential lessons for Africa in the Brazilian example of Embrapa's organisation and funding. Beintema et al. (2010) reinforce that many developing countries are experiencing stagnant and even declining investment in public agricultural research. Brazil ranks third in the developing world in terms of public agricultural R&D investments after China and India – total public agricultural R&D spending has increased substantially in recent years due to renewed commitment to agricultural R&D on the part of the Brazilian government. Embrapa

has also undergone restructuring to ensure that the country's agricultural sector remains competitive, with modifications that include enhancing human and institutional capacities, improving institutional structures, and strengthening the performance and evaluation system. It is also increasing its international collaborations, and South Africa needs to seriously look at closer cooperation with Embrapa in addition to studying the Embrapa model of concentrating agricultural research into a central agency. Hazell (2012) stresses that African agriculture is 'reaping the harvest of previous neglect' and reinforces the need for Africa to invest more heavily in meaningful research and technology to capitalise on the continent's abundant resources. Similarly, Sandrey and Edinger (2009) point to the example of China for African agricultural development, as China's dramatic economic growth over the last 30 years has had a strong pillar of rural sector prosperity from the 'twin paths' of technology and an augmentation of these technologies by an extension service of over one million staff members.

Anderson and Valdes (2008) discuss how the income profiles of agriculture changed during the reform period. Based on the agricultural census data of 1995/96, they cite Lopes (2004) who found that of a total 4.8 million farms in Brazil, 3.3 million (68%) fell within the legal definition of family farming in the National Family Farming Programme. These farms generated 24% of the total gross income in agriculture, while commercial farms of all sizes (32% of all farms) generated 76% of agricultural income. Of the 3.3 million family farms, around 2 million may be considered subsistence farms run by extremely poor families, and here poverty was a problem, as the 2000 demographic census data shows that 61% of households in agriculture were living below the poverty line (in contrast to the 25% in the urban sector). By contrast, the 257,000 mid-sized commercial farms (5.1% of all farms) produced 20% of the total agricultural output and the 375,000 large commercial farms produced 52% of the production. Brandao (2012) provides a partial update on this data by citing Alves et al. (2012) who found that based on the agricultural census data, 86% of the value of agricultural production came from 11% of farms, and that net farm income was negative in 56% of farms.

Meanwhile, Brazil's ability to raise more than 40 million people into middle-class income categories, and the lowering of abject poverty levels from 23% to 8% in less than two decades, should serve as a source of inspiration for South Africa.

The future

Despite differences in the availability of new farmland, most observers agree that Brazil still has a significant area for development without encroaching on the crucial Amazon Basin. Clearly, productivity has driven the sector in recent years, and these impressive productivity increases are showing no signs of slowing. Examining trade opportunities and notwithstanding the, at best, current impasse of the World Trade Organisation (WTO) Doha Round, Brazil is likely to be a major beneficiary of an outcome. Brazil has sufficient overhang between current and bound rates to ensure that few, if any, tariff adjustments domestically and few trade-distorting subsidies would need to be revised as part of the Doha Agreement. In theory, liberalisation in the major markets for products such as sugar should provide a major benefit to Brazilian exports. In practice, this liberalisation will be muted by special safeguard (SSG) mechanisms and the abilities of enhanced tariff quota rates (TRQ) to continue allowing importing countries to capture rents. And the very success of the agricultural sector is helping to sow the seeds for its future slow-down as the export growth is a contributor to the Dutch disease phenomenon of an appreciating currency.

Martha and Filho (2012) stress that in the final analysis there is a direct linkage between the national system of innovation and the capacity of the farmers to absorb the knowledge that is generated. The institutional system provides knowledge for a productive sector gain, but it is up to the farmers to invest in their training and absorb this public knowledge. This is a medium to long-term process, and the creation of Embrapa in the 1970s set the first part of this process in motion. The authors consider that more needs to be done in Brazil to transfer this applied knowledge in the agricultural sector, and Brazil must lift the absorptive capacity of producers by improving education and at the same time reduce dependence on imported technological inputs.

Overall, looking to the next 40 years, The Economist ('Brazilian agriculture', 2010) succinctly considered that

> if you were asked to describe the sort of food producer that will matter most in the next 40 years, you would probably say something like this: one that has boosted output a lot and looks capable of continuing to do so; one with land and water in reserve; one able to sustain a large cattle herd (it does not necessarily have to be efficient, but capable of improvement); one that is productive without massive state subsidies; and maybe one with lots of savannah, since the biggest single agricultural failure in the world during past decades has been tropical Africa,

and anything that might help Africans grow more food would be especially valuable. In other words, you would describe Brazil.

The Economist also considers that although Brazil is not the cheapest place in the world to grow soybeans (this place is held by Argentina, followed by the American Midwest), it is the cheapest place to plant the next acre! And in a final discussion pertaining to Africa, this venerable magazine considers that much of the Brazilian experience may be applicable to Africa – but Africa needs to develop the will to make it happen.

Based upon the evidence from the Brazilian experience, we would end with a misquote from John Paul Jones, as when during the American War of Independence he was asked to surrender by the British, he replied 'Brazil has not yet began to farm'!

References

Anderson, K. and Valdés, A. (Eds). 2008. *Distortions to agricultural incentives in Latin America*. Washington, D.C.: World Bank Publication.

Alves, E. et al. 2012. Lucratividade da agricultura. *Revista de Política Agrícola*, 21(2), Apr/May/Jun.

Beintema, N., Avila, F. and Fachini, C. 2010. Brazil: New developments in the organisation and funding of public agricultural research. *Brazilian Agricultural Research Corporation (Embrapa) Country Note,* October.

Brandão, A.S.P. 2007. *The sugar/ethanol complex in Brazil: development and future*. Paper presented at the Public Conference on 'Global sugar markets, policies and reform options', International Food Policy Research Institute (IFPRI), June.

Brandão, A.S.P. 2012. *Policy concerns in middle income countries – a Brazilian perspective*. Presentation at the International Agricultural Economists Conference, Brazil.

De Rezende Lopes, M. et al. 2008. Brazil. *In* Anderson, K. and Valdés, A. (Eds). *Distortions to agricultural incentives in Latin America*. Washington, D.C.: World Bank Publication.

Hazell, P.B.R. 2012. *Options for African agriculture in an era of high food and energy prices.* Elmhirst Lecture, 27th International Conference of Agricultural Economists, Foz do Iguaçu, Brazil August.

Jank, M. 2012. *Sugarcane ethanol: producing sustainable food and fuel*. Financial Times Sustainable Agricultural Summit, Marriot London Grosvenor Hotel, 29 March 2010. [Online]. Available:
http://www.ftconferences.com/userfiles/file/FT_Sustainable_Agri_2012_presentatons.pdf

LMC International. 2012. *Sugar and HFS production costs: global benchmarking.* Oxford: LMC International.

Lopes, I.V. 2004. *Quem Produz o Que no Campo: Quanto e Onde. Coletânea Estudos Gleba 34*. Brasília: Brazilian Confederation of Agriculture and Getúlio Vargas Foundation.

Mahr, D.E. 2011. *Drivers of land-use change in the Mato Grosso: a ten year MODIS analysis.* Providence: Brown University, Centre for Environmental Studies.

Martha, G.B. Junior and De Souza Ferreira Filho, J.B. (Eds). 2012. *Brazilian agriculture, development and changes*. Brasília: Brazilian Agricultural Research Corporation Ministry of Agriculture, Livestock and Food Supply, Embrapa.

Nassar, M.A., Da Costa, C.C. and Chiodi, L. 2008. *Implications of the Doha Round outcomes for Brazilian agricultural policies and exports interests*. Geneva: International Centre for Trade and Sustainable Development (ICTSD).

OECD. 2005. *Review of agricultural policies, Brazil*. Paris: Organisation for Economic and Cooperation Development.

OECD. 2011. *Agricultural policy monitoring and evaluation, 2011, OECD countries and emerging economies*. Paris: Organisation for Economic and Cooperation Development.

OECD. 2012. *OECD – FAO Agricultural Outlook 2012 – 2021*. Paris: Organisation for Economic and Cooperation Development. [Online]. Available: http://www.oecd.org/site/oecd-faoagriculturaloutlook/

The Economist. 2010. 'Brazilian agriculture: The miracle of the Cerrado – Brazil has revolutionised its own farms. Can it do the same for others?' 26 August 2010.

Agriculture in Russia, India and China

Ron Sandrey and Nick Vink

Summary and some implications for South Africa

The aim of this chapter is to provide some background on the agricultural sectors in Russia, India and China. It starts with a comparative description of the agricultural sectors in these three countries from a global perspective before giving more details on agricultural production and trade in Russia, India and China, and concluding with perspectives on their agricultural policy.

We find that the BRICS[1] (Brazil, Russia, India, China and South Africa) are providing a slowly increasing share of world production (42.4% in 2010), with China the dominant producer in the group. Similarly, some BRICS sit at the top of the table for world trade, with Brazil and China the second and third leading agricultural exporters, respectively, and India just making the top 10. China and Russia are both top-five importing countries. Overall, agriculture is very important to both India and China as measured by their direct contribution to GDP, but this has been steadily declining in the three economies examined. Meanwhile, despite recent spectacular Gross Domestic Product (GDP) growth rates, there is a range in the Gross National Income (GNI) per capita in the BRICS: from India's $3,620 as the lowest to Russia's $19,940 as the highest, with South Africa, China and Brazil having very similar figures about half-way between India and Russia.

---

[1] The terms BRIC and BRICS tend to become confusing. We use the former term BRIC for Brazil, Russia, India and China (and BRICs for their collective term) while BRICS refers to the original BRIC grouping plus newly-joined South Africa.

Examining the individual agricultural sectors we find that since the breakup of the old Soviet Empire in 1991, Russian agriculture has been in turmoil, with agricultural production still lower than in 1990 even though Russia currently ranks amongst the top 12 producers globally in all of its major commodities. Livestock production declined more than the overall sector but cattle products (cow's milk and beef) still dominate overall production, followed by wheat and then chicken and pig meat. Meanwhile, grain and related crops dominate Russian exports, with wheat increasing to be some 40% of the total while exports of commodities such as sunflowers and sunflower oil, rapeseed oil, and maize have increased from virtually zero to emphasise the emergence of a new agricultural system in Russia. The European Union (EU) is becoming less important as a destination as Africa (and Egypt in particular) is taking its place, and the linkages to the old Soviet Empire remain important. Import sources are globally widespread, with the EU remaining in the top spot. Brazil has become an active trading partner, while Africa as an entity would be just ahead of China in fourth place. Russia remains a net importer of agricultural goods, with exports ($9bn) barely a quarter of imports by value, with Russia importing relatively higher value products (dairy and fresh fruit) as opposed to the grain exports.

Aggregate agricultural production in India has increased steadily in recent years, with most of the main products being familiar. The product rankings are consistent, reflecting a country with centuries of established agricultural expertise. The EU is India's major export market (but closely matched by challenges from China, the United States (US) and Vietnam) and is losing market share as India's total agricultural exports have increased some fivefold in little more than a decade. Africa as a whole would be in fourth place. Rice is both the largest commodity produced and exported in most years, but other exports such as cotton, beef, cane sugar, and maize are increasing. Palm oil from Indonesia and soybeans from Argentina are the main imports.

China, home to some 1.33 billion persons, is a mountainous country with high plateaus and deserts in the west constraining arable land for permanent crops, a constraint that is accentuated by scarce water resources. Nevertheless, China has made dramatic strides in agricultural production in the last few decades and now produces nearly one-quarter of the world's agricultural output by value with most of the main commodities produced having global ranking of number one or two. China's biggest export destination is Japan, and if Africa was a country, it would be ranked at fifth. Africa in aggregate would be in 11th position as an import source while India has been the big import mover, followed by a similar growth

from Indonesia, Argentina and, at number two, Brazil.[2] The composition of imports is changing as China's income growth has spurred changes in demand for more luxury-type foods. This is exemplified in the imports of protein for animal feeds, as soybean products and palm oil now constitute nearly 43% of China's agricultural imports.

Examining the general picture for support to agriculture, we find that both South Africa and Brazil join New Zealand, Australia, and Chile as the least subsidised global agricultural producers. Support to Indian agriculture is hard to ascertain but seems to be around that of the Organisation for Economic and Cooperation Development (OECD) average, which would put it on a par with China but possibly just below Russia. In China, transfers to specific commodities vary widely, while in India, the tension between the desire to raise food prices for farmers but lower them for consumers leads to heavy intervention. In Russia, support has increased through a tightening of border protection and an increase in budgetary transfers to the sector.

What can Africa learn from these three BRICs? Both Russia and India would seem to offer few lessons for Africa, but certainly the dramatic increase in Chinese agriculture can offer more. This increase started from an enabling macroeconomic and policy environment and was fuelled by an impressive research and development programme that focused on new plant varieties and the associated inputs to support their improved performance. Also, but not discussed in this chapter, China instigated an impressive extension service to deliver these technologies to every farmer. The threat from BRIC agricultural exports to Africa is discussed elsewhere in this book, while the increases in imports of higher-value products and wine into Russia, India, and China as the wealth of their consumers increases offer export opportunities for South Africa.

1. Introduction

The aim of this chapter is to provide some background on the agricultural sectors in Russia, India, and China.[3] The chapter starts with a comparative description of the agricultural sectors in these three countries from a global perspective before giving more details on agricultural

---

[2] We note from recent 2012 Brazilian data that there has been a steep decline of almost 80% in Brazil's agricultural exports to China – chiefly as a result of a dramatic decline in exports of soybeans and related products. This is confirmed from Chinese import data for 2012.
[3] Brazilian agriculture is addressed in Chapter 8 and as a tralac working paper (Sandrey and Vink, 2012).

production and trade in Russia, India and China. The chapter concludes with perspectives on agricultural policy, farm size structure, and technologies employed in these three countries.

2.   The big picture

The global importance of Russia, India, and China as agricultural producers is shown in Table 1. Starting with total net production,[4] these countries are providing a slowly increasing share of world production; from 36.8% in 1995 rising to 42.4% in 2010. China is the dominant producer, followed by India and Brazil and with Russia significantly behind. Crop production is a much higher proportion of total agriculture in both India (74.8%) and China (70.3%) than globally (66.8%) or in the other three BRICS countries, and especially in Russia and South Africa where crop and livestock production are more evenly matched.[5]

The global trade profile for Russia, India and China is presented in Table 2. China ranks as the third largest agricultural exporter globally (after the US and Brazil), with India in 10th place and Russia in the 12th. For agricultural importers, China is second, Russia fifth, and India 11th. Both sets of data show a significant underestimate of the percentage share of 'real' global agricultural trade, as intra-EU trade is included in the totals. As this figure is around one-third of the total value of the trade reported for the top 15 traders globally, global shares without intra-EU trade may be around 50% higher than the data shown here. Brazil is a minor agricultural importer and South Africa does not rank in the top 15 in either category. The economic downturn during 2009 is apparent, with only Indian imports showing an increase, while there has been a strong recovery since then. Note that this data using the World Trade Organisation (WTO) database does not reconcile with the individual data presented later for agricultural exports and imports using the Global Trade Atlas data.

---

[4] Net production is defined by the Food and Agricultural Organisation (FAO) as the value of production measured in monetary terms at the farm-gate level after the deduction of intermediate inputs used within the agricultural sector (seed and feed).

[5] Note that the sum of crops and livestock is greater than the total for agriculture: feed for livestock is double counted.

Table 1: Agricultural production in Russia, India and China (US$ million)

	1995	2000	2005	2008	2009	2010
Agriculture total						
Russia	34,556	32,495	36,957	39,601	41,996	37,172
India	145,298	162,815	179,671	210,414	204,977	222,168
China	280,801	352,375	422,804	475,036	486,844	499,450
World	1,461,741	1,668,448	1,890,714	2,068,610	2,093,182	2,129,307
% world total	36.8%	38.4%	40.1%	41.8%	41.7%	42.4%
Crops						
Russia	18,568	18,796	23,870	26,759	25,650	17,870
India	112,793	124,170	134,406	158,327	150,542	166,265
China	202,051	249,368	293,514	335,596	341,610	351,014
World	975,912	1,125,313	1,280,280	1,408,812	1,410,694	1,433,953
% world total	39.3%	39.9%	40.7%	43.0%	42.6%	43.4%
Livestock						
Russia	22,862	19,370	19,878	22,180	23,110	23,844
India	34,845	40,997	48,413	55,659	57,920	60,277
China	105,680	134,749	159,701	171,542	177,738	182,449
World	610,168	679,081	755,976	813,125	827,065	
% world total	32.4	35.1	37.5	38.3	38.9	39.3

Source: FAOSTAT (2012)

Table 2: Agricultural trade by value and by share

		Value $bn	% World Share			Annual % change			
Rank	**Exporters**	**2011**	**1990**	**2000**	**2011**	**2005-11**	**2009**	**2010**	**2011**
4	China	65	2.4	3.0	3.9	14	-3	26	25
10	India	34	0.8	1.1	2.1	22	-23	41	49
12	Russia	30	-	1.4	1.8	13	-16	4	38
	Importers								
2	China	145	1.8	3.3	8.3	21	-12	41	34
5	Russia	41	-	1.3	2.3	16	-15	20	17
11	India	23	0.4	0.7	1.3	20	18	26	26

Source: WTO. [Online]. Available:
http://www.wto.org/english/res_e/statis_e/its2012_e/its12_merch_trade

The data in Table 3 describes the general macroeconomic profile of the three countries and provides a perspective by firstly showing the GNI per capita expressed in US dollars followed by recent GDP growth rates. There is a range in the GNI per capita, from India's $3,620 as the lowest to Russia's $19,940 as the highest, with that of South Africa and Brazil very similar and that of China closing in on South Africa. The GDP growth rate in the lower half of the table similarly shows a variation, with China's well-known stellar performance evident and South Africa's struggle to keep pace. The 2009 year was not a good one for Brazil, Russia and South Africa as the global economic downturn hit, with Russia experiencing a significant decline in GDP. The power of compounding is apparent from the GNI per capita data for China: the 2011 GNI of $8,450 is some 51% higher than the 2007 figure. Conversely, South Africa's GNI per capita grew by only 12% over the same period.

Table 3: GNI per capita and GDP growth rates

GNI per capita, Purchasing Power Parity (PPP) (current international $)					
	2007	**2008**	**2009**	**2010**	**2011**
Brazil	9,570	10,160	10,180	11,000	11,500
Russia	16,350	19,850	18,270	19,190	19,940
India	2,720	2,840	3,070	3,340	3,620
China	5,580	6,230	6,820	7,530	8,450
South Africa	9,620	10,090	10,040	10,330	10,790
GDP growth (annual %)					
Brazil	6.1	5.2	-0.3	7.5	2.7
Russia	8.5	5.2	-7.8	4.3	4.3
India	9.8	3.9	8.2	9.6	6.9
China	14.2	9.6	9.2	10.4	9.3
South Africa	5.5	3.6	-1.5	2.9	3.1

Source: World Bank. [Online]. Available: http://data.worldbank.org/country

This GDP data is extended in Table 4 to introduce the World Bank forecasts through to 2014 for the five countries. Here the World Bank is suggesting that each of the five countries will remain on their same growth trajectory, albeit with South Africa still marginally below Brazil and Russia but with these three significantly below both India and China.

Table 4: World Bank GDP growth forecasts

	2010	**2011**	**2012e**	**2013f**	**2014f**
Brazil	7.5	2.7	2.9	4.2	3.9
Russia	4.3	4.3	3.8	4.2	4
India	9.6	6.9	6.6	6.9	7.1
China	10.4	9.2	8.2	8.6	8.4
South Africa	2.9	3.1	2.7	3.4	3.5

Source**:** World Bank forecasts. [Online]. Available: http://data.worldbank.org/country

Table 5 shows, firstly, the share of agricultural value added in each country followed by the annual percentage change in this figure. Agriculture is more important in the BRIC countries than in South Africa, and especially so in the Asian economies of India and China. While this direct contribution of agriculture to GDP has been steadily declining in all the economies, the relative decline in South Africa has been more pronounced. Overall a declining role for agriculture in the economy is not necessarily a bad thing, but when set against the real problem of rural poverty and the lack of industrial expansion that besets South Africa, combined with modest GDP growth, it is a problem for the country.

Table 5: Agricultural value added

	2007	**2008**	**2009**	**2010**	**2011**
Agriculture, value added (% of GDP)					
Brazil	5.6	5.9	5.6	5.3	5.5
Russia	4.4	4.4	4.7	4.0	
India	18.3	17.8	17.7	17.7	17.2
China	10.8	10.7	10.3	10.1	10.0
South Africa	3.4	3.2	3.0	2.5	2.4
Agriculture, value added (annual % growth)					
Brazil	4.8	6.3	-3.1	6.3	3.9
Russia	1.3	6.4	1.3	-10.7	
India	5.8	0.1	1.0	7.0	2.8
China	3.7	5.4	4.2	4.2	4.3
South Africa	3.5	10.9	-3.2	5.0	0.7

Source: World Bank. [Online]. Available: http://data.worldbank.org/country

3. The production and trade performances of Russia, India and China

From the FAO database we extracted the values of the 15 largest agricultural products by value for each country, with the discussion of each country following the same format where possible. Data for the half-decades ending in 1995, 2000, 2005 and 2010 are used, along with the 2010 global ranking of production in the respective country/commodity under 'rank'. From there the Global Trade Atlas data was used to present the details on agricultural trade. For the trade data we use the first available year in the 1990s, followed by 2000, 2005 and the last three years (2009 to 2011) inclusive, with all data in US dollars (millions) unless otherwise stated, and at the HS 6 line level. This latter feature means that sometimes the same commodity may appear twice as these commodities are similar at this level of disaggregation (India with palm oil is an example). For a detailed analysis of South Africa's agricultural trading relationship with BRICs, see Chapter 7 for South African exports and future prospects to these destinations, and Sandrey et al. (2012) for competition from BRICs in the African market.

3.1 Russia

Following the breakup of the Soviet Union in 1991, the Russian agricultural sector faced turmoil. The large collective and state farms had to contend with the sudden loss of state-guaranteed marketing and supply channels and a changing legal environment that created pressure for reorganisation and restructuring. Aggregate agricultural production is shown in Figure 1, where the decline following the breakup of the old Soviet system is apparent. Total agricultural production is still lower than in 1990, with livestock production experiencing the biggest difficulties. Furthermore, the impact of the 2010 drought on crop production is plain to see.

Table 6 shows the main agricultural products in the Russian agricultural sector. Cattle products (cow's milk and beef) dominate, followed by wheat and then chicken and pig meat. Russia ranks amongst the top 12 producers globally in all of these commodities, with sunflower seeds and 'other meats' ranked number two. Yet the dollar value for several of these commodities in 2010 was lower than their nominal values in 1995, with a few (notably wheat and chicken) actually increasing.

Figure 1: Net agricultural production in Russia, Index 1990 = 100
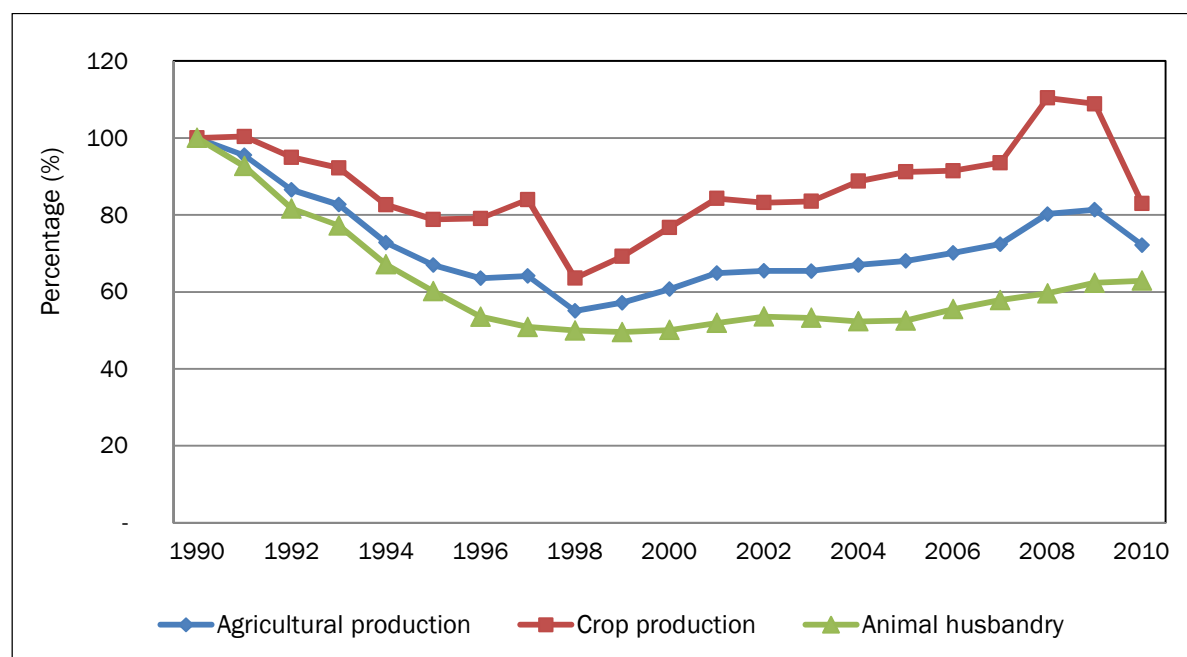
Source: Kiselev and Romashkin (2012); data supplied by the ICTSD

Table 6: Russian agricultural production, 1995-2010 (US$ million)

Commodity	1995	2000	2005	2010	Global rank
Cow milk	8 575	8 386	8 254	8 855	6
Beef	7 365	5 119	4 840	4 648	7
Wheat	1 249	2 607	4 702	4 104	5
Chicken	1 224	1 071	1 890	3 631	5
Pig meat	2 863	2 411	2 325	3 491	8
Hen eggs	1 556	1 571	1 700	1 875	6
Potatoes	4 056	3 181	3 547	1 563	5
Sunflower seed	1 087	989	1 642	1 361	2
Sugar beet	793	589	853	925	3
Tomatoes	739	623	848	757	12
Sheep meat	650	324	367	446	11
Apples	507	775	755	417	12
Cabbages, etc.	258	482	341	409	3
Vegetables, other	681	264	462	392	11
Meat, other	7		8	387	2

Source: FAOSTAT (2012)

Table 7 shows the performance and destination of Russia's agricultural exports. The emergence (and importance) of new markets such as Egypt and, to a lesser extent, Turkey is notable, while the predominance of the republics of the former Soviet Empire is as expected. There has also been a large continental shift. The EU now absorbs just more than 16% of exports compared to more than half less than 15 years ago, even though it remains the single largest destination. On the other hand, were Africa to be included as a country, it would be in number one place with $2,190 million in exports, thanks largely to the contribution from Egypt.

Table 7: Russian agricultural exports by destination, 1997-2011 (US$ million)

Partner country	1997	Share (%)	2000	2005	2009	2010	2011	Share (%)
EU	839	53.00	483	552	980	792	1489	16.38
Egypt	2	0.13	16	344	867	907	1342	14.77
Turkey	110	6.95	79	79	545	473	1024	11.27
Ukraine	44	2.78	81	441	526	566	730	8.03
Azerbaijan	20	1.26	45	213	435	340	556	6.12
Saudi Arabia	31	1.96	5	98	245	125	379	4.17
Israel	35	2.21	31	63	127	103	243	2.67
Uzbekistan	67	4.23	11	14	133	133	230	2.53
Armenia	5	0.32	3	47	157	146	177	1.95
Kyrgyzstan	16	1.01	12	64	118	118	175	1.93
World	1583	100	1200	3564	7747	5921	9088	100
Top 10 as % of total	73.80		63.80	53.70	53.30	62.50	69.80	

Source: Global Trade Atlas (2012)

Table 8 shows the composition of these exports. Grain and related crops dominate, with wheat (whose production has increased as was seen above) increasing from less than 6% of the total to some 40%. Several exports (sunflowers and sunflower oil, rapeseed oil and maize) have grown from virtually zero to several percentage points, emphasising the emergence of a new agricultural system in Russia over a relatively short period. In this process, Russian farmers are concentrating on a smaller number of commodities – the 10 largest exports have increased from a fifth to almost two-thirds of total exports.

Table 8: Russian agricultural exports by commodity, 1997-2011 (US$ million)

Commodity	1997	Share (%)	2000	2005	2009	2010	2011	Share (%)
Wheat	85	5.37	42	1127	2727	2056	3641	40.06
Barley	120	7.58	44	203	421	195	483	5.31
Sunflower	12	0.76	58	168	375	210	397	4.37
Cigarettes	5	0.32	3	128	313	276	317	3.49
Wheat flour	16	1.01	31	43	121	36	220	2.42
Sunflower oil	6	0.38	15	24	176	164	211	2.32
Rapeseed oil	0	0.00	0	3	53	77	177	1.95
Vodka	69	4.36	31	54	134	147	164	1.80
Maize	0	0.00	0	6	187	42	156	1.72
Cocoa reparations	15	0.95	21	73	230	129	153	1.68
World	1583	100	1200	3564	7747	5921	9088	100
Top 10 as % of total	20.70		20.40	51.30	61.10	56.30	65.10	

Source: Global Trade Atlas (2012)

Table 9 shows the sources of Russia's major agricultural imports: all of the top 10 sources of imports have increased their market share, with the notable exception of the US, which has lost more than half of its share since 1995 despite maintaining the value of its exports to Russia. These sources are more globally widespread than the export destinations, with the EU remaining in the top spot throughout the period under review. Brazil has become an active trading partner, almost tripling its share of the Russian market and taking the number two spot.[6] Africa as a country would be just ahead of China in fourth place. It is also evident from this data that Russia remains a net importer of agricultural goods, with exports ($9bn) barely a quarter of imports by value.

Russia sources a wide range of commodities from overseas markets. Even though the share of the 10 largest import commodities has increased, it is still less than a third of total imports, as opposed to the almost two-thirds share of the 10 largest export commodities. It is also clear that Russia is importing relatively higher value products (dairy and fresh fruit) as opposed to the grain exports.

---

[6] Note that Brazil's exports to Russia declined by almost half between 2011 and 2012, when Brazil's total agricultural exports declined by almost a third.

Table 9: Russian agricultural imports by source, 1997-2011 (US$ million)

Source	1997	Share (%)	2000	2005	2009	2010	2011	Share (%)
EU	4765	37.04	2288	5094	8857	11703	14330	38.60
Brazil	389	3.02	370	2117	3232	3826	3824	10.30
Ukraine	750	5.83	626	1410	1390	1917	2065	5.56
China	333	2.59	149	591	1022	1192	1554	4.19
United States	1495	11.62	702	849	1724	1288	1552	4.18
Turkey	136	1.06	91	376	1106	1449	1543	4.16
Ecuador	103	0.80	156	463	791	878	1189	3.20
Argentina	187	1.45	85	565	1021	764	818	2.20
Indonesia	96	0.75	53	207	278	467	631	1.70
Canada	120	0.93	32	64	259	307	501	1.35
World	12866	100	7315	15726	26223	31324	37129	100
Top 10 % of total	65.10		62.20	74.60	75.00	76.00	75.40	

Source: Global Trade Atlas (2012)

Table 10: Russian agricultural imports by commodity, 1997-2011 (US$ million)

Commodity	1997	Share (%)	2000	2005	2009	2010	2011	Share (%)
Beef	379	2.95	143	803	2118	2013	2156	5.81
Pig meat	224	1.74	86	549	1471	1541	1715	4.62
Cane sugar	806	6.26	690	742	504	1151	1539	4.15
Cheese	106	0.82	44	570	743	1135	1219	3.28
Bananas	154	1.20	175	449	628	694	948	2.55
Tobacco	99	0.77	260	496	804	790	945	2.55
Tomatoes	110	0.85	42	216	640	755	813	2.19
Other food preparations	188	1.46	37	266	504	677	769	2.07
Apples	219	1.70	82	294	537	633	757	2.04
Palm oil	76	0.59	51	300	454	643	726	1.96
World	12866	100	7315	15726	26223	31324	37129	100
Top 10 % of total	18.40		22.00	29.80	32.00	32.00	31.20	

Source: Global Trade Atlas (2012)

3.2   India

Aggregate agricultural production for India is shown in Figure 2, starting in 1977. Production has increased steadily throughout the period, with livestock catching up on the crop index in the new millennium.

Figure 2: Net agricultural production in India
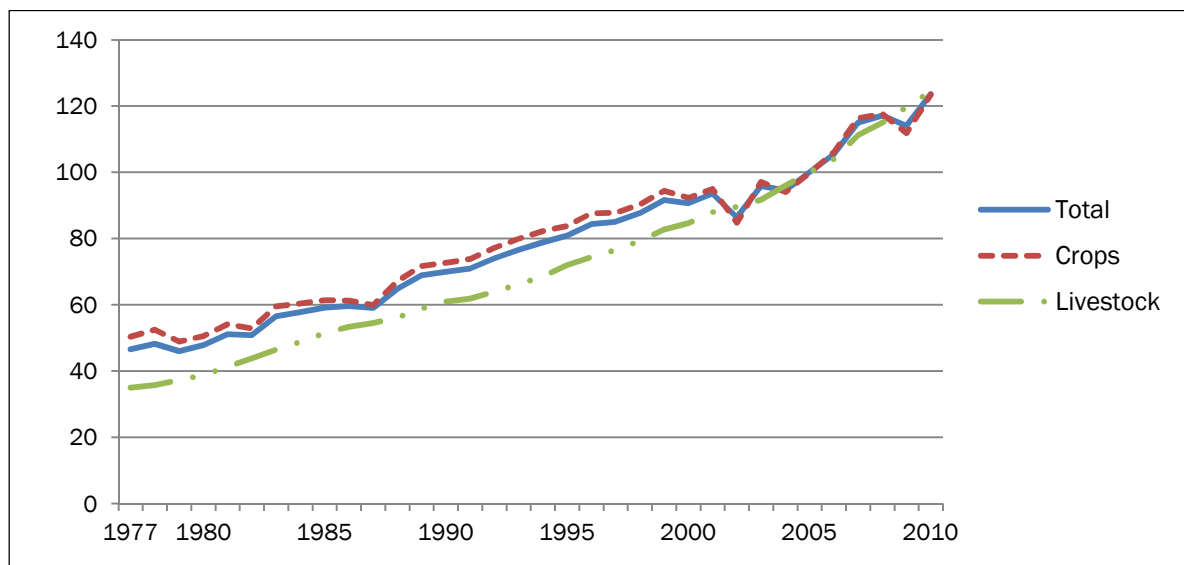
Note: Index, 2004-2006 = 100

Source: FAOSTAT (2012)

The main agricultural commodities produced in India are shown in Table 11, along with their global rankings. Apart from tomatoes (3rd), soybeans (4th) and poultry meat (6th), India is the largest or second largest producer by value of its most important commodities. Most of the products are familiar ones, but the inclusion of buffalo milk at number two and buffalo meat nearer the bottom is different (and may inspire South Africans to seek buffalo milk from their herd). There is consistence throughout the table, as one would expect from a country that has had several centuries of established agricultural production and has not gone through the turmoil of the post-Communist eras of China and especially Russia.

India's export destinations are shown in Table 12. As with Russia, the EU is the major market but has lost market share despite a near tripling of exports there – India's agricultural exports have increased some five-fold in little more than a decade. China and Vietnam have both become more favoured destinations, while the US has lost ground despite an almost fourfold increase in exports. These top 10 export destinations have maintained a consistent 60 to 65% market share over the period. Africa as a whole would be in fourth place.

Table 11: Indian agricultural production, 1995-2010 (US$ million)

Commodity	1995	2000	2005	2010	Rank
Rice	30 618	33 871	36 686	38 425	2
Buffalo milk	14 308	17 322	20 769	24 870	1
Cow milk	8 337	10 288	12 407	17 133	2
Wheat	9 858	11 499	10 277	12 146	2
Mangoes, etc.	6 591	6 293	7 088	9 004	1
Sugar cane	8 460	9 141	7 279	8 926	2
Bananas	2 868	3 982	5 319	8 387	1
Cotton lint	3 125	2 345	4 495	8 139	2
Vegetables, other	3 805	5 395	4 169	5 978	2
Potatoes	2 638	3 892	4 435	5 678	2
Tomatoes	1 944	2 746	3 262	4 595	3
Buffalo meat	3 156	3 380	3 660	4 009	1
Soybeans	1 312	1 343	2 132	3 336	4
Onions	857	9 92	1 981	3 175	2
Chicken meat	865	1 233	1 999	3 124	6

Source: Global Trade Atlas (2012)

Table 12: Indian agricultural exports by destination, 1999-2011 (US$ million)

Partner country	1999	Share (%)	2000	2005	2009	2010	2011	Share (%)
EU	1127	23.35	1006	1468	2016	2435	3234	10.66
China	50	1.04	61	362	1029	2424	3204	10.56
United States	713	14.77	647	868	990	1264	2924	9.64
United Arab Emirates	265	5.49	281	512	1367	1535	2020	6.66
Vietnam	28	0.58	41	208	970	1072	1780	5.87
Bangladesh	300	6.22	182	649	740	1096	1694	5.58
Saudi Arabia	406	8.41	383	611	1004	1151	1317	4.34
Indonesia	108	2.24	126	223	353	565	1208	3.98
Malaysia	118	2.44	157	284	600	819	1124	3.70
Iran	55	1.14	23	63	611	570	858	2.83
World	4827	100.00	4611	8835	14871	20465	30344	100.00
Top 10 % of total	65.70		63.00	59.40	65.10	63.20	63.80	

Source: Global Trade Atlas (2012)

Rice is not only the largest commodity produced by India's farmers by value, but has also been the main agricultural export over most of the period (Table 13). The rapid rise in exports means that even the tripling in value of rice exports has resulted in a steep decline in export share. Cotton and beef are catching up rapidly, while cane sugar and maize, of interest to South Africa, are also increasing rapidly. India is a 'swing' global trader in sugar, as Table 11 shows it to be a major producer and, combined with a very large population, small variations in crop yields can make a significant difference to the net trading position. In some years (e.g. 2009), India is even a net importer of sugar.

Table 13: Indian agricultural exports by commodity, 1999-2011 (US$ million)

Commodity	1999	Share (%)	2000	2005	2009	2010	2011	Share (%)
Rice	916	18.98	631	1692	2373	2284	3774	12.44
Cotton	15	0.31	9	323	1191	2997	3211	10.58
Beef	90	1.86	161	529	946	1681	2505	8.26
Soybean oilcake	357	7.40	462	638	1365	1659	2158	7.11
Mucilages[1]	165	3.42	165	218	213	480	1893	6.24
Cane sugar	1	0.02	21	17	5	594	1817	5.99
Maize	0	0.00	2	61	501	516	1045	3.44
Peanuts	69	1.43	59	79	263	394	914	3.01
Cashew nuts	563	11.66	424	620	578	562	849	2.80
Castor oil	192	3.98	195	229	337	576	823	2.71
Total	4827	100	4611	8835	14871	20465	30344	100
Top 10 % of total	49.10		46.20	49.90	52.30	57.40	62.60	

[1]A gelatinous substance of plant origin

Source: Global Trade Atlas (2012)

India's main sources of imports are shown in Table 14, with Indonesia (palm oil) overtaking Malaysia as the largest source. Import sources are also becoming more concentrated, with the top 10 sources increasing their share of the Indian market from three-quarters to almost 85%. Africa ranks second, just marginally ahead of Malaysia. India is a net exporter by value of agricultural products, with imports dropping from 78% of exports to 54%.

Table 14: Indian agricultural imports by source, 1999-2011 (US$ million)

Source	1999	Share (%)	2000	2005	2009	2010	2011	Share (%)
Indonesia	355	9.34	427	1189	3120	4035	5323	32.50
Africa	394	10.37	440	625	1013	1045	1570	9.58
Malaysia	926	24.37	528	289	793	812	1564	9.55
Argentina	304	8.00	316	587	535	931	1007	6.15
Ukraine	25	0.66	6	7	399	526	839	5.12
China	170	4.47	147	266	463	473	809	4.94
EU	279	7.34	139	216	354	481	777	4.74
United States	263	6.92	200	286	616	827	762	4.65
Canada	62	1.63	19	169	588	552	600	3.66
Myanmar	40	1.05	32	210	854	686	599	3.66
World	3800	100	2857	5477	11438	13323	16380	100
Top 10 as % of total	74.20			78.90	70.20	76.40	77.80	84.60

Source: Global Trade Atlas (2012)

As signalled in the previous table, the rapidly rising imports of palm oil, from mostly Indonesia but also Malaysia, dominate imports. These have become considerably more concentrated, with the share of the top 10 increasing from half to almost three-quarters of total agricultural imports.

Table 15: Indian agricultural imports by commodity, 1999-2011 (US$ million)

| Commodity	1999	Share (%)	2000	2005	2009	2010	2011	Share (%)
Palm oil	17	0.45	211	836	2800	3660	5551	33.89
Soybean oil	7	0.18	45	798	695	1110	1214	7.41
Palm oil	1170	30.79	671	369	766	841	1177	7.19
Cashew nuts	198	5.21	259	476	594	571	1150	7.02
Sunflower	8	0.21	78	12	475	581	969	5.92
Peas dried	46	1.21	30	195	581	503	771	4.71
Beans dried	5	0.13	11	23	570	613	387	2.36
Legumes, other	19	0.50	21	164	433	295	323	1.97
Almonds	48	1.26	58	145	189	246	314	1.92
Wool	61	1.61	57	97	124	197	253	1.54
Total	3800	100	2857	5477	11438	13323	16380	100
Top 10 as % of total	41.60			50.40	56.90	63.20	64.70	73.90

Source: Global Trade Atlas (2012)

3.3 China

China is the world's fourth largest country by area but the largest by population with some 1.33 billion people. Its terrain is mostly mountains, high plateaus and deserts in the west, and plains, deltas, and hills in the east. Although the country is endowed with various natural resources, land is a constraint. Some 16.7% of the land is arable or in permanent crops, but with around 9% of the world's arable land, and water resources per capita at perhaps as low as one-quarter of the global average, there is considerable pressure on this land and the scarce water resources.

Aggregate production for Chinese agriculture from 1977 to 2010 is shown in Figure 3, which, when compared to the growth performance of India, illustrates an important difference between the two Asian giants. India started in 1977 with an index value of 47, while China's starting point that same year was 24 – almost exactly half. Therefore, the Chinese growth through to the index of 2004 to 2006 was significantly faster than India's growth over the initial period. Since then, however, India has slightly outperformed China, reaching an index of 124 in contrast to China's 119.

Figure 3: Net agricultural production in China, 1977-2010
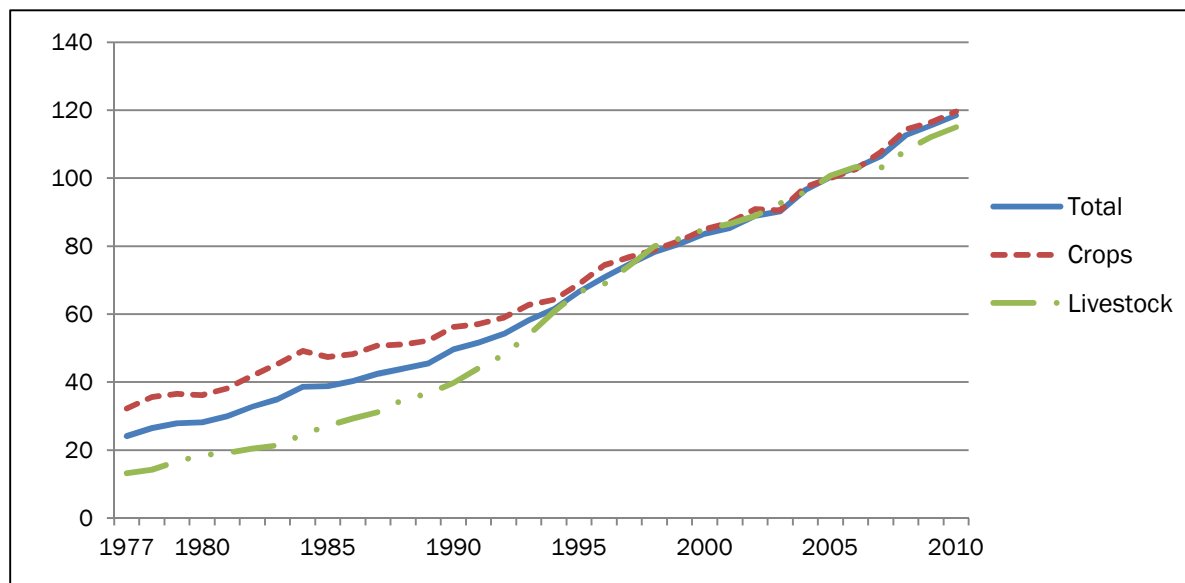
Note: Index, 2004-2006 = 100

Source: FAOSTAT (2012)

As indicated in Table 1, China produces nearly one-quarter of the world's agricultural output by value. And this is reflected where the main commodities and their global rankings of mostly number one or two are shown in Table 16. Most of these entries are familiar to

Westerners, but the entry of 'other eggs' (mostly duck eggs) and the importance of garlic are quintessentially Chinese.

Table 16: Chinese agricultural production (US$ million)

Commodity	1995	2000	2005	2010	Rank
Pig meat	51 393	62 692	71 709	79 435	1
Rice	44 868	45 393	45 417	48 760	1
Vegetables, other	16 765	21 384	23 339	24 683	1
Hen eggs	11 364	15 685	17 451	19 762	1
Tomatoes	4 868	8 250	11 685	17 412	1
Chicken	8 635	12 903	14 180	16 807	2
Beef	8 874	12 920	14 431	16 796	3
Wheat	15 209	14 301	14 050	16 170	1
Apples	5 928	8 643	10 157	14 068	1
Other eggs	9 758	9 520	10 629	12 039	1
Cow milk	1 898	2 694	8 687	11 245	3
Potatoes	5 171	8 847	10 701	10 675	1
Garlic	2 829	3 940	5 833	9 768	1
Maize	3 276	1 488	5 508	9 438	2
Mushrooms, etc.	2 181	4 345	6 152	8 807	1

Source: FAOSTAT (2012)

The destination of China's agricultural exports is shown in Table 17. Unlike Russia and India, China's biggest trading partner in agricultural products is Japan and not the EU. Again, if Africa were a country, it would be ranked at number six and increasing quite fast (as are both the US and Vietnam). Export destinations are becoming slightly less concentrated, but these 10 countries still take up three-quarters of all the exports.

Table 18 highlights that most of China's export growth, with the exception of the largest item (garlic), is in non-traditional exports. Even fish and mollusc exports are at HS codes 1604 and 1605 (processed fish products) rather than the larger HS chapter 03 (marine fish). Much of the trade is from China's burgeoning freshwater aquaculture sector rather than from marine fishing. The top 10 exports make up only a quarter of total exports, showing China's diverse export portfolio.

Table 17: Chinese agricultural exports by destination, 1995-2011 (US$ million)

Partner country	1995	Share (%)	2000	2005	2009	2010	2011	Share (%)
Japan	3554	29.53	4506	6690	6401	7608	9052	18.61
EU	1379	11.46	1486	2760	4203	5031	6008	12.35
United States	466	3.87	814	1988	3421	4088	4921	10.12
Hong Kong	2531	21.03	1545	2246	2849	3465	4508	9.27
South Korea	581	4.83	1263	2061	2014	2426	2873	5.91
Africa	214	1.78	455	652	1482	1641	2132	4.38
Vietnam	133	1.11	89	294	923	1294	1919	3.95
Indonesia	281	2.34	405	408	972	1605	1895	3.90
Malaysia	207	1.72	441	660	1054	1452	1802	3.70
Russia	494	4.11	179	699	1046	1365	1754	3.61
World	12034	100.00	13134	22618	32037	39695	48643	100.00
Top 10 as % of total	81.80		85.10	81.60	76.10	75.50	75.80	

Source: Global Trade Atlas (2012)

Table 18: Chinese agricultural exports by commodity, 1995-2011 (US$ million)

Commodity	1995	Share (%)	2000	2005	2009	2010	2011	Share (%)
Garlic	80	0.66	136	563	1087	2319	2069	4.25
Fish	635	5.28	830	924	1066	1311	1635	3.36
Molluscs	106	0.88	219	729	730	971	1470	3.02
Mushrooms	0	0.00	0	211	333	768	1235	2.54
Animal guts	279	2.32	318	510	791	832	1106	2.27
Chicken offal	0	0.00	274	640	605	803	1089	2.24
Apple juice	0	0.00	0	459	647	736	1068	2.20
Dried vegetables	163	1.35	211	421	524	834	1055	2.17
Shrimps	5	0.04	104	727	639	828	1046	2.15
Tomato paste	43	0.36	68	303	813	814	952	1.96
Total	12034	100	13134	22618	32037	39695	48643	100
Top 10 as % of total	10.90		16.40	24.30	22.60	25.70	26.20	

Source: Global Trade Atlas (2012)

Table 19 shows China's main import sources, with Africa in aggregate holding 11th position. India has been the big mover, followed by a similar growth path from Indonesia, Argentina and, at number two, Brazil.[7] New Zealand, aided by the recent FTA with China, is at number 10 while the US, Malaysia, and the EU have lost market share. China's sources of imports are highly concentrated and becoming even more concentrated over time, with these 10 countries responsible for almost 85% of all of China's agricultural imports.

Table 19: Chinese agricultural imports by source, 1995-2011 (US$ million)

Source	1995	Share (%)	2000	2005	2009	2010	2011	Share (%)
United States	3400	29.39	2510	6375	13444	17897	22148	25.06
Brazil	652	5.64	585	3010	8442	10726	15597	17.65
EU	1270	10.98	1095	1792	3179	4636	6794	7.69
Australia	768	6.64	1356	2380	2467	3884	6338	7.17
Argentina	228	1.97	757	2984	3466	5695	5400	6.11
Malaysia	779	6.73	435	1356	2971	3422	5046	5.71
Indonesia	158	1.37	288	885	2211	2863	4015	4.54
India	34	0.29	83	341	805	2377	3548	4.01
Canada	1110	9.60	691	981	2490	2789	2839	3.21
New Zealand	230	1.99	302	638	1274	2110	2813	3.18
World	11568	100	10040	25768	48604	67594	88372	100
Top 10 as % of total	74.60		80.70	80.50	83.80	83.40	84.30	

Source: Global Trade Atlas (2012)

China's economic growth and the concomitant income growth has spurred huge changes in the demand for food, and as people become more able to afford animal protein, the demand for animal feeds (soybeans, palm oil and soybean oil) increases – these two items now constitute nearly 43% of China's agricultural imports, compared to less than 8% just 17 years ago (Table 20). Wine is notable in the 10th position, from virtually nothing to $1.27 billion in 2011. France and Australia dominate these imports, with South Africa supplying a minnow's share of $20 million.

---

[7] We note from recent 2012 Brazilian data a steep decline by almost 80% in Brazil's agricultural exports to China – chiefly as a result of a dramatic decline in imports of soybeans and related products. This is confirmed from Chinese import data.

Table 20: Chinese agricultural imports by commodity, 1995-2011 (US$ million)

Commodity	1995	Share (%)	2005	2009	2010	2011	Share (%)
Soybeans	75	0.65	7777	18790	25089	29840	33.77
Cotton	1378	11.91	3193	2114	5658	9469	10.71
Palm oil	790	6.83	1737	3852	4544	6539	7.40
Wool	362	3.13	1114	1336	1805	2619	2.96
Hides & skins	0	0.00	929	1081	1451	1897	2.15
Fish meal	328	2.84	1083	1303	1668	1752	1.98
Sugar	778	6.73	324	307	780	1680	1.90
Cassava	68	0.59	421	889	1202	1388	1.57
Soybean oil	931	8.05	873	1843	1200	1322	1.50
Wine	1	0.01	40	377	657	1274	1.44
Total	11568	100.	25768	48604	67594	88372	100
Top 10 as % of total	40.70		67.90	65.60	65.20	65.40	

Source: Global Trade Atlas (2012)

4. Agricultural support policy

The policy framework and, in particular, the extent of support to the agricultural sector in these three countries and the changes in recent years have been analysed in two seminal studies recently: one by the World Bank by Anderson and Martin (2009) and the other by the continuing work of the OECD (in particular OECD, 2011) and the online OECD database. This research provides the foundation for the agricultural policy analysis for China and Russia, with supplementation from other sources. Data for India is more difficult to source and interpret.

The general picture for support to agriculture in BRICS is presented in Table 21, drawn from the 'live' online OECD database. It shows the degree to which governments support (positive value) or tax (negative value) agriculture using the Producer Support Estimates (PSE) as a measure of the net transfers to the sector as a percentage of total production. Thus, the measures are directly comparable through years and across different countries. South Africa had the lowest PSE in 2010, indicating that support to agriculture in this country is very low, while Brazil's 4.5% is still low by international standards (the OECD average is 18.8%). These two BRICS countries join New Zealand's 0.8%, Australia's 3.0% and Chile's 3.5% as the least subsidised agricultural producers. Both China and Russia subsidise at around the

OECD average, and in China the support for agriculture is increasing. There do not seem to be any recent and definitive estimates for support to Indian agriculture, but the OECD, World Bank (Pursell et al., 2009) and the International Food Policy Research Institute (IFPRI) (Mullen et al., 2005) all indicate that the level is around that of the OECD average. This would also put it on a par with China but possibly just below Russia.

Table 21: Agricultural support to the BRICS, 1995-2010

	Producer support estimate (PSE) %								
	1995	**2000**	**2003**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Brazil	-6.8	6.4	5.8	6.8	6.1	4.9	4.1	6.5	4.5
Russia	14.5	5.5	19.2	14.6	17.2	18.2	21.9	22.1	21.4
China	5.9	3	10.1	8.5	12.3	10.1	3.3	13.2	17.4
South Africa	14.9	5.8	7.1	6.2	9.2	4.2	3.1	4.3	2.2

Source: OECD. [Online]. Available: http://stats.oecd.org/Index.aspx?DataSetCode=MON20123_1

In China, transfers to specific commodities vary widely, with the highest support given to cotton and sugar, where it may exceed half of the value of farm receipts. The lowest levels of support are for rice and eggs, where support is actually negative as state purchases are at prices below import parity, implying a net tax on producers (OECD, 2012). In India, the tension between the desire to raise food prices for the benefit of farmers and to lower them for the benefit of consumers leads India to intervene heavily in the farm sector with multiple policy instruments. In Russia, the OECD (2011) reports that supports have increased through a tightening of border protection and an increase in budgetary transfers to the sector as a result of progressive policies aimed at import substitution. In particular, the OECD is concerned at the increasing debt and interest rate concessions in Russia as this may divert resources from what they consider to be the more important priority of sustainable development. As Russia is now a member of the WTO, it will be intriguing to watch Russian agricultural policy as the country seeks to establish a competitive agricultural sector.

Related to agricultural policies is the issue of farm structures. Here, Brazil, Russia and South Africa all exhibit dualistic farm structures while in both China and India (very) smallholdings dominate. Also interrelated with policies is the issue of technology in the agricultural sector. Here the performance of India's agricultural sector has been erratic over the past decades: output recorded a quantum jump in growth during the Green Revolution of the 1960s to the 1980s in response to the widespread adoption of new seed and fertilizer-based technologies,

but in recent years agricultural growth has slowed while the agricultural population has continued to increase. In China, once the overall enabling policy framework was in place, the agricultural expansion was driven by technology. This has been mainly new plant varieties, augmented by the associated increases in inputs. Production rose sharply, poverty fell dramatically, and the level and quality of food consumption improved significantly.

References

Anderson, K. and Martin, W. (eds.). 2009. Distortions to agricultural incentives in Asia. Washington: World Bank.

FAOSTAT Website. 2012. [Online]. Available: http://faostat.fao.org/site/357/default. Rome: Food and Agriculture Organisation of the United Nations.

Kiselev, S. and Romashkin, R. 2012. *Possible effects of Russia's WTO accession on agricultural trade and production*. ICTSD Programme on Agricultural Trade and Sustainable Development, Issue Paper No. 40. Geneva: International Centre for Trade and Sustainable Development. [Online]. Available: www.ictsd.org

Mullen, K., Orden, D. and Gulati, A. 2005. *Agricultural policies in India: producer support estimates 1985-2002*. MTID Discussion Paper No 62. Washington DC: International Food Policy Research Institute (IFPRI).

OECD. 2005. "Review of Agricultural Policies: China". OECD Publication, Paris

OECD. 2011. *Agricultural policy monitoring and evaluation 2011: OECD countries and emerging economies*. OECD Publishing. [Online]. Available: http://dx.doi.org/10.1787/agr_pol-2011-en

Pursell, G., Gulati, A. and Gupta, K. 2009. India. *In* Anderson, K. and Martin, W. (eds.), *Distortions to agricultural incentives in Asia*. Washington, DC: World Bank.

Sandrey, R. and Vink, N. 2013. *The rise and rise of Brazilian agriculture: what does it mean for South Africa?* (Forthcoming).

Sandrey, R., Vink, N. and Jensen, H. 2012. *The BRICs and agricultural exports to Africa: are they a threat to South African interests?* Paper presented to a special session of the Agricultural Economics Association of South African Conference, Bloemfontein, October 2012.

WTO. 2011. *Trade Policy Review Mechanism (TPRM)*. Report by the Secretariat, India, WT/TPR/S/249. Geneva: World Trade Organisation. 10 August.

WTO. 2012. *Trade Policy Review Mechanism (TPRM)*. Report by the Secretariat, China, WT/TPR/S/264. Geneva: World Trade Organisation. 8 May.

WTO. *Trade Profiles*. 2012. [Online]. Available: http://www.wto.org/english/res_e/booksp_e/anrep_e/trade_profiles12_e.pdf

Chapter 10

South African agricultural imports and policy space

Ron Sandrey

Summary

Except for the 2007 year, South Africa has been a net exporter of agricultural products, although we note that this is exaggerated by the use of free on board (f.o.b) instead of cost, insurance, and freight (c.i.f.) values to assess imports. During 2011, agricultural exports were $7,227 million with imports at $6,331 million.

The main sources of imports in the 'bigger picture' sense during 2011 were the EU followed by the Mercado Comun del Sur (Mercosur) and Association of South East Asian Nations (Asean), while the main products by HS 6 line were wheat, rice, palm oil, and soybean products. The fastest growing individual source over the last 15 years has been Brazil, followed by China and Thailand, while the fastest growing products at the HS 6 line have been palm oil, chicken cuts, and wheat.

Our assessment of the border tax collected based upon the Southern African Customs Union (SACU) Tariff Schedule was $309.5 million or 4.89% overall.

Examining policy space to increase border taxes, we found, firstly, that some $1,667 million or 26.5% of the total was effectively immune from increased tariffs as at least 40%, and in many instances 100%, of the lines were sourced from the European Union (EU) with the Trade, Development and Cooperation Agreement (TDCA) rates or from the Southern African Development Community (SADC) with its associated zero duty access. In the second place, it was found that $2,203 million or 34.8% of the total was associated with Tariff Rate Quota (TRQ) lines where increasing applied tariffs may be complicated.

Another $863 million (13.6% of imports) were in lines where the applied rates are equal to the bound rates at zero, while a further $72 million (1.14%) were where the applied rates were above zero but still equal to the bound rates.

This left only $1,867 million or 29.5% of the imports where there was clear policy space to increase tariffs. However, some $845 million (13.5 % of total imports) were in four lines of animal feeds that are direct inputs into South African domestic animal or poultry raising sectors. As such, increasing tariffs would raise domestic costs, and another $121 million is actually processed fishery products. **Deleting these animal feeds and fishery imports reduces strictly agricultural policy space to $901 or 14.3% of the total agricultural imports. The clear-cut policy space is limited.** Notably, some $245 million of these imports are in HS 020714 lines – frozen chickens and chicken cuts from Brazil and the EU, products that are causing consternation in trade policy circles.

Background

South Africa has traditionally been an agricultural exporting country, as displayed in Table 1. This holds true for every year shown except 2007, when there was a trade deficit of US$75 million. Note, however, that this profile of a trade surplus owes its existence in part to the way South Africa reports trade statistics, as, unlike most countries, South Africa reports import data as the equivalent of f.o.b. This means that transport and associated costs are not reported against the imports by South Africa as is the normal convention, and this consequently underestimates imports against the norm by perhaps as much as 10%. To gain a perspective on the balance, the top portion of the table also shows the trade balance as a percentage of agricultural exports, with the most recent 2011 surplus being 12.4% of the exports. The table also shows both exports and imports to put the data into perspective, along with the associated trade data for both the EU and SADC partners. Not shown is that in the most recent 2011 year there was a large surplus with Zimbabwe, Mexico, Mozambique and Angola, and, conversely, large deficits with Argentina, Brazil, Thailand, Indonesia, the United Sates and Malaysia.

Table 1: South Africa's agricultural trade profile, $ million

	1996	2000	2005	2006	2007	2008	2009	2010	2011
Trade Balance									
World	760	846	1,436	770	-75	688	1,206	1,521	896
% exports	29.5%	37.7%	35.4%	19.9%	-1.8%	12.4%	21.4%	23.6%	12.4%
EU	492	536	1,120	773	935	1,054	730	808	469
SADC	358	287	529	471	336	1,027	934	1,134	1,152
Exports									
World	2,577	2,243	4,057	3,865	4,243	5,535	5,626	6,455	7,227
EU	927	914	1,733	1,526	1,923	2,136	1,916	2,223	2,277
SADC	473	406	697	637	563	1,226	1,129	1,375	1,475
Imports									
World	1,817	1,397	2,620	3,094	4,318	4,847	4,420	4,934	6,331
EU	435	378	613	753	988	1,082	1,186	1,416	1,807
SADC	115	119	168	166	227	199	195	241	323

Source: Global Trade Atlas

The objective of this chapter is, firstly, to examine agricultural imports in detail and then to switch to trade policy measures associated with these imports. In particular, this means an examination of the possible 'policy space' or room that South Africa has to curtail imports through tariff increases. The policy space examination will review and update a 2008 paper by Sandrey et al. We note at the outset that while we are fully aware of South Africa's obligations under its SACU commitments and of how these in effect mean that South Africa does not have a tariff schedule, but rather that SACU does, we shall treat the schedule as being South Africa's for simplicity in this chapter.

1. The data

Extending the analysis beyond Table 1, this section will look at imports in recent years in more detail by both source and composition. A series of tables will be presented, all with the common format of being expressed in US dollars (millions) for values and the HS 6 line level for the commodities, sourced from the Global Trade Atlas. Data is shown for 1996, the first year available, 2000, 2005, and the three most recent years of 2009, 2010 and 2011. In addition, to indicate the growth or otherwise of these imports, the term 'ratio' is introduced where this is the ratio of imports in 2011 over the comparable value in 2000. A ratio higher than the overall increase means that source/HS line is increasing faster than the overall

comparator, while, conversely, a ratio lower means it is decreasing relative to the comparator. Presenting the data in US dollars (millions) does not detract from the main purpose of this section or the policy space examination, which is to emphasise the changes in these import flows rather than their absolute value in rand.

Table 2 extends Table 1 and shows agricultural imports by source in more detail. The EU remains the main source, followed by the South American region bloc of Brazil, Argentina, Uruguay and Paraguay (Mercosur), the 10-nation Asean regional bloc, the four BRIC countries of Brazil, Russia, India and China (note that Brazil is listed here twice, as it belongs to both Mercosur and BRIC); and then the African sequence of, firstly, the whole of Africa, and then the so-called Tripartite Free Trade Agreement (TFTA) grouping with its associated subregional SADC grouping. A perusal of the Africa data shows that SADC accounts for most of the South African agricultural imports from the entire continent. Argentina tops the rankings for the individual countries, followed by fellow Mercosur member, Brazil, and then Thailand and the United States (US).

Table 2: South African agricultural imports from world, $ million and changes 2011/2000

	1996	2000	2005	2009	2010	2011	Ratio
World	1,817	1,397	2,620	4,420	4,934	6,331	4.5
EU	435	378	613	1,186	1,416	1,807	4.8
Mercosur	236	204	650	1040	975	1,298	6.4
Asean	232	182	401	901	991	1,145	6.3
BRIC	118	106	534	806	824	1,047	9.9
Africa	190	139	207	256	315	384	2.8
TFTA members	137	123	184	226	274	358	2.9
SADC	115	119	168	195	241	323	2.7
Argentina	193	161	316	608	589	781	4.9
Brazil	40	32	324	415	362	495	15.5
Thailand	72	62	188	483	463	482	7.8
United States	312	161	209	172	267	428	2.7
China	25	36	97	264	299	313	8.7

Source: Global Trade Atlas

Looking at the ratio we see that since 2000, the EU has gained modestly (a ratio above the overall world total indicates a gain), while both Mercosur and Asean have strongly increased. The Mercosur increase has been fuelled by Brazil, as Argentina has increased modestly, while

Brazil is also fuelling the BRICs. China, in the final entry, is also growing strongly. These shifts have been in part at the expense of the US, whose imports have declined in percentage share terms.

Table 3 presents the main import HS 6 lines during 2011. Wheat topped the list in 2011, although in earlier years rice had been the main import and in 2010 both palm oil and soybean cake imports were greater than those of wheat. Not shown is that these top 10 products represent 48.8% of the total, a share that has risen since the 34.4% in 1996. Palm oil, soybean oil, and chicken cuts have been the growth imports as shown by the ratio.

Table 3: South African agricultural import lines from world, $ million and changes 2011/2000

		1996	2000	2005	2009	2010	2011	Ratio
HS 6		1,817	1,397	2,620	4,420	4,934	6,331	4.5
100190	Wheat	145	83	176	282	274	600	7.2
100630	Rice	138	128	221	450	411	472	3.7
151190	Palm oil	52	46	104	232	302	412	9.0
230400	Soybean cake	65	68	119	297	341	360	5.3
150790	Soybean oil	1	0	79	64	225	296	n.a.
220830	Whiskies	73	52	140	202	262	294	5.7
020714	Chicken cuts	23	30	114	144	147	245	8.2
210690	Food preparations	32	47	91	115	129	157	3.3
240120	Tobacco	21	20	62	161	142	141	7.1
151211	Sunflower oil	73	43	20	92	102	111	2.6

Source: Global Trade Atlas

In the next section we will discuss the trade barriers to these imports. But first we will continue the background information by showing the main import lines from the different sources and the main sources for the top import lines. This 'what imports from where' presentation gives a perspective on trade policy instruments available to South Africa. Table 4 starts with imports from the EU, where whisky tops the list but where soybean oil is increasing dramatically to challenge that top spot. Also increasing dramatically from a zero base are chicken cuts and soybean oil. These chicken cuts will be discussed in more detail later in the trade remedies section.

Table 4: Agricultural imports from the EU

	1996	2000	2005	2009	2010	2011	Ratio
Products / Total	435	378	613	1,186	1,416	1,807	4.8
Whiskies	69	46	110	174	238	266	5.8
Soybean oil	1	0	0	2	161	237	n.a.
Chicken cuts	3	3	3	3	7	91	30.3
Food preparations	20	26	49	65	68	87	3.3
Wheat	1	0	25	174	119	71	n.a.
Soybean oil	0	0	0	5	24	62	n.a.
Pork, etc.	14	11	15	27	47	59	5.4
Pet food	2	5	4	25	33	42	8.4
Animal feed	8	10	16	17	24	35	3.5
Cocoa products	5	4	18	16	21	33	8.3

Source: Global Trade Atlas

Imports from Mercosur are shown in Table 5, where soybean oilcake for animal feed is the number one line, followed by wheat and then chickens and chicken cuts. Imports of the latter (both chicken cuts and whole chickens) have increased dramatically, while sugar and soybean oil have grown off a zero base in 2000.

Table 5: Agricultural imports from Mercosur

	1996	2000	2005	2009	2010	2011	Ratio
Products / Total	236	204	650	1040	975	1298	6.4
Soybean cake	59	65	119	293	340	360	5.5
Wheat	0	20	68	53	38	223	11.2
Chicken	1	4	96	128	120	124	31.0
Chickens, whole	0	2	12	14	56	81	40.5
Soybean oil	0	0	79	61	64	58	n.a.
Sugar	0	0	6	17	11	49	n.a.
Rice	0	8	0	42	4	46	5.8
Sunflower oil	69	41	18	91	76	45	1.1
Sugar, refined	0	0	1	32	27	44	n.a.
Tobacco	2	2	22	83	47	37	18.5

Source: Global Trade Atlas

Asean imports (Table 6) are dominated by palm oil (again for animal feed) and rice, both of which have grown faster than the overall average. Sardines have grown from a zero base, while coffee has declined in importance.

Table 6: Agricultural imports from Asean

	1996	2000	2005	2009	2010	2011	Ratio
Products / Total	232	182	401	901	991	1145	6.3
Palm oil	52	46	103	231	300	404	8.8
Rice	60	48	145	329	329	341	7.1
Palm kernel	20	13	24	25	39	54	4.2
Sardines	1	0	0	85	62	53	n.a.
Coffee	23	14	17	21	29	36	2.6

Source: Global Trade Atlas

Turning now to Africa, Table 7 shows the imports from Africa while Table 8 shows those from SADC. Cotton, tobacco, and tea dominate the list – and only tea could be considered a food product.

Table 7: Agricultural imports from Africa

	1996	2000	2005	2009	2010	2011	Ratio
Products / Total	190	139	207	256	315	384	2.8
Cotton	53	31	67	46	51	89	2.9
Tobacco	18	10	25	44	46	63	6.3
Tea	9	13	21	35	39	35	2.7
Cocoa paste	6	2	6	16	23	16	8.0
Molasses	0	0	0	8	11	16	n.a.
Bananas	0	0	1	4	8	12	n.a.
Cotton cake	7	3	7	16	18	12	4.0
Maize	14	0	0	0	0	11	n.a.

Source: Global Trade Atlas

Continuing with African imports, Table 8 shows those from SADC. A comparison between the total African and the SADC subset shows that the top three African imports are almost exclusively from SADC, as were molasses, bananas, and maize in the minor imports. That leaves only cocoa paste and cotton oil cake from the main African imports that are not sourced from within SADC. This emphasises that outside of SADC, Africa is not important

for South African agricultural imports, and that, by granting duty-free access to SADC, South Africa is close to granting duty-free access to Africa.[1]

Table 8: Agricultural imports from SADC

	1996	2000	2005	2009	2010	2011	Ratio
Products / Total	115	119	168	195	241	323	2.7
Cotton	24	30	67	46	51	88	2.9
Tobacco	18	10	22	31	35	63	6.3
Tea	6	12	20	33	37	33	2.8
Molasses	0	0	0	8	11	16	n.a.
Bananas	0	0	1	4	8	12	n.a.
Maize	2	0	0	0	0	11	n.a.

Source: Global Trade Atlas

Changing the focus to look at sources of the main import lines, Table 9 examines wheat and shows some variation in these sources. Wheat is generally regarded as a generic international commodity, and Table 9 shows that trade has been sourced from its four main suppliers in recent years.

Table 9: Import sources of wheat

	1996	2000	2005	2009	2010	2011	Ratio
Source / Total	145	83	176	282	274	600	7.2
Argentina	0	20	68	44	9	211	10.6
United States	82	10	48	10	75	168	16.8
Australia	57	26	26	24	15	79	3.0
EU	1	0	25	174	119	71	n.a.

Source: Global Trade Atlas

Imports of rice (Table 10) have, like wheat, been sourced from a variety of countries in recent years. The EU has virtually ceased to be a source, while Thailand has become the main supplier, with India consistently in second place. Sources further down the table have also been inconsistent.

---

[1] And, of course, this entails duty-free access to SACU although we have ignored difficult-to-obtain intra-SACU trade in this study.

Table 10: Import sources of rice

	1996	2000	2005	2009	2010	2011	Ratio
Source / Total	138	128	221	450	411	472	3.7
EU	0	29	2	0	0	0	0.0
Thailand	59	46	145	326	319	336	7.3
India	33	18	71	21	20	61	3.4
Brazil	0	0	0	37	2	43	n.a.
Pakistan	0	1	1	18	45	17	17.0
Vietnam	1	2	0	3	10	5	2.5
China	0	0	0	36	9	3	n.a.

Source: Global Trade Atlas

Table 11 shows that palm oil is almost exclusively sourced from Malaysia and Indonesia, two Asean countries.

Table 11: Import sources of palm oil

	1996	2000	2005	2009	2010	2011	Ratio
Source / Total	52	46	104	232	302	412	9.0
Malaysia	51	30	69	121	155	225	7.5
Indonesia	0	16	34	111	145	178	11.1
India	0	0	0	0	0	5	n.a.

Source: Global Trade Atlas

Until 2010, the Mercosur sources of Argentina and Brazil were virtually the exclusive suppliers of soybeans and soybean oilcake, but since then the EU has become a major supplier of the rapidly rising new import of soybean oil (Table 12).

Similarly, Table 13 shows that the EU and the US dominate the whisky market, with imports from the US growing faster than those from the traditional EU (Scotland) sources.

Finally, Table 14 outlines the imports of chicken cuts. Here, there are dramatically changing import sources, and, as foreshadowed above, these imports are leading to trade policy challenges for South Africa. The US has dropped away, while imports from both the EU and Brazil have increased sharply. Canada has been the only consistent source with imports that are generally around 10% of the total.

Table 12: Import sources of soybean oilcake and soybeans

	1996	2000	2005	2009	2010	2011	Ratio
HS 230400 Soybean oilcake							
Source / Total	65	68	119	297	341	360	5.3
Argentina	45	65	119	293	340	360	5.5
HS 150790 Soybean oil							
Source / Total	1	0	79	64	225	296	n.a.
EU	1	0	0	2	161	237	n.a.
Brazil	0	0	59	21	10	34	n.a.
Argentina	0	0	19	40	53	24	n.a.

Source: Global Trade Atlas

Table 13: Import sources of whiskies

	1996	2000	2005	2009	2010	2011	Ratio
Source / Total	73	52	140	202	262	294	5.7
EU	69	46	110	174	238	266	5.8
United States	1	2	26	23	19	22	11.0

Source: Global Trade Atlas

Table 14: Import sources of chicken cuts

	1996	2000	2005	2009	2010	2011	Ratio
Source / Total	23	30	114	144	147	245	8.2
EU	3	3	3	3	7	91	30.3
Brazil	1	4	90	112	109	112	28.0
Canada	2	4	11	6	14	16	4.0
Argentina	0	0	7	16	11	12	n.a.
United States	11	8	0	1	3	7	0.9

Source: Global Trade Atlas

In summary, it can be seen that South African agricultural imports are generally very concentrated by both product and sources of many of these major products. This circumstance, as we shall see in the next section, has major implications for trade policy options and, in particular, the available policy space.

2. Tariffs and tariff policy space

Sandrey et al. (2008) discussed how under the trade liberalisation of the 1990s, South African border tariffs were reduced and export subsidies were eliminated through unilateral reductions that went beyond the mandatory requirements negotiated under the Agreement on Agriculture. This was, however, somewhat balanced by the introduction of the World Trade Organisation (WTO) TRQ regimes for several of the important agricultural imports. They went on to analyse individual agricultural imports to assess whether the policy space exists for an option of increasing agricultural tariffs to afford some protection to domestic producers. The critical parts of this analysis were (1) commitments given to multilateral trading partners through the WTO; (2) commitments to regional partners through the TDCA with the EU and preferences granted to SADC; and (3) the available space that South Africa had reserved through its WTO bound rates.

Thus, against the background of the WTO, two aspects of tariff policy are important. The first is bound versus applied tariff rates, while the other is the TRQs. Bound tariffs are those tariffs where South Africa makes a commitment to WTO members that it will not exceed these rates. Applied tariffs are those tariffs that are actually 'applied' or levied at the border. Associated with applied rates are the most favoured nation (MFN) rates, according to which all imports not under some special concession rate enter the country. The applied rate is usually but not always below (and in some instances substantially below) the bound rates, thus giving 'policy space' where the applied rates could be raised to the bound rates. TRQs are special access commitments according to which a country agrees to imports of a commodity line that has reduced TRQ rates that are below the MFN rate. In South Africa's case, the TRQ rate is a maximum of 20% of the bound rate for the agreed quantity of imports, after which the MFN rate applies. Complicating TRQs in South Africa's case is the situation where, although technically under TRQ administration, many of the TRQ lines are operating in an environment where the restrictions operate in name only and the applied rate is actually the TRQ rate or below and not the higher bound rate.

To assist in this analysis, Sandrey et al. selected five different categories of agricultural imports:

- No policy space, as either (i) the applied rates were at or very close to the WTO bound rates, or (ii) the combined percentage market share from the preferential sources of the EU and SADC is at least 40%;

- Perhaps some limited space, but the current applied rates were within a maximum of 6.4 percentage points of the bound rates;

- Room to increase the applied rates, but these imports are an essential feedstuff for the animal or poultry industries in South Africa;

- Room to increase the applied rates, but this product is a basic food in South Africa and other analyses have shown that increasing tariffs hurts the poor and generates a welfare loss to South Africa (wheat); and

- Room to raise the applied tariffs, as there clearly is policy space.

In summary, Sandrey et al. found that policy space available to South African agriculture was limited. Some 14.1% of the 2005 imports were 'locked' by the WTO bound rates, with an additional 7.5% almost at those bound rates. Another 22.9% was effectively 'locked' with at least 50% sourced from the EU/SADC combined with an additional 15.2% 'almost locked' with at least 40% of the imports from these same destinations. This gave a total of 59.7%, that is, for all practical purposes, locked into the current tariff policy regime.

Of the remaining imports, another 14.6% constituted animal feed inputs. Any increase in these tariffs would directly pass a cost increase onto South African poultry and meat producers, and ultimately onto consumers. Imports of wheat (6.7% of the total) are also sensitive. While there was policy space to increase the wheat tariff, South Africa is a net importer of this staple food. This left a grand total of 19.0% of all imports where at least some policy space is available. Even here, most of these imports are subject to WTO TRQ obligations and thus not totally under the control of South African trade policy authorities.

The update on policy space

This section will move on six years and re-examine the policy space issue based upon 2011 agricultural imports. A slightly different approach has been taken, so the final percentage shares of each of the modified categories are not directly comparable. The issue of increasing agricultural tariffs needs to be put into perspective. In 2011, South Africa imported agricultural products worth $6,331 million. Based on the Tariff Schedule, these imports attracted $309.5 million in duties, with all but $6,45 million of this from non-EU or SADC imports. This gives an overall tariff rate of 4.89%. By value, most of the duties were collected on palm oil ($40.9m), chicken cuts (HS 020714 - $23.1m), other food preparations ($17.8m),

sunflower seeds ($11.1m), and two lines of tobacco with $10.64 and $9.68 million respectively. As we will show, there are limited opportunities to increase these tariffs. The result is that increasing government revenues cannot realistically be considered a motive for such a move. This leaves purely protectionist motives and a reversion from South Africa's liberalisation moves of the immediate post-apartheid period. Let us examine current policy space.

Preferential trade plus TRQ constraints

There are two issues to examine here. The first issue is the preferential imports from the EU under the TDCA and the imports from SADC under the SADC Agreement. The second is the issue of TRQs. There are overlaps between these two issues, as (a) many of the preferential imports are in TRQ lines, (b) similarly, many of the TRQs are in preferential access EU/SADC preferential trade lines, and (c) in some TRQ lines there are no access preferences available to EU imports. In addition, as indicated above, the TRQ regime is a complex one, as in many of the lines the TRQ regime is not rigidly enforced. Our analysis of trade at the HS 6 digit line level complicates a thorough analysis. Therefore, to specially assess the policy space in these TRQ lines requires a more detailed analysis, but suffice it to say that as a generalisation we can examine where trade seems to be operating in TRQ delineated lines and leave a more detailed analysis for later.

Firstly, the EU and SADC imports, along with the TRQ imports, are shown in Table 15. Row two shows that of the global imports of $6,331 million in 2011, some $1,807 or 28.5% were from the EU. Another $323 million was from SADC, giving a combined $2,130 or 33.6% from the EU and SADC, while $2,203 million or 34.8% were in import lines associated with TRQs. Rows four and five show, firstly, in row four, the values of the imports where the combined EU plus SADC share was at least 40%, and then in row five the overall percentage of the imports from the EU and SADC where their combined share was at least 40% in that import line. Thus, some $1,459 or 80.7% of the imports from the EU were in lines where the EU and SADC combined dominated; a combined EU/SADC figure of $1,677 million or 78.7% of the EU/SADC total was similar in the dominating lines. Of these, some 33.5% were in TRQ associated HS 6 lines.

Line 6 in Table 15 shows that, overall, some 26.5% of the total global imports were in EU/SADC dominated lines and therefore cannot be realistically considered for tariff

increases. Lines seven and eight provide more details on the TRQ lines: some 36% of imports from the EU ($650m) were in lines associated with TRQs, while the similar data for SADC imports shows $207 million or 64.1% of these SADC imports.

Table 15: South African agricultural imports from EU and SADC plus TRQ lines

Category	EU	SADC	EU+SADC	TRQ
Total $ million (World $6,331m)	1,807	323	2,130	2,203
Relative % share world total	28.50%	5.10%	33.60%	34.80%
EU +SADC >40% line $ million	1,459	218	1,677	739
EU+SADC >40% line %	80.7%	67.5%	78.7%	33.5%
EU+SADC >40% line % World	23.0%	3.4%	26.5%	11.7%
$ million total in TRQ lines	650	207	857	
% total in TRQ lines	36.0%	64.1%	40.2%	

Source: Author's calculations

Table 16: Main imports where the combined EU/SADC share is above 40%

$1,677 million or 26.5% total		World imports ($ m)	% Share	Tariffs (%)		
HS line	Definition	6,331	EU/SADC	Bound	MFN	TRQs
220830	Whiskies	294	90.5%	67.0	15	Yes
150790	Soybean oil	296	80.1%	49.0	10	
210690	Food preparations	157	56.1%	99.0	20	Yes
520100	Cotton	102	86.3%	60.0	10	Yes
240120	Tobacco	141	49.6%	44.0	15	Yes
150710	Soybean oil	74	83.8%	81.0	10	Yes
020329	Meat of swine	76	77.6%	37.0	0	
230910	Pet food	48	87.5%	37.0	0	
230990	Animal feed	63	55.6%	37.0	20	
180690	Cocoa preparations	42	78.6%	21.0	17	
090240	Black tea	41	80.5%	170.0	100	
220210	Waters	37	70.3%	0.0	5	
220300	Beer	26	96.2%	8.5	5	
100590	Maize	23	100.0%	50.0	0	
200490	Frozen vegetables	21	100.0%		25	

Source: Global Trade Atlas data, author's calculations

Table 17 moves on to examine the main imports associated with TRQs, where the main import is wheat. Here the bound rates are 72% and therefore the theoretical TRQ rate would be 14.4%, but as the MFN applied rate is zero, it is safe to assume that wheat is not categorised under the TRQ rate. It could, in theory, be raised significantly from the current zero rate, but Sandrey et al. (2005) analysed the welfare implications of such an increase in the wheat tariff, tracing the effects through the value chain from farmers to consumers, and showed that most households would suffer a loss in welfare as final bread and bakery product prices increased. The next three products show that a significant share of the market is held by EU/SADC and, although not shown, these imports are duty-free. Indeed, only the final entry of frozen beef attracts EU duties at the same level of the MFN 40% rate.

Table 17: Main imports in tariff lines associated with TRQs

$2,203 million or 34.8% of total		World imports ($ m)	% Share	Tariffs (%)	
HS code	Description	6,331	EU/SADC	Bound	MFN
100190	Wheat	600	11.8%	72.0	0
220830	Whiskies	294	90.5%	67.0	15
210690	Food preparations	157	56.1%	99.0	20
240120	Tobacco	141	49.6%	44.0	15
151211	Sunflower oil	111	0.0%	61.0	10
520100	Cotton	102	86.3%	60.0	10
020712	Meat, chickens	89	7.9%	82.0	0
150710	Soybean oil	74	83.8%	81.0	10
090111	Coffee	71	9.9%	119.0	0
170111	Cane sugar	52	1.9%	105.0	0
020727	Turkey cuts	36	8.3%		0
100300	Barley	31	0.0%	41.0	0
020230	Beef, frozen	23	21.7%	160.0	40

Bound rate constraints

The next category of "untouchables" features instances where the bound rates are zero and it is accordingly the same as the MFN rate. Imports during 2011 accounted for $863 million (13.6% of imports), as shown in Table 18. Some 55% of this category comprises rice imports, and, significantly, no imports are from either the EU or SADC.

Table 18: Main imports where the bound rates are zero

$863 million or 13.6% total		World imports ($ m)	% Share	Tariffs (%)	
HS line	Description	6,331	EU/SADC	Bound	MFN
100630	Rice	472	0.0%	0.0	0
050400	Animal guts	76	11.8%	0.0	0
350510	Dextrin, etc.	36	27.8%	0.0	0
010110	Purebred animals	25	28.0%	0.0	0
180500	Cocoa powder	25	24.0%	0.0	0

Following on from the zero bound rates there is another category of those lines where the bound rates are equal to the MFN rates. Thirteen million of these imports are from the EU, and the TDCA rates are all zero. Half of the imports are sugar confectionery and another quarter is cheese, both with around one-quarter of the imports from the EU at preferential zero duties.

Table 19: Main imports where the bound rates equal MFN rates

$72 million or 1.14% total		World imports ($ m)	% Share	Tariffs (%)	
HS line	Description	6,331	EU/SADC	Bound	MFN
170490	Sugar confectionery	37	27.0%	37.0	37
040630	Cheese	14	28.6%	95.0	95

The remaining trade

Following on from the examination of (a) where the combined EU and SADC import share is at least 40%, (b) where there is a TRQ associated with the HS 6 line (and recognising the complexities associated with this generalisation), and (c) where the bound rates are either zero or equal to the MFN rates, we are left with imports of **$1,867 million or 29.5% of the total** in 2011. Only $158 million (8.7% of EU imports) remains, as does an even lower 1.9% ($6 million) of the SADC imports. In this analysis, we have ignored the SACU/Mercosur agreement, but note that an amount of some $607 or 46.8% of the Mercosur total is included here.

The main imports in these HS lines are shown in Table 20. However, we note that the top three imports of palm oil, soybean oilcake, and palm kernel are all animal feeds that are significant imports into the South African domestic animal and poultry sectors. Thus, increasing tariff rates on these inputs directly raise costs in South African agriculture with

little or no offset of protecting the domestic production of these inputs. When $18 million of sunflower seed oilcake is added to these three imports, we find that their total is $845 million or some 13.5% of total imports.

In reality, accepting the feed input logic, there is some **$1,022 of total imports where there is a clear case for raising tariffs. This is 16.1% of the total**. Note especially that Table 20 contains imports of HS 020714 (chicken cuts) with 37.1% sourced from the EU in 2011. Imports of these products from Brazil are causing consternation in agricultural trade policy circles. Note also that there are imports of $121 million (1.9%) in the WTO category of fisheries products but reported here as processed foodstuffs[2]. **Deleting these imports reduces strictly agricultural policy space to $1,901 or 14.3% of the total agricultural imports. The clear-cut policy space is limited.**

Table 20: Imports where there is policy space between bounds and MFN

$1,397 million or 22.1% total		World imports ($ m)	% Share	Tariffs %	
HS line	Description	6,331	EU/SADC	Bound	MFN
151190	Palm oil	412	0.7%	81.0	10
230400	Soybean oilcake	360	0.0%	33.0	0
151329	Palm kernel	55	0.0%	81.0	0
170199	Sugar	47	0.0%	105.0	0
110710	Malt	45	20.0%	99.0	0
200979	Apple juice	40	0.0%	26.0	0
HS Lines that are unbound (including processed fisheries products)					
$470 million or 7.4% total		World imports ($ m)	% Share	Tariffs %	
HS line	Description		EU/SADC	Bound	MFN
160413	Sardines	61	1.6%		0
160414	Tuna	31	0.0%		25
160520	Shrimps	10	0.0%		0
	All prepared fish in HS 16	121			
020714	Chicken cuts	245	37.1%		15
071333	Kidney beans	62	0.0%		10
020629	Beef offal	16	0.0%		0

---

[2] Strictly speaking, these products are not agricultural products but as they are processed food products they often get included as agricultural products.

References

"Costs and Benefits of Higher Tariffs on Wheat Imports to South Africa – A General Equilibrium Analysis". 2005:2. Department of Economics: Elsenburg

Sandrey, R., Karaan, M. and Vink, N. 2008. Is there policy space to protect South African agriculture? *South African Journal of Economics,* 76:1 March: 89-103.

Trade remedies and safeguards in BRICS countries

Willemien Viljoen

Summary

Trade remedies are legal instruments countries use to protect their domestic industries against foreign imports. Traditionally, trade remedies consist of anti-dumping measures, countervailing duties and safeguards. Over the last decades there has been a significant change in the countries that implement and are affected by anti-dumping measures, countervailing duties and safeguards. Since the launch of the Uruguay Round of Multilateral Trade Negotiations there has been a significant change in the number and variety of countries using trade remedies and safeguards. Prior to the Uruguay Round, the primary users of these instruments were developed countries. However, the composition has changed dramatically over the last decades. Since 1995, developing countries have become the main users of both anti-dumping measures and safeguards, while developed countries have always been the main users of countervailing duties. It also seems that developing country exports have always been the main targets of anti-dumping and countervailing investigations by all other World Trade Organisation (WTO) member countries.

The BRICS countries (Brazil, Russia, India, China and South Africa) are some of the most prominent users of trade remedies and safeguards. Out of all the developing countries these are also the economies most affected by anti-dumping measures, countervailing duties and safeguards, especially exports from China. The statistical databases of the WTO on anti-dumping measures, countervailing duties, and safeguards show the prominent role that the BRICS countries play in the utilisation of multilateral trade remedies and safeguards:

- Between 1995 and June 2012, China was affected by 24% of all anti-dumping measures implemented by other WTO members – the most measures implemented on the exports of a WTO member over the time period.

- India not only implemented the most anti-dumping measures of all WTO members between 1995 and June 2012, but also the greatest number of safeguards between 1996 and April 2012.

- 47% of all countervailing measures implemented after 1995 were on exports from BRICS countries, mostly China and India.

1. Introduction

Provision is made for the implementation of trade remedies and safeguards in the General Agreement on Tariffs and Trade (GATT) 1994 and various WTO agreements on the multilateral level and in regional agreements on the bilateral level. The aim of trade remedies is to increase the duty on a specific import product and to make the domestic market less attractive for foreign imports. These measures provide governments with the necessary flexibility to temporarily rescind from the commitments made under a liberal trade policy. Trade remedies traditionally consist of safeguards, anti-dumping duties, and countervailing measures. Safeguard mechanisms provide temporary relief from import surges; anti-dumping measures counteract unfairly low prices on import products; and countervailing duties (CVD) counteract subsidies. The purpose of anti-dumping and countervailing measures is to address unfair imports into a domestic market from a specific importing country, while safeguards are implemented when a surge in imports, under fair trade conditions, causes harm to the domestic industry of the like product.

Brazil, Russia, India, China and South Africa are seen as some of the fastest growing economies in the world. The implementation of trade remedies and safeguards on the exports of these countries can have a significant effect on these countries' ability to penetrate and gain market share in certain foreign markets. However, the use of anti-dumping measures, countervailing duties, and safeguards by the BRICS countries can also have a significant impact on the ability of foreign producers to gain access into these growing markets.

The aim of this chapter is to look at the use of multilateral trade remedies and safeguards with Brazil, Russia, India, China and South Africa as either exporting or reporting WTO member

countries in order to establish their role and importance in the utilisation of these measures. In order to attain this goal, the chapter briefly provides an overview of anti-dumping measures, countervailing duties and safeguards as legal instruments to protect domestic industries against foreign imports, followed by an analysis of the change in dynamics of developing versus developed countries' utilisation of these instruments since the Uruguay Round of Multilateral Trade Negotiations. The focus of the chapter then shifts to a broad analysis of anti-dumping measures, countervailing duties, and safeguards with the BRICS country grouping as implementing and exporting countries. The final section of the chapter provides a comprehensive overview of the domestic laws, regulations and rules applicable to trade remedies and safeguards in each BRICS country and a statistical analysis of anti-dumping measures, countervailing duties and safeguards on the multilateral level with Brazil, Russia, India, China and South Africa as reporting and exporting countries.

2. Background: Anti-dumping measures, countervailing duties and safeguards

Trade remedies are legal instruments which can be used by countries to protect their domestic industries against foreign imports. These measures can be taken when countries determine that foreign producers are resorting to certain unfair trade practices. Traditionally, trade remedies include anti-dumping measures, countervailing duties and safeguards. However, strictly speaking, safeguards are not trade remedies because these measures are not implemented to remedy unfair trade, but are utilised when there is a surge of imports, under fair trade conditions, which caused harm to the domestic industry.

Anti-dumping measures and countervailing duties counteract unfairly low prices charged in the importing market due to dumping by foreign firms or subsidisation by foreign governments. The aim of these measures is to limit either the size of the dumping or the subsidisation to level the playing field between domestic and foreign producers in the same market. Anti-dumping and countervailing measures allow countries to take action against unfair competition to offset the unfair and anti-competitive practices of dumping and subsidisation.

Anti-dumping measures and countervailing duties are unilateral remedies which can be implemented subsequent to an investigation and determination in accordance with the applicable multilateral agreements of the WTO and the national laws and regulations of the

implementing country. On the multilateral level, the utilisation of anti-dumping measures is governed by Article VI of GATT 1994 and the Agreement on Implementation of Article VI of GATT 1994 (the Anti-Dumping Agreement (ADA)), while the use of countervailing duties also falls under the ambit of Article VI of GATT 1994 and the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement). Although dumping is not prohibited by WTO law, GATT 1994 and WTO law allow for remedial action to be taken against these measures when it causes or threatens to cause material injury to the domestic industry which produces products similar to those being imported. Countervailing measures can be implemented when subsidised imports give foreign competitors an unfair competitive advantage over domestic producers, often undercutting domestic prices. Through the implementation of countervailing duties, the duty applicable to the subsidised imports is increased, restoring any imbalance caused by the subsidisation.

Safeguards protect the domestic industry of the importing country against a significant increase in imports under fair trade conditions. These measures act as a 'safety valve' by providing temporary relief to a domestic industry which has incurred serious injury. The implementation of safeguards is governed by Article XIX of GATT 1994 and the WTO Agreement on Safeguards, and provides a mechanism to temporarily reimpose protection when liberalisation imposes unexpected political burdens on the importing nation.

3.   Use of anti-dumping and trade remedies by developing countries

Over the last decades there has been a significant change in the countries that implement and are affected by trade remedies and safeguards. Since the Uruguay Round of Multilateral Trade Negotiations was launched and the WTO Agreements on anti-dumping measures, countervailing duties and safeguards entered into force, there has been a significant change in the number and variety of countries using these measures. Prior to the Uruguay Round, the primary users of trade remedies and safeguards were developed countries, including Australia, the European Union (EU), and the United States (US). The WTO statistical databases on implemented anti-dumping measures, countervailing duties and safeguards give an indication of how the composition of countries utilising these measures has changed over the last decades. The databases on anti-dumping measures and countervailing duties provide data from 1995 until June 2012 according to affected and implementing countries. The data on safeguards ranges from 1996 to April 2012. The data was then divided into developing and developed countries, according to the country classifications utilised by the United Nations

(UN). The figure below depicts two graphs. The first indicates the number of anti-dumping measures which have been implemented by developing and developed countries over the time period. The second shows the number of anti-dumping measures which have been implemented against the imports of developing versus developed countries.

Figure 1: Anti-dumping measures by exporting and reporting countries
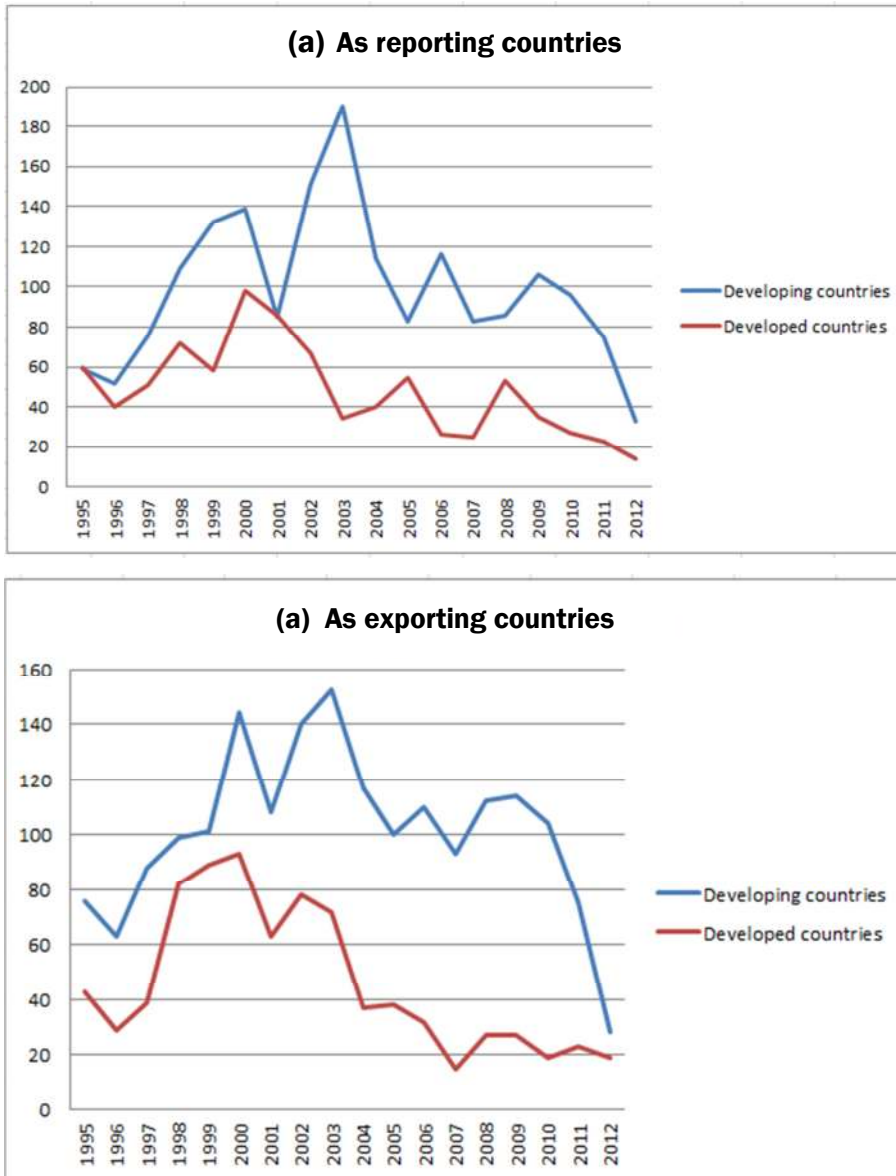
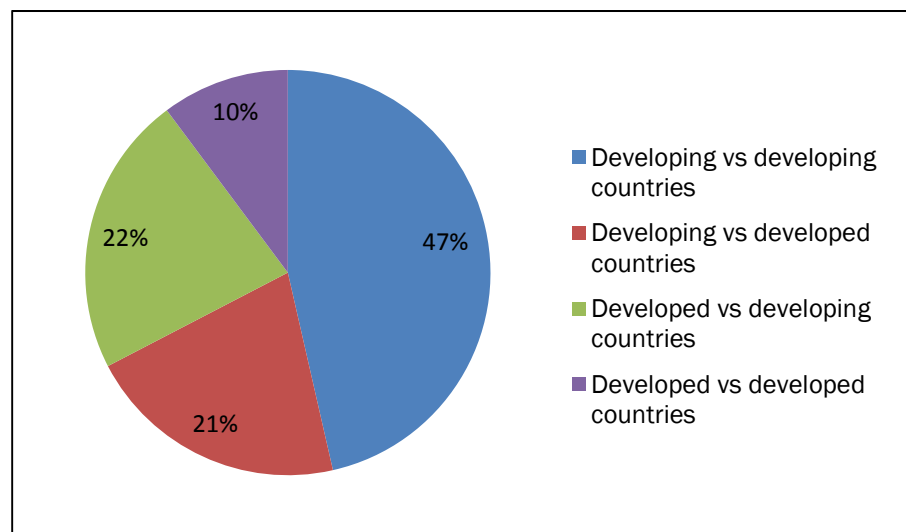Source: WTO Statistics on anti-dumping measures (2013a)

Figure 1(a) shows that there has been a shift from the traditional users of anti-dumping measures. Prior to 1995, developed countries were the main users of these measures. Between 1990 and 1999, 50% of the anti-dumping investigations were initiated by the EU, Australia, the US and Canada. Developing countries accounted for 39% of anti-dumping investigations over the same time period. However, there has been a significant increase in the amount of

anti-dumping duties implemented by developing countries since 1995. Between 1995 and June 2012, developing countries implemented 67% of all anti-dumping measures, while developed countries accounted for only 33% of all final anti-dumping duties. India, Argentina, and China are the three developing countries which have utilised anti-dumping measures the most, accounting for 32% of all anti-dumping duties implemented between 1995 and June 2012.

Figure 1(b) shows how developed and developing countries have been affected by the implementation of anti-dumping measures. It seems that the imports of developing countries have always been the target of anti-dumping investigations. Between 1990 and 1999, anti-dumping investigations targeted the exports of developed countries in 35% of all cases, while 66% of investigations were against the exports from developing countries. Between 1995 and June 2012, anti-dumping measures were implemented on the exports of developing countries in 69% of all cases, while 31% of all measures were implemented on the exports of developed countries. Exports from China have mainly been targeted by anti-dumping measures, accounting for 24% of duties imposed over the time period.

**Figure 2: Anti-dumping measures: developing versus developed countries**

Source: WTO Statistics on anti-dumping measures (2013a)

Although developing county exports have always been a target for anti-dumping measures, traditionally these measures were imposed by developed countries. This dynamic has also changed drastically over the last decades. Figure 2 shows that there has been a shift from developed countries targeting the exports of developing countries to developing countries targeting the exports of other developing countries. Out of all the measures implemented

between 1995 and June 2012, 47% of these measures were implemented by developing countries on the exports of other developing countries, while in 21% of all cases developing countries targeted the exports of developed countries. Developing country exports are still the main target for anti-dumping measures implemented by developed countries, with developed countries targeting exports of other developed countries only in 10% of all anti-dumping measures implemented over the time period.

Over the last decades there has also been a change in the use of countervailing measures. Although developed countries have remained the main users of countervailing measures, the most significant change over the last decades has been the vast increase in countervailing duties implemented by developed countries against the exports of developing countries. Figure 3 below shows developing versus developed country exports affected by countervailing measures between 1995 and June 2012, and countervailing duties implemented by developing versus developed countries over the time period.

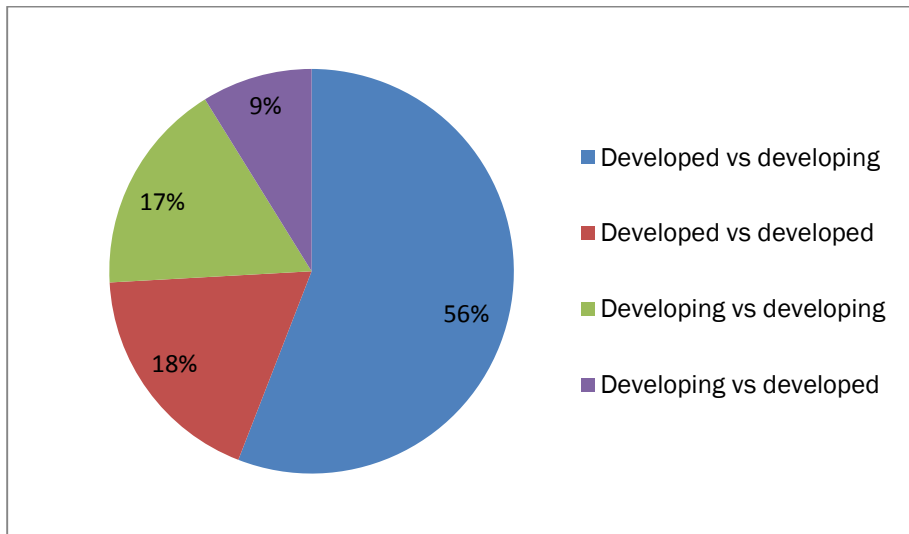**Figure 3: Countervailing measures by exporting and reporting countries**
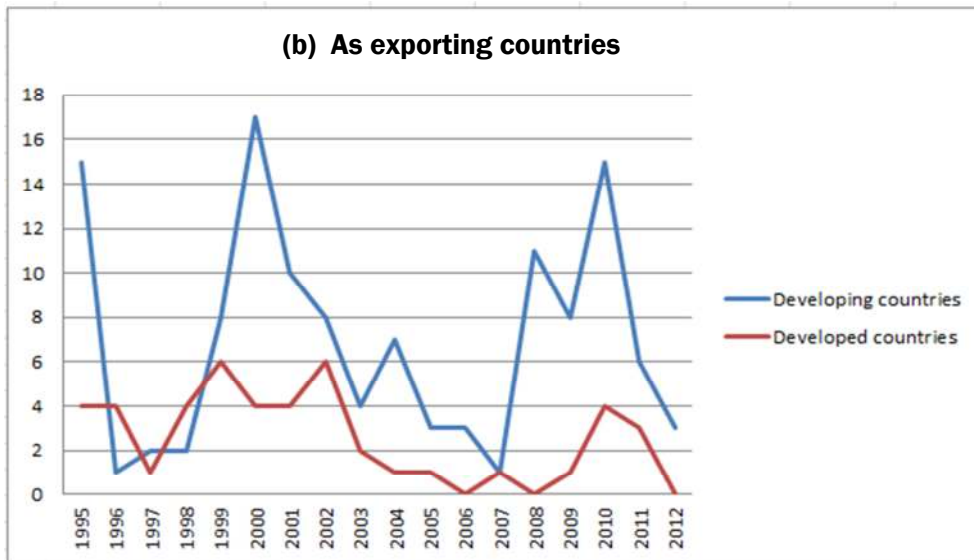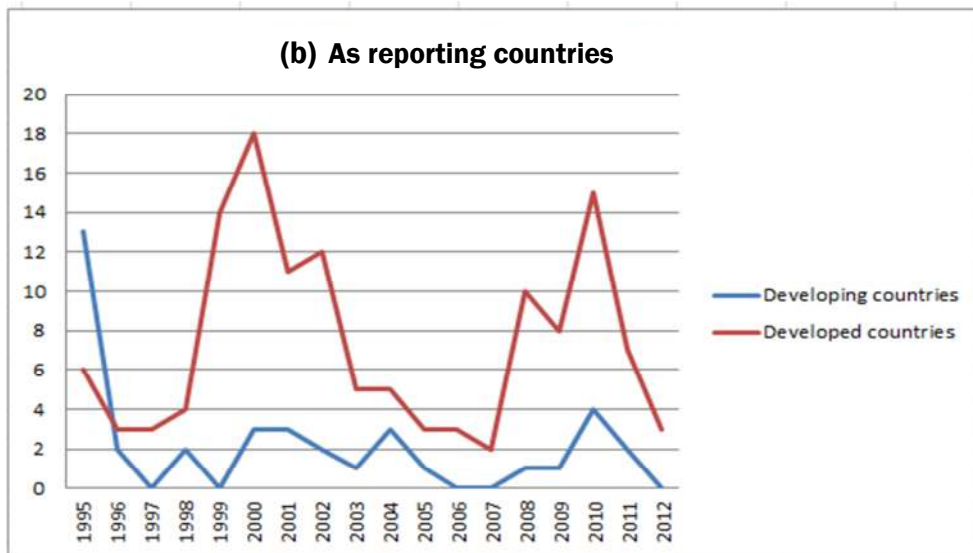
Source: WTO Statistics on countervailing measures (2013b)

Figure 3(a) shows that since 1999, developing country exports have been the exports most affected by countervailing duties. Prior to 1999 the majority of countervailing duties were implemented on the exports of developed countries. Between 1995 and June 2012, developing country exports were affected by 73% of all countervailing duties, while only 27% of countervailing measures targeted the exports of developed countries. The developing countries most affected by these measures over the time period were China and India.

Figure 3(b) shows that developed countries have always been the main users of countervailing duties. Between 1995 and June 2012, developed countries implemented 78% of the total countervailing measures implemented by all WTO member countries, while only 22% of these measures were implemented by developing countries. The US, EU and Canada were the main users of countervailing duties over the time period, accounting for 34%, 18% and 11%, respectively, of all measures between 1995 and June 2012.

The dynamics regarding developing versus developed countries' use of countervailing measures are shown in Figure 4. Most of the countervailing measures implemented over the time period have been by developed countries against the exports of developing countries, followed by developed countries implementing measures against the exports of other developed countries. Developing countries have mostly also implemented countervailing duties against the exports of other developing countries.

Figure 4: Countervailing measures: developing versus developed countries

Source: WTO Statistics on countervailing measures (2013b)

Figure 5 shows the use of safeguard measures by developing and developed countries between 1996 and April 2012. The graph shows that developing countries were the main users of safeguards over the time period, except for one year between 2003 and 2004. Between 1996 and April 2012, developing countries implemented 78% of the total safeguard measures by all WTO member countries, while developed countries only implemented 28% of all measures. The developing country which implemented the most safeguards was India, while the US was the developed country which used the most safeguard measures over the time period.

Figure 5: Developed versus developing countries implementing safeguards
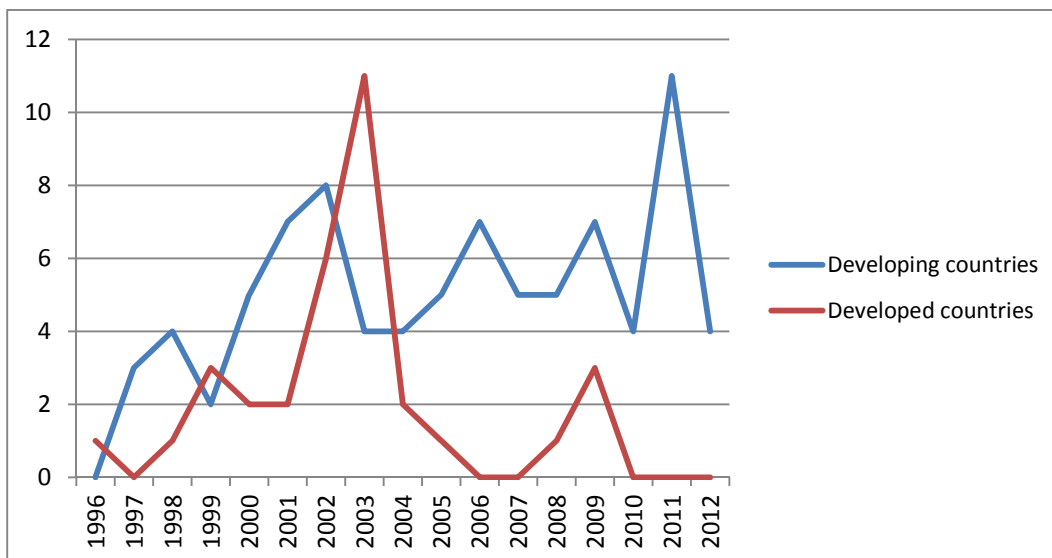
Source: WTO Statistics on safeguards measures (2013c)

4. Trade remedies and safeguards in BRICS countries

The BRICS countries are some of the most prominent users of trade remedies and safeguards. Out of all the developing countries, these are also the economies most affected by an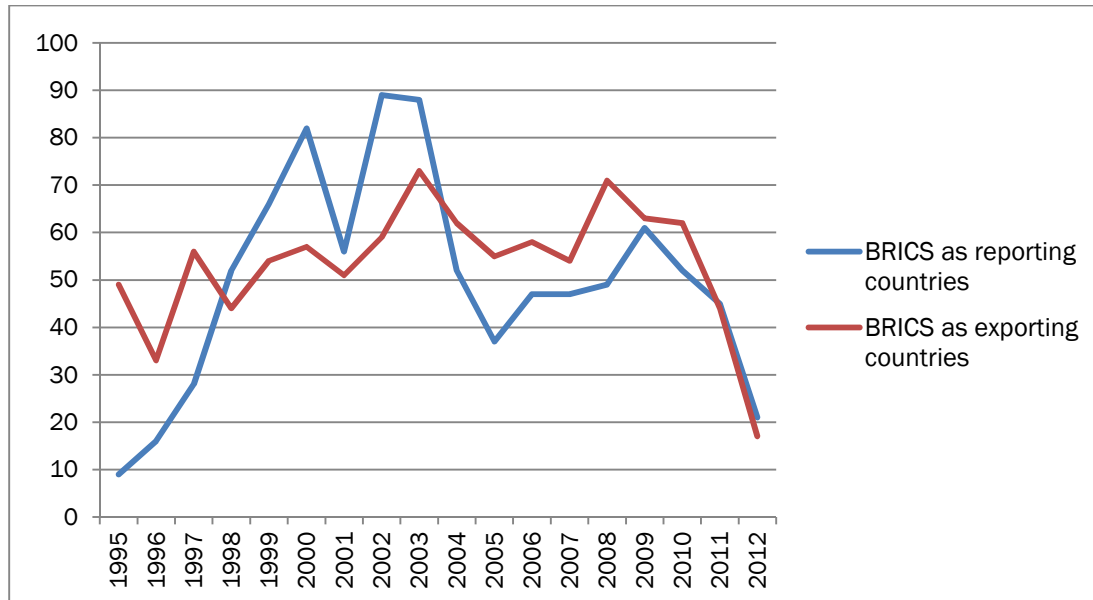ti-dumping measures, countervailing duties and safeguards, especially China. The WTO databases on anti-dumping, countervailing and safeguards depict the role Brazil, India, China and South Africa played in the use of these measures between 1995 and June 2012 (1996 and April 2012 for safeguards). The databases have limited to no data available on measures implemented by Russia and affecting Russian exports. The WTO database on anti-dumping measures by exporting countries does provide data on how Russia has been affected by anti-dumping measures implemented by other WTO member countries. However, the databases contain no information regarding anti-dumping measures implemented by Russia and countervailing measures and safeguards with Russia as exporting and reporting country. Due to the lack of data on Russia in the WTO databases, the data below only includes Russia in the BRICS countries as exporting countries.

Figure 6 shows the number of anti-dumping measures implemented by all BRICS countries and the anti-dumping measures affecting BRICS exports between 1995 and June 2012. Over the time period, BRICS countries were affected by 36% of all anti-dumping measures implemented by other WTO member countries and implemented 34% of all measures. The figure shows that since 2008 there has been a significant decrease in the number of measures implemented against the BRICS countries, while there has also been a significant decrease in the number of measures implemented by the BRICS countries on the exports of other WTO members since 2009. Out of all the BRICS countries, India (18%) implemented the majority of the anti-dumping measures, followed by China (6%) and Brazil and South Africa (5% each). The BRICS countries were affected by anti-dumping measures implemented on their exports as follows: China (24%), Russia and India (4% each), Brazil (3%), and South Africa (2%).

Figure 7 below shows the number of anti-dumping measures affecting BRICS countries which have been implemented by other BRICS countries and non-BRICS countries. Between 1995 and June 2012, a total number of 962 anti-dumping measures were implemented on BRICS export products. Of these measures, 26% were implemented by BRICS countries on the exports of other BRICS countries, while 74% were implemented by non-BRICS countries. The majority of the anti-dumping measures implemented by BRICS countries on BRICS

exports were implemented by India and Brazil on exports from China. Over the time period, China implemented only 9 measures against Russia and 4 against India, while South Africa implemented 18 measures against China, 12 against India, 4 against Brazil, and 2 against Russia.

Figure 6: BRICS anti-dumping measures as exporting and reporting countries: 1995-2012

Source: WTO Statistics on anti-dumping measures (2013a)

Figure 7: Anti-dumping measures: BRICS versus other countries
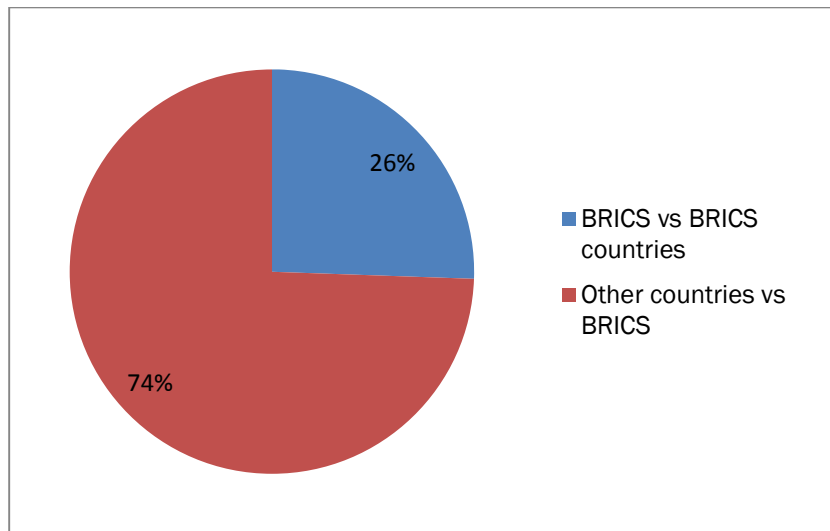
Source: WTO Statistics on anti-dumping measures (2013a)

Compared to the data on anti-dumping measures, the data on countervailing measures reveals a similar pattern: between 1995 and June 2012, BRICS countries were not major users of countervailing measures, but were greatly affected by these measures implemented on their

exports by non-BRICS countries (See Figure 8). Over the time period, exports from BRICS countries were affected by 47% of all countervailing measures implemented by WTO member countries, while only 9% of the total number of measures was implemented by the BRICS. The BRICS countries most affected by these measures were China and India, while Brazil and South Africa were the countries which initiated the most countervailing measures in the BRICS country grouping.

Figure 8: BRICS countervailing measures as exporting and reporting countries: 1995-2012
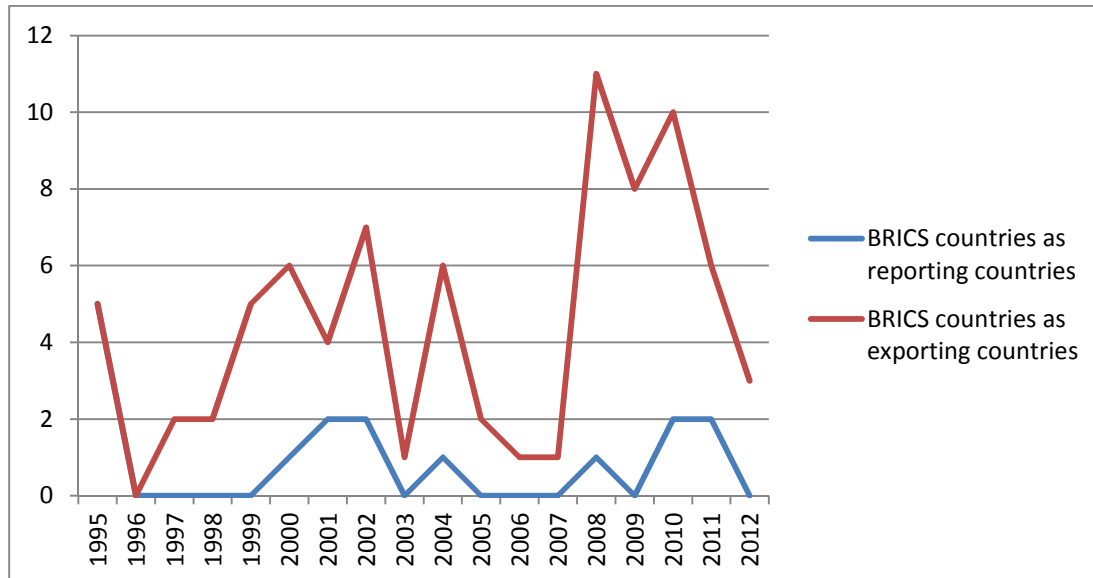
Source: WTO Statistics on countervailing measures (2013b)

The majority of the BRICS countries were not major users of safeguard measures between 1996 and April 2012, accounting for 18 safeguards over the time period. However, India is an exception, accounting for 14 of the total 18 BRICS safeguards. This is not just the most safeguards implemented by all BRICS countries, but also the highest number of safeguards implemented by all WTO member countries between 1996 and April 2012. Figure 9 below shows the percentage of measures implemented by developed countries, other developing countries, and BRICS countries. Out of all three groupings, other developing countries, mostly Indonesia and Turkey, implemented the majority of the safeguard measures, followed by developed countries, generally the US, and lastly BRICS countries.

Figure 9: BRICS safeguard measures: 1996-2012
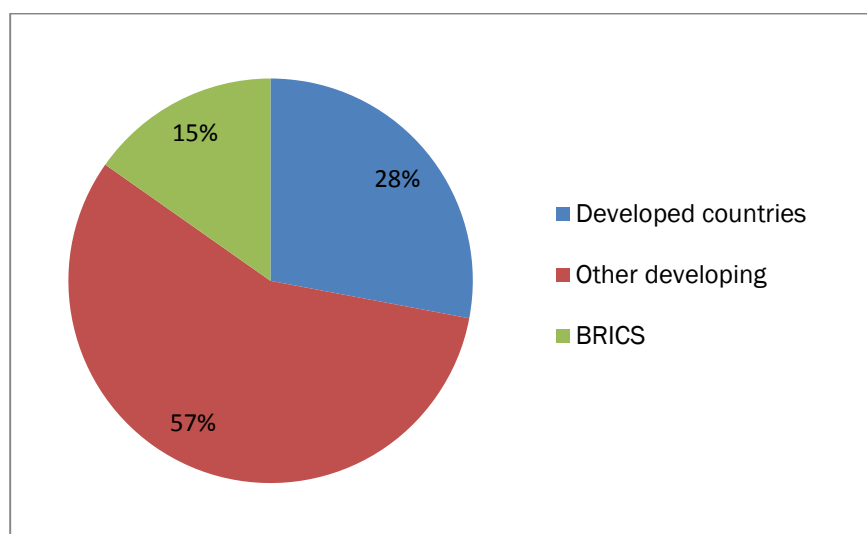
Source: WTO Statistics on safeguards measures (2013c)

5. Trade remedies and safeguards by individual BRICS countries

5.1 Brazil

An increase in the use of trade defence measures was shown for Brazil after the Uruguay Round of Multilateral negotiations. This can be attributed to rapid tariff liberalisation, the growth in imports of finished products after the Uruguay Round, domestic lobbying for trade protection due to an increase in foreign imports, and the democratisation of Brazil which has led to the increased organisation of pressure groups.

Through the Presidential Decree 1355 of December 1994, the WTO agreements on trade remedies were incorporated into the Brazilian legal system. Federal Act no. 9019 of March 1995 established the competent authorities responsible for the investigation of allegations of dumping and subsidisation and the administrative procedures applicable to such investigations. The Secretary of Foreign Trade is the authority which must decide whether an anti-dumping investigation will be initiated and is responsible for the review process. The Department of Trade Defence is responsible for conducting the dumping investigation after which recommendations are made to the Secretary to either terminate the investigation or to the Chamber of Foreign Trade to impose anti-dumping duties. Anti-dumping investigations are undertaken under two working groups, depending on the product under investigation. One working group is focused on investigations pertaining to agricultural and husbandry products, while the other focuses on intermediary products.

The table below shows the domestic laws, regulations, and rules applicable to the implementation of anti-dumping measures, countervailing duties, and safeguards in Brazil.

Table 1: Domestic laws, regulations and rules applicable in Brazil

Title	Date	Description
Decree 1355	1994	Incorporating the Uruguay Round of Agreements regarding dumping, subsidies and countervailing measures and safeguards into the domestic law of Brazil
Decree 1602	1995	Regulates the administrative process regarding anti-dumping duties
Decree 1751	1995	Regulates the administrative process regarding subsidies and countervailing measures
Decree 1488	1995	Regulates the administrative process regarding safeguards
Law 9019/95	1995	Provides for the implementation of anti-dumping measures and countervailing duties
Decree 1936	1996	Amendment to Decree 1488 and establishes that safeguard will be applied as an increase in import tax
Circular 20/96	1996	Complaint requirements for a countervailing investigation
SECEX Circular 19	1996	Complaint requirements for a safeguard investigation
CAMEX Resolution 9	2001	Establishes the Technical Group on Commercial Defence
SECEX Circular 59	2001	Establishes the rules on confidential information, deadlines and non-market economies in trade remedy investigations
Directive 46	2011	Establishes some additional procedural formalities regarding anti-dumping investigations
Resolution 13	To be implemented in 2013	Establishes the Technical Group for Public Interest Assessment to determine the suspension or modification of anti-dumping measures, compensatory measures and waivers for reasons of public interest

Source: WTO documents on anti-dumping, countervailing and safeguard notifications (2013d)

5.1.1 Anti-dumping measures and countervailing duties

In the Brazilian system of anti-dumping, the preliminary examination of an application takes place within 20 days of the submission of an application. Within 30 days from the communication informing an applicant of the preliminary examination, an investigation is initiated, while a preliminary determination is given within a minimum of 60 days from the initiation. A final determination can be expected within a year after the investigation has been initiated.

The Market Economy Status (MES) status of China and the usage of public interest factors, the lesser duty rule, and price undertakings in Brazil are the following:

- The Chamber of Foreign Trade can take into account public interest factors when an anti-dumping duty has been imposed or a price undertaking negotiated. In exceptional circumstances, due to national interest, the Chamber can decide to suspend an imposed anti-dumping measure, disapprove a negotiated price undertaking, or apply a measure of a different amount than was recommended.

- In 2003, Brazil afforded MES to Russia, and in November 2004, China, along with 20 other countries, was also granted MES. Prior to granting MES to China, the normal value of Chinese imports was determined by looking at a third country market economy. The normal value determinations used by Brazil include the export price of imports from the US to Canada and from the US to Japan.

- Brazilian domestic legislation does not contain a mandatory lesser duty rule, but authorities take the view that prices of the domestic like product and foreign product must be taken into account. Thus, the Department of Foreign Trade may consider the prices which the domestic industry should have used in normal trade conditions. This price can also be lowered if the Department is of the view that the dumping margin will provide excessive protection to the domestic industry.

- The domestic legislation of Brazil allows for the application of price undertakings when dumping takes place, instead of the imposition of anti-dumping duties. Price undertakings have been used in 10% of anti-dumping investigations and mainly when the exporting countries are Mercosur members (Argentina, Brazil, Uruguay and Paraguay) or associated members.

It does not seem that the use of trade defence measures by Brazil will be reduced any time soon. On the contrary, the Ministry of Development has issued a strategy to accelerate the pace of anti-dumping investigations to 10 months and prioritises the use of specific duties rather than ad valorem duties as appropriate anti-dumping measures (Barral and Brogini, 2005).

5.1.1.1   Anti-dumping measures

Although exports from Brazil were not greatly affected by anti-dumping measures between 1995 and June 2012, Brazil is one of the major users of anti-dumping measures. Over the time period, Brazilian exports were affected by 3% of all anti-dumping measures implemented by WTO member countries, and implemented a total of 129 anti-dumping measures (5% of total measures) on imports from other WTO countries. The WTO database indicates two distinct patterns in regard to final anti-dumping measures with Brazil as either the implementing or affected country. Figure 10 below shows these distinct patterns. Between 1995 and June 2012 there was a steady decline in the number of anti-dumping duties imposed on goods exported from Brazil. The highest number of anti-dumping duties imposed on Brazilian exports was a total of 10 final duties in 1996. After 1996 there was a steady decline in anti-dumping investigations targeting the exports of Brazil, with no measures in place in the first half of 2012.

The data on Brazil as a user of anti-dumping measures shows a completely different picture. From 1998 to 2006 there was an overall decline in the use of anti-dumping measures by Brazil, from 14 anti-dumping measures implemented in 1998 to no measures implemented in 2006. However, since 2006 there was a significant increase the number of anti-dumping measures Brazil implemented on the imports of other WTO countries, reaching the highest number of anti-dumping measures (16 measures) over the time period in 2009.

Figure 10: Final anti-dumping duties with Brazil as reporting or exporting country: 1995-2012
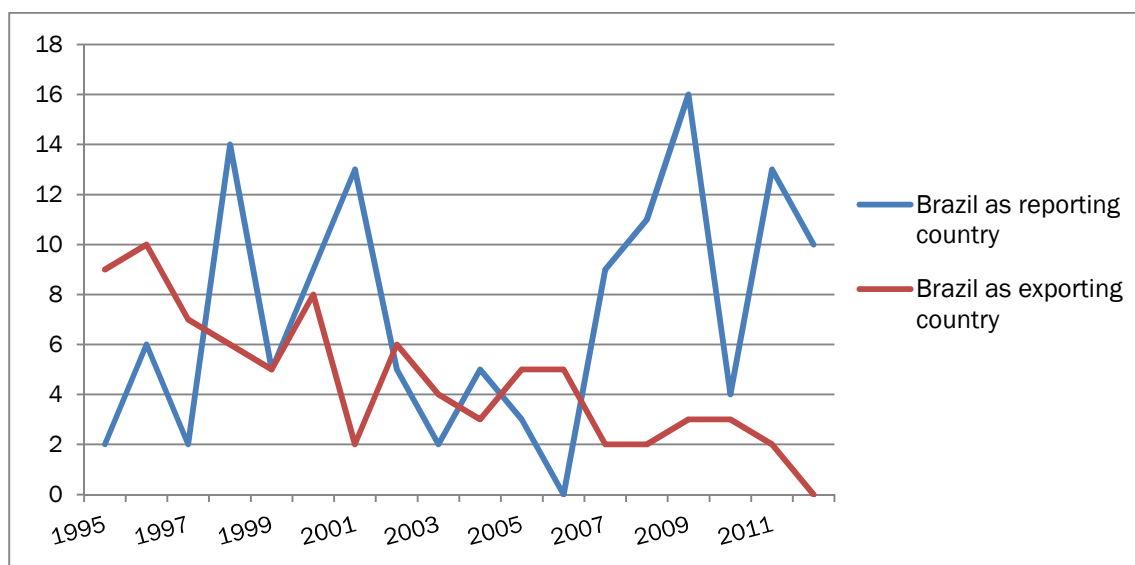
Source: WTO Statistics on anti-dumping measures (2013a)

Figure 11 below shows those countries which have targeted the imports of Brazil in anti-dumping investigations and the countries against which Brazil has implemented anti-dumping measures.

Figure 11: Anti-dumping measures by reporting and affected countries: 1995-2012
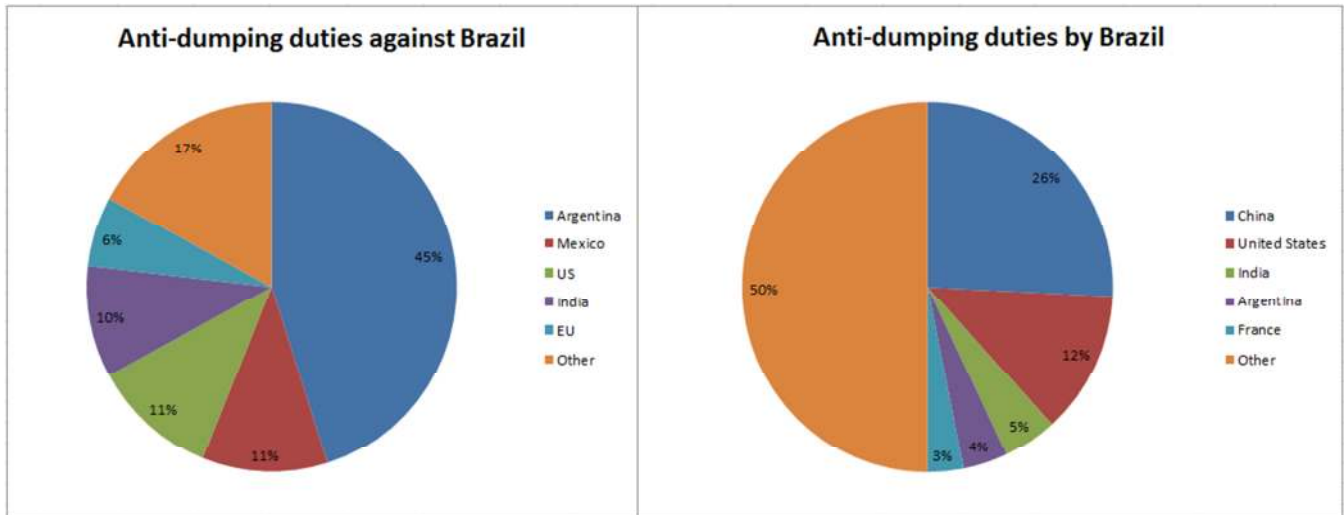
Source: WTO Statistics on anti-dumping measures (2013a)

Brazilian exports have mostly been targeted by anti-dumping measures implemented by other developing countries. The countries which have implemented the majority of measures on Brazilian exports are Argentina (45% of total measures), Mexico (11%), the US (11%), India (10%), and the EU (6%). The Brazilian products which have been most affected by measures implemented by other WTO countries are base metals (44%), machinery (15%), plastic products (12%), paper products (5%), and textiles and clothing (5%).

Brazil has mainly targeted the imports from other developing countries with anti-dumping investigations, implementing the majority of measures on imports from China (26%), US (12%), India (5%), and Argentina (4%) between 1995 and April 2012. These measures were mainly implemented on imports of base metals (19%), plastic products (17%), chemical products (16%), textiles and clothing (12%), and paper products (9%).

5.1.1.2 Countervailing duties

Between 1995 and June 2012, Brazil implemented a total of seven countervailing measures against other WTO countries and was affected by eight countervailing duties against its exports over the time period. Brazil implemented countervailing duties in 1995 (five measures) and one measure each in 2004 and 2008. Figure 12 below shows the import

products mainly affected by Brazilian countervailing duties. The measures were mainly implemented on vegetable products (five measures), plastic products (one measure) and base metals (one measure), all imported from developing countries. Over the time period, measures were implemented against imports from India (two measures) and one measure each against imports from the Ivory Coast, Indonesia, Malaysia, the Philippines, and Sri Lanka.

Figure 12: Import products affected by Brazilian countervailing duties: 1995-2012
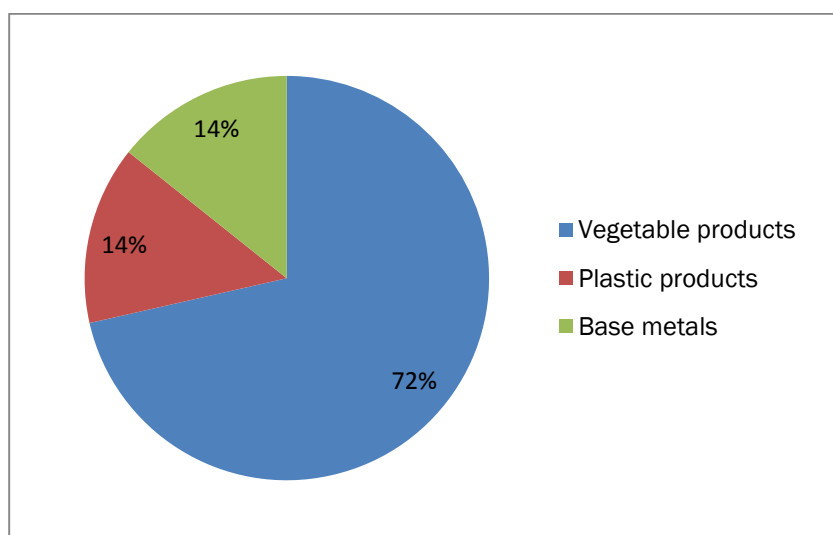
Source: WTO Statistics on countervailing measures (2013b)

Although countervailing duties implemented by Brazil have only been against the imports of developing countries, there is an even split between developed and developing countries targeting Brazilian exports in countervailing investigations.

Figure 13 shows that out of the eight countervailing duties implemented on Brazilian exports, Mexico implemented 50%, the US 37%, and Canada 13% of all measures between 1995 and June 2012. These measures were all implemented on Brazilian exports of base metals in 1995 (four measures) and two measures each in 2000 and 2002.

Figure 13: Countries implementing countervailing duties against Brazilian exports: 1995-2012
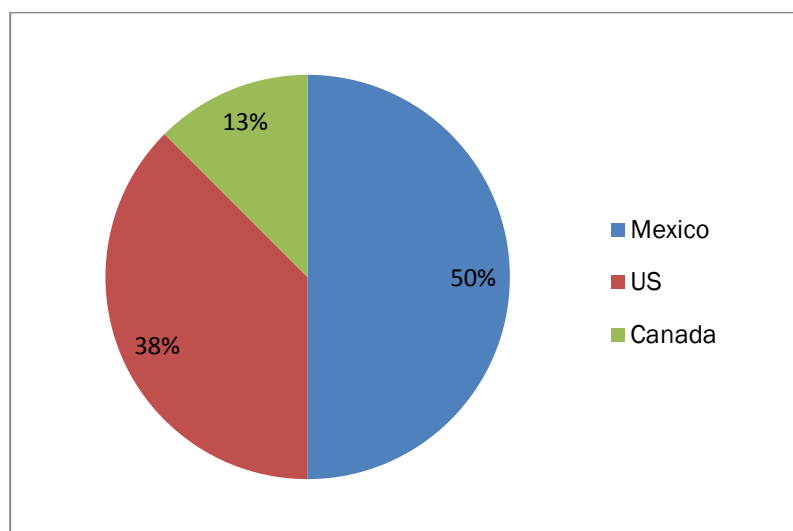
Source: WTO Statistics on countervailing measures (2013b)

5.1.2 Safeguards

Brazil is not a great user of safeguard measures. Between 1996 and April 2012, a total number of 118 safeguards were implemented by all WTO member countries of which Brazil implemented only two measures, one in 1997 and one in 2002. These measures were implemented against imports of vegetable products and miscellaneous manufactured articles.

5.2 Russia

Russia, together with Belarus, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, is a member of the Eurasian Economic Community (EurAsEC) within which Russia, Belarus and Kazakhstan formed a customs union parallel with the EurAsEC in 2010. The relationship between the customs union and the EurAsEC can be described as a double-layer integration process. On the regional level, the EurAsEC countries have created a regional trade agreement with its own institutions and legal framework where member countries have committed to create a free trade area. Within the structure of the EurAsEC, Russia, Belarus and Kazakhstan committed to create a customs union and later a Common Economic Space (CES). The customs union makes use of the existing structures of the EurAsEC, but has also created some of its own bodies to exclusively cater for the needs of the customs union. The customs union is a single customs territory with a Common External Tariff (CET), a Common Customs Code, harmonised non-tariff regulations, common sanitary and phytosanitary requirements,

common principles and rules on technical regulations, and a common trade remedies law regulating goods imported from third-country parties.

The body responsible for implementing anti-dumping measures, countervailing duties and safeguards in the Russian market is the designated body of the customs union. The legal basis for the implementation of trade remedies and safeguards is the Agreement on the Application of Safeguard, Anti-Dumping and Countervailing Measures with respect to Third Countries of 25 January 2008 (General Rules). The implementation of trade remedies and safeguards during the transition period is governed by the Agreement on the Application of Safeguard, Anti-dumping and Countervailing Measures in Transitional Period of 19 November 2010 (Transitional Rules). These agreements stipulate that the Customs Union Commission will undertake the function of the customs union's common investigating authority and will be the body responsible for deciding whether or not to implement final duties. Although the power to conduct investigations have been transferred to the Commission, the investigative function of the Commission has been delegated to the existing investigating authorities of each customs union member country with the Commission only responsible for having the final decision on whether or not to impose a duty.

The table below shows the domestic and regional laws, regulations, and rules applicable to the implementation of anti-dumping measures, countervailing duties, and safeguards in the Russian market against imports from non-customs union countries.

The general rules have been in force since 1 July 2010 and are based on the provisions in the WTO agreements on anti-dumping, subsidies and countervailing measures, and safeguards. The transitional rules came into force on 19 November 2010 and are applicable to specific areas in the general rules during the transition period: investigation procedures, expedited review of national measures, customs procedures, confidential information, and the transmission of the investigating functions to supra-national level. During the transitional phase, any anti-dumping, countervailing or safeguard investigation is the duty of the national authority of each member country (Ministry of Industry and Trade in Russia, Ministry of Foreign Affairs in Belarus, and Ministry of Economic Development and Trade in Kazakhstan), with the Customs Union Commission responsible for the imposition and cancellation of duties and the review of any remedial measures. When the customs union came into force there were a number of national trade remedy and safeguard duties in force which will remain in force for the transitional period, but are subject to expedited review. The

expedited review can have two distinct outcomes. The first is that the review determines that the measure in place must lapse after the initial implementation period by which the national duty will stay in place until it lapses. The second is that the review finds that the measure must be extended beyond the initial implementation period, which means that the national measure will remain in force and become a supra-national measure applicable to imports into the common customs territory. There is no time frame to determine the termination of the transitional period. However, the period will come to an end when all the relevant functions are transferred to the relevant supra-national body, all expedited reviews are completed, and the methodological document regarding the procedures and calculations in respect of trade remedies in the supra-national body are completed.

Table 2: Domestic and regional laws, regulations and rules applicable in Russia

Title	Date	Description
Agreement on the application of safeguards, anti-dumping and countervailing measures against third countries	2010	The substantive and procedural requirements for the implementation of anti-dumping measures, countervailing duties and safeguards on imports from third country parties
Agreement on the application of safeguard, anti-dumping and countervailing measures in transitional period	2010	Implementation of anti-dumping measures, countervailing duties and safeguards on third countries in the period of transition to a customs union
Customs Union Commission Decision No. 339	2010	Decision regarding the implementation of safeguards, anti-dumping measures and countervailing duties in the common customs territory of the customs union within EurAsEC
Protocol of 19 November 2010	2010	Protocol on granting authority to conduct an investigation and the data containing confidential information for the purpose of the investigation prior to implementing safeguards, anti-dumping measures and countervailing duties in relation to third countries
Decision of the Eurasian Economic Commission Board No. 1	2012	Decisions on the issues of safeguards, anti-dumping measures and countervailing duties in the common customs territory of the customs union
Provisions on confidential and proprietary information	2012	Provisions on the use and protection of confidential and proprietary information of limited distribution in the body responsible for investigations
Regulations and Draft Decisions of the Eurasian Economic Commission	2012	Regulation making and draft decisions of the EEC for safeguards, anti-dumping measures and countervailing duties
Board of Eurasian Economic Commission Decision No. 44	2012	Decisions regarding some issues important to the protection of the domestic market

Source: WTO documents on anti-dumping, countervailing and safeguard notifications (2013d)

5.2.1 Anti-dumping and countervailing measures in Russia

The general provisions of the customs union regarding anti-dumping and countervailing measures are similar to the provisions in the WTO Anti-Dumping Agreement and Agreement on Subsidies and Countervailing Measures. Seeing that Russia is a member of a customs union, with a CET and common rules on trade remedies and anti-dumping and countervailing investigations, during and after the transitional period it must comply with the requirement of domestic industry in the context of a customs union. Implementing an anti-dumping measure or a countervailing duty must aim to remedy any harm caused or threatened to the market of the common customs territory, which includes producers in Russia, Belarus and Kazakhstan.

The MES status of China and the usage of public interest factors, the lesser duty rule, and price undertakings in Russia are the following:

- There is no obligation on the Customs Union Commission and the domestic investigating authorities to consider any public interest factors when considering the implementation of an anti-dumping duty. There is no mention of any public interest factors in the general or transitional measures of the customs union.

- Russia has granted China MES.

- The provisions regarding a lesser duty are similar to those in the WTO Anti-dumping Agreement. The investigating authority can impose a duty less than the dumping margin if it will be sufficient to remedy any injury caused. However, no obligation is placed on the authority to implement a lesser duty where applicable.

- The general provisions of the customs union allow the Customs Union Commission to approve a price undertaking. However, even though a price undertaking has been accepted, an anti-dumping investigation can be continued on the request of an exporter or by the decision of the investigating authority.

5.2.1.1 Anti-dumping measures

Due to Russia's accession to the WTO only in 2012, the information available on trade remedies and safeguards affecting and implemented by Russia in the WTO database is limited. The database has no information available on countervailing duties, safeguards and anti-dumping measures implemented by Russia. The WTO database has information only on

those anti-dumping measures which have been implemented on Russian exports. In order to provide a more comprehensive picture on anti-dumping and safeguards in the Russian market, additional information was sourced from Global Trade Alert (2013). Although the data range is from 2009 until 2013, the focus is only on final duties imposed and not on investigations launched. Thus, the data on anti-dumping measures and safeguards implemented by Russia provides information on these measures between 2009 and the end of 2011.

Figure 14 below shows the anti-dumping measures implemented on Russian exports from 1995 and June 2012 (WTO database (2013)). Over the time period, 4% of all anti-dumping duties targeted exports from Russia, with a total number of 102 final duties imposed against Russian exports by all WTO members. Between 1999 and 2009, there was a steady decline in the number of duties imposed on Russian export products, decreasing from 16 measures in 1999 to no measures in 2009. However, it seems that there is renewed interest in anti-dumping measures against Russian exports with three measures in place during only the first half of 2012.

Figure 14: Anti-dumping measures against Russia: 1995-2012
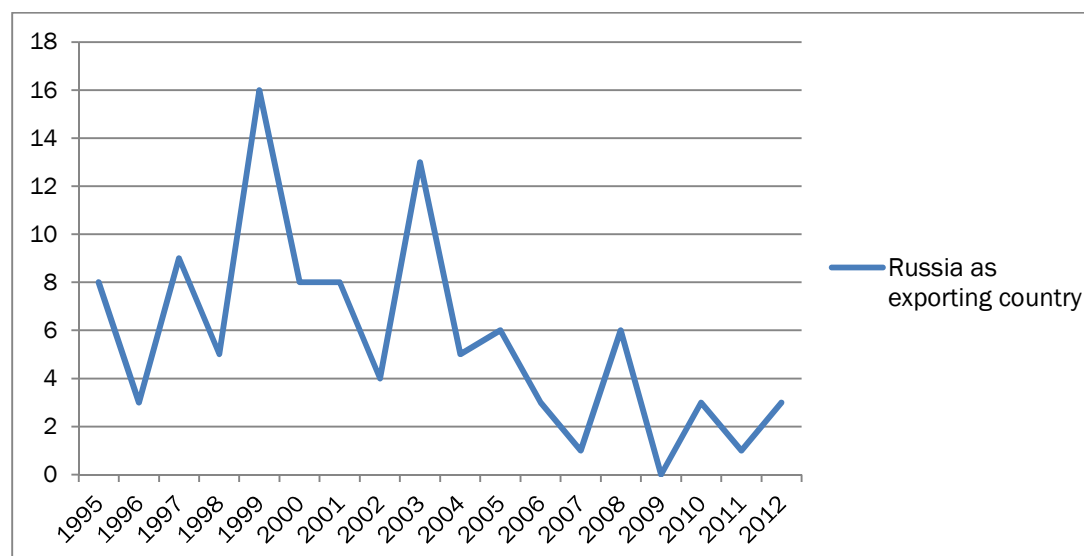
Source: WTO Statistics on anti-dumping measures (2013a)

There is more or less an even share between anti-dumping measures implemented by developed and developing countries. Between 1995 and 2012, 55% of all anti-dumping measures against Russian exports were implemented by the EU (16%), India (15%), China (9%), Ukraine (8%) and the US (7%), and were mostly implemented on base metals (61%), chemical products (20%), plastic products (10%), and non-metallic minerals (9%).

Table 3 shows the number of anti-dumping measures implemented by Russia according to the Global Trade Alert (2013). Between 2009 and 2012, Russia implemented eight anti-dumping measures against imports from Ukraine and China in three product sectors: base metals, machinery, and textiles and clothing.

Table 3: Anti-dumping measures implemented by Russia: 2009-2012

Date	Product Sector	Affected country
2009	Base metals	China
		China
	Textiles and clothing	Ukraine
	Machinery	Ukraine
2010	Base metals	China
2011	Base metals	Ukraine
		Ukraine
	Machinery	China

Source: Global Trade Alert (2013)

5.2.2   Safeguards

Russia is an active user of safeguard measures. Between 2009 and 2011, Russia implemented six safeguard measures on base metals (50%), chemical products (33%), and food, beverages and tobacco products (17%) (See Figure 15).

Figure 15: Import products affected by Russian safeguards: 2009-2012
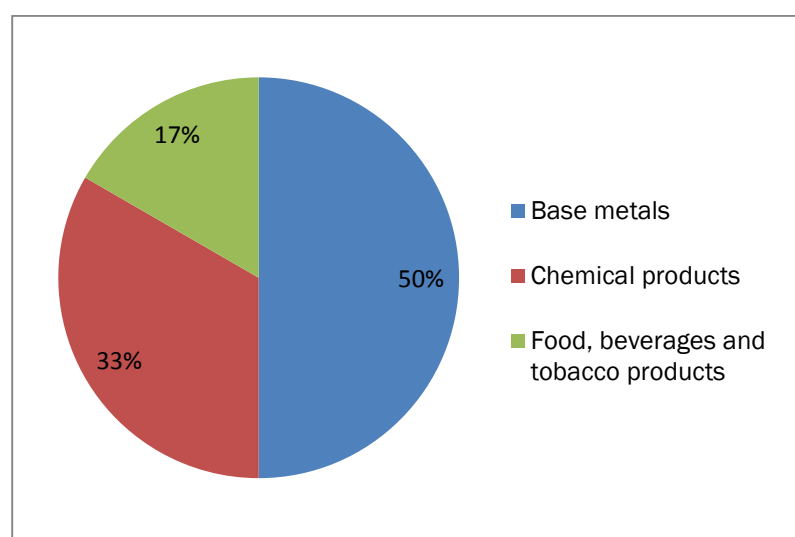
Source: Global Trade Alert (2013)

Although six measures implemented over a three-year period do not seem to show significant use of safeguard measures, the picture changes when we compare the information to the data available in the WTO safeguards database. Between 1996 and April 2012, a total of 118 safeguards were implemented by all WTO member countries of which India (14 measures), Indonesia (13 measures), and Turkey (13 measures) were the main implementing countries. Between 2009 and 2011, the only WTO member country which implemented more safeguards than Russia was Indonesia with 9 safeguards. Given the short time period and the limited availability of Russian data, this does seem to indicate that Russia will become a major user of safeguard measures in the WTO.

5.3. India

India had a very restrictive trade regime prior to 1991 with domestic industries given high levels of protection through import controls and tariffs. After 1991, India systematically opened its market to international competition. In 1992, the first anti-dumping investigation was initiated in India, with the number of anti-dumping investigations slowly increasing up until 1997. Between 1997 and 2002 there was a significant increase in the utilisation of anti-dumping measures to protect India's domestic industry, currently making India one of the most prolific users of anti-dumping measures compared to other developing as well as developed economies. Although India has never implemented a countervailing measure, out of all the WTO member countries, India is the top user of safeguard measures, implementing a total of 14 safeguards between 1996 and the end of April 2012 (WTO, 2013).

The table below shows the domestic laws and regulations of India applicable to trade remedies and safeguards. Prior to the Uruguay Round of Trade Negotiations, the implementation of anti-dumping measures, countervailing duties, and safeguard measures was governed by the Customs Tariff Act of 1975 Sections 9, 9A, 9B, and 9C (anti-dumping and countervailing), and 8B and 8C (safeguards). After the Uruguay texts were signed, these sections were amended by the Customs Tariff (Amendment) Act of 1995 (anti-dumping and countervailing) and the Finance Bill of 1997 (safeguards).

Table 4: Domestic laws, regulations and rules applicable in India

Title	Date	Description
The Customs Tariff Act	1975	Provisions on anti-dumping, countervailing and safeguards
The Customs Tariff (Amendment) Act	1995	Amendment of the provision to align them with the WTO rules
Finance Bill	1997	Amendment of the Customs Tariff Act, 1975 regarding safeguards
Customs Tariff (Identification and Assessment of Safeguard Duties) Rules	1997	Procedural and administrative requirements regarding safeguards
Notification No. 103/98 – Customs and Notification No. 62/99 – Customs	1998 and 1999	Identification of countries as developing countries regarding the Customs Tariff Act, 1975 in respect of safeguard measures
Customs Notification No. 24/206	2006	Amendment of the countervailing rules
The Customs Tariff (Identification, Assessment and Collection of Anti-Dumping duty on Dumped Articles and for Determination of Injury) Amendment Rules	2012	Amendment of the anti-dumping rules
Safeguard Measures (Quantitative Restriction) Rules	2012	Rules regarding quantitative restrictions applied as a safeguard measure

Source: WTO documents of anti-dumping, countervailing and safeguard notifications (2013d)

5.3.1 Anti-dumping and countervailing duties

The Directorate General of Anti-dumping and Allied Duties, as part of the Ministry of Commerce and Industry, is the national authority responsible for investigating allegations of dumping and subsidies and making recommendations on whether duties should be imposed to the Central Government. The Department of Revenue is the body ultimately responsible for the decision to implement anti-dumping and countervailing duties.

The first detailed provisions regarding the procedure and formalities for conducting anti-dumping and countervailing investigations and imposing duties were the Customs Tariff (Identification, Assessment and Collection of duty or Additional Duty on Injury) rules and the Customs Tariff (Identification, Assessment and Collection of Duty or Additional Duty on Bounty-fed Articles and for the Determination of Injury) rules which were notified in 1985. These Anti-dumping Rules and Countervailing Duty Rules were amended in 1995 to align them with the provisions of the WTO agreements on anti-dumping and countervailing.

Subsequently, these rules have been amended various times (in 1999, 2001, 2002, 2003, 2006, 2011 and 2012).

The MES status of China and the usage of public interest factors, the lesser duty rule, and price undertakings in India are the following:

- Public interest factors do not form a major component of any anti-dumping investigation and determination.

- India is yet to afford MES to China. India has a hybrid approach to anti-dumping measures on imports from China. Under normal circumstances, these anti-dumping investigations will be conducted by constructing the normal value of the imports on the basis of the price in a third country market economy. However, if it is shown that market conditions do prevail for one or more firms subject to an investigation, the investigating authority can apply rules which are normally reserved for investigations pertaining to imports from market economies.

- The Central Government is obliged to apply a lesser duty in the context of restricting an anti-dumping duty to the lower of the dumping margin or the injury margin. An injury margin is calculated in each case as the difference between the fair selling price due to the domestic industry and the landed cost of the product under consideration. If the injury margin is less than the dumping margin, the maximum anti-dumping duty to be applied is that of the injury margin and not the dumping margin.

- In accordance with the domestic laws, price undertakings can be utilised. However, a price undertaking will not be accepted before a preliminary determination has been made and if it will be impracticable or unacceptable for any reason to rather accept a price undertaking than implement an anti-dumping duty.

5.3.1.1   Anti-dumping measures

India is an active user of anti-dumping measures and implemented 18% of all anti-dumping measures between 1995 and June 2012. This is the most anti-dumping measures implemented by any WTO member country during the time period. According to Figure 16, India always implemented more anti-dumping measures than those measures implemented against India's exports. From 1995 until 2002 there was a significant increase in the number of measures implemented by India, with an overwhelming 64 anti-dumping measures in place on foreign

imports in 2002. Between 1995 and June 2012, only 95 anti-dumping measures were implemented against India's exports. The number of measures reached its maximum in 2006 (12 anti-dumping measures) after which there was a steady decline in measures against India's exports.

Figure 16: Anti-dumping measures with India as implementing and affected country: 1995-2012
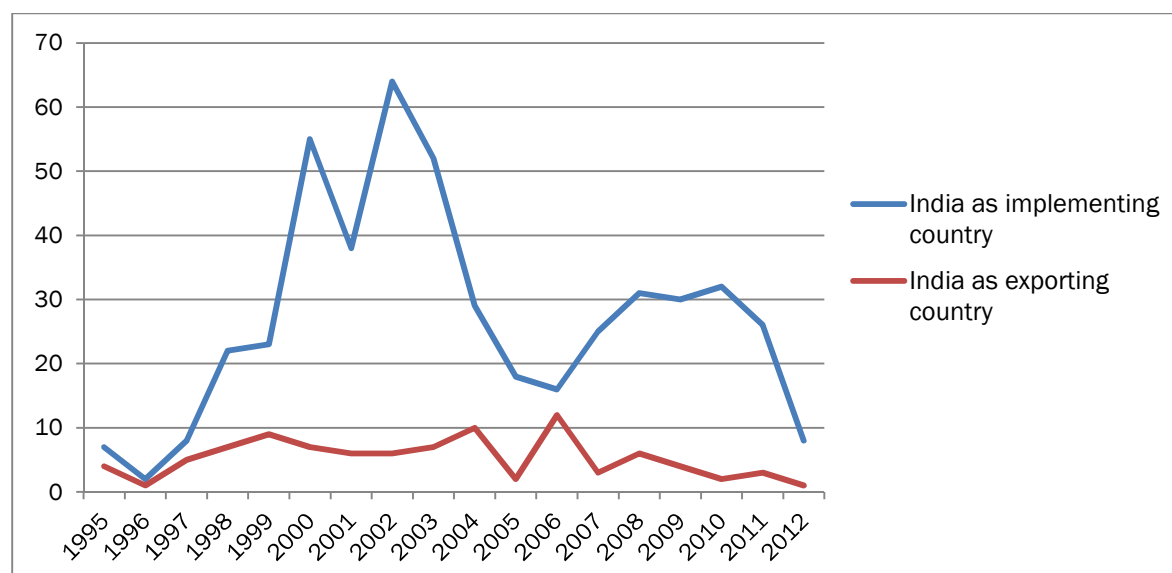
Source: WTO Statistics on anti-dumping measures (2013a)

India's anti-dumping measures have mostly been concentrated in five product sectors. These are chemical products, plastic products, textiles and clothing, machinery, and base metals. Measures implemented on these sectors accounted for 93% of the total anti-dumping measures implemented by India between 1995 and June 2012. These measures were mainly imposed on imports from other developing countries, with the majority of the measures implemented on imports from China (25%), Chinese Taipei (8%), Republic of Korea (7%), EU (7%), and Thailand (5%).

Over the time period, anti-dumping measures imposed on India's exports were also highly concentrated with 92% of all measures implemented on base metals, chemical products, plastic products, textiles and clothing, and machinery (Figure 17). The majority of these measures were implemented by other developing countries (63%), including South Africa, Turkey, Argentina and Brazil, with only 37% of these measures implemented by three developed countries (the EU, US and Canada).

Figure 17: Product sectors affected by anti-dumping measures: 1995-2012
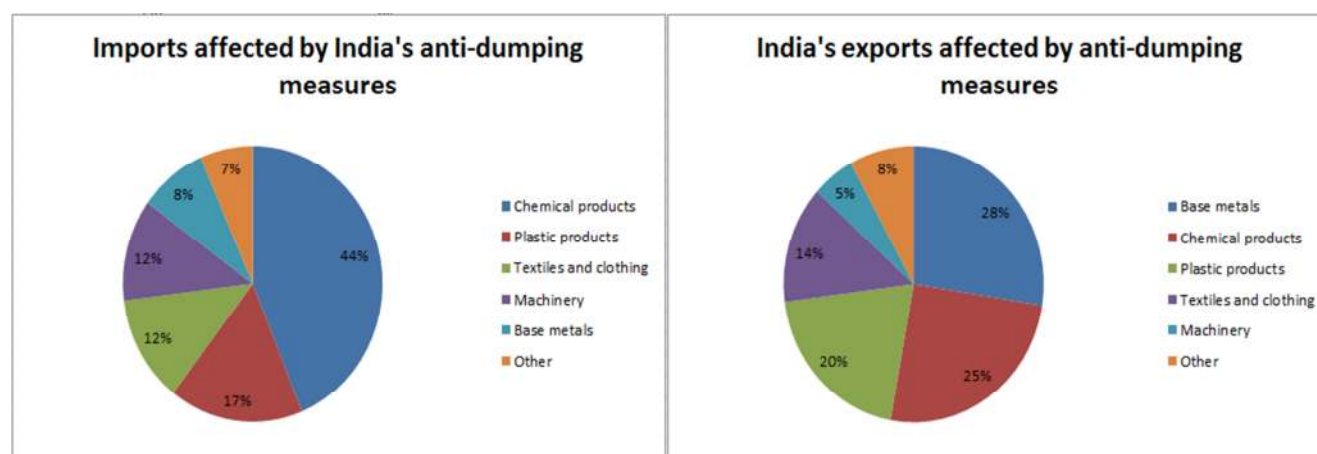
Source: WTO Statistics on anti-dumping measures (2013a)

5.3.1.2   Countervailing duties

Between 1995 and June 2012, India did not implement any countervailing duties; however, 31 countervailing duties were implemented on India's exports over the time period. Developed countries (the EU, US and Canada) implemented 77% of these measures, while other developing countries (South Africa, Brazil and Turkey) implemented 23% of these duties. The majority of these measures were implemented between 1995 and 2004 (26 countervailing duties), with only five measures implemented after 2004.

All countervailing duties implemented on India's exports were imposed in six product sectors: base metals (48%), plastic products (19%), chemical products (16%), clothing and textiles (6%), machinery (6%), and paper products (3%).

5.3.2   Safeguards

India has been the most prolific user of safeguard measures among all WTO developed and developing member countries. Between 1996 and April 2012, India imposed 14 out of a total of 118 safeguard measures. These measures were mainly implemented on chemical products (86%), with one safeguard each implemented on plastic products and vegetable products, respectively.

5.4   China

China has been a member of the WTO since 22 December 2001. Three important provisions regarding anti-dumping measures, countervailing duties, and safeguards implemented on Chinese exports are included in China's Accession Protocol to the WTO:

- The treatment of China as a non-market economy for the purpose of anti-dumping investigations;

- The use of alternative benchmarks in countervailing investigations of Chinese exports; and

- The application of special safeguards only applicable to Chinese exports.

In terms of anti-dumping investigations of products imported from China by other WTO member states, the Accession Protocol states that the investigating authority of a WTO member country can use either domestic prices or costs of the industry under investigation to determine the normal value of the imports or an alternative methodology. An alternative methodology (or non-market methodology) can be utilised if the producers under investigation cannot show that market economy conditions prevail in the manufacturing, production, and sales in the industry being investigated for dumping and producing the like product in the Chinese market. According to the Protocol, this recourse to non-market methodologies is set to expire in 2016. However, some countries (Brazil, Russia and South Africa) have already chosen to treat China as a market economy for the purpose of anti-dumping investigations and apply the methodology to determine the normal value set out in Article 2 of the WTO Anti-Dumping Agreement. Currently, India is the only BRICS country which has not yet recognised China as a market economy, using a hybrid approach to conduct anti-dumping investigations on Chinese exports.

Prior to the WTO accession, China was essentially 'exempt' from the countervailing laws of most WTO member countries. However, this was changed by Article 15(b) of the Accession Protocol which specifically states that WTO members must utilise the relevant provisions of the WTO Agreement on Subsidies and Countervailing Measures to determine the existence and scope of subsidisation, unless special difficulties arise in doing so. In this case, WTO countries can use alternative benchmarks to measure the degree of subsidisation, which can include benchmarks external to China, including commercial lending rates in third-party countries.

The Accession Protocol also allows WTO members to adopt domestic laws and regulations that provide for a special safeguard to only be applied to Chinese exports for a period of 12 years after China's accession. In the case of a special safeguard measure, a WTO member country can request consultations with China to seek a mutual beneficial solution when it is determined that products from Chinese origin are imported in such increased quantities or under such conditions that cause or threaten market disruptions to the domestic producers of the like product in the importing country. If the consultations result in an amicable resolution, the importing country can withdraw concessions or limit imports to the extent necessary to mitigate the market disruptions caused by the surge in Chinese imports.

In terms of anti-dumping measures, countervailing duties and safeguards implemented by China on imports from other WTO member countries, the Ministry of Commerce is the domestic industry responsible for all trade remedy and safeguard investigations and initial determinations. These investigations are required to take place in accordance with Chinese domestic laws, regulations and rules, including the Anti-dumping Regulations, Countervailing Duty Regulations, and Safeguard Regulations. China has a significant number of domestic regulations and provisional rules which govern the substantive and procedural requirements for investigations of foreign imports. These domestic laws, regulations, and rules are included in Table 5 below.

Table 5: Domestic laws, regulations and rules applicable in China

Title	Date	Description
Foreign Trade Law of the People's Republic of China	2004	Law regulating foreign trade including trade remedies and safeguards implemented on foreign imports
Antidumping Regulations of the People's Republic of China	2004	Substantive and procedural requirements for implementing anti-dumping measures on foreign imports
Countervailing Duty Regulations of the People's Republic of China	2004	Substantive and procedural requirements for implementing countervailing measures on foreign imports
Safeguard Regulations of the People's Republic of China	2004	Substantive and procedural requirements for implementing safeguards on foreign imports
Provisional Rules on Initiation of Antidumping Investigations	2002	Rules on conducting an anti-dumping investigation
Provisional Rules on Antidumping Investigations by Questionnaire	2002	Rules on the questionnaire required for an anti-dumping investigation

Title	Date	Description
Provisional Rules on hearings in Antidumping Investigations	2002	Rules regulating hearings in anti-dumping investigations
Provisional Rules on Sampling in Antidumping Investigations	2002	Circumstances under which an anti-dumping investigation by sampling can take place
Provisional Rules on On-the-Spot Verification of Antidumping Investigations	2002	Rules on on-the-spot verifications by officials to information and materials
Provisional Rules on Information Disclosure in Antidumping Investigations	2002	Rules regarding access to information by interested parties
Provisional Rules on Access to Non-Confidential Information of Antidumping Investigations	2002	Rules on access to non-confidential information
Provisional Rules on Price Undertakings in Antidumping Investigations	2002	Rules on voluntary price undertakings by exporting countries
Provisional Rules on new Shipper Review of Antidumping Investigations	2002	Rules regarding the review of countries, exporters and importers who did not export the product in question during the investigation period
Provisional Rules on Refund of Antidumping duty	2002	Rules on refunds where the duty paid was higher than the actual dumping margin
Provisional Rules on Interim Review of Dumping and Dumping Margins	2002	Rules regarding the interim review of anti-dumping duties already in place
Rules on Information Access and Disclosure in Industry Injury Investigations	2002	Rules on the disclosure of information during the investigation
Rules on Antidumping Industry Injury Investigations and Determinations	2002	Rules on determining injury to a domestic industry
Rules for Hearings on Industry Injury Investigations	2002	Legal rights and obligations of the interested parties during public hearings
Rules of the Supreme People's Court on Certain Issues Related to Application of Law in Hearings of Antidumping Administrative Cases	2002	Administrative law regarding the court's capability to hear issues pertaining to anti-dumping law

Source: WTO documents on anti-dumping, countervailing and safeguard notifications (2013d)

5.4.1 Anti-dumping and countervailing measures

Anti-dumping and countervailing issues were first introduced in Chinese law in 1994 through the Foreign Trade Law of 1994. The first anti-dumping and countervailing regulations were adopted in 1997 when the Regulations on Anti-dumping and Countervailing Measures of the People's Republic of China were promulgated by the State Council. These regulations aimed

to ensure fair competition and protect the domestic business interest of China's domestic industries.

The regulations consist of six chapters and 42 articles which mainly focused on anti-dumping measures with only a limited number of articles on countervailing duties. Dumping was defined as an action when the price of an import product is less than its normal value. The regulations further contained the provisions on the determination of injury and the normal value and the price of an import, and the procedures of an anti-dumping investigation. However, these regulations had various shortcomings: the clauses were very broad, general, abstract and simple; the investigation process was poorly defined with no specific timeline; and the regulations were in some instances inconsistent with WTO law. This necessitated the amendment of the regulations after China acceded to the WTO in 2001.

5.4.1.1   Anti-dumping measures

Between 1995 and June 2012, China was one of the major users of anti-dumping measures, ranking fifth out of all WTO members implementing these measures. Over the same time period, Chinese exports were also the products mainly targeted by anti-dumping investigations by all other WTO member countries. Figure 18 shows the use of anti-dumping measures with China as importing (reporting) and exporting country over the time period. The data shows that there was a steady increase in the number of anti-dumping measures implemented against Chinese exports between 1999 and 2009. Between 2001 and 2003 there was a drastic increase in the number of measures implemented by China on imports from other WTO member countries, with a gradual decrease in Chinese anti-dumping measures since the end of 2003. The majority of measures on Chinese exports were implemented by other developing countries (67% of all measures on Chinese exports), including India (19%), Brazil (12%), and Argentina (10%). The Chinese product sectors most affected by these measures were base metals (23%) and chemical products (22%).

Between 1995 and June 2012, China imposed slightly more anti-dumping measures on imports from developed countries (54%) than on imports from other developing economies (46%). The developed countries most affected by Chinese anti-dumping measures were the US (18%), Japan (17%), and the EU (8%). China mainly implemented anti-dumping measures on imports of chemical products (53%), plastic products (23%), base metals (7%), and textiles and clothing (6%).

Figure 18: Anti-dumping measures with China as reporting and exporting country: 1995-2012
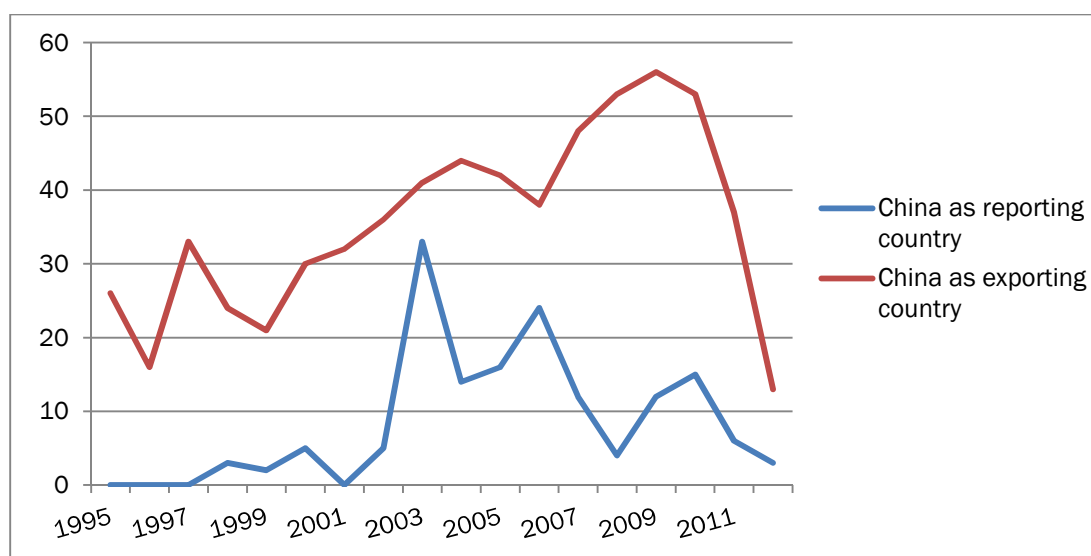
Source: WTO Statistics on anti-dumping measures (2013a)

5.4.1.2 Countervailing measures

China was the country most affected by countervailing measures between 1995 and June 2012 (22% of all measures over the time period). All countervailing measures implemented against Chinese exports were implemented between 2005 and June 2012, with the majority of measures implemented in 2008 and 2010. Figure 19 below shows two graphs: the first depicts the Chinese product sectors affected by countervailing measures, while the second shows the countries which implemented all countervailing duties on Chinese exports. The data shows that Chinese exports of base metals, machinery, textiles and clothing, and food, beverages and tobacco products were the products which were most affected by countervailing measures implemented by the US, Canada, Australia, and the EU over the time period.

Between 1995 and June 2012, China implemented only four countervailing measures. These measures were implemented on live animal and animal products, vegetable products, base metals, and miscellaneous manufactured goods imported from the US (three countervailing duties) and the EU (one countervailing duty).

Figure 19: Countervailing measures on Chinese exports: 1995-2012
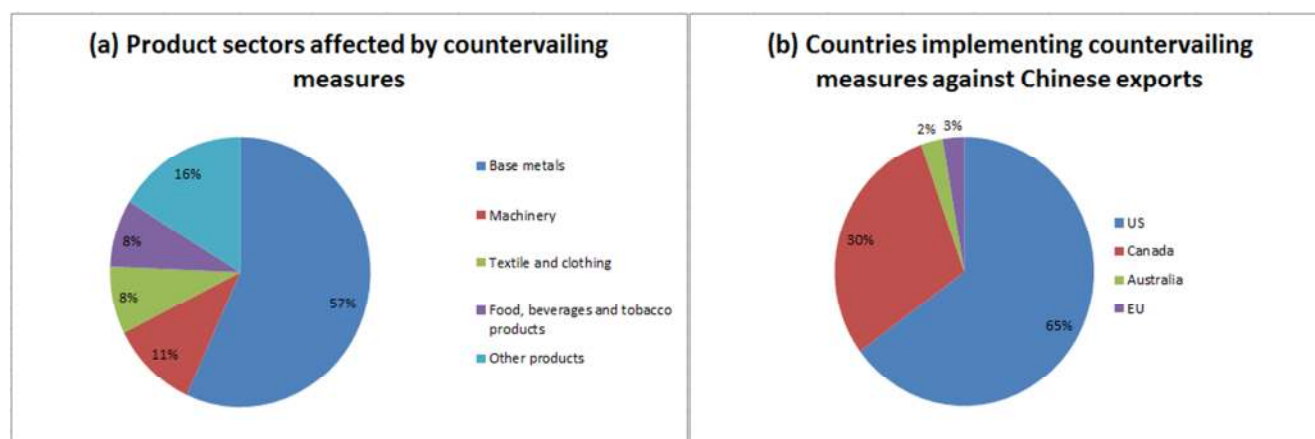
Source: WTO Statistics on countervailing measures (2013b)

5.4.2   Safeguards

China is not a major user of safeguard measures. Between 1996 and April 2012, China only implemented one safeguard in 2002 against imports of base metals.

5.5   South Africa

South Africa's use of anti-dumping measures dates back to 1914 when the Customs Tariff Act introduced the concept of anti-dumping actions. Since then, South Africa has become one of the most active users of anti-dumping measure, especially since the 1990s. This can be explained by the tariff and trade liberalisation which took place after the isolation of the apartheid era.

The International Trade Administration Act (ITA Act) of 2002 and the International Trade Administration Commission (ITAC) Anti-Dumping Regulations regulate the implementation of anti-dumping measures in South Africa. ITAC is an independent agency which is responsible for the decisions regarding anti-dumping measures. ITAC is supported by investigators which are responsible for the dumping determination and injury analysis. Their reports are submitted to the Commission which is obliged to take decisions. A report on the final finding by the Commission is submitted to the Minister of Trade and Industry and, if accepted, published in the Government Gazette.

The table below provides the South African domestic laws and regulations applicable to all anti-dumping, countervailing and safeguard investigations, and measures on foreign imports into the South African (Southern African Customs Union – SACU) market.

Table 6: Domestic laws and regulations applicable in South Africa

Title	Date	Description
Customs and Excise Act No. 91	1964	Contains basic provisions on trade remedies and safeguards
Board on Tariffs and Trade Act No. 107	1995	Contains basic provisions on trade remedies and safeguards
International Trade Administration Act No. 71	2004	Detailed provisions regarding anti-dumping, countervailing and safeguards
Anti-Dumping Regulations	2004	Detailed provisions on the substantive and procedural requirements regarding anti-dumping investigations and measures within the SACU domestic industry
Countervailing Regulations	2005	Detailed provisions on the substantive and procedural requirements regarding countervailing investigations and measures within the SACU domestic industry
Safeguard Regulations	2005	Detailed provisions on the substantive and procedural requirements regarding safeguard investigations and measures within the SACU domestic industry

Source: WTO documents on anti-dumping, countervailing and safeguard notifications (2013d)

South Africa is part of SACU, which is a customs union and apart from South Africa includes Botswana, Lesotho, Namibia and Swaziland (BLNS). The 2002 SACU Agreement makes provision for new institutions within SACU for the implementation of trade remedies. The Tariff Board will be a supra-national SACU body which will be responsible for the consideration of submissions by the member states' national bodies and for making recommendations to the Council of Ministers. ITAC will function as the national body of South Africa, but the Tariff Board and national bodies of BLNS must still be established.

5.5.1 Anti-dumping measures and countervailing duties

According to the ITA Act and the Anti-dumping Regulations, the domestic market which must be considered in the dumping and injury analysis is not just the South African market, but the SACU market. However, due to South Africa's dominant position in SACU, anti-dumping investigations are mostly concerned with the South African market and South African firms seeking import protection. Although the relevant target market is the SACU market, the members of SACU are individual members of the WTO and thus South Africa and not SACU reports investigations to the WTO.

The difference between the Brazilian anti-dumping application and that of South Africa is based on the fact that South Africa only recently granted MES to China and that the public interest does not play a role in determinations.

- ITAC does not have a predetermined list of countries which are considered to be non-market economies. Non-MES is applied to socialist economies and was applied to China prior to 2007. Prior to its being granted MES by South Africa in 2007, China was considered to be the most important source of 'unfair' trade originating in a non-market economy in terms of the value of trade and the perception of its competition against imports by South African producers.

- Although there is no formal obligation on ITAC to apply a lesser anti-dumping duty under full cooperation, the Commission does apply it in practice. The Anti-Dumping Regulations define a lesser duty as a payment or duty 'imposed at the lesser of the margin of dumping or the margin of injury, and which is deemed to be sufficient to remove the injury caused by the dumping'.

The price disadvantage of the domestic industry is seen as being the 'margin of injury'. The amount by which the price of the import product is less than the selling price of the SACU product is accepted as the price advantage.

- The economic impact of anti-dumping measures on consumers and industries (public interest considerations) is not considered by ITAC when it makes a recommendation to implement anti-dumping duties.

- The Anti-Dumping Regulations allow for the application of a price undertaking instead of the implementation of an anti-dumping duty. However, South Africa has not used price undertakings in the past and it is expected that they may not be utilised much in future either (McCarthy, 2005).

5.5.1.1 Anti-dumping measures

South Africa is one of the main users of anti-dumping measures. Between 1995 and June 2012, South Africa implemented 128 anti-dumping duties. Over the same time period, South African exports to all WTO members were affected by 40 anti-dumping measures. There was a dramatic increase in measures imposed by South Africa between 1995 and 1999, from no measures in 1995 to 36 measures in 1999. However, after 1999 there has been a steady

decline in the number of measures imposed by South Africa on foreign imports. Between 1995 and 2003 there was a steady increase in the number of anti-dumping duties imposed on South African exports, reaching a maximum number of eight measures in 2003 after which measures on South African exports significantly decreased (Figure 20).

Figure 20: Anti-dumping measures with South Africa as reporting and exporting country: 1995-2012
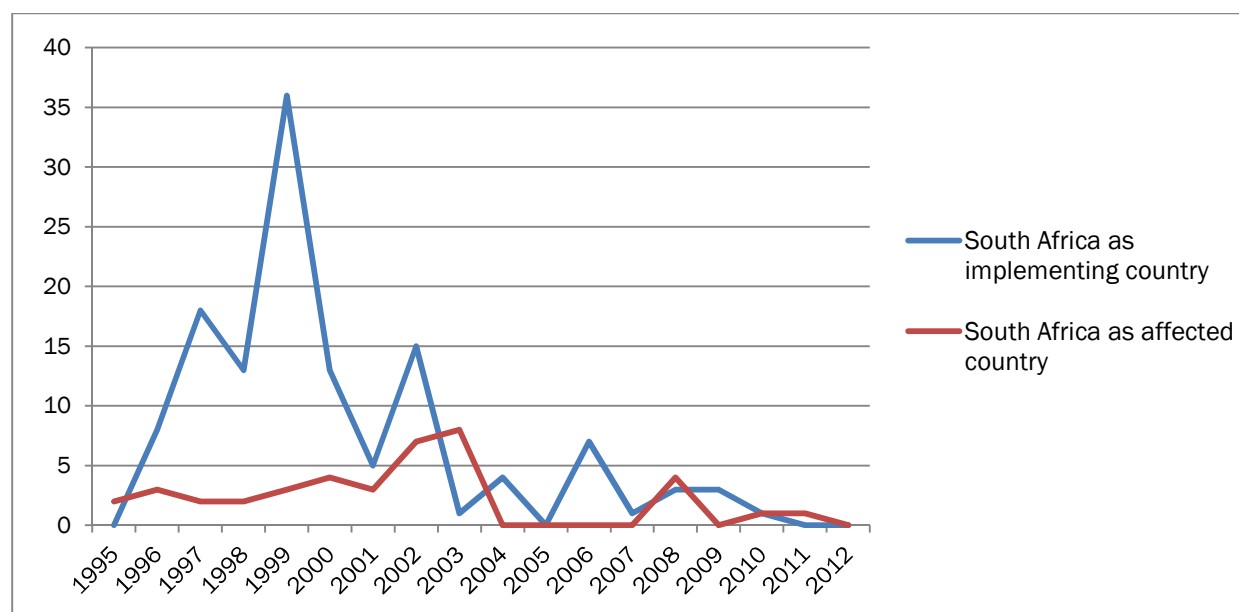
Source: WTO Statistics on anti-dumping measures (2013a)

Of the 40 anti-dumping duties imposed on South African exports, 55% were imposed by developed countries (mostly the US, the EU and Canada) and 45% by other developing countries (mostly India, Argentina and Brazil). These measures were imposed on exports in four product sectors: base metals (75%), chemical products (18%), food, beverages and tobacco products (5%), and non-metallic minerals (3%).

The 128 anti-dumping measures South Africa imposed on foreign imports over the time period were mainly implemented on imports of base metals (26%), plastic products (20%), chemical products (15%), non-metallic minerals (11%), and textiles and clothing (9%). These measures were mostly aimed at imports from China (14%), the Republic of Korea (13%), India (9%), Germany (6%), and Chinese Taipei (5%).

5.5.1.2   Countervailing duties

Between 1995 and June 2012, South Africa implemented five countervailing measures, while four countervailing duties were implemented on South African exports over the same time

period. All four measures implemented on South Africa exports were imposed prior to 2002, by two countries (New Zealand and the US) on two product sectors (food, beverages and tobacco products, and base metals). The five measures South Africa implemented were imposed between 2000 and 2002. These countervailing duties were implemented against imports of base metals, chemical products, plastic products, and textiles and clothing from India (four measures) and Pakistan (one measure).

5.5.2 Safeguards

South Africa is not a significant user of safeguard measures and only implemented one safeguard measure in 2007 on the imports of chemical products.

6. Conclusion

The basic premise of trade remedies and safeguards is to increase the import duty of a specific product to make the importing market less attractive for foreign imports. However, the scope and purpose of these instruments is much wider than this: the goal of anti-dumping measures and countervailing duties is to address unfair imports into the domestic market from a specific exporting country, while a safeguard measure provides temporary relief to the domestic industry when a surge in imports, under fair trade conditions, causes or threatens harm to the domestic industry of the importing country. However, the rationale for utilising trade remedies and safeguards as a remedy to protect the domestic industry against harm has long been a point of contention, with many economic writers indicating that these instruments are merely used as a protectionist tool to protect inefficient domestic industries against foreign competition.

The use of anti-dumping measures, countervailing duties and safeguards, as either a remedy to adequately afford protection to a domestic industry against harm or purely as a protectionist tool, can have a significant impact on the ability of producers to access markets opportunities in foreign markets. This is especially so if foreign competitors want to gain access to emerging markets, like the BRICS countries which are regular users of these measures. The majority of BRICS countries are major, if not the main, users of mainly anti-dumping measures and safeguards, limiting access to their domestic markets. However, the other side of the coin also rings true: the utilisation of trade remedies and safeguards on the exports of BRICS countries can also hamper these countries' ability to increase their share of global

exports and enhance economic growth. This is particularly the case for China and India due to the fact that their exports face regular anti-dumping measures and countervailing duties implemented by some of their main WTO trading partners. As emerging economies the BRICS countries, both as implementing and affected countries, play a pivotal role in the utilisation of multilateral anti-dumping measures, countervailing duties and safeguards, which may have a significant impact on trade opportunities in these emerging countries and for exports of these economies in various foreign markets.

References

Barovikow, E. and Evtiomov, B. 2012. *The Handbook of Trade Enforcement*. [Online]. Available: www.globalcompetitionreview.com

Barral, W. and Brogini, G. 2005. Anti-dumping in Brazil. In *National Board of Trade, Sweden: Report: The use of antidumping in Brazil, China, India and South Africa – Rules, trends and causes*. [Online]. Available: http://www.kommers.se/upload/Analysarkiv/ Arbetsomr%E5den/Antidumpning/Antidumpning%20-%20huvudsida/National_Board_of_Trade-Antidumping_in_Four_Developing_Countries.pdf

Barroca, T.S. 2012. *The Brazilian Trade Remedies and the Anti-Dumping Injury Analysis*. [Online]. Available: http://www.noronhaadvogados.com.br/pale/tbr-19112012.pdf

Centre for Economic Policy Research. 2013. *Global Trade Alert*. [Online]. Available: http://www.globaltradealert.org

Directorate General of Anti-Dumping and Allied Duties. 2005. *Legal Framework for Anti-Dumping and Countervailing Measures*. [Online]. Available: http://commerce.nic.in/traderemedies/pdf_ar04_05/ch2.pdf

Directorate General of Anti-Dumping and Allied Duties. 2011. *Anti-Dumping – a guide*. [Online]. Available: http://commerce.nic.in/traderemedies/Anti_Dum.pdf

Gao, X. 2009. *The Proliferation of Anti-Dumping and Poor Governance in Emerging Economies: Case studies of China and South Africa*. The Nordic Africa Institute Discussion paper 43.

Georgievskiy, S. 2011. *Trade Remedies in the Customs Union: Legislation and Transitional Period state of play*. Presentation by the Spokesperson of the Ministry of Industry and Trade of the Russian Federation. [Online]. Available: http://trade.ec.europa.eu/doclib/docs/2011/march/tradoc_147616.pdf

International Trade Centre. 2008. *Business Guide to Trade Remedies in Brazil: Anti-Dumping, Countervailing and Safeguards Legislation, Practices and Procedures*. [Online]. Available: http://www.intracen.org

McCarthy, C. 2005. Anti-dumping in South Africa. In *National Board of Trade, Sweden: Report: The use of antidumping in Brazil, China, India and South Africa – Rules, trends and causes*. [Online]. Available: http://www.kommers.se/upload/Analysarkiv/Arbetsomr%E5den/ Antidumpning/Antidumpning%20-%20huvudsida/National_Board_of_Trade-Antidumping_in_Four_Developing_Countries.pdf

Razumkov Centre. 2002. *Eurasian Economic Community: The Principles of Activity and Prospects of Development*. [Online]. Available:
http://www.razumkov.org.ua/additional/analytical_report_NSD36_eng.pdf

Stoler, A.L. 2003. *Treatment of China as a Non-Market Economy: Implications for Anti-dumping and Countervailing Measures and Impact on Chinese Company Operations in the WTO Framework*. Presentation to Forum on WTO System & Protectionism: Challenges China Faces after WTO Accession Shanghai WTO Affairs Consultation Center, December 1-2, 2003. [Online]. Available: http://www.iit.adelaide.edu.au/docs/Shanghai.pdf

Tharakan, P.K.M. 2000. *The problem of anti-dumping protection and developing country exports*. [Online]. Available: http://www.wider.unu.edu/publications/working-papers/previous/en_GB/wp-198/_files/82530864848447659/default/wp198.pd

United Nations. 2012. *Country classifications according to region*. [Online]. Available:
http://www.un.org/en/development/desa/policy/wesp/wesp_current/2012country_class.pdf

Verrill, C.O. 2009. *A Report on Trade Remedies and Rules of Application*. [Online].
Available: http://scholarship.law.duke.edu

WTO. 2013a. *Statistics on anti-dumping measures*. [Online]. Available:
http://www.wto.org/english/tratop_e/adp_e/adp_e.htm

WTO. 2013b. *Statistics on subsidies and countervailing measures*. [Online]. Available:
http://www.wto.org/english/tratop_e/scm_e/scm_e.htm

WTO. 2013c. *Statistics on safeguards measures*. [Online]. Available:
http://www.wto.org/english/tratop_e/safeg_e/safeg_e.htm

WTO. 2013d. *Member States' notifications*. [Online]. Available:
http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm

Multilateral Agreements

Agreement on Safeguards

Agreement on Subsidies and Countervailing Measures

Agreement on the Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 (Anti-Dumping Agreement)

General Agreement on Tariffs and Trade 1947

General Agreement on Tariffs and Trade 1994

National laws, regulations and rules

Brazil

   Presidential Decree 1355 of December 1994

   Federal Act No 9019 of March 1995

Russia

   Agreement on the Application of Safeguard, Anti-Dumping and Countervailing Measures with respect to Third Countries of 25 January 2008

   Agreement on the Application of Safeguard, Anti-dumping and Countervailing Measures in Transitional Period of 19 November 2010

India

   Customs Tariff (Amendment) Act of 1995

   Customs Tariff (Identification, Assessment and Collection of duty or Additional Duty on Injury) rules of 1985

   Customs Tariff (Identification, Assessment and Collection of Duty or Additional Duty on Bounty-fed Articles and for the Determination of Injury) of 1985

   Customs Tariff Act of 1975

   Finance Bill of 1997

China

   Foreign Trade Law of 1994

   Regulations on Anti-dumping and Countervailing Measures of the People's Republic of China of 1997

   WTO Accession Protocol of 2001

South Africa

International Trade Administration Act of 2002

International Trade Administration Commission Anti-Dumping Regulations of 2004

Chapter 12

South Africa's economy-wide effects as a result of increased total factor productivity on the country's agricultural sector: a preliminary investigation

Bonani Nyhodo, Hans Grinsted Jensen and Ron Sandrey

1. Introduction

The world economy is expected to grow moderately over the period to 2025 with South Africa's real Gross Domestic Product (GDP) growth rate average estimates of 3.5%. During the same period, South Africa's population growth is anticipated to average 0.5% annually with total factor productivity (TFP) increases of 0.2% annually. However, Africa as a continent is estimated to grow much faster, with many countries experiencing real GDP growth rates of greater than 5%; India and China are expected to continue with their spectacular performances of real GDP growth rates above 6%; but both Brazil and Russia are expected to have similar growth rates to South Africa's 3.5% forecast (Foure et al., 2012). Importantly, both China and India are expected to have annual TFP growth rates of over 1.3% on average each year, significantly above the South African 0.2% figure. The objective of this chapter is to analyse the impacts of South Africa being able to increase its TFP in agriculture to be nearer that of the Chinese overall TFP levels. There is no doubt that productivity has been the driving force in Brazil's spectacular growth in recent years (Sandrey and Vink, 2013), while similarly the same has held for Chinese agriculture (Edinger and Sandrey, 2010).

To undertake this analysis we use the Global Trade Analysis Project (GTAP) agro-ecological zone (AEZ) model and examine changes to the agricultural sector only. This chapter extends the GTAP analysis of the economy-wide TFP in South Africa by Sandrey et al. (2012) to a

more specialist agriculture-only approach using disaggregated land types with an updated GTAP model. It is represented as a preliminary analysis of a more detailed investigation of the impacts of enhanced TFP on the agricultural sector in South Africa. In general, using enhanced TFP from 0.2 to 0.6% across all production sectors, Sandrey et al. found that, keeping everything else constant, the South African economy increased by an additional four percentage points over the 2007 to 2020 time period, leading to South Africa's aggregate welfare being around $250 billion higher over this period. Most of this gain was from increased capital as investment flowed into the more efficient South African economy, and the gains were concentrated in the manufacturing sectors partially at the expense of agriculture. The objective of this chapter is to concentrate upon agriculture with a more agricultural-specific model, and note that we eschew a detailed discussion of the role of TFP in agriculture but rather refer to Sandrey et al. for that discussion.

2. Model description, aggregation and policy design – the GTAP-AEZ

The GTAP-AEZ model with its associated database, the GTAP-AEZ database, is outlined here along with the outline of the database aggregations and the policy scenarios used to shock the model. The theoretical foundation of a standard model underpins the GTAP-AEZ model. It is an augmented standard GTAP model where the land account is disaggregated into 18 agro-ecological zones as outlined by Lee et al. (2005). Agriculture, unlike other sectors of any economy, uses land as a primary factor of production more extensively (Hertel, 1997). The GTAP-AEZ is a valuable development within the GTAP framework, and it is documented in Lee et al. (2005) and Baldos et al. (2012).

The land disaggregation followed the geographical classification of land upon its natural characteristics. Agro-ecological zoning, as described in Lee et al. (Ibid.), categorises land according to the agro-ecological features such as soil types, temperature regimes, land form, and moisture content. This methodology depended on the two major databases and their design developed by the Food and Agriculture Organisation (FAO) and the International Institute of Applied System Analysis (AIASA) at Purdue University (FAO, 2000 and Fischer et al., 2002). The GTAP-AEZ model's main interest, as outlined in Lee et al. (Ibid.), tended to be more on the length of growing period (LGP)[1] that leads to the concept of attainable crop productivity. The length of a growing period is divided into six classifications of about 60

---

[1] The length of growing period is defined as the time (in days) of the year when the temperatures (normally above 5° Celsius) and soil moisture content are good for crop growth.

days each that is considered along the humidity gradients with the world divided into three climatic zones: tropical, temperate, and boreal. These LGPs are calculated as the number of days with enough temperature and precipitation/soil moisture for crops to grow. To come up with the GTAP customised AEZ (18 in total) for this chapter, a process of overlapping the six LGP with three climatic zones was done.

The total size of an agro-ecological zone is fixed, meaning land is not mobile between different AEZs. An elaboration of how this assumption does not run against the anticipated shifts in AEZs as a function of changing climate is presented in Lee et al. (Ibid.). Land within an AEZ is mobile between land uses. This means within AEZ, land can be shifted from wheat production into soybean production or animal production. Relative returns determine land cover since sectors with the highest returns will crowd out those with lower returns.

The AEZ database resembles the standard GTAP database version 8 in that it has 129 regions/countries (an increase from 113 in GTAP database version 7) with 57 tradable commodities (the same as with the earlier version). The 129 regions are mapped or aggregated into **23 regions**. Important to note is that 11 of the regions are African regions, with the BRIC countries (Brazil, Russia, India and China) mapped as individual regions and other regions (actual mapping or aggregation is presented in Appendix A). The 57 tradable commodities are mapped into **33 tradable commodities**; 12 of these are agricultural commodities with forestry and fishing mapped individually. All other agriculture related products, such as textile and leather, were mapped individually with manufacturing mapped into light and heavy manufacturing (Appendix B present mapping of the tradable commodities). This study's simulations and modifications to get the right policy shocks followed a sequence as presented in Appendix C.

In order to present a clear picture of the effects of enhanced TFP, the tables in the analysis show results of (a) a base run where 'business as usual' is modelled, and then (b) a scenario whereby agricultural TFP is increased from the base run or 0.2% to 0.6%. No attempt is made to discuss how this TFP may be raised, only that it has been in order to assess the results should it be raised to levels closer to those from both Brazil and China in recent years. To examine changes brought about by increasing TFP, results from that scenario are compared to the values (results) of the base scenario by subtracting the values of the base scenario from the enhanced TFP scenarios. At this juncture, it is important to provide brief descriptions of each of the three scenarios.

- **Policy scenario one (base scenario)**: This scenario was run by projecting the world economy based on the International Monetary Fund (IMF) forecasts (Foure et al., 2012 and own assumption on a number of macroeconomic variables) from 2007 to 2025 (18 years). The specific macroeconomic variables that were shocked (determined exogenously) to the model are real GDP growth rates, population growths, labour force growths (skilled and unskilled labour growths), and natural resources. The shock to the model of the exogenous variables allowed the model to calculate the required capital accumulation (investment) and TFP growth rate (required to generate the forecast growth rates). The aim of all this was to obtain the TFP growth rates required. Having calculated them, a swap between the real GDP growth and TFP was effected in the modelling procedure, allowing the model to determine the real GDP while using the TFP growths to shock the model (population growths, labour growths together with natural resources were kept as exogenous). The model then calculated the required real GDP growth rates and capital required within the model.

- **Policy scenario two**: This simulation runs on the same database as the base scenario (allowing for direct comparison of the results) with only one modification. All the TFP values calculated under the base scenario for other regions (except South Africa) were not changed, meaning these regions are allowed to have their TFP growths as originally simulated, and this includes keeping the South African TFP for non-agricultural products unchanged as well. Then the only change is that TFP values for South African agricultural products (inclusive of forestry and fishing) were simulated to increase to 0.6% (from the 0.2% at the base scenario) annually on average over the whole period.

The aim of the second scenario is to pick up changes to the South African econom**y to be attributed to** changes in agricultural total factor productivity. The results are analysed as annual average changes over the period of 18 years from 2007 to 2025.

3. Model results and analysis

Foure et al. (2012) use IMF macroeconomic projections for projecting the performance of the world economy up to 2025 with a number of their own assumptions. South Africa's real GDP growth over the period to 2025 is projected to average 3.5% each year. This is low compared to other African regions where projected real GDP growths are higher than 4% with only the

Southern African Customs Union (SACU) expected to grow much slower than even South Africa. Importantly, Zambia, the Economic Community of West African States (ECOWAS), and the Southern African Development Community (SADC) are projected to grow at 7.5%, 6.6% and 5.7%, respectively. Within the context of BRICS[2], South Africa's projected growth is slightly lower than that of Brazil while higher than that of Russia, with China and India performing exceptionally well (with growth higher than 6%). The developed economies (not shown in Table 2) of Europe and North America are expected to see moderate growths of around 2% per annum on average over this period (see Table 1).

The real GDP projections for Africa are promising, but a closer look at the labour growth projections is warranted. South Africa's projected growth of skilled and unskilled labour per year over the period under review is modest: on average, South Africa's skilled and unskilled labour is anticipated to increase annually by 1.94% and 1.01%, respectively. Note that skilled-labour growths are much higher than unskilled-labour growths, as this gives an indication that the projected growths will not be the result of primary-sector growths – they will come from secondary and tertiary sectors that do not have high labour intensity. Africa is expected to see much higher population growth rates, although note that South Africa has a low growth rate. Of interest for a BRIC-related study is that population growth in Russia is negative; in China it is lower than even South Africa's. South Africa's capital growth (determined within the model) is impressive at 4.76% on average per year over this period, providing a good picture of a country with a thriving manufacturing sector that attracts investment. As discussed, South Africa's TFP is anticipated to increase by 3.6% over the 18-year period; this means a 0.2% average annual growth rate. But note especially on the right-hand column of Table 1 that our scenario of increasing South African TFP to 0.6% is not unrealistic when viewed against that of TFP in many other countries.

Table 1 shows that South Africa's annual real GDP of 3.5% is projected. This expected growth rate is equally matched by the 3.6% increase in incomes at constant prices, as shown in Table 2 where prices are anticipated to decrease by almost 1.3% under the base scenario. Under policy scenario two (enhanced TFP in agriculture only), income levels will increase by a similar 2.4% while prices will experience a decline of the same 1.3%.

---

[2] The terms BRIC and BRICS tend to become confusing. We use the former term BRIC for Brazil, Russia, India and China (and BRICs for their collective term) while BRICS refers to the original BRIC grouping plus newly-joined South Africa.

Table 1: Macroeconomic projections as average annual growth rates, 2007–2025 (policy scenario one)[3]

	Real GDP	Unskilled labour	Skilled labour	Population	Capital	NatRes	TFP
South Africa	3.5	1.01	1.94	0.50	4.76	1.08	0.20
Botswana	4.0	1.30	3.36	0.90	4.36	1.08	0.50
Namibia	4.1	1.05	3.41	1.30	4.79	1.08	0.30
SACU[4]	2.1	1.58	5.22	1.00	2.39	1.08	0.00
Kenya	5.4	2.74	6.09	2.60	6.99	1.08	0.40
Egypt	5.5	1.59	6.30	1.50	6.08	1.08	0.50
Mauritius	4.3	0.33	2.01	0.40	5.89	1.08	0.60
Zambia	7.5	3.10	4.29	3.10	9.26	1.08	1.10
ECOWAS	6.6	2.70	5.30	2.50	9.49	1.08	1.00
SADC	5.8	3.03	5.78	2.70	5.93	1.08	0.90
Sub-Saharan Africa	4.4	2.94	5.66	2.40	3.81	1.08	0.60
North Africa	4.3	0.85	4.91	1.00	4.99	1.08	0.50
Brazil	3.9	0.75	3.76	0.70	5.14	1.08	0.40
Russia	3.3	-1.35	0.04	-0.20	3.27	1.08	0.90
India	6.8	1.58	4.78	1.20	7.06	1.08	1.30
China	8.7	-0.05	3.48	0.30	7.71	1.08	1.60

Source: Foure et al, (2012), GTAP results and own assumptions.

Table 2: South Africa's yearly changes in income and prices (% changes base and TFP scenario)

	Income	Prices	Income constant prices
Policy scenario one (Base)	2.3	-1.3	3.6
Scenario two (TFP increase)	2.4	-1.3	3.8

Source: GTAP output and own calculation

A closer look at South Africa's welfare changes (the average changes in income) on an annual basis is presented in Table 3. As this presents a picture of a uniform increase expressed in the average growth rates used, it may not depict a realistic picture given changes in South Africa's growth rate over time as the model used is a static model. The results show

---

[3] Capital and TFP are the results determined within the model while the rest were determined outside the model.
[4] SACU in this study only includes Lesotho and Swaziland as all other members are included in this study as separate regions.

that at the end of the 18-year period, under policy scenario two, South Africa's income is expected to experience a US$12.2 billion increase over the base-run outcome.

Table 3: South Africa's annual changes in income with constant prices over the period ending in 2025, expressed in US dollars millions)

	Total income over the period		Changes in total income per year		Difference
	Base	TFP increase	Base	TFP increase	Base TFP
2007	248,051	248,051			
2008	257,010	257,377	8,960	9,326	366
2009	266,293	267,053	9,283	9,677	393
2010	275,912	277,094	9,618	10,040	422
2011	285,878	287,512	9,966	10,418	452
2012	296,204	298,321	10,326	10,810	484
2013	306,903	309,537	10,699	11,216	517
2014	317,988	321,175	11,085	11,638	552
2015	329,473	333,250	11,486	12,075	590
2016	341,374	345,779	11,901	12,529	629
2017	353,704	358,780	12,330	13,000	670
2018	366,480	372,269	12,776	13,489	713
2019	379,717	386,265	13,237	13,996	759
2020	393,433	400,788	13,715	14,522	807
2021	407,643	415,856	14,211	15,068	858
2022	422,367	431,491	14,724	15,635	911
2023	437,623	447,714	15,256	16,223	967
2024	453,430	464,547	15,807	16,833	1,026
2025	469,808	482,012	16,378	17,466	1,088
			221,757	233,961	12,204

Source: GTAP output and own calculation

3.1   Policy effect of scenario two on macroeconomics in South Africa

In South Africa, unemployment is one of the biggest challenges facing the current government. Before the economic recession began in 2007, South Africa had experienced one of its longest periods of high economic growth. This justifies a look at the impact of the TFP policy simulation on the country's economic growth rates – real GDP. Even though is it important to look at real GDP growths as an indication of the vibrancy of an economy, the argument has always been that most of South Africa's growth has not generated the much

needed jobs (i.e. jobless growth). In this regard, the anticipated real GDP growth on top of the baseline growth of real GDP growth rate is expected to average 3.65% (policy scenario two). This means a 0.14% average yearly increase under policy scenario two over and above the expected 'business as usual' baseline. (See Table 4 for details).

Increases in average growth rates of South Africa's unskilled and skilled labour were calculated to be 1.05% and 1.99% respectively from the TFP scenario, and this is 0.04% for unskilled labour and 0.05% for skilled labour higher than the base growths. These annual growths in both skilled and unskilled labour are too small for a country where the current level of unemployment, at around 24%, is expected to only reduce by one percentage point over this period with enhanced TFP. Under policy scenario two, increases in capital growth are more significant: 4.93% from a base value of 4.76%. Therefore, the simulated annual TFP increases[5] of 0.6% will not have a meaningful impact on unemployment. This gives a clear indication that increasing agricultural total factor productivity is only a partial answer to the country's unemployment challenge.

Table 4: Changes in selected macroeconomic variables as average yearly growths, 2007-2025

	Base	TFP	Policy 2-1
Real GDP	3.5	3.64	0.14
Unskilled labour	1.01	1.05	0.04
Skilled labour	1.94	1.99	0.05
Capital	4.76	4.93	0.17
Natural resources	1.08	1.08	0

Source: GTAP output

3.2   Impact on equivalent variation

The welfare measure used in the study is the equivalent variations (EV) for each region, expressed in US dollars (millions). This means the results can be interpreted as the change in regional incomes at constant prices induced by the proposed policy change, as shown in Table 5 for the EV of the countries/regions of the African and the BRIC countries as represented at 2025. South Africa is expected to experience a US$12.2 billion (5.50%) increase under policy scenario two at 2025 (cumulatively). Changes in EV from the base scenario to the TFP

---

[5] These simulated increases in TFP for South Africa only cover agriculture, forestry and fishing products excluding other products (keeping them at 0.2%).

increase provide a picture where South Africa's increases of EV are much bigger than any other region, but, of course, the only change from the base scenario is that of TFP in South African agriculture. In Africa, a number of regions will experience reduced welfare incomes and these include a significant decline in SACU and smaller declines in Kenya and Egypt. Most BRIC countries are expected to experience minimal changes, although note that India is expected to see increased EV resulting from a more efficient South African economy, suggesting a complementary relationship.

Table 5: Effect of the TFP scenario on equivalent evaluations – 2025 (US$ billions)

EV	Base	TFP	Increase from TFP
South Africa	*221,757*	*233,961*	5.50%
Botswana	12,078	12,097	0.16%
Namibia	8,393	8,406	0.15%
SACU	2,076	2,054	-1.06%
Kenya	42,164	42,130	-0.08%
Egypt	177,720	177,686	-0.02%
Mauritius	7,667	7,681	0.18%
Zambia	26,353	26,403	0.19%
ECOWAS	573,403	574,062	0.11%
SADC	51,368	51,671	0.59%
Sub-Saharan Africa	231,964	232,312	0.15%
North Africa	319,210	319,225	0.00%
Brazil	1,265,054	1,264,888	-0.01%
Russia	1,066,850	1,066,756	-0.01%
India	2,535,430	2,535,627	0.01%
China	11,424,973	11,424,783	0.00%
United States of America	7,732,530	7,730,474	-0.03%
European Union – 27	3,922,061	3,921,477	-0.01%
Latin America	1,475,903	1,475,777	-0.01%
North America	1,169,183	1,168,816	-0.03%
Oceania	673,023	672,825	-0.03%
Asia	3,993,101	3,993,020	0.00%
Rest of world	2,814,549	2,814,853	0.01%

Source: GTAP output

The regional welfare changes (presented in Table 5) form an important part of general equilibrium analysis; however, further details regarding the real reasons for the increased EV are equally important. The decomposition of the EV is possible within the GTAP modelling framework. In this study, the EV decomposition for South Africa is outlined in five components as presented in Table 6: factor endowment, allocative efficiency, TFP change, other effects, and terms of trade. South Africa's increase in EV is primarily driven by factor endowment while allocative efficiency and TFP change are contributing significantly, and terms of trade and other effects modestly. The allocative efficiency presents the welfare effects due to reallocation of already available resources.

Under policy scenario two, South Africa's welfare increase of US$12.2 billion has been reported. About US$6.3 billion will be accounted for due to factor endowment, US$2.5 billion accounted for by technical change effect (tfp), US$2.3 billion as a result of allocative efficiency and the remainder accounted for by terms of trade effects and other effects (Table 6). The largest increase in percentage terms is from the terms of trade effect (9.74%), while the TFP contribution is 7.55% from the base scenario.

Table 6: South Africa's EV welfare decomposition (at 2025)

	Base	**TFP**	**Change $**	**Change %**
Allocative efficiency effects	41 224	43 588	2 363	5.73%
Endowment effects	109 919	116 208	6 289	5.72%
Technical change effect (TFP)	33 384	35 903	2 520	7.55%
Terms of trade effect	6 640	7 287	647	9.74%
Other effects	30 588	30 972	384	1.26%
Total	**221,757**	**233,961**	**12,204**	**5.50%**

Source: GTAP output

3.3 Impact of the policy changes on yields and area harvested of crops in South Africa

Engaging in the ongoing discussion about whether or not the world natural resources will be able to feed a world population that is estimated to reach 9 billion in 2050, Vink (2012) argues that agricultural output can increase in four ways, namely expansion of area, the relocation effect, crop pattern effects, and crop intensification. Using a table from Bruinsma (2009), he further argues that over the period 1961-2005, 31% of the increase in Sub-Saharan Africa's crop production was accounted for by land expansion while 38% is attributed to

improvements in yields, with the remainder accounted for by crop intensity. Taking the issue of yield further, Cramon-Taubadel et al. (2009) show that from 1975 to 2007, the annual world total factor productivity increase on agriculture was 1.7%, with a Sub-Saharan African total factor productivity of 0.9%. (Latin America and the rest of the Asian countries experienced increases of 1% and 1.4% with China at 2.1%). In this study, the simulated changes in yields are higher than those of the other studies. This is attributed to the simulated higher increases in total factor productivities as the only agricultural variable to account for the increase. This is caused, in part, by a limitation of this study in that there was no simulated expansion of agricultural land, as we are arbitrarily forcing the model to increase factor productivity.

Overall crop production in South Africa can increase in only two ways. These are by (1) increases in yield and (2) changes in harvested area among the different crops on a total fixed land area. The simulation results are presented in Table 8, with changes in yields on the left-hand side and changes in harvest area on the right-hand side. South Africa's **crop yields** under the base scenario are expected to increase annually over the period of 18 years by quantities ranging from 2.9% for wheat to 3.1% for plant-based fibre from their initial values of 1905 thousand tons and 29 thousand tons, respectively. With a simulated increase in TFP to 0.6%, further increases of 0.5% yields in all cases are expected on top of their base scenarios figures.

On the 'area harvested' side under the base scenario, South Africa's decline of 357 thousand hectares will be reduced to 332 thousand hectares with increased total factor productivity (to 0.6%) annually.[6] An outline of which of the crops will gain and lose land area is provided in Table 7. Some products are expected to gain (area harvested increases) while others are expected to lose as returns to land determine the winners and losers in the substitution effects. For example, wheat production increases come from both yield increases and an increase of the wheat producing area, as the area harvested will increase from 632 thousand hectares in the base case to 657 thousand hectares with increased TFP across the agricultural sector. With enhanced TFP, the wheat area is anticipated to increase by 25 thousand hectares on top of the base scenario land areas. Conversely, products that are simulated to lose area are other cereals, oil seeds, and sugar cane and beet; thus, any increase in production will have to come

---

[6] Both forest and pasture land under the base scenario were experiencing increases in the area harvested; however, with increased total factor productivity both lose land area (even though the loss is minimal).

from yield increases. Note, however, that simulated increases to plant-based fibre are from a very low base of only 29 thousand tons produced on 11 thousand hectares (see Table 7).

Table 7: Changes in South Africa's crop yields (%) and area harvested (000 - ha)

	Yields			Area harvested		
	Base production in 000 tons	TFP	Policy 2-1	Base harvested area 000 ha	TFP 0.6 Area 000 ha	Change in land allocation
Wheat	1,905	2.9	0.5	632.0	657.0	25.0
Other cereal grains	7,598	2.8	0.5	2,770.7	2,511.4	-259.3
Veg, fruits and nuts	9,625	2.9	0.5	499.0	442.8	-56.2
Oil seeds	573	2.9	0.5	546.2	586.9	40.7
Sugar cane and beet	19,724	3.0	0.5	323.0	285.4	-37.6
Plant-based fibre	29	3.1	0.5	11.0	15.3	4.3
Crop n.e.s.*	21,472	2.9	0.5	1,422.2	1,348.1	-74.1
Total crop land				6,204.2	5,846.7	-357.4
Pasture land						245.1
Forest						112.3
Total area						0.0

Source: GTAP output
*n.e.s. not elsewhere specified

It needs to be pointed out that under the model specification, the productive land size was kept unchanged (or there is no simulated land expansion accompanying increased total factor productivity). Therefore, there is a substitution of land away from cropland even though with increased total factor productivity the rate of land taken from crop land declines. This, of course, does not reconcile with the 'real world' picture as outlined by Vink (above), with an expansion of area, the relocation effect, crop pattern effects and crop intensification all interacting. This clearly shows that there needs to be more work undertaken on modelling land expansion as well as on crop yields in an updated new GTAP baseline.

3.4 Impact on quantity of production at market prices (in 2007 prices)

After examining South Africa's production increase induced by both yield and area harvested, we now turn to the value of output at market prices in real 2007 prices and expressed in US dollars where the production value and output taxes are added together. In short, this means that the monetary value of South Africa's output is expressed in 2007 prices at 2025 or

annually (the percentage changes are yearly growth rates in values from 2007 to 2025). Under the base scenario, most primary agricultural product values are anticipated to increase in the period until 2025 by more than 2% per year on average. The biggest increases are plant-based fibre and wool, which are expected to increase by 5.1% from US$1,090 and 4.7% from US$1,030, respectively, while the lowest is from forestry at 1.0% (Table 8).

Simulating an increase in TFP for the agricultural, forestry, and fisheries sectors, we find a further increase in all sectors ranging from 0.2% in sugar crops (not processed sugar) to 1.1% in plant-based fibre production (albeit from a low base as discussed above). Not shown are the increases in the other sectors of the economy, but suffice it to say that it was initially expected that an increase in production would be larger in agricultural products (both primary and unprocessed), and this is indeed the case. However, with increased TFP in agriculture there are also increased investments leading to increases in sectors like light manufacturing flowing through from the demand for agricultural machinery. Secondly, increases in factor incomes also lead to increased demand for other goods outside the agricultural sector.

Table 8: Changes in the value of output for South Africa, US dollars expressed in 2007 prices (%)

	Initial value of output (2007 prices)	Base increase (%)	Difference Base to TFP (%)
Wheat	13	3.1	0.7
Cereal grains	743	2.3	0.2
Vegetables, fruits and nuts	2,160	2.2	0.6
Oil seeds	5,347	3.3	0.5
Sugar cane and sugar beet	339	2.3	0.2
Plant-based fibre	1,090	5.1	1.1
Crop n.e.c.*	136	2.6	1
Bovine cattle, sheep, goats and horse	375	2.5	0.4
Animal product n.e.c.	1143	2.9	0.5
Raw milk	2,064	2.6	0.3
Wool, silk-worm cocoons	1,030	4.7	0.7
Forestry	543	1	0.5
Fishing	2,586	2.1	0.7

Source: GTAP output
* n.e.c. not elsewhere classified

3.5 Effects on South Africa's aggregate quantities of exports and imports at market prices

As discussed, overall production in South Africa is expected to increase as the TFP changes to the agricultural sector result in more demand for non-agricultural products. Presented in Table 9 are the anticipated changes in the value of aggregate exports and imports, expressed in world market prices (real 2007 prices). Under the base scenario, the value of South Africa's aggregate exports is expected to increase through time in real terms. For example, it is expected that the export value of wheat will increase by 7.4% on average over this period, and this will increase by a further 2% above the base line with enhanced TFP. The value of aggregate imports changes from the initial values are minimal compared to those of exports, meaning that a desirable degree on import substitution is taking place in the more efficient agricultural sector in particular. Again looking at wheat, the expected increase in the value of annual aggregate imports under the base scenario of 0.7% is expected to decline marginally. In the agricultural sectors, only the vegetables/fruit group, processed rice, and beverages and tobacco sectors are expected to see marginal increases in imports relative to what they would have been under the base scenario. Conversely, many of the non-agricultural sectors witness a marginal increase in import value as substitution effects take place in the overall economy.

Table 9: Annual changes in the value of tradable (exports and imports at world prices of 2007) products of South Africa (%)

	South Africa's value of exports			South Africa's value of imports		
	Value of world exports (at world prices)	Base	TFP increase	Value of world imports (at world prices)	Base	TFP increase
Wheat	34.42	7.4	2.0	383	0.7	-1.0
Cereal grains	135.58	4.5	1.0	248	0.6	-0.4
Vegetables, fruits and nuts	2037.07	3.1	1.2	178	2.6	0.1
Oil seeds	16.82	4.9	1.9	80	2.9	-0.2
Sugar cane and sugar beet	5.88	5.4	3.1	0.2	0.6	-1.2
Plant-based fibre	63.83	6.4	1.4	94	1.2	-0.1
Crop n.e.c.nec	198.47	3.2	1.3	315	2.0	-0.1
Cattle, sheep, goats and horse	24.37	8.1	2.1	119	2.9	-0.7
Animal product n.e.c.	164.42	5.2	1.4	91	1.2	-0.4
Raw milk	1.82	13.2	6.8	2	0.9	-2.7
Wool, silk-worm cocoons	169.45	8.1	1.2	8	2.6	-0.2
Bovine cattle, sheep and goat meat products	55.16	6.5	1.0	254	0.0	-0.2
Meat products	134.07	5.4	1.6	319	1.3	-0.7
Vegetable oils and fats	135.9	5.7	0.4	956	1.0	-0.1
Dairy products	148.41	6.0	0.5	173	0.5	-0.3
Processed rice	21.51	2.9	0.0	296	1.5	0.1
Sugar	460.27	8.2	0.5	208	0.1	-0.1
Food product n.e.c.	1478.19	3.4	0.2	1032	1.9	0.0
Beverages and tobacco	1249.01	3.0	0.1	512	2.1	0.1
Textile	673.01	1.9	-0.2	1841	3.0	0.2
Wearing apparel	468.51	1.4	-0.2	1050	4.0	0.3
Leather products	327.67	4.6	-0.1	858	2.3	0.2
Wood products	74.08	-2.3	1.7	968	5.5	-0.4
Paper products, publishing	1540.84	0.0	0.4	1440	4.6	-0.1
Forestry	74.08	4.2	2.7	31	4.5	-1.4
Fishing	125.06	1.6	1.0	20	2.4	-0.4
Coal, oil, gas and other minerals	11158.72	1.2	-0.1	11502.5	2.7	0.1
Light manufactures	16430.46	2.1	-0.1	14402	3.2	0.1
Heavy manufactures	36237.42	2.5	-0.1	40843	4.3	0.2
Utility & construction	475.74	3.2	-0.1	1145	3.5	0.2
Transport & Communication	5344.98	3.1	-0.1	7034	2.9	0.2
Other services	5541.81	2.7	-0.2	3142	3.3	0.2

Source: GTAP output

4. Conclusion

The objective of this study was to test whether or not increased total factor productivity for South Africa's agriculture from an annual average increase of 0.2% to 0.6% would affect the economy, and if it does, whether these effects would be positive or negative. The results indicate that the whole economy stands to benefit as the incomes will increase from increases to factor endowment, allocative efficiency, increased technical change, and other effects. The continued dominance of the share of output by livestock in the agricultural sector continues through the relative share of pasture land in South Africa. The area harvested will shift between agricultural commodities as relative returns result in substitution for the fixed land supply, with wheat in particular expected to gain.[7] The value of output in South Africa is expected to increase even for non-agricultural products as a more efficient agricultural sector drives a wider expansion. The value of aggregate exports in South Africa as a result of the policy changes is expected to increase while the value of aggregate imports is expected to decrease. South Africa's position in terms of self-sufficiency is expected to improve considerably, even for traditionally import-augmented products such as wheat. The study indicates that increased total factor productivity in South Africa's agriculture will lead to positive but minimal changes for the whole economy but to profound positive changes to the agricultural sector.

---

[7] The results discussed in the chapter are perhaps potentially estimated, as we have curtailed any production increases from previously poorer marginal land by prohibiting an expansion to the land area.

References

Avetisyan, M., Baldos, U. and Hertel, W.T. 2011. *Development of the GTAP version 7 land use database*. GTAP Research Memorandum No. 29. Center for Global Trade Analysis, Department of Agricultural Economics, Purdue University.

South Africa. Department of Agriculture, Forestry and Fisheries (DAFF). 2011. *Abstract of agricultural statistics*. Pretoria: National Department of Agriculture.

FAO. 2000. *Land cover classification system: classification concepts and user manual.* (with CD-Rom). Rome: Food and Agriculture Organisation (FAO) of the United Nations.

Fischer, G., Van Velthuizen, H., Shah, M., and Nachtergaele, F. 2002. *Global agro-ecological assessment for agriculture in the 21st century: methodology and results.* (Research Report RR-02-02). Laxenburg, Austria: International Institute for Applied Systems Analysis (IIASA) and Food and Agriculture Organisation (FAO) of the United Nations (UN).

Foure, J., Benassy-Quere, A. and Fontagne, L. 2012. *The great shift: macroeconomic projections for the world economy at the 2050 horizon*. CEPII Working paper 2012-03.

Hertel, T.W., Lee, H.L., Rose, S. and Sohngen, B. 2009. Modelling land-use related greenhouse gas sources and sinks and their mitigation potential. *In* Hertel, T.W., Rose. S. and Tol, R. (eds.), *Economic Analysis of Land Use in Global Climate Change Policy*. New York: Routledge. [Online]. Available: http://www.ewidgetsonline.net/dxreader/Reader.aspx?token=sKMcJ+coK5%2fEkkhtL169yg%3d%3d&rand=565345&buyNowLink=&page=&chapter=

Lee, H.L., Hertel, T.W., Sohngen, B. and Ramakutty, N. 2005. Towards an integrated land use data base for assessing the potential for greenhouse gas mitigation. *GTAP Technical Paper No.25*. GTAP.

Liebenberg, F., Pardey, P.G. and Khan, M. 2010. *South African agricultural research and development: A century of change.* Staff Paper P10-1, Department of Applied Economics, University of Minnesota.

Sandrey, R., Jensen, H.G. and Vink, N. 2012. *South Africa – how do we become a BRIC?* Conference paper presented during the 50th annual conference of the Agricultural Economics of South Africa (October 2012, Bloemfontein). A revised version was published as Sandrey, R., Jensen, H.G. and Vink, N. 2012. *South Africa – how do we become a BRIC?* tralac Working Paper S11WP142011. Stellenbosch: tralac. [Online]. Available: www.tralac.org

Vink, N. 2012. Food security and African agriculture. *South African Journal of International Affairs,* 19(2): 157–177: Routledge.

Warr, P.G. 2011. Food security vs. food self-sufficiency: the Indonesian case. *The Indonesia Quarterly,* 39(1): 56–71.

Appendix A: Regional Aggregation

Code	Regional description	Countries in the aggregation
ZAF	South Africa	South Africa
BWA	Botswana	Botswana
NAM	Namibia	Namibia
SACU	SACU	Rest of SACU
KEN	Kenya	Kenya
EGY	Egypt	Egypt
MUS	Mauritius	Mauritius
ZMB	Zambia	Zambia
ECOWAS	ECOWAS	Cameroon, Côte d'Ivoire, Ghana, Nigeria, Senegal and rest of West Africa.
SADC	SADC	Malawi, Mozambique, Tanzania and Zimbabwe.
SSA	SSA	Central Africa, South Central Africa, Madagascar, Uganda and rest of Eastern Africa.
NAFRICA	North Africa	Morocco, Tunisia and rest of North Africa
BRA	Brazil	Brazil
RUS	Russia	Russia
IND	India	India
CHN	China	China
US	United States	United States of America
EU-27	European Union-27	Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Bulgaria and Romania.
LATINAMER	Latin America	Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Rest of South America, Costa Rica, Guatemala, Honduras, Nicaragua, Panama, El Salvador, Rest of Central America, Caribbean
NAMERICA	North America	Canada, Mexico and rest of North America
OCEANIA	Oceania	Australia, New Zealand and rest of Oceania
ASIA	Asia	Hong Kong, Japan, Korea, Mongolia, Taiwan, Rest of East Asia, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Thailand, Vietnam, Rest of Southeast Asia, Bangladesh, Nepal, Pakistan, Sri Lanka, and rest of South Asia.
RESTOFWORLD	Rest of the world	Switzerland, Norway, Rest of EFTA, Albania, Belarus, Croatia, Ukraine, Rest of Eastern Europe, Rest of Europe, Kazakhstan, Kyrgyzstan, Rest of Former Soviet Union, Armenia, Azerbaijan, Georgia, Bahrain, Iran, Israel, Kuwait, Oman, Qatar, Saudi Arabia, Turkey and United Arab Emirates.

Appendix B: Commodity Aggregation

Code	Regional description
Pdr	Paddy rice
Wht	Wheat
Gro	Cereal grains
v_f	Vegetables, fruits and nuts
Osd	Oil seeds
c_b	Sugar cane and sugar beet
Pfb	Plant-based fibre
Orc	Crop n.e.c.
Ctl	Bovine cattle, sheep, goats and horse
Oap	Animal product n.e.c.
Rmk	Raw milk
Wol	Wool, silk-worm cocoons
Frs	Forestry
Fsh	Fishing
Extractions	Coal, oil, gas and other minerals.
Cmt	Bovine cattle, sheep and goat meat products
Omt	Meat products
Vol	Vegetable oils and fats
Mil	Dairy products
Pcr	Processed rice
Sgr	Sugar
Ofd	Food product n.e.c.
b_t	Beverages and tobacco
Tex	Textile
TexWapp	Wearing apparel
Lea	Leather products
Lum	Wood products
Ppp	Paper products, publishing
LightMnfc	Manufactures n.e.c.; transport equipment n.e.c.; motor and vehicle parts and metal products.
HeavyMnfc	Petroleum, coal products; chemical, rubber, plastic products; mineral product n.e.c.; ferrous metals, metals n.e.c.; electronic equipment and machinery, equipment.
Util_Cons	Electricity, gas manufacture and distribution, water and construction.
TransComm	Trade, transport n.e.c., water transport, air transport and communication.
OthServices	Financial service n.e.c., insurance, business service n.e.c., recreational and other service n.e.c., public admin. and defence, education, health, ownership of dwellings

Appendix C: Policy Experiments used in this study

This appendix presents in table format the outline of policy shocks as described in the body of this chapter.

Policy Scenario	Policy shock	Variables
Base	Shock the model with the TFP values from the results of the first shock (for all regions).	- Exogenous: TFP - Endogenous: Capital - Endogenous: GDP - Exogenous: Natural resources - Exogenous: Labour
TFP	TFP for other regions not changed and only increases South Africa's agriculture, forestry and fishing TFP (to 0.6%) and for other products kept at original level.	- Exogenous: TFP - Endogenous: Capital - Endogenous: GDP - Exogenous: Natural resources - Exogenous: Labour

South Africa's way ahead: into the MIST?

Ron Sandrey and Nick Vink

1. Introduction

Much interest and high expectations have been associated with South Africa's entry into the BRICs club of developing economies (Brazil, Russia, India and China). An examination of this club and how South Africa compares to the other members is presented in Chapter 2. South Africa has a significantly smaller economy, with a Gross Domestic Product (GDP) of about one-quarter of the Indian and Russian economies. Its population of approximately 50 million is around one-quarter and one-third of Brazil's and Russia's, respectively, and well behind the population of more than a billion in both China and India. However, it does compare well in GDP per capita by both conventional and purchasing power parity (PPP) measures. South Africa's merchandise trade as a percentage of GDP, an indication of openness in an economy, is the highest in the group, but the real Achilles heel for South Africa is the very high unemployment rate. Contrary to general perceptions, the BRICs have not had uniformly spectacular GDP growth in recent years. It seems that GDP growth is clearly neither a necessary nor a sufficient condition for BRIC membership.

The aim of this chapter is to start from the concept of the BRICs at their birth and follow their progress through to 2011, and to speculate about their growth for the next few years. Has South Africa profited from the BRIC growth? Next, we introduce the latest acronym MIST, and from there seek in the mist and among possible 'dark horses' for the next BRICs. We find that the MIST countries (Mexico, Indonesia, South Korea and Turkey) are, in effect, the 'next cabs off the rank' as far as developing countries ranked by total GDP are concerned, with all four tightly grouped and ranked between 14th and 18th place on the world GDP table. All four

have had consistently good GDP growth rates, and except for agricultural exports to Turkey, all four are becoming increasingly important as South African trading partners. Overall, their trade and economic performance has not been as strong as that of the BRICs, and their trading relationships with South Africa are generally not as strong as those of the BRICs, but then the Chinese data strongly influences overall BRIC data for just about every indicator. Nonetheless, combined with the BRICs, the MIST effectively embrace most of the so-called South-South trade between developing countries, and especially those outside of Africa. Given the current economic woes of the EU, South Africa's largest trading partner, and the muted current performance and future prospects for the US, it is inevitable that South-South trade will become more important for South Africa.

Fellow African countries have not been included in the analysis, which has, however, been extended to Argentina and Saudi Arabia as 'countries of interest'. It behoves South Africa to maintain an interest in these two countries as both have exhibited solid economic growth in recent years.

2. The BRICs

Jim O'Neill (2001) famously coined the term BRIC in a Goldman Sachs paper that concluded the BRICs were likely to sustain their growth rates over the next decade and as a result their share of world GDP would increase. They were the sure bet of the investment world. Therefore, it behoves us to test how well the BRICs have performed since their 'inauguration' at the end of 2001. O'Neill made three predictions in 2001 relating to the economies of the BRICs that can be tested.[1] These are:

1. The BRICs would continue to see GDP growth above that of the G7 countries.

2. Following from that, on a current GDP basis, the combined BRICs economies would reach 14.2% of global GDP in 2011, up from their 2001 levels of 8.0% in 2001.

3. On a purchasing power parity GDP basis, the BRICs would increase their global share from the 2001 level of 23.3% to 27% by 2011.

---

[1] He also suggested that, at the beginning of 2007, the EU would be augmented by another 13 members. This was proved to be correct when on 1 January 2007 Bulgaria and Romania joined to augment the 10 who joined in 2004.

Table 1 shows the GDP growth rates since 2001 for the BRICS[2], the Organisation for Economic and Cooperation Development (OECD), and the world. In the lower portion of the table is shown whether the BRICS countries outperformed the world. The data is clear: with only two exceptions, the BRICS countries have individually and collectively grown faster than the OECD countries in every year since 2001. Secondly, the BRICS countries have increased their share of the world economy – global growth has been higher than the average growth for the OECD countries in every year since 2001. Table 2 shows the BRICS' share in the world economy.

Table 1: GDP growth since 2001 (%)

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Brazil	2.73	7.53	-0.33	5.17	6.09	3.96	3.16	5.71	1.15	2.66	1.31
Russia	4.30	4.30	-7.83	5.25	8.54	8.15	6.38	7.18	7.30	4.74	5.09
India	6.86	9.55	8.24	3.89	9.80	9.26	9.28	7.85	7.94	3.91	4.94
China	9.30	10.40	9.20	9.60	14.20	12.70	11.30	10.10	10.00	9.10	8.30
South Africa	3.12	2.89	-1.54	3.62	5.55	5.60	5.28	4.55	2.95	3.67	2.74
World	2.73	4.34	-2.25	1.33	3.94	4.00	3.46	3.99	2.73	1.99	1.69
OECD	1.49	3.20	-3.94	-0.03	2.58	2.88	2.48	3.08	1.98	1.56	1.30
Did the BRICS outperform the OECD (y = yes, n = no)											
Brazil	y	y	y	y	y	y	y	y	y	y	y
Russia	y	y	n	y	y	y	y	y	y	y	y
India	y	y	y	y	y	y	y	y	y	y	y
China	y	y	y	y	y	y	y	y	y	y	y
South Africa	y	n	y	y	y	y	y	y	y	y	y

Source: World Bank [Online]. Available: http://data.worldbank.org/country

Table 2 emphasises just what this GDP growth translates into. China has increased its share of global GDP from 4.12% in 2001 to 10.46% in 2011.[3] Hence, by 2009, China had more than doubled its share of world GDP from the base of 2001. O'Neill (2001) predicted that the BRICs would increase their share of GDP from 8.0% in 2001 to 14.2% by 2011. His direction was correct, but he underestimated the timing, as the BRICs passed that level in 2008, some

---

[2] The terms BRIC and BRICS tend to become confusing. We use the former term BRIC for Brazil, Russia, India and China (and BRICs for their collective term) while BRICS refers to the original BRIC grouping plus newly-joined South Africa.
[3] The time it takes to double an original base such as the size of GDP or income per capita can be approximated using the 'rule of 72': divide the rate of increase (say 6% GDP growth per year) into 72 to give an approximation of the time it takes to double the original base (in this example, 12 years).

three years early! Looking at China's recent growth, which has averaged 9.49% per year, suggests that China is well on the way to doubling it again.

Table 2: Percentage of world GDP

GDP (%)	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Brazil	3.54	3.39	2.80	2.70	2.45	2.20	1.93	1.57	1.47	1.51	1.72
Russia	2.65	2.36	2.11	2.71	2.33	2.00	1.67	1.40	1.15	1.03	0.95
India	2.64	2.67	2.35	2.00	2.22	1.92	1.83	1.71	1.64	1.57	1.53
China	10.46	9.39	8.62	7.39	6.26	5.48	4.94	4.57	4.37	4.35	4.12
South Africa	0.58	0.58	0.49	0.45	0.51	0.53	0.54	0.52	0.45	0.33	0.37
OECD	65.9	67.8	70.6	71.5	74.1	76.3	78.3	80.3	81.2	81.3	80.9
BRIC*	19.29	17.81	15.89	14.80	13.26	11.60	10.37	9.25	8.63	8.46	8.33

*Note that BRIC excludes South Africa

Source: World Bank [Online]. Available: http://data.worldbank.org/country

O'Neill's third prediction was that the BRICs would account for some 27% of global GDP when measured by PPP by 2011. He was very close; the actual statistics from Table 3 show that it is 26.2%. Note that South Africa and Brazil have maintained a remarkably stable share of global GDP when measured in PPP over the period.

Table 3: Percentage share of world GDP (PPP at current prices)

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Brazil	2.84	2.86	2.79	2.78	2.73	2.71	2.77	2.80	2.78	2.84	2.85
Russia	3.71	3.71	3.72	4.01	3.51	3.40	2.97	2.78	2.72	2.51	2.42
India	5.59	5.41	5.18	4.75	4.73	4.54	4.40	4.21	4.09	3.92	3.89
China	14.02	13.26	12.59	11.45	10.81	9.97	9.38	8.80	8.38	7.88	7.44
South Africa	0.69	0.69	0.70	0.71	0.71	0.71	0.71	0.70	0.71	0.71	0.70
OECD	53.6	54.8	55.9	57.5	58.9	60.4	61.6	62.8	63.8	64.9	65.4
BRIC %	26.2	25.2	24.3	23.0	21.8	20.6	19.5	18.6	18.0	17.1	16.6

Source: World Bank [Online]. Available: http://data.worldbank.org/country

O'Neill (2001) also predicted that 'by 2011 China will actually be as big as Germany on a current GDP basis, and Brazil and India not far behind Italy'. By 2011, the World Bank data shows that China's economy was 2.05 times larger than that of Germany, while Brazil's was 13% bigger than Italy's, with India's some 16% below that. An important question constantly asked is: When will China become the world's largest economy? This is of course a poorly

worded question, as, for much of recorded history, China has been the world's largest economy (with only India keeping it company), yet it is instructive to look at the World Bank data. In 1990, China's economy was 6.2% of that of the US in current GDP terms, but 15.7% in PPP. By 2000, these had increased to 13.7 and 34.6%, respectively, and by 2011 China's economy was 48.5% of that of the US by conventional GDP measurement but a much closer 75.4% in PPP terms.

One measure of the extent to which South Africa has benefited from the BRICs expansion is to analyse trade data. A fundamental component of the Gross National Product (GNP) comprises exports minus imports: the larger the net exports, the larger the GNP will be. The next series of four tables presents South African trade data: firstly, total merchandise trade by exports and imports, and then agricultural trade as defined by the WTO, again for exports and imports. The data is presented in the same format: for 1996[4], 2000, 2005, 2010 and 2011, the rank for individual countries in 2011 for the respective tables, and the ratio of 2011 trade over the base year. All data is presented in percentage shares of the total. A ratio greater than 1.0 means that for the respective row the percentage share has increased. The shares are shown for the four BRIC countries, the EU (South Africa's main trading partner), Africa as an aggregate, and the Tripartite Free Trade Area (TFTA), which represents the proposed TFTA of virtually the whole eastern side of Africa.

Starting with Table 4, the global merchandise exports, it is evident that the BRICs have increased their share of South African merchandise exports sixfold between 1996 and 2011. Most of this expansion is driven by increased exports to China – exports more than 17 times higher than their share in 1996. The contribution of the other three BRICs was less, with Brazil's share declining. Some of this expansion was at the expense of exports to the EU, which were only 87% of their 1996 level in 2011, while exports to Africa increased slightly. The data also shows that China was the number 1 individual destination in 2011, with India in 7th place. In consequence, BRIC growth, and in particular Chinese growth, contributed to South Africa's export growth over the last decade and this, in turn, would have fed through to GNP growth.

---

[4] This is the first available year from the Global Trade Atlas data for South Africa.

Table 4: Total South African merchandise exports, market shares (%)

	Rank	1996	2000	2005	2010	2011	Ratio
EU		25.3	31.4	32.6	23.6	22.1	0.87
Africa		13.4	12.9	13.6	14.4	14.3	1.07
TFTA members		13.2	11.6	11.2	12.9	12.6	0.95
Brazil	26	1.0	0.7	0.6	0.9	0.9	0.90
Russia	45	0.2	0.1	0.1	0.4	0.3	1.50
India	7	0.9	1.4	2.3	3.8	3.5	3.89
China	1	0.7	1.1	2.7	10.0	12.1	17.29
BRICs		2.8	3.3	5.7	15.0	16.8	6.0

Source: Global Trade Atlas, 2012

Table 5 shows South African merchandise imports. Here the BRIC share has gone from 4.1% of the total in 1996 to 19.9% in 2011, again driven by China's increased market share. Has this been to South Africa's advantage? Arguably, it has led to cheaper imports from China and India, but, as Sandrey et al. (Chapter 5) show, this wider Chinese import penetration into Africa has been at the expense of the South African domestic manufacturing sector, both directly through the imports *per se* and indirectly by blocking off the African market for South African manufactured products. Note that the EU's share has declined to less than 70% of its level in 1996, while imports from Africa have increased more than threefold.

Table 5: Total South African merchandise imports, market shares (%)

	Rank	1996	2000	2005	2010	2011	Ratio
EU		44.7	40.4	38.2	32.1	30.7	0.69
Africa		2.4	3.2	5.1	7.8	7.7	3.21
TFTA members		2.4	2.3	3.6	4.8	4.4	1.83
Brazil	15	1.0	1.1	2.4	1.7	1.7	1.70
Russia	51	0.1	0.3	0.2	0.1	0.2	2.00
India	7	0.9	0.9	2.0	3.5	4.0	4.44
China	1	2.1	3.7	9.0	14.4	14.1	6.71
BRICs		4.1	6.0	13.5	19.7	19.9	4.85

Source: Global Trade Atlas, 2012

Turning to agricultural exports, Table 6 shows that the export share to the BRICs rose from 1.3% in 2000 to 6.0% in 2011, with Russia, India and China all increasing significantly in percentage shares but off low bases. Africa (and TFTA) has maintained ground, while the EU

has again declined in importance to about three-quarters of where it was. No BRIC destination ranks among the top 10 for agricultural exports once the EU countries are treated individually, but further analysis shows that three African countries (Zimbabwe, Mozambique and Angola) are among the top seven. Thus, the BRICs' impressive growth rates are doing little for South African agricultural exports.

Table 6: South African agricultural exports, market shares (%)

	Rank	1996	2000	2005	2010	2011	Ratio
Africa		21.8	25.3	23.4	29.1	27.2	1.07
EU		36.0	40.7	42.7	34.4	31.5	0.77
TFTA members		21.7	23.5	20.1	25.9	23.5	1.00
Brazil	59	3.2	0.4	0.1	0.2	0.2	0.37
Russia	15	1.0	0.3	1.0	2.6	2.4	7.80
India	34	0.2	0.1	0.5	0.7	0.6	4.45
China	11	0.4	0.4	1.4	2.6	2.9	7.10
BRIC		4.8	1.3	3.0	6.2	6.0	4.68

Source: Global Trade Atlas, 2012

Finally, Table 7 shows the South African agricultural import position, where the BRIC share is up to 16.5% thanks largely to imports from second-ranked Brazil. South Africa's agricultural trading position with the BRICs is discussed in more detail in Sandrey and Fundira (2012) for agricultural exports to the BRICs directly, and in Sandrey, Vink and Jensen (2012) for South African agricultural exports to Africa and the competition from the BRICs in this market.

Table 7: South African agricultural imports, market shares (%)

	Rank	1996	2000	2005	2010	2011	Ratio
Africa		10.5	9.9	7.9	6.4	6.1	0.61
EU		23.9	27.1	23.4	28.7	28.5	1.05
TFTA members		7.5	8.8	7.0	5.6	5.7	0.64
Brazil	2	2.2	2.3	12.4	7.3	7.8	3.41
Russia	29	0.1	0.1	0.0	0.3	0.5	6.62
India	11	2.9	2.6	4.2	3.0	3.3	1.25
China	7	1.4	2.6	3.7	6.1	4.9	1.92
BRIC		6.5	7.6	20.3	16.7	16.5	2.18

Source: Global Trade Atlas, 2012

The investment position is examined in detail in Chapter 4 and summarised here. South Africa has somewhat less of a call on funds held offshore (assets) than others have on their funds held in South Africa for each of the three years from 2008 to 2010 examined. Based on 2010 data, Europe was the main destination for assets (59.8%) and the main source for liabilities (63.3%), followed by the Americas for both. Both Africa and Asia are more important as an investment destination than an investment source. Changes over the period show that Asia had the biggest increase in assets by percentage, but Europe continued to show the largest increase by value. For liabilities, Europe showed the largest increase but in percentage terms, Europe, the Americas and Asia were similar. In 2010, most of the total South African **assets** (43%) were held in portfolio assets abroad, followed almost equally by direct assets and other. By region, most of the 2010 portfolio is held in Europe (77%) while in Africa, Asia, the Middle East and Oceania it is predominantly direct investment. The comparable picture for **liabilities** (investments held in South Africa by others) shows that overall more were held in portfolio assets than direct assets for each year. European and Asian money in South Africa is held more in direct assets (54% and 69%, respectively), while the American money (85%) is concentrated in portfolio investments.

China was the fourth most significant destination for South African assets held abroad, with most of these assets direct investments associated with banks. A similar position was found for Chinese investments in South Africa (ranked at number nine in 2010), where the majority are direct investments associated with banks. South African investments in Brazil are predominantly portfolio investments associated with banks, while in India they are more associated with 'other' and banks.

In summary, Jim O'Neill's predictions in 2001 proved to be remarkably accurate, and his only blemish was to underestimate the growth of the BRICs over the next 10 years as China in particular witnessed a remarkable and possibly unparalleled period of sustained growth. In turn, this BRIC expansion has fuelled South African merchandise exports to China in particular, and while South Africa's total merchandise imports from the BRICs similarly increased, it is not clear what contribution this made to South Africa's overall economic position. On the one hand it contributed to cheaper domestic goods for the country, but on the other hand it severely threatened South Africa's domestic manufacturing capacity. Agricultural exports to the BRICs are of limited trade weight overall, while imports from Brazil in particular are important. Finally, the investment relationship between South Africa

and China is becoming more important but not to the same extent as the merchandise trading ties have become.

3. Into the MIST

3.1 Economic size and GDP growth

The BRICs have now become the BRICS, with South Africa joining the group of economies that are each the largest in their respective parts of the world in terms of GDP.[5] In a January 2011 message to his clients, O'Neill repackaged the MIST grouping of Mexico, Indonesia, South Korea and Turkey as the next tier of large emerging economies to take over from the BRICs as future growth stars. Inclusion or exclusion from these groupings matters: Standard & Poor have a CIVETS 60 Index for the 10 largest stocks in each of these markets (Moore 2012), yet there is a sense that countries are being included or excluded based on their 'fit' with the acronym. Furthermore, choosing the four MIST countries is not all that clever, because they are the next four biggest developing economies globally (Table 8). Between these four and South Africa at rank 27th, the only other two developing countries are Saudi Arabia and Argentina, both discussed later. Below South Africa there is a longer list of developing countries (and Greece as a 'newly emerging undeveloping' country) which will no doubt provide fertile ground for more acronyms. Of most interest to South Africa is probably the United Arab Emirates (UAE) and Chile, which are not discussed further in this chapter. Note that there are no African countries to accompany South Africa on the list of 40, although Nigeria (42), Egypt (43) and Algeria (48) are in the top 50.

---

[5] The race to find the next catchy acronym went from BRICs to the 'Next-11' (also coined by Jim O'Neill, in 2005) and then the MIKT as a subset of the Next-11 and consisting of Mexico, Indonesia, (South) Korea and Turkey. Robert Ward from the Economist Intelligence Unit coined CIVETS as a rival group – Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa (Moore, 2012).

Table 8: GDP rankings of countries at 2011, US $ million

Rank	Economy	GDP ($m)	Rank	Economy	GDP ($m)
1	United States	15,094,000	21	Sweden	538,131
2	China	7,318,499	22	Poland	514,496
3	Japan	5,867,154	23	Belgium	511,533
4	Germany	3,570,556	24	Norway	485,803
5	France	2,773,032	25	Argentina	445,989
6	Brazil	2,476,652	26	Austria	418,484
7	United Kingdom	2,431,589	27	South Africa	408,237
8	Italy	2,194,750	28	UAE	360,245
9	Russia	1,857,770	29	Thailand	345,649
10	India	1,847,982	30	Denmark	332,677
11	Canada	1,736,051	31	Colombia	331,655
12	Spain	1,490,810	32	Iran	331,015
13	Australia	1,371,764	33	Venezuela	316,482
14	Mexico	1,155,316	34	Greece	298,734
15	South Korea	1,116,247	35	Malaysia	278,671
16	Indonesia	846,832	36	Finland	266,071
17	Netherlands	836,257	37	Chile	248,585
18	Turkey	773,091	38	Hong Kong	243,666
19	Switzerland	635,650	39	Israel	242,929
20	Saudi Arabia	576,824	40	Singapore	239,700

Source: World Bank [Online]. Available: http://data.worldbank.org/country

Table 9 compares the economic growth rates of the MIST countries to those of South Africa, the OECD countries, and the world economy as a whole. Indonesia and Korea have been above the world average every year, while Mexico has struggled more than any BRIC or MIST with some rather wild swings in growth rates over the period shown.

As a result, Mexico's contribution to the world economy slipped from almost 2% in 2001 to 1.65% in 2011 (Table 10). Indonesia and Turkey have almost doubled their contribution, while South Korea maintained its position. As a group, the MIST countries' contribution has increased from 3.59% of world GDP in 2001 to 4.16% in 2011.

Table 9: GDP growth since 2001 (%)

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Mexico	3.94	5.52	-6.24	1.19	3.26	5.15	3.21	4.05	1.35	0.83	-0.16
Indonesia	6.46	6.20	4.63	6.01	6.35	5.50	5.69	5.03	4.78	4.50	3.64
South Korea	3.63	6.32	0.32	2.30	5.11	5.18	3.96	4.62	2.80	7.15	3.97
Turkey	8.49	9.16	-4.83	0.66	4.67	6.89	8.40	9.36	5.27	6.16	-5.70
South Africa	3.12	2.89	-1.54	3.62	5.55	5.60	5.28	4.55	2.95	3.67	2.74
World	2.73	4.34	-2.25	1.33	3.94	4.00	3.46	3.99	2.73	1.99	1.69
OECD	1.49	3.20	-3.94	-0.03	2.58	2.88	2.48	3.08	1.98	1.56	1.30
Did the MIST outperform the world (y = Yes, n = No)											
Mexico	y	y	n	n	n	y	n	y	n	n	n
Indonesia	y	y	y	y	y	y	y	y	y	y	y
South Korea	y	y	y	y	y	y	y	y	y	y	y
Turkey	y	y	n	n	y	y	y	y	y	y	n
South Africa	y		y	y	y	y	y	y	y	y	y

Source: World Bank [Online]. Available: http://data.worldbank.org/country

Table 10: MISTs' share of world GDP at current prices (%), 2001-2011

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Mexico	1.65	1.64	1.52	1.79	1.86	1.92	1.86	1.80	1.86	1.94	1.94
Indonesia	1.21	1.12	0.93	0.83	0.77	0.74	0.63	0.61	0.62	0.59	0.50
South Korea	1.59	1.61	1.44	1.52	1.88	1.92	1.85	1.71	1.71	1.72	1.57
Turkey	1.10	1.16	1.06	1.19	1.16	1.07	1.06	0.93	0.81	0.70	0.61
South Africa	0.58	0.58	0.49	0.45	0.51	0.53	0.54	0.52	0.45	0.33	0.37
BRIC	19.3	17.8	15.9	14.8	13.3	11.6	10.4	9.2	8.6	8.5	8.3
MIST	4.16	4.06	3.68	4.03	4.20	4.15	4.00	3.59	3.44	3.29	3.59

Source: World Bank [Online]. Available: http://data.worldbank.org/country

When this contribution is measured by the alternative PPP measure of GDP (Table 11), the aggregate share increases by a lesser rate, from 4.77% in 2001 to 5.18% in 2011. Thus, while becoming wealthier in nominal terms, these MIST countries are not becoming wealthier in their relative purchasing power as they, in effect, become victims of their own success as the relative standard of living and associated costs rise.

Table 11: MISTs' share of world GDP, 2001-2011 by PPP at current prices (%)

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Mexico	2.16	2.16	2.15	2.27	2.26	2.31	2.27	2.24	2.25	2.05	2.07
Indonesia	1.39	1.35	1.34	1.27	1.24	1.23	1.23	1.22	1.22	1.20	1.18
South Korea	1.86	1.86	1.84	1.82	1.87	1.87	1.92	1.96	1.96	2.01	1.93
Turkey	1.59	1.49	1.44	1.49	1.44	1.43	1.37	1.30	1.19	1.23	1.26
South Africa	0.69	0.69	0.70	0.71	0.71	0.71	0.71	0.70	0.71	0.71	0.70
BRICs	26.2	25.2	24.3	23.0	21.8	20.6	19.5	18.6	18.0	17.1	16.6
MIST	5.18	5.02	4.91	4.92	4.89	4.89	4.87	4.81	4.68	4.69	4.77

Source: World Bank [Online]. Available: http://data.worldbank.org/country

Finally, Table 12 shows World Bank estimates made in November 2012 of future growth rates for these economies to 2014. Economic growth is expected to stabilise in Mexico and Indonesia, while it is accelerating in South Korea and Turkey. All four of these countries are expected to experience higher growth than South Africa, but none are expected to grow faster than 5% per year. Nevertheless, given the continuing global recession, the bet on MIST is still in play.

Table 12: World Bank GDP forecasts, % annual change

GDP growth	2010	2011	2012e	2013f	2014f
Mexico	5.5	3.9	3.5	4.0	3.9
Indonesia	6.2	6.5	6.0	6.5	6.3
South Korea	6.3	3.6	3.5	4.0	4.5
Turkey	9.2	8.5	2.9	4.0	5.0
South Africa	2.9	3.1	2.7	3.4	3.5

Source: World Bank [Online]. Available: http://data.worldbank.org/country

3.2   South Africa's trading relationships with MIST

The data in Table 13 shows South African merchandise exports to the MIST countries, both individually and collectively, and with the BRICs as a reference point for comparison. During 2011, South Korea was ranked South Africa's number 12 destination with the other three tightly grouped between 29th and 32nd place. All have been increasing their market share (final column).

Table 13: Market share for South African merchandise exports, 1996-2011 (%)

	Rank	1996	2000	2005	2010	2011	Ratio
Mexico	29	0.3	0.5	0.3	0.4	0.7	1.46
Indonesia	30	0.6	0.4	0.5	0.7	0.7	1.76
Korea	12	2.5	2.0	1.6	2.2	2.5	1.24
Turkey	32	0.5	0.3	0.4	0.5	0.6	1.79
BRIC		2.8	3.3	5.7	15.0	16.8	5.05
MIST		3.9	3.2	2.8	3.7	4.4	1.39

Source: Global Trade Atlas, 2012

Table 14 looks at MIST exports of all merchandise into South Africa. South Korea falls just outside the top 10 exporters to South Africa, and all four countries are capturing an increasing share of the South African market, albeit at modest rates of growth.

Table 14: The share of the South African market for merchandise imports 1996-2011 (%)

	Rank	1996	2000	2005	2010	2011	Ratio
Mexico	36	0.1	0.2	0.3	0.6	0.6	2.49
Indonesia	28	0.4	0.8	0.6	0.8	1.0	1.25
South Korea	13	1.6	1.9	2.6	2.2	2.2	1.20
Turkey	37	0.2	0.2	0.6	0.3	0.6	2.75
BRIC		4.1	6.0	13.5	19.7	19.9	3.31
MIST		2.3	3.1	4.2	3.9	4.4	1.41

Source: Global Trade Atlas, 2012

Tables 15 and 16 repeat this exercise for agricultural exports and imports, respectively. Mexico was the fourth largest global destination for South African agricultural exports during 2011, with a massive leap from 0.0% in 2010 to 5.3% in 2011. As shown later, this was the direct result of maize exports to Mexico. South Korea is also among the top 10 destinations, while both Indonesia and Turkey are in the 50th position, way down the list for export destinations and growing only slowly.

Indonesia ranks in the top 10 for agricultural imports, but only just, while all countries have been marginally increasing their import share into South Africa, although again from a low base for some. In the final analysis, Mexico, Korea and Turkey contributed a combined market share of just 0.7%, and on that basis they are far from having an important agricultural trading relationship with South Africa.

Table 15: Market share for South African agricultural exports, 1996-2011 (%)

	Rank	1996	2000	2005	2010	2011	Ratio
Mexico	4	1.5	0.0	0.0	0.0	5.3	383
Indonesia	50	0.8	0.1	1.5	1.0	0.3	3.88
South Korea	9	2.1	1.9	1.1	1.6	3.2	1.68
Turkey	51	0.7	0.4	0.4	0.2	0.3	0.62
BRIC		4.8	1.3	3.0	6.2	6.0	4.68
MIST		5.2	2.4	3.1	2.8	9.1	3.77

Source: Global Trade Atlas, 2012

Table 16: The share of the South African market for merchandise imports 1996-2011 (%)

	Rank	1996	2000	2005	2010	2011	Ratio
Mexico	39	0.2	0.2	0.2	0.2	0.2	1.03
Indonesia	10	1.4	2.7	2.3	4.0	4.0	1.47
Korea	41	0.2	0.1	0.0	0.1	0.2	1.32
Turkey	33	0.3	0.3	0.7	0.4	0.3	1.05
BRIC		6.5	7.6	20.3	16.7	16.5	2.18
MIST		2.0	3.4	3.2	4.7	4.7	1.40

Source: Global Trade Atlas, 2012

3.2. Bilateral trading relationships: South Africa and MIST

The next four tables show total merchandise trade and agricultural trade between South Africa and each of the MIST countries individually. Note that for total merchandise trade, an aggregated HS 2 chapter definition is used while for agricultural trade, the disaggregated HS 6 lines are shown. Table 17 starts with Mexico, where white maize exports in 2011 (and 2012) dominate South Africa's exports due to the Mexican drought in those years. This is an opportunistic trade for South Africa, and its long-term sustainability depends on the occurrence of weather events in North America. The generic HS chapters of machinery and vehicles and their parts dominate imports with miniscule agricultural imports.

Indonesia is an important source of palm oil and palm kernel oil for animal feed products for South Africa, as is evident from Table 18. Wood pulp makes up some 41% of the total merchandise exports to Indonesia over the last two years. Agricultural exports of fruit are minor.

Table 17: South Africa's trade with Mexico, 2010-2011

Imports ($m)			Exports ($m)		
All merchandise					
	2010	**2011**		**2010**	**2011**
Total	466	601	Total	299	654
Electrical machinery	192	281	Cereals	0	381
Machinery	77	90	Machinery	32	74
Vehicles & parts	99	88	Iron & steel	68	64
Agricultural products					
Total	12	14	Total	2	383
Cordials	7	6	Maize	0	346
Food preparations	1	3	Maize seed	0	35
Liqueurs	2	2	Liqueurs	0	1

Source: Global Trade Atlas, 2012

Table 18: South Africa's trade with Indonesia, 2010-2011

Imports ($m)			Exports ($m)		
All merchandise					
	2010	**2011**		**2010**	**2011**
Total	673	957	Total	542	646
Vegetable oils	163	214	Wood pulp	273	268
Rubber	96	123	Iron & steel	56	142
Vehicles	56	74	Ores	51	66
Agricultural products					
Total	195	254	Total	63	25
Palm oil	145	178	Grapes	2	6
Palm kernel oil	13	26	Pears	3	6
Coffee	7	11	Cocoa preparations	5	5

Source: Global Trade Atlas, 2012

Table 19 confirms that South African maize exports to South Korea are important, giving South Africa an agricultural trade surplus with South Korea. This is largely surplus white maize, grown to higher quality standards for human consumption than that which is used for animal feed in several Asian countries. This is a new challenge for South Africa: this country can no longer export surplus white maize into Africa, nor is this surplus being bought by the World Food Programme because many African countries are becoming self-sufficient – and

even surplus producers – in maize production. Vehicles are a significant general merchandise import, and this category has grown strongly over the years.

Table 19: South Africa's trade with South Korea, 2010-2011

Imports ($m)			Exports ($m)		
All merchandise					
	2010	**2011**		**2010**	**2011**
Total	1,745	2,250	Total	974	1,802
Vehicles	673	947	Ores	102	230
Machinery	272	334	Iron & steel	219	476
Electrical machinery	314	298	Mineral fuel	41	168
Agricultural products					
Total	6	12	Total	102	228
Coffee extracts	5	11	Maize	85	210
Non-alcoholic beverages	0	0	Ethyl alcohol	4	4
Food preparations	0	0	Oranges	1	1

Source: Global Trade Atlas, 2012

Finally, Table 20 shows trade with Turkey. While agricultural trade is subdued, both mineral fuels and machinery seem to constitute intra-industry trade as they appear at the aggregate level for both imports from Turkey and exports to Turkey in total merchandise trade. However, it is not possible to draw any definitive conclusions at this level of aggregation of the data. Agricultural trade in either direction is modest.

A summary of the agricultural products that (a) South Africa is exporting to the world but not necessarily to any MIST country, and (b) the MIST countries are importing from the world but not necessarily from South Africa, is shown in Table 21. Note that these commodities are Food and Agricultural Organization (FAO) definitions and not the HS codes from the Global Trade Atlas above, with the result that they may not directly correlate with the data in the previous four tables. Maize, South Africa's fourth largest export, and food preparations not elsewhere specified (a rather generic and mixed definition of high value-added products such as tomato sauce and chutney), South Africa's seventh largest export, are imported by all four MISTs. Perhaps more telling is that of South Africa's top 20 exports, some 13 are not imported by any of the MIST countries. Agricultural export potential and future opportunities for South Africa may be limited in these countries.

Table 20: South Africa's trade with Turkey, 2010-2011

Imports ($m)			Exports ($m)		
All merchandise					
	2010	**2011**		**2010**	**2011**
Total	280	562	Total	401	563
Machinery	50	117	Mineral fuel	174	285
Mineral fuel	1	114	Iron & steel	65	64
Vehicle & parts	48	56	Machinery	51	59
Agricultural products					
Total	19	19	Total	16	20
Nuts	3	3	Fish meal	9	11
Pasta	1	2	Sheep skins	1	4
Hazelnuts	3	1	Sheep skin, wool on	3	1

Source: Global Trade Atlas, 2012

Table 21: South African agricultural exports and MIST imports, 2011

	US$ million	MIST imports, not necessarily from South Africa			
Wine	781.4				
Oranges	598.7				
Grapes	419.5				
Maize	304.9	Mexico	Indonesia	Korea	Turkey
Apples	248.8		Indonesia		
Fruit preparations n.e.s.*	224.8				
Food preparations n.e.s.*	221.1	Mexico	Indonesia	Korea	Turkey
Wool, greasy	168.7				
Pears	159.7				
Sugar, refined	130.8	Mexico	Indonesia		
Sugar, raw	116.9		Indonesia	Korea	
Lemons and limes	109.3				
Cigarettes	100.8				
Nuts, other	98.7				
Sunflower oil	98.1				Turkey
Grapefruit	94.4				
Beverages & distilled alcohol	90.7			Korea	
Tangerines etc.	90.4		Indonesia		
Chocolate pralines n.e.s.*	88.3	Mexico			
Tobacco n.e.s.*	85.4				

* n.e.s = not elsewhere specified   Source: FAOSTAT, 2012

3.4 BRICs into the MIST

3.4.1 Trade between the BRICs and the MIST countries

The trading relationship between each of the BRIC and the MIST countries shows the importance or otherwise of this trading relationship. Recall that this combination effectively includes the nine largest developing countries in the world; thus, a large part of South-South trade is covered in this way. In this regard, Table 22 looks at Brazilian exports to, and imports from, the MIST countries in recent years. Korea and Mexico are solid trading partners, as the data ranks Korea as number five import source in 2011, while Mexico, a fellow American country, ranks 11th as an import source and 17th as an export destination.

Table 22: Brazil's trade with MIST

Rank	Partner	2006	2010	2011	Share (%)
		Brazilian exports ($m)			
	World	137,470	201,915	256,040	100.0
17	Mexico	4,440	3,715	3,960	1.55
34	Indonesia	481	1,663	1,718	0.67
11	Korea	1,962	3,760	4,694	1.83
40	Turkey	590	1,034	1,460	0.57
		Brazilian imports ($m)			
	World	91,396	181,649	226,243	100.0
11	Mexico	1,310	3,858	5,130	2.27
27	Indonesia	650	1,518	1,920	0.85
5	Korea	3,106	8,422	10,097	4.46
37	Turkey	146	657	917	0.41

Source: Global Trade Atlas, 2012

Both Korea and Turkey are important partners for Russia, as shown in Table 23 where they alternate in their rankings between export destinations and import sources.

Table 23: Russia's trade with MIST

Rank	Partner	2006	2010	2011	Share (%)
	Russian exports ($m)				
	World	226,524	348,528	378,688	
60	Mexico	245	291	569	0.15
58	Indonesia	187	616	586	0.15
13	Korea	2,305	10,150	10,464	2.76
4	Turkey	9,134	19,365	24,946	6.59
	Russian imports ($m)				
	World	128,151	211,439	278,690	
44	Mexico	185	470	813	0.29
35	Indonesia	419	1,012	1,438	0.52
8	Korea	6,771	7,062	11,386	4.09
12	Turkey	2,621	4,700	6,124	2.20

Source: Global Trade Atlas, 2012

For India, both Indonesia and Korea are major bilateral trading partners, while the bilateral trade with both Turkey and Mexico is of less importance (Table 24).

Table 24: India's trade with MIST

Rank	Partner	2006	2010	2011	Share (%)
	Indian exports ($m)				
	World	121,259	222,922	307,086	
40	Mexico	522	767	1,339	0.44
11	Indonesia	1,875	4,572	6,860	2.23
17	Korea	2,326	3,641	4,825	1.57
23	Turkey	1,162	2,326	3,623	1.18
	Indian imports ($m)				
	World	172,876	350,783	465,076	
35	Mexico	530	990	2,185	0.47
9	Indonesia	3,603	9,719	13,995	3.01
12	Korea	4,747	9,938	12,437	2.67
49	Turkey	190	796	887	0.19

Source: Global Trade Atlas, 2012

Korea is an important trading partner for China, ranking number 4 as an export destination and number 2 as an import source. The other three MISTs are of more importance as export destinations than import sources for China (Table 25).

Table 25: China's trade with MIST

Rank	Partner	2006	2010	2011	Share (%)
		Chinese exports ($m)			
	World	969,324	1,578,444	1,899,281	
22	Mexico	8,824	17,874	23,981	1.26
16	Indonesia	9,453	21,973	29,257	1.54
4	Korea	44,558	68,811	82,925	4.37
25	Turkey	7,307	11,960	15,619	0.82
		Chinese imports ($m)			
	World	791,794	1,393,909	1,741,430	
35	Mexico	2,606	6,809	9,362	0.54
14	Indonesia	9,610	20,760	31,323	1.80
2	Korea	89,818	138,024	161,673	9.28
57	Turkey	765	3,153	3,128	0.18

Source: Global Trade Atlas, 2012

In summary, the MIST countries are important trading partners for the BRIC countries in some instances, with most BRICs being strongly linked to Korea in particular. This analysis, however, only looks at the BRIC perspective, and were we to look at the 'mirror' MIST data, we would undoubtedly find that China would present them with a much larger import source. Nevertheless, the reason why South-South trade is relatively small lies in the fact that the largest of the developing countries hardly trade with each other.

3.4.2   Global trade patterns

The following two tables show the percentage shares of global merchandise trade for the BRIC and MIST countries. The right-hand column shows the difference in global share of exports between 2000 (the birth of BRICs) and 2011, expressed in percentage points. For example, by 2011, South Africa had increased its share of world exports by 0.07 of a percentage point from the 2000 base. All countries have increased their global shares except Mexico, which declined by 0.66 of a percentage point. As always, China is especially prominent, with an increase of 6.54 percentage points. In 1980, South Africa had the second-

highest share of global exports of the countries shown in Table 26 (behind Saudi Arabia). However, China and Brazil had already overtaken South Africa by 1985 (and similarly, India had also overtaken South Africa by 1995) as sanctions and boycotts against South African produce resulted in a sharp decline in South Africa's share until 2000, from when it recovered somewhat. In general, the overall BRIC performance was better than that of MIST, but, of course, China biases any such comparison and a closer examination shows that both Korea and Turkey have done well even though their aggregate performance is only one of increasing global share by 0.11 percentage points. Further down the table, Saudi Arabia has also done well (oil), while Argentina is struggling to keep up.

Table 26: Global merchandise export shares (%)

	1980	1985	1990	1995	2000	2005	2009	2011	Increase over 2000
Brazil	0.99	1.31	0.91	0.90	0.85	1.13	1.22	1.40	0.55
Russia	1.00	1.00	1.00	1.57	1.64	2.32	2.42	2.86	1.22
India	0.42	0.47	0.52	0.59	0.66	0.95	1.31	1.67	1.01
China	0.89	1.40	1.80	2.88	3.86	7.26	9.58	10.40	6.54
South Africa	1.25	0.83	0.68	0.54	0.46	0.49	0.49	0.53	0.07
Mexico	0.89	1.37	1.18	1.54	2.58	2.04	1.83	1.91	-0.66
Indonesia	1.08	0.95	0.74	0.88	1.01	0.83	0.95	1.10	0.09
Korea	0.86	1.55	1.89	2.42	2.67	2.71	2.90	3.04	0.37
Turkey	0.14	0.41	0.38	0.42	0.43	0.70	0.81	0.74	0.31
Argentina	0.39	0.43	0.36	0.41	0.41	0.38	0.44	0.46	0.05
Saudi Arabia	5.36	1.41	1.29	0.97	1.20	1.72	1.53	2.00	0.80
BRICS	4.56	5.01	4.91	6.48	7.47	12.15	15.03	16.86	8.17
MIST	2.97	4.28	4.19	5.26	6.69	6.28	6.50	6.79	0.11

Source: WTO [Online]. Available:
http://www.wto.org/english/res_e/statis_e/its2012_e/its12_merch_trade

Table 27 shows a similar pattern for global merchandise imports, with China powering the BRICS to an overall increase of 9.57 percentage points in just 11 years (and an increase of 10.85 percentage points since 1980). Perhaps no single data illustrates the rise of China more emphatically than the 6.54 and 6.11 percentage point increases in China's global export and import share, respectively, as shown in these two tables. Again, Mexico's share has declined but all others have increased; South Africa has recovered partly from the apartheid disaster;

and the BRIC increase is substantially more than that of MIST thanks largely but not exclusively to China.

Table 27: Global merchandise import shares (%)

	1980	1985	1990	1995	2000	2005	2009	2011	Increase over 2000
Brazil	1.20	0.71	0.63	1.02	0.88	0.71	1.05	1.28	0.41
Russia	1.00	1.00	1.00	1.15	0.66	1.16	1.51	1.76	1.09
India	0.72	0.79	0.66	0.66	0.77	1.32	2.02	2.51	1.74
China	0.96	2.10	1.50	2.50	3.35	6.08	7.90	9.46	6.11
South Africa	0.94	0.56	0.52	0.58	0.44	0.57	0.58	0.66	0.22
Mexico	1.07	0.95	1.23	1.41	2.67	2.10	1.90	1.96	-0.71
Indonesia	0.52	0.51	0.62	0.77	0.65	0.70	0.74	0.96	0.31
Korea	1.07	1.55	1.97	2.56	2.39	2.41	2.54	2.84	0.46
Turkey	0.38	0.56	0.63	0.68	0.81	1.08	1.11	1.31	0.50
Argentina	0.51	0.19	0.11	0.38	0.37	0.26	0.30	0.40	0.03
Saudi Arabia	1.45	1.17	0.68	0.53	0.45	0.55	0.75	0.71	0.26
BRICS	4.82	5.16	4.31	5.91	6.1	9.84	13.06	15.67	9.57
MIST	3.04	3.57	4.44	5.41	6.51	6.28	6.28	7.07	0.55

Source: WTO [Online]. Available:
http://www.wto.org/english/res_e/statis_e/its2012_e/its12_merch_trade

Agriculture is important to the MIST countries, and Table 28 shows some general indicators of the role of agriculture in the economy. Korea has limited arable land, while the other three are potentially land-rich. Agriculture's importance as measured by the contribution to GDP and employment is high in both Indonesia and Turkey, while for both Mexico and Korea, even though these two latter indicators are lower, the rural population is still high as a percentage of the total. Livestock production in particular is increasing strongly in most cases, while overall food production is stagnating in Korea but increasing in Indonesia in particular. All four economies are relatively open, as measured by merchandise trade as a percentage of GDP. Indonesia's agriculture is still characterised by small farmers, as attested by the low value added per worker, while South Korea's economy has already industrialised. By comparison, South Africa's value added per worker in agriculture is R3951, a bit higher than that in Mexico and Turkey.

Table 28: The role of agriculture in MIST

	Mexico	Indonesia	Korea	Turkey
Agricultural land (km²)	1,028,330	526,000	18,540	389,110
Arable land as share of total land (%)	12.9	13.0	16.4	27.7
Agriculture as share of GDP (%)	3.9	15.3	2.6	9.6
Agricultural growth (% p.a.)	3.3	2.9	-4.3	2.4
Agricultural employment as share of total (%)	13.5	38.3	6.6	22.9
Exports as share of GDP (%)	30.3	24.6	52.4	21.2
Imports as share of GDP (%)	31.7	22.9	49.6	26.8
Food production index (2004/06=100)	105.3	121.8	100.5	110.3
Livestock index (2004/06=100)	108.6	119.3	116	118.2
Food exports as a share of total exports (%)	6.1	16.4	1.1	10.6
Food imports as a share of total imports (%)	6.5	8.5	4.5	4
Rural population (%)	21.9	49.3	16.8	28.6
Agricultural value added per worker ($, 2010)	3,302	730	19,807	3,770

Source: World Bank [Online]. Available at: http://data.worldbank.org/country

3.4.3 The Foreign Direct Investment position with South Africa

Table 29 shows that South Korea has a significant Foreign Direct Investment (FDI) presence in South Africa. The South African Reserve Bank data shows South Korea as having investments in South Africa of R1.8 billion in 2010, while South African interests had a call on R337 million in South Korea in the same year period. Turkey has minor investments in South Africa, and for a period at the turn of the millennium, South Africa had a relatively large call on funds in Indonesia. Mexico was not listed in the South African Reserve Bank data as having any FDI presence.

Table 29: MIST FDI investment position with South Africa, 1997-2010

	South African FDI liabilities (Rm)			South African FDI assets (Rm)		
	Indonesia	Turkey	Korea	Indonesia	Turkey	Korea
1999	307		191	2,446		
2000		1	690	2,448		
2005		18	895	27	1	34
2010		129	1,814	80	10	337

Source: South African Reserve Bank

4. Other contenders

Two contenders for elevation to some sort of club that would be of interest to South Africa are Argentina and Saudi Arabia. Saudi Arabia is of interest because it is oil rich and has the potential to become an increasingly important export destination for specialist South African products such as fresh fruit, and because, just as South Africa offers a gateway into Africa, Saudi Arabia offers a gateway into the Middle Eastern oil states. Argentina is of interest as the single largest source of South Africa's agricultural imports, and because of its proximity to Brazil.

Table 30 shows some selected economic indicators for Argentina and Saudi Arabia. Both are medium-sized countries as measured by population and, combined with their reasonable GDP per capita, this gives them significant economic power. Furthermore, given that a generally presumed qualification for becoming a BRIC is a decent growth rate, the annual percentage growth rates for Argentina and Saudi Arabia since the birth of BRIC in 2001 are also shown. Since 2003, both countries have outperformed the OECD (a weak test), and since 2009 the world (the strong test).

Table 31 shows that mineral fuels dominate the South African imports from Saudi Arabia, while fruit and nuts are the top export items in a trade that is significantly in favour of Saudi Arabia.

Table 30: Selected macroeconomic indicators for Argentina and Saudi Arabia, 2001-2011

		2011	2009	2007	2005	2003	2001
GDP ($bn)	Argentina	446.0	307.1	260.8	183.2	129.6	268.7
	Saudi Arabia	576.8	376.7	384.9	315.6	214.6	183.0
GDP per capita (current $)	Argentina	10,941	7,665	6,624	4,736	3,410	7,203
	Saudi Arabia	20,540	14,051	15,091	13,127	9,607	8,849
GDP per capita (PPP $)	Argentina	17,674	14,563	13,325	10,833	8,721	8,829
	Saudi Arabia	24,434	22,045	21,502	20,406	18,610	17,967
Population (million)	Argentina	40.76	40.06	39.37	38.68	38.00	37.30
	Saudi Arabia	28.08	26.81	25.50	24.04	22.33	20.68
Population growth (% p.a.)	Argentina	0.9	0.9	0.9	0.9	0.9	1.0
	Saudi Arabia	2.3	2.4	2.8	3.5	4.0	3.1
Unemployment rate	Argentina		8.6	8.5	10.6	16.1	18.3
	Saudi Arabia		5.4	5.6			4.6
Growth in GDP (% p.a.)	Argentina	8.9	0.9	8.7	9.2	8.8	-4.4
	Saudi Arabia	6.8	0.1	2.0	5.6	7.7	0.5
	World	2.73	-2.25	3.94	3.46	2.73	1.69
	OECD	1.49	-3.94	2.58	2.48	1.98	1.30
	Did Argentina and Saudi Arabia outperform the world (y = yes, n = no)						
	Argentina	y	y	y	y	y	n
	Saudi Arabia	y	y	n	y	y	n

Source: World Bank [Online]. Available: http://data.worldbank.org/country

Table 31: South Africa's trade with Saudi Arabia

South African imports ($m)			South African exports ($m)		
All merchandise					
	2010	2011		2010	2011
Total	3,234	4,441	Total	368	375
Mineral fuel	2,767	3,824	Fruit and nuts	79	106
Organic chemicals	169	250	Ores	41	86
Fertilisers	107	133	Iron & steel	53	40
Agricultural products					
Total	2	1	Total	161	125
Nuts	0	0	Lemons	48	54
Pasta	0	0	Cigarettes	13	33
Hazelnuts	0	0	Sheep skins	13	12

Source: Global Trade Atlas, 2012

Table 32 shows the bilateral trading relationship between South Africa and Argentina: once again, the trade is heavily in favour of Argentina with the large imports of animal feeds with a limited offset of South African exports.

Table 32: South Africa's trade with Argentina

South African imports ($m)			South African exports ($m)		
All merchandise					
	2010	**2011**		**2010**	**2011**
Total	922	1,116	Total	110	183
Animal feeds	361	385	Fertilisers	2	41
Cereals	13	224	Ores	10	36
Vehicle parts	56	213	Mineral fuel	31	21
Agricultural products					
Total	589	781	Total	7	7
Soybean oilcake	340	360	Vegetable saps	1	2
Wheat	9	211	Liqueurs	1	2
Sunflower oil	76	45	Pineapple juice	1	1

Source: Global Trade Atlas, 2012

To put Argentinean and Saudi Arabian agriculture in perspective with MIST, Table 33 shows the global rankings as, firstly, agricultural exporters among the top 20, and then a similar profile for imports. As exporters, Indonesia, Argentina and Mexico all had an important global share in 2011, with Indonesia and Argentina ranked in 6th and 8th place, respectively. Similarly, South Korea and Mexico are among the top 10 importers with Saudi Arabia in 11th place. All three, along with Turkey, have an import share of at least 1%.

Table 34 shows the same general agricultural indicators for Saudi Arabia and Argentina as were presented for the MIST countries. Both countries are relatively arid (in South Africa, for example, arable land makes up 15% of total agricultural land), but both countries have a relatively high agricultural value added per worker, with agriculture making up only a small share of total employment. As a percentage of GDP, agriculture is more important in Argentina. Food exports are over 50% of total exports for Argentina, while, conversely, they are more important in Saudi Arabia's imports.

Table 33: Leading traders of agricultural products, $ billion and % changes

Rank		Value ($m)	Share (%)			Annual change (%)			
		Exporters							
		2011	1990	2000	2011	2005-11	2009	2010	2011
6	Indonesia	48	1.0	1.4	2.9	23	-23	42	34
8	Argentina	45	1.8	2.2	2.7	15	-25	23	31
14	Mexico	23	0.8	1.7	1.4	11	-3	13	22
		Importers							
7	South Korea	35	2.2	2.2	2.0	13	-20	26	30
8	Mexico	29	1.2	1.8	1.7	10	-22	16	24
11	Saudi Arabia	22	0.8	1.0	1.3	16	-14	60	27
14	Turkey	18	0.6	0.7	1.0	18	-26	34	36

Source: WTO [Online]. Available:
http://www.wto.org/english/res_e/statis_e/its2012_e/its12_merch_trade

Table 34: Some general agricultural indicators

	Saudi Arabia	Argentina
Agricultural land (km²)	1,734,350	1,405,000
Arable land as share of total land (%)	1.5	11.3
Agriculture as share of GDP (%)	2.5	10
Agricultural growth (% p.a.)	1.1	28
Agricultural employment as share of total (%)	4.1	1.2
Exports as share of GDP (%)	58.1	21.7
Imports as share of GDP (%)	38.6	18.4
Food production index (2004/06=100)	105.9	115.4
Livestock index (2004/06=100)	110.8	113.6
Food exports as a share of total exports (%)	1.2	51.2
Food imports as a share of total imports (%)	15.7	2.6
Rural population (%)	17.9	7.7
Agricultural value added per worker ($, 2010)	20,233	12,957

Source: World Bank [Online]. Available: http://data.worldbank.org/country

Table 35 describes production, imports, and exports for Saudi Arabian agriculture. There are several lines of potential interest for South Africa in the import column.

Table 35: Saudi Arabian agricultural production and trade data (US$ m)

Production		Imports		Exports	
Chicken	822	Barley	1,917	Cheese	309
Dates	551	Rice	1,310	Pastry	193
Milk	521	Chicken	1,231	Fruit juice	187
Wheat	202	Food preparations	908	Sugar	182
Tomatoes	181	Sugar	691	Non-alcoholic beverages	147
Eggs	160	Cigarettes	669	Buttermilk	113
Mutton	128	Maize	471	Milk	103
Fruit	126	Wheat	400	Maize oil	87
Beef	108	Infant food	368	Sugar	81
Vegetables	95	Palm oil	358	Dates	78
Grapes	93	Milk powder	350	Macaroni	75
Camel meat	77	Chocolate	311	Food preparations	62
Cucumbers	76	Beef	292	Milk powder	61
Potatoes	75	Pastry	281	Eggs	60
Citrus	61	Cheese	262	Cream	54
Sorghum	42	Mutton	251	Waters	51
Melons	36	Cheese	224	Vegetables	50
Okra	36	Cake soybeans	214	Orange juice	49
Watermelons	35	Tea	211	Frozen potato	45
Camel milk	33	Sugar	208	Yoghurt	43

Source: FAOSTAT, 2012

The global rankings of production in Argentina (Table 36) reflect its role as a heavyweight on the agricultural scene, with several products ranked by the FAO among the top 10 during 2010. These include a number-three global ranking for soybeans, sunflower seeds, and lemons and limes; and a number-four ranking for beef, maize, and pears. As an exporter, Argentina ranks as the number one exporter of soybean cake in the world and number two in soybeans, with both of these exports in the FAO's top 20 commodity by country export table.

Finally, in Table 37, the FDI position between Saudi Arabia and Argentina on the one hand, and South Africa on the other, is shown. These investments are very modest in the case of Argentina, but in Saudi Arabia's case they have been important in the past.

Table 36: Argentinean agricultural production and trade data (US$ m)

Production		Imports		Exports	
Soybeans	14,172	Bananas	114	Cake soybean	8,195
Beef	7,095	Rubber	114	Soybeans	4,986
Milk	3,277	Pork	105	Soybean oil	4,136
Maize	2,768	Food preparations	103	Maize	3,145
Chicken	2,275	Coffee	73	Beef	1,041
Wheat	2,270	Cocoa	59	Wheat	902
Grapes	1,496	Cocoa butter	54	Wine	737
Sugar	821	Feed supplements	45	Sunflower oil	539
Sunflower	611	Chocolate pralines, n.e.s.	38	Milk powder	460
Apples	444	Cocoa paste	36	Chicken	379
Lemons	441	Tobacco	35	Pears	337
Pork	432	Coffee	33	Groundnuts	292
Eggs	419	Beverages, distilled	33	Tobacco	292
Barley	347	Confectionery	30	Flour of wheat	290
Rice	336	Fruit preparations	26	Beans	260
Cotton lint	329	Maize	25	Rice	234
Potatoes	327	Cotton	25	Malt	228
Pears	288	Wine	23	Sorghum	225
Sorghum	282	Oil, essential	21	Lemons	204
Groundnuts	268	chicken	18	Groundnuts	203

Source: FAOSTAT, 2012

Table 37: South Africa's FDI position with Saudi Arabia and Argentina (Rm)

	South African FDI liabilities		South African FDI assets	
	Saudi Arabia	Argentina	Saudi Arabia	Argentina
1999	54	2	54	
2000	62	3	62	
2005	-546	32	-546	26
2010	-1,031	12	-1,031	42

Source: South African Reserve Bank

In summary, both Argentina and Saudi Arabia must be 'countries of interest' to South Africa. Both are strongly growing middle-income countries, and both should be of special interest to

the agricultural sector – Argentina as a major source of South African agricultural imports and Saudi Arabia as a latent export destination.

5.   A cautionary note

While we can say with a reasonable degree of confidence that we know recent growth pathways, the future is of course uncertain. At the heart of this chapter are growth rates from the developing world, and while China in particular has had a spectacular and probably unique growth period that stretches back some 40 years, there has been much more variation in almost all of the other countries examined. The enthusiasm for BRIC and MIST is predicated upon the continuation of their growth pathways being above that of the developed world. Sharma (2012) strongly makes this point when he argues that few countries can sustain unusually fast growth, and now that the boom years are over, the international order will change less than expected. At the heart of this debate is the thesis on what Sharma calls 'the rise of the rest' and how quickly developing countries will converge on the developed world. His contention is that few countries have managed this feat over the last 50 years and therefore there is the likelihood that, similarly, few will manage it in the near or medium future. The top tier will look very similar in the future, as few economies are likely to break into this exalted group.

While there is speculation over when China will regain its position as the number one world economy, population rather than GDP per capita is the driver here. It is one thing to overtake the US as an economy with a population of well over one billion. It is quite another to pass on a GDP per capita basis. One can indulge in endless speculation over GDP growth, and from there analyse the implications of this growth. For example, we can take the World Bank 2014 growth forecasts from Table 4 for the US and China and extrapolate these into a spread sheet using current 2012 GDP per capita data. From this exercise we find that from the situation at 2012 when Chinese per capita was 11.2% of that of the US, in 20 years' time it would be 35.2% of the comparable US figure. This would be an improvement and a remarkable performance, but still little more than one-third of the US wealth per capita. Continuing the extrapolation, in 30 years' time it would be 55.2%, and thanks to the power of compounding, somewhere around 2054 they would equate! But, drop the Chinese rate by 1% annually and by 2054 the Chinese level is 'only' 70.7% of the US level. Yet another 1% less and it is still below half at 2054, while increasing the US rate by 1% and maintaining Chinese growth, the

figure would be 69.5% rather than being equal. The salient point is that extrapolating a small 'tweak' to the growth rate makes an enormous difference to convergence.

But how much does this matter? The developing world, in many instances, is becoming richer, and this will change consumption patterns and therefore future trade opportunities. But just how much richer they are likely to become is another matter altogether. As Sharma (2012) cautions, there are just too many factors at play that are likely to dampen speculative conjecture.

References

FAOSTAT. 2012. *Food and Agricultural Organisation (FAO) database*. [Online]. Available: http://faostat.fao.org/site/357

Moore, E. 2012. Civets, Bricks and the Next 11. *Financial Times*, June 8. [Online]. Available: http://www.ft.com/cms/s/0/c14730ae-aff3-11e1-ad0b-00144feabdc0.html#axzz2IxuAHBLU

OECD database. [Online]. Available: http://www.oecd.org/statistics/#d.en.199456.

O'Neill, J. 2001. *Building better global economic BRICs*. Goldman Sacks Global Paper No. 66, November 2001.

Sandrey, R., Fundira, T. and Jensen, H.G. 2013. *Chinese domination of the African industrial goods market*. (Chapter 5, this volume).

Sandrey, R. 2011. *South Africa's way ahead: are we a BRIC?* Trade Brief No. D11TB06/2011. Stellenbosch: tralac.

Sandrey, R. and Fundira, T. 2013. *South African agricultural export prospects to the BRICs*. (Chapter 7, this volume).

Sandrey, R., Vink, N. and Jensen, H. 2012. *The BRICs and agricultural exports to Africa: are they a threat to South African interests?* Paper presented to special session of the South African Agricultural Economics Association Conference, Bloemfontein, October 2012.

Sharma, R. 2012. Broken BRICs: Why the rest stopped rising. *Foreign Affairs*, November/December.

World Bank database. [Online]. Available: http://databank.worldbank.org/Data/Home.aspx

World Trade Organisation (WTO) database. [Online]. Available: http://stat.wto.org/Home/WSDBHome.aspx

Chapter 14

BLNS: the BRIC trading relationships in perspective with their EU trade

Ron Sandrey

1.   Introduction, summary and discussion

In considering South Africa's trading relationships, we must always be careful to recognise that South Africa is one of five members of the Southern African Customs Union (SACU), and that the interests of the other four SACU members (Botswana, Lesotho, Namibia and Swaziland (BLNS)) must be taken into account. Accordingly, this chapter will examine the merchandise trading relationships between the BLNS and the BRIC countries of Brazil, Russia, India and China. The chapter starts with a brief SACU perspective before moving to an overview of 2011 trade from the World Trade Organisation (WTO) and then setting the BLNS relationships with the BRICs against their trading relationships with the United States (US) and the European Union (EU). Outside of South Africa, the EU is the main trading partner for all except in the case of Lesotho, where almost all of the 'external' exports are clothing destined for the US (Tables A to D).

We have not tried to analyse the BLNS trading relationships with South Africa in detail, but suffice it to say that this relationship is crucial – as also highlighted in Tables A to D. Note furthermore that (1) the imports from South Africa into the respective BLNS countries form the basis for their shares of the common SACU revenue pool and that this in turn provides a significant share of their external revenues; and (2) this trading relationship distorts and potentially underestimates the import flow from third parties as South Africa may be a transit source given the SACU common tariff regime. We also note from earlier unpublished tralac

research that apart from the Namibia-Botswana trading relationship, the intra-BLNS trading is extremely low.

The SACU perspective[1]

In **2010**, **SACU**'s total exports increased by 8.9% to R819.43 billion[2] and they accounted for a 22.0% share of the African merchandise exports that year, while SACU imports increased by 1.7% to R687.87 billion and accounted for 20.0% of African merchandise imports. EU was both the main destination of SACU exports (26.6%) and the main source of imports (26.3%).

During **2011, Botswana**'s total exports to the rest of the world increased by 16.1% to R40.1 billion, while imports increased by 19.2% to R49.6 billion. Intra-SACU exports increased by 22.4% to R5.7 billion (14.2% of the total), while intra-SACU imports increased by 8.0% to R33.2 billion (66.8% of the total).

Lesotho's total exports to the rest of the world in **2010** declined by 30.2% to R3.7 billion, while conversely, imports increased by 23.2% to R9.3 billion. Lesotho's intra-SACU exports increased by 1.4% to R2.6 billion (75.1% of the total), while intra-SACU imports declined by 3.2% to R7.0 billion (79.3% of the total).

Namibia's total exports to the rest of the world during **2011** increased by 9.4% to R36.7 billion, while imports increased by 5.5% to R46.3. Intra-SACU exports declined by 2.1% to R7.7 billion (20.9% of the total), while intra-SACU imports increased by 11.1% to R35.4 billion (76.6% of the total).

South Africa's intra-SACU exports increased by 9.1% to R72.0 billion in **2011**, with Namibia the main destination (R31.9 billion) followed by Botswana. These intra-SACU exports accounted for 8.1% of the total exports from South Africa. Intra-SACU imports increased by 11.7% to R24.5 billion, with Swaziland as the main source. These intra-SACU imports were 2.8% of South Africa's total imports. In all instances, South Africa was the main source of BLNS imports and destination of their exports.

Swaziland's total exports to the rest of the world declined by 7.5% to R11.9 billion in **2011**, while imports similarly declined by 16.2% to R12.8 billion. Swaziland's intra-SACU exports

---

[1] Data for this section was drawn from the SACU Secretariat at <u>http://www.sacu.int/publications.php?id=439</u>
[2] Using the Global Trade Atlas trade-weighted data for currency conversions, the US dollar was worth R7.28 in 2010 and R7.29 in 2011.

increased by 8.7% to R8.1 billion (68.2% of the total), while intra-SACU imports declined by 18.8% to R11.1 billion (86.0% of the total).

The big picture

Tables A to D are sourced from the WTO profiles for Botswana, Lesotho, Namibia and Swaziland, respectively. They show 2011 merchandise trade by total values, commodity breakdown, the main export destinations and import sources, trade growth 2005-2011, and the totals for services trade. Again, these tables highlight the general dominance of South Africa as a trading partner and the general first or second placing of the EU, except for Lesotho's exports to the US. Swaziland was roughly in a global trade balance while the other countries ran trade deficits in 2011.

Table A: Botswana

	Exports	Imports
Total 2011 $ million	$5,882 m	$7,272 m
Commodity (ITS) %		
Agriculture	2.4%	11.2%
Fuels/minerals	8.7%	17.25
Manufacturing	87.2%	70.4%
Destination/Origin		
South Africa	13.5%	66.7%
EU	65.2%	13.2%
China		10.9%
Annual % change 05-11	5%	15%
Services 2010 $ million	$385 m	$867 m

Table B: Lesotho

	Exports	Imports
Total 2011 $ million	$1,100 m	$2,600 m
Commodity (ITS) %		
Agriculture	5.1%	13.2%
Fuels/minerals	0.0%	5.9
Manufacturing	87.9%	64.5%
Destination/Origin		
South Africa	48.9%	95.2%
US	31.8%	0.2%
Canada	15.1	
EU	1.9%	1.6%
Annual % change 05-11	9%	11%
Services 2010 $ million	$44 m	$479 m

Table C: Namibia

	Exports	Imports
Total 2011 $ million	$4,373 m	$6,330 m
Commodity (ITS) %		
Agriculture	22.8%	8.9%
Fuels/minerals	31.4%	31.2
Manufacturing	6.2%	52.5%
Destination/Origin		
South Africa	29.1%	75.8%
EU	35.6%	8.6%
Angola export/China import	8.3	4.1%
Annual % change 05-11	13%	16%
Services 2010 $ million	$890 m	$713 m

Table D: Swaziland

	Exports	Imports
Total 2011 $ million	$2,000 m	$2,100 m
Commodity (ITS) %		
Agriculture	28.3%	21.6%
Fuels/minerals	1.8%	15.2
Manufacturing	69.7%	62.2%
Destination/Origin		
South Africa	79.8%	81.4%
EU	13.9%	2.7%
China		4.0%
Annual % change 05-11	2%	2%
Services 2010 $ million	$250 m	$650 m

Source: WTO [Online]. Available: http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx

To obtain consistent and timely data, we have used the Global Trade Atlas (GTA) data as sourced from the BRICs authorities[3], and the Africa Growth and Opportunity Act (AGOA) trade data as sourced from the tralac website for the US data, rather than using the difficult-to-obtain BLNS data directly. This data is December-year data in all cases, and features the years from 1995 to 2011 for China; 1997 to 2011 for Russia; 1999 to 2011 for India, but 1997 to 2012 (as at 14 January 2012) for Brazil. We have used the data from 2000 onwards for the aggregate Tables 2 to 5 inclusive, but to give a fuller picture we have used all available data for the individual trade lines which are presented at the HS 6 line level. All data in this chapter is expressed in US dollars, but the big-picture data is expressed in millions while the detailed data is expressed in thousands. The term 'Grth' is used to denote growth rates based upon the average of the latest two years over the average of 2005/2006 to even out variations on what is often limited trade. The BRIC and EU data is shown, firstly, for the aggregate data from 2000, and then the individual BLNS tables for firstly imports from BLNS into each BRIC (BLNS exports) and then secondly exports to BLNS from each BRIC (BLNS imports) for 2005, 2008, and the latest two years of 2010 and 2011. We emphasise that it is likely that BLNS exports to BRICs (BRIC imports) may be accurate, but that, given the extent of general trade from South Africa to the BLNS, their imports from the BRICs (BRIC exports), and in particular China, may be understated.

---

[3] Since all BRIC and EU data is sourced from the Global Trade Atlas as provided by the respective BRIC and EU country authorities we will not reference each individual table in the chapter.

A summary of the 2011 trade profile with the BRICs, the US and EU is given in Table 1, where it can be seen that there is a lot of variation in this data. This is confirmed with the next set of Tables 2 to 5 for the longer period of the BRIC relationships. Concerning the BRICs, China was heavily engaged in trade with both Botswana and Namibia, while both Lesotho and Swaziland were exporting moderate values to China (as reported by Chinese imports from them). India was exporting to the four BLNS countries and importing from all except for the minor values from Lesotho. Russia was engaged only in importing from Namibia and exporting small values to that country, while Brazil is really only exporting to Namibia and importing from Swaziland.

In general, the relationship with the EU dominates exports from (imports into EU) Botswana, Namibia, and Swaziland and imports from (EU exports to) Namibia. Lesotho is heavily dependent on the US for its exports while for the other three BLNS countries, their exports to the US are the second most important after the EU and well above any BRIC trade as reported. Conversely, for BLNS imports (partner exports), the US features between the second most important for Lesotho to the fourth most important for Swaziland. Not shown in Table 1 but reported in Table 30 is that the direct Japanese trading relationship is not significant and concentrates on Japanese imports of precious metals and stones from the BLNS and exports of vehicles to the BLNS.

Table 1: Aggregate BLNS/partner trade data for 2011, $ million

	2011 trade $ million			
	Botswana	**Lesotho**	**Namibia**	**Swaziland**
Imports from BLNS into				
Brazil	0.0	0.0	1.3	17.4
Russia	0.0	0.1	130.6	1.4
India	35.4	2.4	13.5	55.2
China	101.9	7.4	222.5	0.3
US	586.6	768.7	872.7	83.3
European Union	4,090	336.2	2,013	232.8
Exports to BLNS from				
Brazil	1.3	0.0	24.4	3.6
Russia	0.0	0.2	3.3	0.0
India	45.1	20.5	66.1	87.5
China	615.8	73.1	280.3	30.7
US	84.7	26.2	242.0	17.4
European Union	199	12.5	704.2	35.4

Source: Global Trade Atlas for BRIC and EU data, AGOA for US from AGOA.info

The next series of tables report directly on the BRIC trading relationships by showing annual totals over the years since 2000. Table 2 starts by reporting on the Chinese trade. The historical pattern is reflective of the 2011 snapshot from Table 1, except that Swaziland's exports to China (China's imports from Swaziland) were significant in the middle years as confirmed by a growth rate of only 0.1, which means the 2010/2011 average was only one-tenth of the average of 2005/2006. Growth has been modest for the other three BLNS countries, and noticeable is that trade in the early years was significant for Chinese exports but important for imports only from Namibia.

Botswana's trade with India has grown significantly, with Indian imports rising dramatically from a very low base. India is actively exporting to all but importing virtually nothing from Lesotho as imports from the other three countries increased from around 2005. Data for both the growth rates and total trade between Russia and the BLNS confirms the 2011 position of imports from Namibia as being the only engagement, while the more recent 2012 data from Brazil confirms an engagement with exports to Namibia and some imports from Swaziland in both 2010 and 2011 as the only meaningful trade.

Table 2: China's trade with BLNS. Annual series: 2000-2011, $ million

Partner	Chinese exports to BLNS												total	Grth
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	total	Grth
Botswana	11.5	14.2	19.0	22.8	49.5	58.5	61.7	117.9	166.1	165.9	369.5	615.8	1,672	8.2
Lesotho	10.4	16.8	24.6	24.9	47.5	55.8	64.4	58.6	79.8	50.4	59.1	73.1	565	1.1
Namibia	8.3	21.2	20.2	37.6	52.4	60.4	133.2	245.6	238.1	262.9	226.4	280.3	1,587	2.6
Swaziland	2.9	3.0	4.7	6.7	11.5	10.9	7.2	13.2	20.0	18.1	29.2	30.7	158	3.3
Partner	Chinese imports from BLNS												total	Grth
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	total	Grth
Botswana	0.0	0.0	0.0	2.2	2.9	4.0	8.2	26.4	185.9	65.3	53.5	101.9	450	12.8
Lesotho	0.1	1.1	0.0	0.0	0.0	0.3	1.3	1.2	1.7	1.7	4.3	7.4	19	7.3
Namibia	3.6	11.3	29.0	36.9	46.3	75.7	121.8	157.6	288.9	310.3	483.5	222.5	1,787	3.6
Swaziland	0.0	7.0	11.1	14.8	14.6	23.2	24.8	19.3	11.3	15.1	2.5	0.3	144	0.1

Table 3: India's trade with BLNS. Annual series: 2000-2011, $ million

Partner	Indian exports to BLNS													
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	total	Grth
Botswana	4.7	5.2	3.8	4.9	6.9	11.7	12.4	14.5	24.2	20.1	34.6	45.1	188	3.3
Lesotho	0.1	0.1	1.4	6.2	10.6	16.1	5.3	7.5	34.2	12.3	18.2	20.5	133	1.8
Namibia	3.3	9.5	4.3	6.5	7.6	14.1	17.5	29.2	96.7	55.4	63.7	66.1	374	4.1
Swaziland	1.5	1.3	4.6	30.0	27.1	4.0	5.7	7.5	15.0	40.2	27.1	87.5	251	11.8
	Indian imports from BLNS													
Partner	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	total	Grth
Botswana	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.0	19.6	5.1	26.6	35.4	87.4	147.6
Lesotho	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.6	2.4	4.2	na
Namibia	0.5	0.2	0.1	3.2	0.1	1.3	22.1	21.3	2.8	40.3	34.2	13.5	139.7	2.0
Swaziland	1.1	0.3	0.3	1.7	3.3	3.7	67.9	30.7	48.6	19.2	98.4	55.2	330.5	2.1

Table 4: Russia's trade with BLNS. Annual series: 2000-2011, $ million

	Russian exports to BLNS													
Partner	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	total	Grth
Botswana	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0	7.4
Lesotho	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0	na
Namibia	4.9	0.4	0.6	0.9	0.6	1.6	1.5	2.0	2.3	2.0	0.5	3.3	21	1.3
Swaziland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	na
	Russian imports from BLNS													
Partner	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	total	Grth
Botswana	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0	1.8
Lesotho	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0	68.8
Namibia	0.0	0.0	0.1	0.1	0.2	0.6	0.7	4.9	3.7	3.1	4.1	130.6	148	106.6
Swaziland	0.0	11.0	0.3	0.5	0.4	0.1	0.2	0.6	0.9	0.6	1.8	1.4	18	10.1

Table 5: Brazil's trade with BLNS. Annual series: 2000-2012, $ million

Partner	Brazilian exports to BLNS														
Partner	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	total	Grth
Botswana	0.1	0.6	2.3	0.7	1.6	2.2	3.7	2.7	2.0	1.0	1.6	1.3	0.7	20	0.3
Lesotho	0.0	0.3	0.0	0.0	0.5	1.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	2	0.1
Namibia	0.5	2.0	3.8	9.9	11.4	12.9	12.6	16.5	23.0	52.4	19.4	24.4	26.2	215	1.7
Swaziland	0.1	0.2	0.4	0.4	0.3	0.5	0.3	0.5	2.1	0.9	3.0	3.6	0.7	13	5.0
	Brazilian imports from BLNS														
Partner	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	total	Grth
Botswana	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	1	1.0
Lesotho	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0	13.3
Namibia	0.0	0.1	0.0	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.2	1.3	0.1	2	7.6
Swaziland	0.6	0.4	0.1	0.3	0.3	0.3	0.2	0.4	0.2	1.6	19.8	17.4	3.7	45	32.1

2. BRICs and the BLNS relationships

From this aggregate data, the study now presents the details of the bilateral trade between the BLNS and the BRICs at the HS 6 level for up to eight separate lines. These lines are ranked by the totals over the entire period and not the most recent period, and in several instances the ranking on totals as shown does not reconcile with the latest trade. **Note that data in these tables is presented in dollars (thousands) rather than millions**, and is shown for the 2005, 2008, 2010 and 2011 years (and 2012 for Brazil) along with totals and the growth from 2005/06 to the most recent two years. Importantly, totals in these tables may not reconcile with totals from Tables 2 to 5 inclusive, as totals from Tables 2 to 5 include the whole period of available data while for consistency's sake the following set of BRIC tables is for 2000 onwards. This leads to the occasional situation whereby an HS 6 line may be ranked highly but no trade is reported for the years given; an example is noted on Table 6 where sugar exports to Botswana consisted entirely of sugar from Brazil to Botswana in 1998! For the most part, the self-evident data is presented with little or no comment, and, as stated earlier, all data is sourced from the BRIC Global Trade Atlas. We start with the Brazilian bilateral trade with Botswana and we use BRIC and BLNS acronym listings for consistency.

The individual Brazilian trade shows that sugar and sugar products feature with both Botswana and Namibia, while the largest individual HS 6 line is the exports to Namibia of furniture and warships (not shown – but that was a one-off in 2009). Namibia also features as having the largest bilateral trade with Russia; but a feature of Russian exports to Namibia that cannot be discerned from Table 12 is that for the top five export lines in total, in three[1] all the trade took place in 1999, and for fishing vessels it was all between 1998 and 2000 inclusive. Conversely, for Russian imports from the BLNS, uranium imports from Namibia featured almost exclusively in 2011; but, encouragingly, a gradual build-up over the last few years for imports of grapes from Namibia and oranges and grapefruit from Swaziland is recorded. The Indian trade is diverse by both partner and commodity. Indian imports of diamonds, gold, minerals, and wool feature, while the major Indian exports focus on medicaments, fabrics, wire, vehicles and motorcycles, sulphuric acid, and oil. As shown in Table 2, the Chinese relationship is important and becoming increasingly so – also, however, at the same time, many of the HS lines have been consistent in recent years. General and electrical machinery, fabrics and clothing, television sets, and 'special' are all important exports from China;

---

[1] These three trade lines consisted of one line of lenses and two lines of instruments.

imports into China from BLNS feature ores, diamonds, some electrical parts, wood pulp, fish meal, and wool.

The **US data** is sourced from the AGOA trade site, and again shows the BLNS trade from the partner mirror perspective. An examination of US imports highlights (1) the textile and clothing trade from Lesotho and to a lesser extent from Swaziland and then Botswana, and (2) the significant values of minerals and fuels from both Namibia and Botswana in particular but also from Lesotho. There is little else. Exports from the US to the BLNS are, firstly, generally below the import values and often significantly below them, and secondly more diversified. The **EU data** is similar to the US pattern in that exports from the EU to the BLNS are also generally below the import values and usually significantly below them. They are, however, unlike the US in that agricultural products do feature in EU imports although diamonds and ores dominate, except for Swaziland where agriculture (sugar) dominates. Unlike the BRIC data, the EU HS 6 lines are ranked and presented by the values of their 2011 trade, and this does conceal some important trade. These are exports of trucks and aircraft to Botswana and aircraft to Namibia, as aircraft tend to be large irregular purchases. Otherwise, exports from the EU into the BLNS are not surprising, except for exports of (1) diamonds to Botswana and (2) copper ores to Namibia.

2.1 The Brazilian bilateral trade

Table 6: Brazil-Botswana trade statistics, US$ thousand

	Year	2005	2008	2011	2012	Total	Grth
Brazilian exports to Botswana							
HS 6	Description / Total	2,189	1,995	1,270	659	24,627	0.3
732111	Cooking appliances	434	502	291	153	4,206	0.6
170199	Sugar	0	0	0	0	3,130	na
170490	Sugar confection	213	394	284	76	2,869	0.4
401110	New tyres	488	404	0	0	2,412	0.0
930190	Weapons	0	0	0	0	1,588	0.0
401120	Truck tyres	436	258	0	0	1,266	0.0
842920	Graders	0	0	0	0	1,070	na
401163	New tyres	396	0	0	0	1,058	0.0
Brazilian imports from Botswana							
	Description / Total	0	11	5	10	701	1.0
283620	Carbonate	0	0	0	0	202	na
851762	Photocopiers	0	0	0	0	160	na
851770	Phone sets	0	11	0	0	122	na
851830	Headphones	0	0	0	0	110	na

Table 7: Brazil-Lesotho trade statistics, US$ thousand

	Year	2005	2008	2011	2012	Total	Grth
Brazilian exports to Lesotho							
HS 6	Description / Total	1,277	0	0	12	2,155	0.1
520942	Denim	1,277	0	0	0	1,277	na
520100	Cotton	0	0	0	0	397	na
730300	Tubes, iron	0	0	0	0	187	na
732111	Cooking appliances	0	0	0	0	177	0.0
020230	Frozen beef	0	0	0	0	66	na
Brazilian imports from Lesotho							
	Description / total	53	52	47	59	392	13.3
853620	Circuit breakers	0	51	46	1	236	na
620342	Men's trousers	0	0	0	51	51	na
610910	T-shirts	26	0	0	0	46	0.0

Table 8: Brazil-Namibia trade statistics, US$ thousand

	Year	2005	2008	2011	2012	Total	Grth
Brazilian exports to Namibia							
HS 6	Description / Total	12,858	22,988	24,372	26,171	215,918	1.7
940360	Furniture	2,498	5,315	2,331	3,768	36,442	0.8
890610	Warships	0	0	0	0	23,769	na
170490	Sugar confection	999	2,079	1,658	1,757	16,657	1.3
940350	Bedroom furniture	1,022	2,313	1,097	1,993	16,087	1.1
170199	Sugar	412	86	1,003	1,621	13,905	2.7
940340	Kitchen furniture	325	931	509	1,263	7,760	1.4
020714	Chicken cuts	18	3,942	714	1,492	7,716	2.1
940320	Metal furniture	231	637	633	2,610	7,605	3.4
Brazilian imports from Namibia							
	Description / Total	19	66	1,263	93	2,334	10.4
030375	Frozen fish	0	21	976	0	1,258	28.7
121190	Plant medicaments	3	11	274	26	424	37.5
010600	Animals, live	0	0	0	0	136	na
410210	Sheep skins	0	0	0	0	125	na
030381	Frozen fish	0	0	0	47	47	na
230120	Fish meal	0	0	0	0	45	na
854221	Integrated circuits	2	0	0	0	43	0.0

Table 9: Brazil-Swaziland trade statistics, US$ thousand

	Year	2005	2008	2011	2012	Total	Grth
	Brazilian exports to Swaziland						
HS 6	Description / Total	475	2,055	3,604	695	13,359	5.0
840682	Turbines	0	0	2,856	0	2,856	na
760110	Aluminium	0	0	0	0	2,658	na
291814	Citric acid	0	1,093	0	0	1,460	0.0
841430	Compressors	269	0	0	309	1,422	na
170490	Sugar confection	66	209	59	68	1,017	0.5
730630	Pipe iron	90	0	99	149	682	na
170199	Sugar	0	404	0	0	549	na
330112	Oils of orange	20	0	0	0	489	0.0
	Brazilian imports from Swaziland						
	Description / Total	312	178	17,390	3,691	54,200	38.8
854239	Integrated circuits	0	0	8,074	668	19,926	na
854231	Integrated circuit	0	0	6,124	2,545	14,690	na
252400	Asbestos	0	0	0	0	7,808	na
841191	Turbojet parts	0	0	766	203	3,365	na
854232	Integrated circuits	0	0	1,646	0	1,748	na
711021	Palladium	0	0	0	0	1,464	na
853521	Circuit breakers	0	0	0	103	895	na
851770	Phone parts	0	15	688	0	755	na

2.2 The Russian bilateral trade

Table 10: Russia-Botswana trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
Russian exports to Botswana							
HS 6	Description / Total	0	121	119	0	1,104	7.4
870422	Vans, trucks	0	0	0	0	681	na
847290	Banknote dispensers	0	121	118	0	271	na
847150	Digital processing units	0	0	0	0	48	na
Russian imports from Botswana							
	Description / Total	2	57	7	0	267	1.8
170410	Chewing gum	0	0	0	0	117	na
200919	Orange juice	0	0	0	0	77	na
611030	Sweaters	2	50	0	0	56	0.0

Table 11: Russia-Lesotho trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
Russian exports to Lesotho							
HS 6	Description / Total	0	0	59	177	520	na
880240	Airplane	0	0	0	0	220	na
902219	X-Ray	0	0	0	175	175	na
847150	Processing units	0	0	36	0	36	na
Russian imports from Lesotho							
HS 6	Description / Total	3	12	150	125	331	68.8
081340	Fruit, dried	0	0	59	0	59	na
610910	T-shirts	0	0	21	22	58	43.0
640299	Footwear	0	0	45	0	45	na
520532	Cotton yarn	0	0	0	40	40	na
853630	Protecting electrical circuits	0	0	0	37	37	na

Table 12: Russia-Namibia trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
	Russian exports to Namibia						
HS 6	Description / Total	1,585	2,326	547	3,325	36,282	1.3
900190	Lenses	0	0	0	0	9,000	na
890200	Fishing vessels	0	0	0	0	7,504	na
560811	Fishing nets	339	737	134	1,108	4,516	1.9
903089	Instruments, measuring	0	0	0	0	1,400	na
903180	Checking instrument	0	0	0	0	1,266	na
870423	Truck	374	0	0	0	924	0.0
840999	Engine parts	176	8	24	64	898	0.3
950430	Games	0	642	0	0	765	na
	Russian imports from Namibia						
	Description / Total	558	3,673	4,127	130,561	148,927	106.6
284410	Uranium	0	0	0	128,143	130,784	na
080610	Grapes	267	3,555	4,122	2,418	16,423	7.4
230120	Fish meal	0	0	0	0	496	na
030378	Whiting & hake	87	0	0	0	306	0.0
030749	Squid	0	0	0	0	245	na
030379	Fish, other	119	0	0	0	183	0.0
030510	Fish fingers	0	0	0	0	87	na
440399	Logs	0	58	0	0	58	na

Table 13: Russia-Swaziland trade statistics, US$ thousand

	Year	2005	2008	2010	2011	total	Grth
	Russian exports to Swaziland						
HS 6	Description / Total	0	0	0	0	1,176	na
880240	Airplane	0	0	0	0	1,150	na
	Russian imports from Swaziland						
	Description / Total	99	905	1,781	1,399	17,964	10.1
170111	Sugar	0	0	0	0	10,833	na
080510	Oranges	31	628	1,131	271	3,991	9.6
080540	Grapefruit	0	205	456	877	2,161	17.5
080550	Lemons	68	67	182	68	599	2.7
610990	T-shirts	0	0	0	79	79	na
854430	Wiring sets	0	0	0	78	78	na
200929	Grapefruit	0	0	0	0	69	na

2.3 Indian bilateral trade

Table 14: India-Botswana trade statistics, US$ thousand

	Year	2005	2008	2010	2011	total	Grth
Indian exports to Botswana							
HS 6	Description / Total	11,679	24,181	34,596	45,076	189,969	3.3
300490	Medicaments	391	5,902	11,340	7,555	29,261	31.9
300339	Medicament	0	2,412	5,111	598	14,820	118.9
761490	Stranded wire	686	702	0	5,643	10,856	2.2
710239	Diamonds	0	27	2,529	5,757	8,364	na
760429	Aluminium bars	860	0	3,053	202	4,550	2.6
300450	Vitamins	0	324	75	3,987	4,423	large
710231	Diamonds unworked	0	2,288	1,225	653	4,184	na
730820	Towers iron	0	0	0	3,976	3,976	na
Indian imports from Botswana							
	Description / Total	397	19,614	26,587	35,404	87,354	147.6
710239	Diamonds	0	15,306	17,830	25,707	61,054	na
710231	Diamonds unworked	0	4,224	8,705	5,859	21,609	na
999300	Detail unknown	0	0	3	3,821	3,911	na
852691	Navigational aid	263	0	0	0	263	0.0

Table 15: India-Lesotho trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
	Indian imports from Lesotho						
HS 6	Description / Total	16,056	34,200	18,224	20,518	132,856	1.8
520942	Cotton fabrics	166	5,190	7,618	11,653	40,957	14.3
271019	Oil	0	20,020	0	0	20,020	na
300490	Medicaments	374	2,382	5,577	4,514	19,813	6.7
521142	Denim	10,876	0	291	689	19,646	0.1
300339	Medicament	61	794	1,358	84	5,323	2.7
300450	Vitamins	544	556	982	1,427	4,051	3.0
841981	Elect kettles	0	2,771	0	167	2,938	na
300420	Antibiotics	1	419	806	319	2,611	13.6
	Indian imports from Lesotho						
	Description / Total	0	287	1,560	2,363	4,241	na
510119	Wool	0	0	1,527	1,999	3,526	na
711810	Coins	0	268	0	0	268	na
121190	Plants medical	0	0	27	41	68	na

Table 16: India-Namibia trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
	Indian exports to Namibia						
HS 6	Description/Total	14,112	96,653	63,701	66,058	378,389	4.1
280700	Sulphuric acid	0	31,109	10,799	1,661	58,865	na
300490	Medicaments	3,515	4,932	7,838	8,301	36,777	2.3
871120	Motorcycles	1,714	5,998	8,966	6,351	34,588	3.2
761410	Stranded wire	670	20,655	545	887	32,298	1.6
851712	Phones cell	0	1,207	1,735	7,107	12,705	na
300420	Antibiotics	7	1,333	576	8,135	12,004	large
850423	Liquid dielectric	0	0	0	0	11,232	na
300339	Medicament	473	2,660	1,144	1,724	10,436	1.3
	Indian imports from Namibia						
	Description/Total	1,293	2,781	34,239	13,473	139,724	2.0
710231	Diamonds	0	0	0	1,043	37,561	na
790111	Zinc	34	586	5,955	6,629	30,850	0.8
071331	Beans	0	0	22,954	0	22,954	na
260300	Copper ores	0	0	0	0	20,674	na
790112	Unwrought zinc	0	0	1,634	0	6,991	0.3
720449	Ferrous waste	489	177	482	2,047	5,273	1.6
310420	Potassium chloride	0	0	0	0	3,157	na
260200	Manganese ores	0	0	0	1,996	1,996	na

Table 17: India-Swaziland trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
Indian exports to Swaziland							
HS 6	Description / Total	4,008	14,998	27,086	87,546	252,336	11.8
710239	Diamonds	0	37	0	9,035	59,575	na
870322	Vehicles	0	0	0	58,083	58,083	na
610910	T-shirts	35	264	138	62	25,785	1
300490	Medicaments	275	1,105	5,852	3,347	17,250	6
711319	Jewellery	46	1,946	5,060	1,044	16,199	18
293930	Caffeine	0	2,071	1,837	2,893	9,146	na
300339	Medicament	0	1,823	1,539	150	5,970	56
294200	Organic compounds	344	681	191	768	3,672	2
Indian imports from Swaziland							
	Description / Total	3,661	48,639	98,374	55,233	331,017	2.1
710812	Gold	0	11,577	35,706	28,127	75,410	na
710813	Gold	3,491	5	0	1,826	48,702	0.1
270900	Crude oil	0	0	42703	0	42,703	na
850300	Parts electric motors	39	7,431	1,226	52	30,642	0.1
711319	Jewellery	1	1,129	3,138	41	14,235	3.3
852380	Media recording	0	14	116	5,262	5,427	na
841989	Air conditioner	0	5,072	21	25	5,341	3.5
844540	Textile winding	0	0	30	0	4,854	0.0

2.4   The Chinese bilateral trade

Table 18: China-Botswana trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
	Chinese exports to Botswana						
HS 6	Description / Total	58,513	166,121	369,527	615,771	1,672,395	8.2
840290	Steam generator	0	0	42,403	70,548	112,992	na
730890	Structure steel	5	1,216	28,909	46,238	77,314	large
620342	Trousers	1,767	8,736	7,031	23,123	63,320	6.7
611030	Sweaters	5,938	8,493	6,173	10,123	57,357	1.2
620462	Girls' trousers	2,077	7,517	7,267	11,778	46,557	4.1
840690	Parts turbines	0	0	7,460	34,167	41,627	na
841990	Lab equipment	23	27	28,414	6,185	34,856	large
853710	Controls electric	22	155	76	31,434	31,837	large
	Chinese imports from Botswana						
	Description / Total	4,004	185,942	53,523	101,895	455,681	12.8
260400	Nickel ores	0	141,022	5	0	184,006	na
710239	Diamonds	666	21,470	24,093	42,737	120,829	12.2
710231	Diamonds	2,981	23,391	20,177	4,552	76,238	4.2
260300	Copper ores	0	0	9,185	54,452	63,637	na
050710	Ivory	0	0	11	0	4,106	na
740200	Copper ores	0	0	0	0	4,059	na
410411	Bovine hides	291	0	0	0	955	0.0
010600	Animals live	0	0	0	0	494	na

Table 19: China-Lesotho trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
	Chinese exports to Lesotho						
HS 6	Description / Total	55,820	79,752	59,092	73,109	565,342	1.1
852812	Colour TV	19,337	0	0	0	86,078	0.0
600410	Knit/crochet fab	6,423	10,285	11,513	22,648	82,678	2.1
600622	Fabrics, cotton	9,640	7,197	6,242	4,377	64,418	0.6
520942	Woven cotton	1,987	5,914	7,148	7,826	37,298	3.7
852872	Television	0	7,866	3,522	0	29,169	na
520949	Woven cotton fab	4,635	5,850	86	0	25,025	0.0
851762	Machine for imaging	0	15,624	1,473	963	24,103	na
600632	Fabrics, synthetic	360	1,821	5,131	8,909	23,157	10.4
	Chinese imports from Lesotho						
	Description / Total	331	1698	4312	7421	19,200	7.3
853620	Circuit breakers	0	473	2618	4748	8,443	na
510539	Animal hair	0	1006	656	539	5,645	0.9
710231	Diamonds	0	0	342	1411	1,753	na
510530	Animal hair	0	0	0	0	503	na
510529	Wool tops	0	0	0	0	500	na
853650	Electrical switches	0	38	211	208	481	na
853630	Electrical circuits	0	141	22	86	320	na
520512	Cotton yarn	0	0	120	166	286	na

Table 20: China-Namibia trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
	Chinese exports to Namibia						
HS 6	Description/Total	60,354	238,105	226,425	280,344	1,586,604	2.6
630232	Bed linen	1,921	34,103	25,477	13,716	127,606	6.3
630392	Curtain	6,371	14,601	14,686	19,392	111,911	2.0
851761	Base stations	0	28	2,209	258	92,682	na
980100	Special	15,847	0	0	0	87,631	0.0
940490	Bedding	4,606	3,607	11,543	17,879	74,589	2.4
902219	X-Ray equipment	0	0	0	6	37,266	na
240220	Cigarettes	1,681	1,654	4,905	10,008	30,374	4.5
870421	Trucks	289	13,993	190	153	29,701	0.1
	Chinese imports from Namibia						
	Description/Total	75,675	288,905	483,495	222,481	1,806,995	3.6
284410	Uranium	5,272	119,357	320,106	126,171	779,089	12.2
790111	Zinc	14,276	30,378	88,032	13,730	376,766	1.5
740200	Copper	40,049	72,960	10,544	0	245,646	0.3
260700	Lead ores	9,016	29,071	24,993	33,124	198,041	1.7
260200	Manganese	0	26,373	23,363	16,555	84,354	na
230120	Fish meal	2,999	5,447	6,921	7,511	37,741	3.8
260300	Copper ores	0	0	0	14,643	14,643	na
030379	Fish, frozen	1,648	541	61	0	10,890	0.0

Table 21: China-Swaziland trade statistics, US$ thousand

	Year	2005	2008	2010	2011	Total	Grth
Chinese exports to Swaziland							
HS 6	Description / Total	10,927	20,009	29,246	30,700	164,085	3.3
600622	Fabrics	1,995	2,298	241	336	18,932	0.2
851762	Imaging	0	1,536	3,954	4,792	11,268	na
851761	Base stations	0	254	6,784	2,756	10,634	na
551422	Fabrics	0	1,255	2,403	3,242	8,970	225.8
520932	Cotton fabric	2,260	610	986	475	8,175	0.5
520939	Cotton fabric	57	1,020	1,733	1,205	4,584	51.5
600632	Fabrics, synthetic	279	200	609	647	4,281	3.3
551321	Fabric polyester	1,002	158	342	775	4,109	0.9
Chinese imports from Swaziland							
	Description / Total	23,181	11,280	2,504	344	144,101	0.1
470311	Wood pulp	21,713	7,586	2,281	0	130,354	0.0
470319	Wood pulp	0	2,880	0	0	9,959	na
200899	Plant parts	1,032	0	0	0	1,363	0.0
470329	Wood pulp	0	507	0	0	507	na
470321	Wood pulp	412	0	0	0	412	0.0
841370	Centrifugal pump	0	0	0	0	304	na
853400	Printed circuits	0	217	0	0	249	na
846693	Parts machine tool	0	0	58	46	108	na

3. The trading relationship with the US, EU and Japan

3.1 The trading relationships with the US

In the following four tables we show the BLNS/US trading relationships for the last three years. The data is sourced from the AGOA website (www.agoa.info) and is expressed in dollars (thousand). Data for both totals and agricultural trade is shown, along with the other main AGOA classifications.

Table 22: Bilateral US/Botswana trade, US$ thousand

	2009	**2010**	**2011**
US exports to Botswana			
Total	185 250	88 153	84 704
Agricultural products:	461	317	259
Special provisions	56 551	45 755	43 064
Machinery	70 163	3 398	16 688
Transportation	35 989	25 558	9 032
US imports from Botswana			
Total	263 819	339 478	586 572
Agricultural products:	399	0	3
Textile and apparel	24 728	23 124	30 957
Minerals & metals	237 543	310 357	546 519

Table 23: Bilateral US/Lesotho trade, US$ thousand

	2009	**2010**	**2011**
US exports to Lesotho			
Total	33 224	22 599	26 247
Agricultural products:	346	6	13 551
Chemicals & related	31 518	89	10 380
US imports from Lesotho			
Total	608 309	597 852	768 702
Agricultural products:	0	235	62
Textiles & apparel	556 776	561 590	630 730
Minerals & metals	44 463	35 252	136 811

Table 24: Bilateral US/Namibia trade, US$ thousand

	2009	2010	2011
US exports to Namibia			
Total	347 803	191 284	242 012
Agricultural products:	9 299	5 127	34 137
Transportation	71 277	79 109	89 551
Chemicals & related	7 286	30 686	20 115
Special provisions	54 385	36 963	47 141
US imports from Namibia			
Total	655 215	390 073	872 676
Agricultural products:	1 921	2 292	9 193
Minerals & metals US imports	639 390	380 327	858 599

Table 25: Bilateral US/Swaziland trade, $ thousand

	2009	2010	2011
US exports to Swaziland			
Total	12 675	20 592	17 420
Agricultural products:	1 291	1 598	917
US imports from Swaziland			
Total	109 603	114 914	83 290
Agricultural products	6 994	18 792	3 166
Textiles & apparel	94 426	93 528	76 907

3.2   The trading relationships with the EU

The following four tables show the BLNS/EU trading relationships for the last 11 years. The data is sourced from EU Global Trade Atlas data, and is expressed in dollars (million). Data for all merchandise and up to the top eight HS 6 lines are shown, along with totals over the period and the same 2010/2011 averages over the 2005/2006 averages as used for the BRIC data above. Note, however, that the HS 6 lines are ranked by their 2011 trade values and not the totals as is the case for the BRIC data.

Table 26: EU trade with Botswana, US$ million

		2000	2005	2008	2010	2011	Totals	Grth
				EU imports from Botswana				
HS 6	Total	482.53	2,968.80	595.90	1,133.08	4,089.90	18,695	1.00
710231	Diamonds	388.05	2,871.45	471.20	926.99	3,886.47	17,091	0.97
710239	Diamonds	5.48	20.14	60.80	124.35	177.86	559	5.50
710221	Diamonds	0.22	8.19	3.43	2.74	18.09	171	0.16
020130	Beef	28.26	26.84	31.64	41.85	2.97	356	0.87
020230	Beef	12.10	10.72	12.98	17.33	1.08	135	1.15
				EU exports to Botswana				
	Total	153.51	170.89	199.58	181.12	199.33	2,134	1.34
710231	Diamonds	13.03	6.03	59.69	39.04	47.06	300	3.10
851770	Phone parts	0.00	0.00	5.28	2.21	12.79	34	na
300490	Medicaments	1.53	8.06	9.30	5.15	11.09	81	1.25

Table 27: EU trade with Lesotho, US$ million

		2000	2005	2008	2010	2011	Totals	Grth
				EU imports from Lesotho				
HS 6	Total	21.34	65.65	250.54	184.75	341.15	1,317	3.60
710231	Diamonds	19.11	63.59	240.87	181.26	336.19	1,260	3.72
				EU exports to Lesotho				
	Total	6.95	18.16	19.60	13.27	12.47	189	0.61
110710	Malt	0.00	0.25	0.93	1.31	2.03	6	10.81
300490	Medicaments	0.18	0.76	1.90	0.51	0.88	11	0.30

Table 28: EU trade with Namibia, US$ million

		2000	2005	2008	2010	2011	Totals	Grth
EU imports from Namibia								
HS 6	Total	467.12	1,185.58	662.95	1,539.14	2,012.91	12,602	1.25
710231	Diamonds	83.46	533.58	13.34	399.69	723.82	3,943	0.80
740200	Copper	8.62	14.20	16.40	155.02	437.74	898	6.89
030429	Fish fillets	0.00	0.00	200.04	181.87	208.87	956	na
790111	Zinc	0.00	58.18	51.47	217.39	160.52	1,019	1.73
284410	Uranium	18.66	73.74	4.99	239.77	87.87	774	2.37
710239	Diamonds	0.95	2.95	28.52	29.45	37.91	122	11.31
080610	Grapes	3.36	27.07	53.18	56.13	36.83	339	1.46
252922	Fluorspar	5.24	19.01	30.57	28.47	36.53	247	1.43
EU exports to Namibia								
	Total	138.34	223.40	456.73	438.66	704.19	3,686	2.71
260300	Copper ores	0.00	0.00	53.07	116.11	210.00	499	na
99RRR1	Special	0.00	0.94	1.81	1.14	73.84	80	large
271011	Light oils	0.00	0.01	58.22	38.84	33.01	199	large
110710	Malt	3.16	5.05	15.01	12.54	30.19	122	3.85
730210	Railway rails	0.00	0.00	0.00	0.03	19.05	28	na
280700	Sulphuric acid	0.00	1.16	4.29	6.68	16.30	43	8.60
710231	Diamonds	6.07	12.28	5.97	10.39	12.27	100	0.72
840999	Vehicle parts	1.53	2.00	8.52	8.96	12.03	61	3.21

Table 29: EU imports from Swaziland, $ million

		2000	2005	2008	2010	2011	Totals	Grth
	EU imports from Swaziland							
HS 6	Total	120.92	142.49	210.15	208.03	232.77	2,051	1.49
170111	Sugar	73.10	98.03	113.78	129.45	152.41	1,214	1.50
170199	Sugar	0.02	0.24	22.89	27.29	21.84	116	10.16
080540	Grapefruit	5.43	6.19	10.05	9.47	15.79	88	2.02
080510	Oranges	5.57	5.39	11.78	8.12	10.64	108	1.37
200830	Citrus prep	4.54	9.74	8.08	8.15	6.51	93	0.84
330210	Odoriferous	0.05	0.00	2.51	3.64	4.85	16	large
382490	Chemicals	0.00	0.00	1.34	3.17	4.07	12	na
	EU exports to Swaziland							
	Total	18.56	36.62	39.22	49.37	35.44	364	1.22
300490	Medicaments	0.49	1.29	0.94	2.39	4.73	17	3.58
382490	Chemicals	0.16	1.75	1.01	1.13	2.50	10	1.33
330210	Odoriferous	0.09	5.85	5.28	4.62	1.58	42	0.52

3.3   The trading relationships with Japan

Table 30: Japanese trade with BLNS, US$ million

		2006	2007	2008	2009	2010	2011
	Japanese imports from BLNS						
	Total from BLNS	71	75	89	68	114	74
71	Precious stones, etc.	25	30	28	16	23	32
74	Copper	6	0	0	0	59	14
79	Zinc	12	15	32	25	18	11
	Japanese exports to BLNS						
	Total to BLNS	27	33	39	27	37	68
87	Vehicles	15	18	21	16	20	35
85	Electrical machinery	1	1	1	0	0	8
00	Special HS	2	4	6	4	4	7
16	Edible meat/fish	3	5	3	4	6	6

Presenting collaborative research by the Trade Law Centre (tralac) and the National Agricultural Marketing Council (NAMC), this book focuses on the group of developing countries that are now commonly referred to as the BRICS (Brazil, Russia, India, China, and, since 2011, South Africa). Key aspects of the trade and investment relationships among these countries are examined; the BRICS collectively also play an important role in global production, trade and investment trends.

These countries have not signed a binding international trade or investment agreement; despite this, it is interesting and important to examine this relationship in key areas of economic policy and performance. For South Africa, which lags somewhat in terms of economic size and performance, this relationship has significant political import. South Africa's accession to this group brings focus on the African continent to a forum of large, developing countries, some of which have considerable interest in the African economy as a market for manufactures, investment location or a source of commodities. Much of the analysis presented here focuses on agriculture, where the competitiveness of Brazilian agricultural in specific subsectors poses economic and policy challenges for South Africa. The recent case of alleged dumping of chicken products from Brazil in the South African market is a case in point; motivating the analysis of trade remedies and safeguard measures is included here.

An important question for Africa is to what extent the dominance of China's industrial exports on the continent circumscribes the industrial development prospects of African countries. China represents the industrial giant among the BRICS, Brazil is the agricultural powerhouse, India the large services hub and Russia boasts an enormous natural resource base; there are competitive challenges for South Africa (and Africa) playing in this arena, but potentially also significant opportunities. This collection of papers makes a contribution to the analysis of this important cluster of countries, and raises important policy issues. Does South Africa have a strategy to play this game?

tralac | trade law centre

National Agricultural Marketing Council
Strategic positioning of South African Agriculture in dynamic global markets

SWEDEN

EMBASSY OF DENMARK

9 780987 012777