

Chapter 13

Measuring regional trade integration in Southern Africa

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Abstract

The paper is about to measure the status and direction of commodity trade integration of Botswana, Namibia and South Africa to the Southern African region. It employs a concept of *relative* trade integration to different regions of the world. Two results emerge: first, the degree of integration of Botswana and Namibia to the Southern African region is high, that of South Africa low. Second, with respect to the ongoing trends of trade integration, there seems to be more of a process of disintegration than of integration in Southern Africa.

Motivation and research question

Southern African regional integration ranks high on the political agenda of Southern African governments and of the international donor community as well. It has been intensively studied and monitored under a range of aspects. Fewer efforts, however, have been made to develop quantitative measures for the degree and speed of integration. Exceptions relate to the measurement of *convergence* of the Southern African countries with respect to, for example, income per capita, economic growth, inflation, external debt and aspects of the political systems. This paper is about the status and speed of *regional trade integration* of Southern African countries. 'Trade' is understood as trade in commodities. Other external economic relations like trade in services, capital flows, direct investments and migration are not considered here. The central question posed in this study is whether and to what extent a process of trade integration between Southern African countries is occurring.

Method

Trade integration is considered here as a situation (or status) and a process. Moreover, trade integration is understood in a relative way: a country's integration with regions of the world is measured by its trade share with these regions and by the change of these shares. An increasing trade share indicates an integration process,

while a decreasing trade share signifies a process of trade disintegration. Thus, an increase of trade flows, even in real terms, between a country and a specific region is not sufficient to constitute an increase in the degree of integration.

‘Trade’ between a country and a region is measured here as ‘exports plus imports’. The data has been retrieved from the online Trade and Industrial Policy Strategies (TIPS) SADC Trade Database. From the commodity classifications provided there, only the two most condensed levels of information have been employed, namely the total over all goods (H0: All commodities) and the next level of 22 categories of commodities (C01 – C22). All data used arise in current US\$, as provided by the database. Three Southern African countries are considered: Botswana, Namibia and South Africa. The analysis concentrates on their trade relations with 21 regions of the world, as provided by the database. One of the regions is Southern Africa which consists of Botswana, Lesotho, Namibia, South Africa and Swaziland, i.e. the Southern African Customs Union (SACU) countries.

The changes of trade shares are based on a comparison of the earliest available information (Botswana: 1999, Namibia: 1998, South Africa: 1992) and the latest (2006 for all three countries). The number of years covered with trade information differs across the three countries. However, our question is not which of the countries made the quickest trade integration progress in the Southern African region. Such a question would have demanded the consideration of an equal number of years. Our question is, instead, whether an integration process – in the example of the three countries – is occurring or not. The higher the number of observations, the higher the validity of the conclusions. Thus, it seemed appropriate to use information for as many years as information is available. In order to reduce the influence of accidental values for the first and the last year, the (linear) trend values and not the factual ones have been used for the calculation of the trade shares.

Results

At first, we consider the H0 level of all commodities and turn later to the disaggregated level of 22 groups of commodities. The three countries are treated one after the other.

Highly aggregated analysis (H0, 'all commodities')

Table 1 depicts the trade shares of Botswana with 21 regions of the world. With around 42% of its trade being conducted with the Southern African region, Botswana is highly integrated with this region. The share has practically not changed. However, in 2006 the country was more integrated with Northern Europe which makes up 50% of Botswana's trade. Moreover, Botswana's trade share with this region has increased considerably, by around 10 percentage points. Botswana's trade with Eastern Africa also has increased – however, from a tiny 3.3% to 3.6%. Also increasing but even less important is the trade share with South-Eastern Asia which developed from 0.1% to 0.3%. By contrast, trade shares with Western and Southern Europe have decreased. The decrease is relatively strong for Western Europe where the trade share came down from 8.2% to 0.3%. For Southern Europe the decrease was smaller (from 1.7% to 0.2%).

Table 1: Botswana, trade shares with 21 regions, 1999 and 2006

	1999	2006
Southern Africa	42,0%	41,6%
Northern Europe	40,3%	50,0%
Western Europe	8,2%	0,3%
Southern Europe	1,7%	0,2%
Northern America	1,1%	1,7%
Middle Africa	0,0%	0,1%
Eastern Africa	3,3%	3,6%
Eastern Europe	0,3%	0,1%
Eastern Asia	1,1%	0,9%
Australia and New Zealand	0,1%	0,1%
Western Asia	1,1%	0,5%
South America	0,0%	0,0%
South-Eastern Asia	0,1%	0,3%
South-Central Asia	0,1%	0,2%
Western Africa	0,0%	0,0%
Micronesia	0,0%	0,0%
Northern Africa	0,0%	0,0%
Other	0,3%	0,0%
Melanesia	0,0%	0,0%

	1999	2006
Polynesia	0,0%	0,0%
Central America	0,0%	0,2%
Sum	100,0%	100,0%

Sources: Trips SADC Trade Database, author's calculations.

The case of Namibia is depicted in Table 2. Namibia's trade share with Southern Africa was and is high but has considerably decreased, from 60.4% to 51.3%. Eastern Africa, on a much lower level, has likewise lost trade with Namibia which decreased from 1.4% to 0.9%. Other 'losers' are Western Europe and Northern America where the trade shares came down from 7.6% to 5.7% and from 5.1% to 4.1%, respectively. By contrast, trade with Northern Europe, Middle Africa and all four Asian regions increased. The strongest increase happened with Northern Europe where the trade share went from 9.9% to 14.7%. Middle Africa saw an increase from 2.8% to 3.9%. Namibia's trade with the Asian regions, starting from a low level, increased by some percentage points.

Table 2: Namibia, trade shares with 21 regions, 1998 and 2006

	1998	2006
Southern Africa	60,4%	51,3%
Northern Europe	9,9%	14,7%
Western Europe	7,6%	5,7%
Southern Europe	7,2%	7,8%
Northern America	5,1%	4,1%
Middle Africa	2,8%	3,9%
Eastern Africa	1,4%	0,9%
Eastern Europe	1,4%	0,2%
Eastern Asia	1,2%	5,9%
Australia and New Zealand	0,7%	0,2%
Western Asia	0,3%	2,1%
South America	0,3%	0,3%
South-Eastern Asia	0,2%	2,0%
South-Central Asia	0,2%	0,4%
Western Africa	0,2%	0,2%

	1998	2006
Micronesia	0,1%	0,0%
Northern Africa	0,0%	0,0%
Other	0,0%	0,1%
Melanesia	0,0%	0,0%
Polynesia	0,0%	0,0%
Central America	0,0%	0,0%
Sum	99,2%	99,9%

Sources: Trips SADC Trade Database, author's calculations.

Table 3, for South Africa, shows a much more 'equilibrated' picture. There seems to be a flaw in the data from Southern Africa: the trade share for 2006 amounts to 0.3% only. South Africa's trade share with Eastern Africa, by contrast, is much higher (19.9% in 2006) and has considerably increased (from 15.3% in 1992). Only trade with Western Europe is more important – but it has decreased. In 1992 it stood at 23.3% and went down to 20.0%. Trade with Western Africa and Middle Africa as well as with the four Asian regions increased by between one and four percentage points. The low figures for trade with Southern Africa and the high figures for 'Other' may lead to the speculation that both categories may have been mixed-up. If this is so, South Africa's trade with other Southern African countries would have shrunk dramatically during 14 years, namely from 20.8% to 4.8%.

Table 3: South Africa, trade shares with 21 regions, 1992 and 2006

	1992	2006
Southern Africa	0,0%	0,3%
Northern Europe	9,7%	9,1%
Western Europe	23,3%	20,0%
Southern Europe	5,4%	5,2%
Northern America	10,9%	9,6%
Middle Africa	0,7%	1,4%
Eastern Africa	15,3%	19,9%
Eastern Europe	5,7%	4,9%
Eastern Asia	0,3%	1,4%
Australia and New Zealand	0,9%	2,3%

	1992	2006
Western Asia	2,2%	6,2%
South America	1,7%	2,6%
South-Eastern Asia	2,1%	4,0%
South-Central Asia	0,4%	4,5%
Western Africa	0,2%	2,3%
Micronesia	0,0%	0,0%
Northern Africa	0,1%	0,7%
Other	20,8%	4,8%
Melanesia	0,0%	0,0%
Polynesia	0,0%	0,0%
Central America	0,2%	0,6%
Sum	100,0%	100,0%

Sources: Trips SADC Trade Database, author's calculations.

A résumé on the basis of the 'All commodities' consideration comes to the following conclusion: Botswana and Namibia are strongly integrated into the Southern African region with at present around 40% and 50%, respectively of their total trade. However, Botswana is even more integrated with Northern Europe (50%) and has increased this share (from 40.3%) while Botswana's trade with Southern Africa stagnates. Namibia's trade with Southern Africa even went down by nine percentage points while the country increased its trade shares with Middle Africa and all four Asian regions. South Africa has managed to increase its trade shares with practically all of those regions with which trade was still rather insignificant in 1992. The development of South Africa's trade shares with Southern Africa is – due to possibly flawed data – not clear. But the main increases in trade shares happened in many (high-growth) regions of the world, and probably not just in the Southern African region.

Thus, the 'all commodity' consideration of trade shares comes to the conclusion that the countries analysed seem to disintegrate from Southern Africa rather than to integrate into that region.

Disaggregated analysis (C01 – C22)

The Southern African disintegration picture emerging from the view on overall trade (H0) is now to be looked at in more detail by considering 22 commodity groups (C01 – C22). The results are presented in Tables 4 – 6 which show the change of trade shares for each of the commodity groups. An increase of the trade share indicates a case of integration, a decrease a case of disintegration. The Annex Table provides a rough (the official) characterisation of the commodity groups.

Table 4 relates to Botswana. While Botswana's overall trade (H0) with Southern Africa decreased (slightly), there are 16 commodity groups out of 22 which indicate an integration process. However, only five commodity groups experienced a two-digit increase with Southern Africa. These are: live animals (C01), fats and oils (C03), leather products (C08), paper products (C10) and works of art and antiques (C21). By contrast, disintegration processes occurred for metal products (C15), textile products (C11) and chemical products (C06). Strong integration processes into regions other than Southern Africa occurred for textile products (C11, with Northern America), metal products (C15, with Northern Europe), arms and ammunition (C19, with Southeastern Asia).

Table 4: Botswana, change of trade shares by 22 commodity groups, 1999 – 2006

Commodity group	Change of trade shares with Southern Africa	(Dis)Integration from/with Southern Africa	Most increasing trade shares with:*
C01	20,1%	Integration	Southern Europe (1.7%)
C02	9,2%	Integration	Eastern Asia 1.0%)
C03	17,2%	Integration	South America (4.0%)
C04	5,7%	Integration	South America (0.3%)
C05	-4,9%	Disintegration	Northern Europe (7.9%)
C06	-3,3%	Disintegration	Northern Europe (2.8%)
C07	4,3%	Integration	Eastern Asia (2.2%)
C08	38,1%	Integration	Eastern Asia 1.9%)
C09	0,9%	Integration	Eastern Asia (0.3%)
C10	11,8%	Integration	Western Asia (0.5%)
C11	-10,1%	Disintegration	Northern America (23.7%)

Commodity group	Change of trade shares with Southern Africa	(Dis)Integration from/with Southern Africa	Most increasing trade shares with:*
C12	3,5%	Integration	Northern Europe (0.6%)
C13	-2,3%	DisIntegration	Eastern Asia (2.9%)
C14	0,4%	Integration	Northern Europe (16.0%)
C15	-32,5%	Disintegration	Northern Europe (40.3%)
C16	7,8%	Integration	Western Europe (0.9%)
C17	3,6%	Integration	South-Easternt Asia (1.9%)
C18	0,6%	Integration	Northern America (3.7%)
C19	3,8%	Integration	South-Eastern Asia (60.5%)
C20	1,5%	Integration	Eastern Asia (2.3%)
C21	32,3%	Integration	Australia, NZL (34.2%)
C22	-15,2%	Disintegration	Northern Europe (33.2%)
		* in brackets: increase in percentage points	

Sources: TRIPS SADC Trade Database, author's calculations.

The results for Namibia are contained in Table 5. As we have seen, Namibia's overall trade (H0) with Southern Africa has decreased considerably. On the level of commodity groups, this is reflected in a majority of commodity groups to show decreasing trade shares with Southern Africa (13 out of 22). Considerable increases of trade shares only occurred in a handful of commodity groups: leather products (C08), photographic instruments, clocks and musical instruments (C18), and live animals and animal products (C01). Most articulated disintegration processes developed, for example in metal products (C15), pearls and precious stones (C14), chemical products (C06), and vegetable products (C02). Regions other than Southern Africa, by contrast, saw increasing shares of Namibia's trade. The most pronounced cases are: arms and ammunition (C19, Eastern Asia), pearls and precious stones (C14, Northern Europe), and metal products (C15, Southern Europe).

Table 5: Namibia, change of trade shares by 22 commodity groups, 1998 – 2006

Commodity group	Change of trade shares with Southern Africa	(Dis)Integration from/with Southern Africa	Most increasing trade shares with:*
C01	9,8%	Integration	Middle Africa (5.4%)
C02	-17,0%	Disintegration	Western Europe (9.7%)
C03	-2,3%	Disintegration	Middle Africa (2.6%)
C04	2,3%	Integration	Middel Africa (2.5%)
C05	-7,2%	Disintegration	Northern America (17.0%)
C06	-26,8%	Disintegration	Northern America (16.4%)
C07	-7,0%	Disintegration	Middle Africa (5.8%)
C08	22,3%	Integration	Southern Europe (5.9%)
C09	-11,2%	Disintegration	Northern Europe (3.8%)
C10	6,6%	Integration	Northern Europe (0.7%)
C11	-11,9%	Disintegration	Northern America (13.3%)
C12	11,2%	Integration	Middle Africa (0.5%)
C13	-1,9%	Disintegration	Middle Africa (3.9%)
C14	-27,1%	Disintegration	Northern Europe (36.7%)
C15	-42,6%	Disintegration	Southern Europe (22.8%)
C16	1,9%	Integration	Middle Africa (1.4%)
C17	7,8%	Integration	Eastern Asia (11.0%)
C18	17,3%	Integration	Middle Africa (0.9%)
C19	4,7%	Integration	Eastern Asia (74.5%)
C20	-13,6%	Disintegration	Middle Africa (15.7%)
C21	-4,0%	Disintegration	Northern America (10.8%)
C22	-10,9%	Disintegration	Western Europe (9.1%)
		* in brackets: increase in percentage points	

Sources: TRIPS SADC Trade Database, author's calculations.

South Africa's trade with Southern Africa – as recorded in the database – is implausibly low, not only on the H0 level but on the more disaggregated level as well. Thus, Table 6 informs about the regions with which South Africa's trade has increased most for each group of commodities. The highest increase occurred for trade with Western Europe in works of art and antiques (S21), followed by Southern America (fats and oil, S03) and Eastern Asia (wood products, S09; footwear,

headgear and umbrellas, S12; textile products, S11), Western Asia (mineral products, S05), Southern America (live animals and animal products, S01) and, again, Eastern Asia (pearls and precious stones, S14).

Table 6: South Africa, regions with highest increase of trade shares, by commodity group, 1992 -- 2006

Commodity group	Most increasing trade shares with:*
S01	Southern America (18.6%)
S02	South-Central Asia (5.1%)
S03	Southern America (23.6%)
S04	South-Central Asia (4.4%)
S05	Western Asia (18.8%)
S06	Australia, NZL (5.8%)
S07	Eastern Asia (2.4%)
S08	Eastern Asia (14.1%)
S09	Eastern Asia (23.0%)
S10	Western Europe (4.9%)
S11	Eastern Asia (15.6%)
S12	Eastern Asia (22.2%)
S13	Eastern Asia (10.3%)
S14	Eastern Asia (18.6%)
S15	South-Central Asia (3.1%)
S16	Eastern Asia (4.0%)
S17	Australia, NZL (6.8%)
S18	South-Eastern Asia (2.0%)
S19	n.a.
S20	Western Europe (10.3%)
S21	Western Europe (56.7%)
S22	Western Asia (17.4%)
* in brackets: increase in percentage points	

Note: For South Africa, the official enumeration of the commodity groups uses an 'S' instead of a 'C'.

Sources: TRIPS SADC Trade Database, author's calculations.

On the basis of the more disaggregated view the following résumé can be drawn. Botswana's overall trade integration process into the Southern African region

stagnates, albeit on a high level. It is therefore plausible to find several of the 22 commodity groups with increasing, partly significantly, increasing trade shares. Namibia's overall pattern is one of disintegration. On the more disaggregated level this is reflected by a low number of commodity groups with significantly increasing trade shares. Here, the disintegration pattern dominates. Due to limitations of the database, the interpretation of the South African trade pattern with respect to Southern Africa is less clear. However, what can be stated is that 12 out of 22 commodity groups experienced a two-digit increase of trade shares with regions other than Southern Africa. This may be taken as a plausible indication that South Africa is at least not strongly integrating into the Southern African region.

Two caveats

Two caveats are in order. The high trade integration of Botswana and Namibia to the Southern African region – that is, primarily to South Africa – may stem from a particular way of trade flow recording: goods supplied by South African (e.g. wholesale) firms to Botswana or Namibia are apparently recorded as imports from South Africa, irrespective of whether these goods originated from South Africa or elsewhere. It may even be possible that goods are recorded as imports from South Africa which have been ordered by Botswana or Namibia directly from overseas suppliers but passed solely through the territory of South Africa to the final destination. Thus, the status of high integration of Botswana and Namibia with the Southern African region may partly be the effect of a particular way of recording trade flows and may not reflect the true origin of goods.

The second caveat relates to the astonishingly low value for South Africa's trade integration with the Southern African region. This may partly be explained by obvious irregularities in the trade figures contained in the database. For example, in six of the 15 years for which information is provided, South Africa's export to the Southern African region is said to be '0' (zero), namely in 1997, 1998, 2003, 2004, 2005 and 2006. In other years export values change from thousands to millions of US dollars. South Africa's import from the region is around US\$750,000 for 2004, while it is US\$ 43 million for 2005.

Conclusions

Two main conclusions may be drawn. First, in terms of the status of commodity trade, the importance of the Southern African region for Botswana and Namibia is rather high, however diminishing. Moreover, the importance may be even exaggerated due to specific trade recording practices. For South Africa, most plausibly, the region only plays a minor role, although this does not follow explicitly from the data provided in the database.

Second, in terms of current trends of commodity trade, Botswana and Namibia are disintegrating from Southern Africa. Their trade relations with Northern Europe and Asia are developing much quicker. South Africa's trade with the region may increase but on a low level. The analysis on a more disaggregated level fits plausibly into this pattern. Some commodity groups indicate an integration process, but most do not.

Thus, in terms of commodity trade and employing the concept of relative integration, the conclusion seems to be unavoidable that there is more of a process of disintegration than of integration occurring in Southern Africa.

Questions not raised in this paper and further research

The paper started by recognising that Southern African economic and political integration is high on the agenda of Southern African governments and even of donor countries. Such a priority is rather plausible on political grounds. However, the economic rationale may be assessed differently. An integration process in relative terms, as understood here, is a zero-sum game. Integration into Southern Africa means necessarily disintegration into other regions. From an economic point of view, the question must be asked: what are the costs – direct costs and foregone chances – of integrating into the Southern African region instead of integrating into other regions of the world?

However, as the analysis shows, at least in the case of external trade in commodities, there is obviously no significant integration process taking place, but rather the contrary. This may partly be the result of a political wish – known to exist at least in Namibia – to loosen the high degree of trade integration with South Africa, rightly understood as trade dependence, and to intensify external trade with countries

of regions other than South Africa. Thus, a next step of this line of thought could be to ask what the integration/disintegration trade pattern looks like when one excludes South Africa and only considers the trade relations between Southern African countries other than South Africa. Moreover, instead of 'Southern Africa' one could analyse the integration/disintegration pattern of SADC countries.

References

Bösl, A. et al. (eds.). 2000–2007. *Monitoring Regional Integration in Southern Africa*. Stellenbosch: tralac.

Annex Table: Description of commodity groups: H0 and C01 – C22

H0: All commodities
C01: Animals (live) and animal products; Section I
C02: Vegetable products; Section II
C03: Fats and Oils (animal or vegetable); Section III
C04: Prepared Foodstuffs; Beverages; and Tobacco; Section IV
C05: Mineral Products; Section V
C06: Chemical products; Section VI
C07: Plastics and Rubber; Section VII
C08: Leather products; Section VIII
C09: Wood products; Section IX
C10: Paper products; Section X
C11: Textile products; Section XI
C12: Footwear; Headgear; and Umbrellas; Section XII
C13: Stone; Cement; and Glass products; Section XIII
C14: Pearls and precious stones; Section XIV
C15: Metal Products; Section XV
C16: Machinery; Section XVI
C17: Vehicles; Aircraft; and Vessels; Section XVII
C18: Photographic instruments; Clocks; and Musical instruments; Section XVIII
C19: Arms and Ammunition; Section XIX
C20: Furniture; Toys; and other products; Section XX
C21: Works of Art and Antiques; Section XXI
C22: Commodities not elsewhere specified XXII

Source: TIPS, SADC Trade Database.

