

TRADE INTENSITIES IN SADC

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Section 1: Introduction and methodology

By examining the import and export intensity one can measure the effects of changes in trade patterns between SACU and SADC (South African Development Community). In this note our aim is first to determine these measures for SACU in relation to selected members of the SADC region for the period 1990-1999. It is shown that trade intensities between SACU and the rest of SADC have increased significantly during the second half of the 1990s. In order to see whether this has crowded out trade in the rest of SADC, we, secondly, investigate trade intensities amongst SADC economies excluding SACU. The data are rather patchy but the results suggest that trade intensities have also increased in the rest of SADC

The import intensity of (SADC) countries j 's export trade with South Africa (i) relative to its exports to the rest of the world and can be defined as:

$$m_{ij} = \left[\frac{m_j}{m_i} \right] \bigg/ \left[\frac{x_j}{(x_w - x_i)} \right]$$

where:

- m_j = imports into South Africa from country j
- m_i = total imports of South Africa
- x_w = total world exports (trade)
- x_i, x_j = total export country i and country j respectively

The index of intensity of country j 's import trade with South Africa (i) is defined as:

$$x_{ij} = \left[\frac{x_{ij}}{x_i} \right] \bigg/ \left[\frac{m_i}{(x_w - m_j)} \right]$$

where

- x_{ij} = South African exports to country j
- x_w = total world imports (trade)
- m_j = total imports of country j

Note:

- If the value of the index is **greater than 1** - this indicates a greater intensity in the bilateral trading relationship between South Africa and the relevant SADC economy relative to the latter's trade with the rest of the world.

- If the value of the index is **equal to 1** - trade is not geographically biased, bilateral relations between the two countries is the same as their trade with the world.
- If the value of the index is **less than 1** - this indicates relatively low intensities in bilateral trade between the two countries.

As data source we used the UN CommTrade global trade data base for SITC defined commodities, compiled by Stats Canada (World Trade Analyser) for all variables.

Section 2: Results for SADC trade with SACU

In the last row of Table 1 it can be seen that on the whole South Africa's trade with the rest of Southern Africa has intensified over the period 1990 and 1999. The intensity of SACU imports from most of the SADC countries has been above one and increasing over the period of review. Zimbabwe, Malawi, and Mozambique had the highest intensity of export trade into SACU while Zambia experienced an increase in the intensity of 4.2 in 1996 to 9.2 in 1999. Tanzania experienced a major drop in export intensity to SACU of 1.8 in 1994, then recovered over a five year period to 4.5 in 1999. Malawi has been maintaining a constant increase in the intensity of imports over this ten year period, while Zimbabwe was experiencing a steady fall of the intensities of export to SACU. The lowest intensity for Zimbabwe was 19.8 in 1998 after which it increased to 37.6 in 1999.

Table 1: Intensity of SACU trade from the rest of SADC

a) Import Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola	0.02		0.01	0.02	0.33	0.05	0.03	0.22	0.16	1.59
2 Congo Dem Rep			0.58	17.16	15.83	11.30	15.16	14.76	0.76	0.48
3 Malawi		23.77	24.21	29.63	33.48	20.12	31.45	33.89	33.61	35.60
4 Mauritius	1.46	1.06	2.18	1.14	0.96	0.78	1.54	1.27	1.17	1.19
5 Mozambique			14.39	20.05	40.26	48.10	41.91		28.03	
6 Seychelles	0.53	0.29	0.99	1.15	1.70	1.56	1.57	2.98	3.12	2.33
7 Tanzania			1.71	2.97	1.78	1.19	1.42	3.15	6.18	4.52
8 Zambia			2.82	5.18	5.80	3.91	4.23	7.70	9.44	9.22
9 Zimbabwe	41.46	44.37	47.65	47.44	41.39	35.46	32.39	38.10	19.77	37.61
10 Total	5.77	6.51	7.61	11.18	12.76	9.58	9.66	11.16	7.25	9.52

b) Export Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola			1.45	0.92	0.77	0.79	4.16	1.84	2.23	1.96
2 Congo Dem Rep			1.15	1.09	0.92	1.33	1.65	1.82	2.05	1.34
3 Malawi		3.59	2.77	2.07	1.55	1.20	2.58	2.54	2.33	2.40
4 Mauritius	1.58	3.14	1.60	1.81	1.50	1.52	2.32	2.27	2.04	2.50
5 Mozambique			2.70	3.38	2.85	3.08	4.77	2.37	4.53	3.65
6 Seychelles	0.27	0.35	0.25	0.33	0.24	0.25	0.46	0.40	0.38	0.36
7 Tanzania			0.11	0.20	0.45	1.09	1.15	1.15	1.64	1.93
8 Zambia			4.43	4.57	2.81	2.50	4.85	4.54	4.25	4.01
9 Zimbabwe	4.74	9.06	6.34	8.50	6.44	8.52	13.66	11.51	10.09	9.44
10 Total	6.58	16.10	20.75	22.83	17.51	20.24	35.53	28.39	29.48	27.54

Source: UN Comm Trade Data according to Stats Canada's World Trade Analyser and own Calculations

Since 1990 the intensity of SACU's exports to SADC's economies has increased substantially, although it is not as high as SADC's exports to SACU. The export intensity exceeded unity for all years under view except for exports to the Seychelles. Higher trade intensities of SACU exports (higher than unity) were also recorded toward Angola and Tanzania from 1996 and 1995 onwards respectively. The trade intensity of SACU's exports to Zimbabwe were the highest recorded in 1996 at 13.66, but subsequently decreased somewhat to 9.44 in 1999.

In conclusion it appears from the above that:

- SACU's export intensity to SADC has been considerably higher than the import intensity
- Zimbabwe still remains to be the most intense trading partner to South Africa

Section 3: Trade intensity amongst SADC economies (excl SA)

If SADC trade intensities with SACU have increased the question is whether this has been at the cost of trade amongst SADC economies excluding SACU. Due to the lack of data we can, however, only cover selected SADC countries. We start with Zimbabwe followed by Mozambique Malawi, Zambia and Tanzania.

Table 2: Intensity of trade between Zimbabwe and the rest of SADC (excluding SACU)

a) Import Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola					0.17		0.00			0.01
2 Congo Dem Rep	1.40	0.45	0.49	0.48	0.04	0.49	0.30	0.38		0.40
3 Malawi	36.46	13.80	12.06	12.74	44.79	34.15	107.16	60.25		45.21
4 Mauritius	8.11	7.65	6.63	9.16	11.51	12.29	13.10	19.79	11.83	12.44
5 Mozambique	3.84	22.64	35.77	7.59	108.18	101.54	104.80			
6 Seychelles			3.90							0.25
7 Tanzania	10.08	12.36	25.57	6.31	3.07	5.25	6.23	61.49	14.80	57.73
8 Zambia	20.55	17.46	22.53	31.11	14.25	25.98	27.64	53.12		60.23
9 Zimbabwe										
10 Total	5.26	5.20	6.29	6.03	6.50	7.73	10.24	13.46	2.66	11.52

b) Export Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola	19.81	11.49	7.73	5.94	13.53	13.52	7.26	7.62		9.76
2 Congo Dem Rep	24.49	12.68	5.90	7.18	23.25	9.79	6.48	10.11		12.65
3 Malawi	121.81	60.07	70.62	79.23	102.95	56.72	62.97	89.38	106.10	116.80
4 Mauritius	1.32	1.58	6.46	10.03	9.03	9.52	3.52	4.94	8.65	11.51
5 Mozambique	92.74	55.59	73.98	100.08	70.35	61.54	75.47	51.07		80.42
6 Seychelles	0.28	0.76	1.74	0.66	0.55	1.56	4.91	2.60		2.23
7 Tanzania	20.37	5.83	5.17	9.07	32.04	11.22	5.23	13.93	8.36	18.75
8 Zambia	88.34	72.36	84.13	124.13	83.53	108.03	94.40	121.49		110.50
9 Zimbabwe										
10 Total	368.31	219.85	255.12	335.62	334.58	271.36	259.73	300.54	122.88	362.00

Source: UN Comm Trade Data according to Stats Canada's World Trade Analyser and own Calculations

When examining the intensity with which Zimbabwe has imported from SADC, it appears that the import intensity from Malawi's higher than the import intensity from Zambia. The intensity of imports from Tanzania is relatively low while the one from Mozambique has seen a rapid increase over the period of observation, probably due to the rehabilitation of the Beira corridor.

Zimbabwe's intensity to export to SADC countries (excluding South Africa) is highest for Malawi and Zambia, where the latter has overtaken the former towards the end of the period. Again the intensity of exports towards Mozambique has risen sharply over the period. Interestingly, the export intensity of Zimbabwe with Angola and Congo Democratic Republic are much higher than the import intensities suggesting that those countries are important markets for Zimbabwe. In general it can be seen that the intensity of SADC excluding SACU to trade with Zimbabwe has not declined over time. The import intensity has risen about two fold, while the export intensity, although showing some volatility, has remained more or less constant.

Table 3: Intensity of trade between Malawi & the rest of SADC (excluding SACU)

a) Import Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola										
2 Congo Dem Rep						0.06				
3 Malawi										
4 Mauritius	1.09	0.02	0.69	3.72	10.41	4.73	26.32	15.16	12.61	8.27
5 Mozambique		22.70			56.69	172.40	74.11		331.60	
6 Seychelles		3.62								
7 Tanzania		6.64			20.65	31.63		71.48	199.42	92.18
8 Zambia		25.43			100.52	52.32		138.37	90.71	
9 Zimbabwe	584.91	181.72	231.87	310.68	354.01	295.60	341.74	321.91	356.94	454.20

b) Export Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola		3.60			1.97					
2 Congo Dem Rep		12.23			19.13	12.66				
3 Malawi										
4 Mauritius	15.11	6.15	4.65	2.20	1.45	9.36	11.02	1.01	1.53	
5 Mozambique		18.94			108.37	221.78	263.63			
6 Seychelles	1.63			0.90	0.95	2.06	1.23			
7 Tanzania		27.41			55.49	164.07		37.76	74.03	52.67
8 Zambia		41.47			100.72	129.58				
9 Zimbabwe	175.08	41.73	39.61	49.95	154.03	177.94	581.48	216.98		175.80
10 Total	191.42	151.20	44.16	52.95	441.30	716.08	855.85	255.33	75.44	228.13

Source: UN Comm Trade Data according to Stats Canada's World Trade Analyser and own Calculations

Malawi's trade intensities with SADC (excluding SACU) are shown in Table 3. Although the data is patchy, it can be seen that the highest intensity to import is with Zimbabwe, followed by Zambia, Tanzania and more recently Mozambique. On the whole intensities to import have risen steadily throughout the 2nd half of the 1990s. Malawi's intensity to export to other SADC economies (excluding SACU) is more volatile, with peaks during 1995 and 1996, after which a considerable drop occurred in 1997 and 1999. In spite of not having a common border, Zimbabwe appears to be the main partner in terms of exports, with Mozambique, Tanzania and sometimes Zambia.

Table 4: Intensity of trade between Tanzania & the rest of SADC (excluding SACU)

a) Import Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola		10.07						0.00		
2 Congo Dem Rep								0.37	0.27	1.25
3 Malawi		17.05			27.27	62.24		17.33	22.12	15.41
4 Mauritius	0.20	0.55	1.48	4.72	0.43	2.54	11.24	1.51	6.32	3.10
5 Mozambique					27.98	2.92	74.49		0.48	
6 Seychelles						1.78			2.84	0.44
7 Tanzania										
8 Zambia								13.28	22.26	63.01
9 Zimbabwe	30.02	10.97	7.62	12.76	54.14	22.18	10.00	23.03	8.40	21.33
10 Total	4.07	5.50	1.05	2.50	11.66	6.39	4.38	6.35	5.47	9.59

b) Export Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola								0.65	1.07	0.19
2 Congo Dem Rep								52.70	69.58	46.02
3 Malawi		4.13			10.15	12.00		32.80	59.56	26.96
4 Mauritius	3.53	57.99	10.20	15.15	6.68	9.37	1.17	4.76	0.08	
5 Mozambique								0.95	7.39	7.27
6 Seychelles	0.59					0.26			0.16	3.18
7 Tanzania										
8 Zambia								9.54	34.21	35.95
9 Zimbabwe	14.85	23.25	37.68	8.87	5.19	10.38	11.90	101.63	14.87	65.67
10 Total	18.93	85.20	47.77	23.97	21.98	31.96	13.05	202.66	186.59	184.93

Source: UN Comm Trade Data according to Stats Canada's World Trade Analyser and own Calculations

Compared to Malawi and Zimbabwe, Tanzania's intensity to import from SADC (excluding SACU) is much lower

as can be seen in the last row of Table 4a). The main partners in this regard are Zambia, Malawi and Zimbabwe. On the export side, Tanzania is starting to develop some markets in the Democratic Republic of Congo, while the export intensity with the traditional partners such as Malawi and Zambia remain solid. However, the intensity to export to Zimbabwe is rather erratic.

Table 5: Intensity of trade between Zambia & the rest of SADC (excluding SACU)

a) Import Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola										
2 Congo Dem Rep										
3 Malawi		50.30			68.44	65.71				
4 Mauritius	1.10	7.97	2.98	3.07	2.55	0.89	0.14	2.98	0.81	1.42
5 Mozambique					3.65	1.61	2.74			
6 Seychelles										
7 Tanzania								16.15	90.58	83.63
8 Zambia										
9 Zimbabwe	185.60	265.48	146.03	200.47	195.16	285.51	253.94	339.80		292.38
10 Total	25.16	34.98	16.94	28.13	39.63	49.43	41.36	61.28	5.24	52.67

b) Export Intensity Index

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
1 Angola										
2 Congo Dem Rep										
3 Malawi		30.85			68.30	26.53		107.45	71.75	
4 Mauritius	0.06	0.11				0.05		8.13	0.60	
5 Mozambique					0.53	1.54	1.03			
6 Seychelles							0.04			
7 Tanzania								22.46	58.92	146.54
8 Zambia										
9 Zimbabwe	43.19	64.08	39.10	50.24	33.30	68.65	74.35	148.57		159.38
10 Total	43.16	94.84	39.01	50.15	101.93	96.60	75.30	286.12	131.04	305.44
Sum - total	0.09	0.20	0.09	0.10	0.19	0.17	0.13	0.51	0.23	0.47

Source: UN Comm Trade Data according to Stats Canada's World Trade Analyser and own Calculations

Zambia's trade data in the data base is very erratic. Except for 1998, only trade with Zimbabwe is represented in a consistent way. On the whole the data suggests that the trade intensities of Zambia with SADC excluding SACU have not become weaker during the 1990s. Indeed, if any conclusion can be drawn from Zambia's patchy trade data, it is that its intensity to trade with SADC excluding SACU has increased.

Section 4: Conclusions

An often heard remark is that since the opening up of its trade relations, South Africa has diverted SADC trade to the detriment of other SADC economies. Although the data is rather sketchy, especially in terms of intra SADC trade excluding SACU, the conclusion is that SACU has indeed increased its intensity to import from and export to SADC dramatically during the 2nd half of the 1990s. However, the same can be said of import and export intensities within SADC excluding SACU. In other words from SADC's perspective trade with SACU is becoming more important, but this is not at the cost of trade with each other.

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