Chapter 3

SADC trade integration – the effect of trade facilitation on sectoral trade: a quantitative analysis

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1. Introduction

Regional integration is seen by many policy makers all over the world as an important policy instrument. This is particularly true for developing countries. Interest in regional integration has increased recently; notably, the European Union (EU) has upgraded regional integration to a key pillar of its development cooperation. Consequently, it is important to measure progress in regional integration.

Regional integration has long been seen as a major instrument for economic progress worldwide and has been studied widely, both in general terms as well as in the context of developing countries (e.g. Balassa 1961; El Agraa 1999). While interest in regional integration has been part of the development discourse since the Second World War, there has been a new wave of interest in regions in the development process since the 1990s. The questions 'Why do countries form regions?' and 'How do they affect their members, those excluded, and the international system?' are back on the agenda (Page 2000). This can be understood against the background of wide-ranging changes at international, regional and national levels.

At a global level, the multilateral trading system has been extended (to include new issues such as competition, intellectual property rights, non-tariff barriers, subsidies and investment) and strengthened following the establishment of the World Trade Organisation (WTO). At a national level, governments changed the way they intervene and regulate. At a regional level, we see rising intra-regional trade, more formal regional organisations, and other evolving forms of cooperation.

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The international structure is becoming more diverse with a mix of countries and groups at various stages or degrees of integration. Both regionalisation and globalisation are evolving in parallel. Many economists see regional integration as contradicting and undermining global integration – as a second-best solution that is at best a 'stumbling block' on the way to that first-best situation. Often multilateral rules are bypassed when new protections are built into regional designs. However, others see regional integration more positively: as complementing global integration, as being a stepping stone to global integration, or as helping to reduce possible negative consequences of globalisation.

Although many share the view that the world tends to be carved up into regions, this cannot be taken for granted. While the benefits of global integration are currently questioned by many (as suggested by the stalled talks on multilateral trade negotiations), so the progress of regional integration is also being questioned. Furthermore, the depth of regional integration varies widely. At one extreme, the integration of the EU has grown considerably; the EU now speaks as one unit in international trade negotiations and uses a single currency in much of Europe. Nevertheless, the integration process of the EU as planned is far from completed and how far it will actually go is uncertain. As the discussions and divisions in the EU constitution show, deep economic and political regional integration is not at all certain. More importantly, this vision of deep regional integration is not the one pursued by other regional blocs who see regional integration as more of an open process. At the other end, Africa's progress in regional integration has not reached far. One can argue that the political and social conditions for regional integration seem no easier to meet than those for global integration (Page 2000).

The 'new regionalism' takes a comprehensive view of regional integration, going beyond economics to refer to politics, security, culture and also diplomacy. Furthermore, it goes beyond the focus of government and looks at other actors such as business and the civil society as well, complementing the 'top-down' with the 'bottom-up' perspective. The new regionalism can also be described as more spontaneous and open, and thus compatible with an interdependent world economy. The new regionalism is more dynamic, as it is also driven by the private sector. Although the advocates of regional integration and the general public see regional

integration as positive, this cannot be taken for granted. Empirically, the questions whether regional integration has positive or negative results for economic growth, how this growth is distributed, how poverty is affected, and others are not conclusively answered.

The idea of this paper came up after a series of interviews with the private sector in the Southern African Development Community (SADC) region showed that within the selected countries, as well as in trade and production sectors, doubts about SADC benefits prevail over the belief in new trade and job opportunities throughout regional integration. The private sector has a pragmatic acceptance that SADC integration is an ongoing process which will deepen in the future. Nevertheless, according to our interviews, expectations in positive effects of trade facilitation are bigger than expectations towards positive effects of a Free Trade Agreement (FTA).

The aim of this paper is to search for empirical evidence on how big the effects of trade facilitation could be in the SADC region, to shed some light on the relationship between trade facilitation and trade flows, and to evaluate the potential benefits of trade facilitation in terms of boosting exports.

This issue is of growing interest in the trade policy debate since trade facilitation has been included in the Doha Development Agenda. The mandate for the WTO negotiations on trade facilitation was adopted in July 2004. Special and differential treatment as well as technical assistance and capacity building are integral parts of the negotiations and are linked to the final outcome. The mandate encourages WTO members to assess their trade facilitation needs and priorities, mainly those of developing and least-developed countries. Any trade facilitation efforts made by developing countries to accomplish the WTO mandate will unquestionably have a positive effect on trade volumes and will help to improve economic development and living standards. While other trade costs (tariffs and non-tariff barriers) have fallen as a result of WTO trade negotiations and regional integration agreements, transaction costs related to cross-border trade procedures have become relatively more important.

2. Modelling trade facilitation

The measurement and quantification of the potential benefits of trade facilitation have only recently been investigated. Although increasing attention has been paid to this issue, no consensus has been reached regarding the trade policy discourse on the definition of trade facilitation. In most cases, two ways of defining this concept have been used. On the one hand, trade facilitation in a narrow sense includes the so-called 'at the border procedures', such as customs documentation or the time involved in crossing a border. On the other hand, trade facilitation in a broad sense also includes some 'inside the border' elements, such as institutional quality, regulatory environment and service infrastructure. Since the effect of institutional quality and regulatory environment on trade has already been investigated elsewhere, we focus here on the narrow definition and consider only 'border' related elements. In this line, trade facilitation is understood as the reduction, or at least the simplification, of 'at the border procedures', comprising a number of documents and the time involved in crossing the border as well as the transaction cost incurred. In addition, we consider the Technological Achievement Index as a proxy for services infrastructure, whose composition includes several indicators of service infrastructure.

As far as we are aware, the effects of trade facilitation on trade volumes at a disaggregated level have not yet been investigated. The innovation of the paper consists in using recent methodological developments to address the issue of trade facilitation at the sectoral level.

2.1 Empirical analysis

Model specification

One of the main devices used to analyse the determinants of international trade flows is the gravity model of trade.[2] Recently, some authors have referred to this model as

[2] The gravity model of international trade has become one of the standard tools for analysing trade patterns and trade. In its usual modern articulation, the gravity model hypothesises that the larger, the richer and the closer together two countries are, the more they trade. Also, the more things they have in common, such as currency, language, shared political histories or colonial connections, a border, the more intensively they trade. Coastal states trade more than landlocked states because they connect more easily. Standard gravity models explain about two-thirds of the variation in global trade, leaving only one-third to be explained by other trade theories.

the 'workhorse' of empirical trade studies (Eichengreen and Irwin 1998; Cheng and Wall 2005). A (traditional) gravity equation augmented with trade facilitation variables is specified and estimated for disaggregated data. The estimated equation is:

Basic equation[3]:

$X_{ij} = \beta_0 + \beta_1 * contig_{ij} + \beta_2 * comlang\_soff_{ij} + \beta_3 * lndist_{ij} + \beta_4 * landl\_ex_i + \beta_5 * landl\_im_j + \beta_6 * lntariff_j + \beta_7 * servinfr05\_im_j + \beta_8 * servinfr05\_ex_i + \beta_9 * lngdpim_j + \beta_{10} * lngdpex_i + \beta_{11} * lnpopim_j + \beta_{12} * lnpopex_i + \mu$, where

- X_{ij} is the total trade flow from country i to country j in 2005;
- $contig_{ij}$ is a dummy taking the value one if trading partners are contiguous;
- $comlang\_off_{ij}$ is a dummy taking the value one if trading partners share a common official language;
- $lndist_{ij}$ is the natural log of the distance (in kilometers) between the trading partners' capitals;
- $landl\_ex_i$ is a dummy taking the value one if the exporting country is landlocked;
- $landl\_im_j$ is a dummy taking the value one if the importing country is landlocked;
- $lntariff_j$ is the natural log of the average tariff applied by the importing country;
- $servinfr05\_im_j$ proxies the services infrastructure of the importing country;[4]
- $servinfr05\_ex_i$ proxies the services infrastructure of the exporting country;[5]
- $lngdpim_j$ is the natural log of the importing country's GDP (in USD);
- $lngdpex_i$ is the natural log of the exporting country's GDP(in USD);
- $lnpopim_j$ is the natural log of the importing country's population;
- $lnpopex_i$ is the natural log of the exporting country's population; and
- μ is the error term.

In a second step, the basic equation is enlarged by dummy variables indicating whether the trading partners belong to one of the regional integration schemes that are officially recognised by the African Union (i.e. Arab Maghreb Union (UMA), Community of Sahel-Saharan States (CEN-SAD), Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), Economic Community of West African States (ECOWAS), Economic Community of Central African States

[3] For the selection of countries, data, sources and variables see Annex 1.
[4] The services infrastructure proxy is composed of three equally weighted parts: (i) telephones (fixed mainlines) per 1000 people in 2005, (ii) telephones (mobile subscribers) per 1000 people in 2005, (iii) internet users per 1000 people in 2005.
[5] See footnote above.

(ECCAS), Inter-Governmental Authority on Development (IGAD), Southern African Development Community (SADC); cf. Economic Commission for Africa/African Union (2006:vii)). A 'SADC13' dummy is added in order to capture possible trade-enhancing effects of SADC if South Africa is not considered to be part of it. A dummy for SACU membership is excluded from the analysis because only in 16 out of 1231 cases such a dummy would show a positive value in such a variable.[6]

Thirdly, we add to the basic equation 'doing business' indicator variables, namely the time needed to export/import (days), documents needed to export/import (number), and the natural log of costs needed to export/import (USD per container). Thus, we analyse how trade facilitation impacts on African trade flows.

Fourthly, we interact the 'doing business' indicator variables as well as the tariff variable with the SADC dummy to see how trade facilitation and tariffs affect trade flows in the case of Southern Africa.

Finally, we apply the same procedure to the SADC13 dummy in order to find out whether the SADC membership of South Africa biases our results.

2.2 Results

Table 1 shows a standard Ordinary Least Square (OLS) regression which analyses the dependence of the value of bilateral exports for all African countries in the data set (basic equation), for the influence of SADC as a whole (SADC14) and for the influence of SADC without considering South Africa (SADC13), on the variables listed in the first column.

[6] We tried out what the result would be of including a SACU and RIA (Regional Integration Agreement) dummy in the basic equation. Doing so generates a coefficient of minus 5.14, highly negative and additionally significant (t-value-3.7)! This result suggests additionally that including a SACU dummy variable in the data set does not make sense, since the structure of our data base is not proper for telling a separate SACU impact story.

Table 1: Tariffs and trade zones

	basic equation		basic equation + RIA dummies (SADC14)		basic equation + RIA dummies (SADC13)	
	coefficient	t-values	coefficient	t-values	coefficient	t-values
contig	0.31	0.51	0.55	0.87	0.71	1.12
comlang_off	2.73***	9.08	2.82***	9.37	2.82***	9.41
lndist	-3.95***	-15.08	-3.46***	-11.83	-3.40***	-11.80
Landl_ex	-0.20	-0.58	-0.46	-1.33	-0.44	-1.29
Landl_im	-1.74***	-5.28	-1.84***	-5.61	-1.82***	-5.58
lntariff	0.69*	1.78	1.40***	3.39	1.42***	3.50
servinfr05_im	0.12***	4.01	0.11***	3.65	0.12***	3.97
servinfr05_ex	0.17***	5.59	0.16***	5.17	0.17***	5.51
lngdpim	0.20	0.87	0.27	1.19	0.25	1.07
lngdpex	0.65***	2.59	0.69***	2.76	0.66***	2.64
lnpopim	1.04***	4.34	0.93***	3.80	0.98***	4.05
lnpopex	0.96***	3.93	0.97***	3.98	1.04***	4.27
censad			-0.72	-1.55	-0.74	-1.60
Uma			-1.84	-1.22	-2.01	-1.34
comesa			0.97**	2.01	0.81*	1.68
Eac			1.41	0.55	1.33	0.52
ecowas			2.34***	3.12	2.43***	3.26
eccas			-0.66	-0.69	-0.55	-0.58
Igad			-2.96*	-1.89	-2.86*	-1.84
Sadc			1.99***	3.61		
Sadc13					2.64***	4.60
Cons	-15.50***	-3.47	-21.98***	-4.69	-23.43***	-4.99
N	1231		1231		1231	
adj R-squared	0.4289		0.4412		0.4448	

Notes: contig=dummy that equals 1 if trading partners are contiguous; comlang_off=dummy that equals 1 if trading partners share a common official language; lndist=natural logarithm of the distance between the trading partners' capitals (in kilometers); landl_ex=dummy that equals 1 if exporting country is landlocked; landl_im=dummy that equals 1 if importing country is landlocked; lntariff=natural logarithm of average tariffs applied by importing countries; servinfr05_im=proxy for services infrastructure of importing country; servinfr05_ex=proxy for services infrastructure of exporting country; lngdpim=natural logarithm of the importing country's GDP; lngdpex=natural logarithm of the exporting country's GDP; lnpopim=natural logarithm of the importing country's population; lnpopex=natural logarithm of the exporting country's population; censad=dummy that equals 1 if both trading partners belong to CENSAD; uma=dummy that equals 1 if both trading partners belong to UMA; comesa=dummy that equals 1 if both trading partners belong to COMESA; eac=dummy that equals 1 if both trading partners belong to EAC; ecowas=dummy that equals 1 if both trading partners belong to ECOWAS; eccas=dummy that equals 1 if both trading partners belong to ECCAS; igad=dummy that equals 1 if both trading partners belong to IGAD; sadc=dummy that equals 1 if both trading partners belong to SADC; sadc13=dummy that equals 1 if both trading partners belong to SADC excluding South Africa; N=number of observations; asterisks denote the statistical significance of the coefficients at the 10% (*), 5% (**), and 1% (***) levels

The most striking empirical results are highlighted in the table above. We find in the basic equation that the coefficient of the 'lntariff' variable is positive (!) and significant, which would mean the higher the tariffs, the higher the trade flows. Of course we know that in reality this is not true. Apparently we face a problem of endogeneity (where the independent variable volume of trade in its monetary value is correlated with the error term of the equation). Nevertheless, there are some imaginable

situations where higher trade is correlated with higher tariffs, i.e. importing countries raise (import) tariffs the more they import, in order to augment government revenue.

The fourth and fifth columns verify whether the membership in trade or regional integration bodies has an additional effect on trade flows besides those already identified in the basic equation. Bear in mind that this second model includes trade flows between all SADC countries, including South Africa. We find that COMESA, ECOWAS, and SADC impact positively on trade (trade flows increase), but that IGAD impacts negatively (!) on trade (trade flows decrease). Unfortunately we still have no explanation for this last finding. Further research would be necessary to better understand this result.

Finally, the last two columns apply the same model as the former one, excluding South African trade from the analysis. We find that the positive impact of SADC on trade is not due to an apparently positive South African influence on SADC trade flows. What is more, the positive impact of SADC on trade seems to be even higher when excluding South African participation from the analysis rather than including it. In other words, even if there is no doubt about the importance of the South African role for the existence and performance of SADC as an integration body, South African participation in SADC trade not only increases trade; the increase won by South African participation is partly at the expense of the loss of some trade opportunities for other SADC countries, which in the end is exactly what many of our interview partners stated in the conversations.

Table 2: Time, documents and costs

	basic equation + doing business (time)		basic equation + doing business (documents)		basic equation + doing business (costs)	
	coefficient	t-values	coefficient	t-values	coefficient	t-values
contig	0.57	0.94	0.34	0.55	0.66	1.10
comlang_off	2.68***	9.04	2.72***	9.01	2.57***	8.73
lndist	-3.89***	-15.04	-3.93***	-14.96	-3.90***	-15.25
landl_ex	1.12***	2.74	-0.17	-0.51	2.15***	4.79
landl_im	-1.47***	-3.88	-1.71***	-4.72	-1.49***	-3.26
lntariff	0.77**	2.00	0.71*	1.79	0.77**	1.98
servinfr05_im	0.11***	3.43	0.12***	3.95	0.11***	3.36
servinfr05_ex	0.15***	4.88	0.17***	5.00	0.05	1.57
lngdpim	0.23	1.00	0.20	0.89	0.25	1.06
lngdpex	0.42*	1.69	0.68***	2.65	1.50***	5.60
lnpopim	1.04***	4.37	1.04***	4.33	1.00***	4.11
lnpopex	1.27***	5.14	0.94***	3.79	0.06	0.21
time_ex07	-0.09***	-5.49				
time_im07	-0.01	-1.29				
doc_ex07			-0.05	-0.59		
doc_im07			-0.01	-0.17		
lncost_ex07					-3.83***	-7.73
lncost_im07					-0.34	-0.74
cons	-13.39***	-3.02	-15.54***	-3.47	9.07	1.56
N	1231		1231		1231	
adj R-squared	0.4424		0.4281		0.4549	

Notes: contig=dummy that equals 1 if trading partners are contiguous; comlang_off=dummy that equals 1 if trading partners share a common official language; lndist=natural logarithm of the distance between the trading partners' capitals (in kilometers); landl_ex=dummy that equals 1 if exporting country is landlocked; landl_im=dummy that equals 1 if importing country is landlocked; lntariff=natural logarithm of average tariffs applied by importing countries; servinfr05_im=proxy for services infrastructure of importing country; servinfr05_ex=proxy for services infrastructure of exporting country; lngdpim=natural logarithm of the importing country's GDP; lngdpex=natural logarithm of the exporting country's GDP; lnpopim=natural logarithm of the importing country's population; lnpopex=natural logarithm of the exporting country's population; time_ex07= time needed to export (days); time_im07= time needed to import (days); doc_ex07=documents needed to export (number); doc_im07=documents needed to import (number); lncost_ex07=natural logarithm of costs needed to export (USD per container); lncost_im07=natural logarithm of costs needed to import (USD per container); N=number of observations; asterisks denote the statistical significance of the coefficients at the 10% (*), 5% (**), and 1% (***) levels

Table 2 shows the regression results checking for the influence of time, bureaucracy (number of documents) and costs on trade flows. Again, the most striking results are highlighted in the table. The results in the first pair of columns of the table refer to the effect of time on trade flows, in the middle pair of columns refer to the number of documents and the last pair of columns refers to the costs. We find that in relation to time, being landlocked is significantly positive (landlocked countries trade more) and time to export has a significantly negative impact on trade flows (the more time it takes to export, the lower the trade flows). One possible interpretation of this result is

that it would seem that non-landlocked (coastal) countries prefer to export to overseas countries, whereas landlocked countries prefer to export to neighbouring countries.

In the second specification (the basic equation + doing business (documents)) we find that the number of documents needed to trade (this is for import and/or for export) does not matter. This has no significant impact on trade flows.

In the third specification (the basic equation + doing business (costs)) we find that being landlocked is significantly positive (landlocked countries have higher trade flows); costs to export has a significantly negative impact on trade flows (the higher the costs, the lower the trade flows). Interestingly, costs impact on trade seems to be quite tremendous. We must try to understand these last two results jointly in their context. For landlocked countries, trade costs are usually higher than for non-landlocked countries, so high costs reduce trade flows. Nevertheless, trade openness is a need in a modern world, and since trade integration with neighbouring countries (see Table 3) is one possibility of reducing trade costs, being landlocked can show positive effects on trade at the same time when costs impact negatively on trade.

Table 3: Time, documents and costs for SADC14

	basic equation + (SADC14*time)		basic equation + (SADC14*documents)		basic equation + (SADC14*costs)		basic equation + (SADC14*tariffs)	
	coefficient	t-values	coefficient	t-values	coefficient	t-values	coefficient	t-values
Contig	0.18	0.29	0.20	0.33	0.21	0.34	0.16	0.26
Comlang_off	2.73***	9.12	2.71***	9.07	2.67***	8.98	2.72***	9.12
Lndist	-3.67***	-13.67	-3.65***	-13.52	-3.60***	-13.37	-3.69***	-13.77
landl_ex	-0.40	-1.17	-0.40	-1.18	-0.61*	-1.77	-0.36	-1.07
landl_im	-1.80***	-5.50	-1.79***	-5.45	-1.69***	-5.16	-1.77***	-5.40
Lntariff	1.17***	2.88	1.23***	3.02	1.40***	3.41	1.10***	2.76
servinfr05_im	0.12***	3.82	0.11***	3.74	0.10***	3.26	0.12***	3.80
servinfr05_ex	0.17***	5.34	0.17***	5.41	0.18***	5.76	0.17***	5.31
Lngdpim	0.21	0.91	0.20	0.89	0.28	1.22	0.23	1.00
Lngdpex	0.63**	2.53	0.61**	2.44	0.48*	1.90	0.62**	2.51
Lnpopim	1.00***	4.16	1.01***	4.21	0.94***	3.92	0.98***	4.08
Lnpopex	0.98***	4.02	1.01***	4.16	1.13***	4.61	0.99***	4.11
stime_ex07	0.03	1.15						
stime_im07	0.02	1.04						
sdoc_ex07			0.27	1.58				
sdoc_im07			-0.01	-0.08				
slncost_ex07					2.83***	3.24		
slncost_im07					-2.47***	-2.90		
Stariff							1.00***	3.94
Cons	-18.09***	-4.03	-18.54***	-4.12	-18.86***	-4.20	-18.08***	-4.03
N	1231		1231		1231		1231	
adj R-squared	0.4355		0.4362		0.4401		0.4356	

Notes: contig=dummy that equals 1 if trading partners are contiguous; comlang_off=dummy that equals 1 if trading partners share a common official language; lndist=natural logarithm of the distance between the trading partners' capitals (in kilometers); landl_ex=dummy that equals 1 if exporting country is landlocked; landl_im=dummy that equals 1 if importing country is landlocked; lntariff=natural logarithm of average tariffs applied by importing countries; servinfr05_im=proxy for services infrastructure of importing country; servinfr05_ex=proxy for services infrastructure of exporting country; lngdpim=natural logarithm of the importing country's GDP; lngdpex=natural logarithm of the exporting country's GDP; lnpopim=natural logarithm of the importing country's population; lnpopex=natural logarithm of the exporting country's population; stime_ex07=(dummy that equals 1 if both trading partners belong to SADC)* (time needed to export (days)); stime_im07=(dummy that equals 1 if both trading partners belong to SADC)* (time needed to import (days)); sdoc_ex07=(dummy that equals 1 if both trading partners belong to SADC)* (documents needed to export (number)); sdoc_im07=(dummy that equals 1 if both trading partners belong to SADC)* (documents needed to import (number)); slncost_ex07=(dummy that equals 1 if both trading partners belong to SADC)* (natural logarithm of costs needed to export (USD per container)); slncost_im07=(dummy that equals 1 if both trading partners belong to SADC)* (natural logarithm of costs needed to import (USD per container)); stariff=(dummy that equals 1 if both trading partners belong to SADC)*(natural logarithm of average tariffs applied by importing countries); N=number of observations; asterisks denote the statistical significance of the coefficients at the 10% (*), 5% (**), and 1% (***) levels

Table 3 shows the same specification as Table 2, checking for trade flows between all SADC countries (trade flows if importer and exporter belong to SADC, considering all 14 member states), and again checking for the effect of time, bureaucracy and costs.

We find that time to trade does not impact significantly on intra-SADC trade, neither for import nor for export. This is interesting because, for trade with states outside SADC, time had a negative effect on trade.

As already observed in Table 2, just as for intra-SADC trade, the number of documents does not impact significantly on intra-SADC trade. However, costs associated with trade matter considerably in the case of intra-SADC trade; costs to export impact significantly positively on (increase in) trade flows; costs to import impact significantly negative on (decrease in) trade flows. The fact that high import costs reduce trade sounds quite understandable. But what about the positive impact of high export costs? An imaginable sequence for this issue could be the following: in the first stage, direct neighbouring export markets are gained (because it is less costly to export to them), but once these markets are fully supplied, additional export expansion needs to search for markets farther away. If export to these markets is successful, trade flows and export increase at the same time as costs (per unit) do. Some further research would be necessary to fully understand the positive relation between higher trade and higher costs and to understand whether this is the case for the year 2005 (our data base).

We also found that within SADC, tariffs impact positively on trade flows. To understand this result, we have to take into account that we are using a static and not a dynamic model for analysing trade flows. SADC member countries are currently involved in a tariff reduction process, but the dynamics in this process, the speed of tariff reduction and the real tariffs applied in 2005 (our data base) were not the same for all SADC countries. If trade flows were higher for countries which reduce tariffs at a lower speed, we would get this kind of relationship between high tariffs and high imports. Some further research on this issue is needed.

Table 4: Time, documents and costs for SADC13

	basic equation + (SADC13*time)		basic equation + (SADC13*documents)		basic equation + (SADC13*costs)		basic equation + (SADC13*tariffs)	
	coefficient	t-values	coefficient	t-values	coefficient	t-values	coefficient	t-values
contig	0.32	0.52	0.39	0.64	0.40	0.65	0.30	0.49
comlang_off	2.74***	9.17	2.72***	9.12	2.69***	9.06	2.73***	9.16
lndist	-3.64***	-13.62	-3.60***	-13.38	-3.57***	-13.28	-3.66***	-13.71
landl_ex	-0.40	-1.17	-0.40	-1.20	-0.54	-1.59	-0.36	-1.07
landl_im	-1.80***	-5.50	-1.78***	-5.46	-1.72***	-5.25	-1.76***	-5.38
lntariff	1.16***	2.90	1.24***	3.10	1.34***	3.33	1.09***	2.76
servinfr05_im	0.12***	4.08	0.12***	4.03	0.12***	3.80	0.12***	4.05
servinfr05_ex	0.17***	5.61	0.18***	5.71	0.18***	5.87	0.17***	5.59
lngdpim	0.19	0.85	0.19	0.82	0.23	1.01	0.22	0.95
lngdpex	0.61**	2.47	0.59**	2.36	0.50**	2.00	0.60**	2.44
lnpopim	1.03***	4.32	1.05***	4.41	1.02***	4.28	1.01***	4.24
Lnpopex	1.02***	4.21	1.07***	4.40	1.13***	4.64	1.04***	4.31
s13time_ex07	0.03	1.25						
s13time_im07	0.03	1.28						
s13doc_ex07			0.30*	1.67				
s13doc_im07			0.03	0.16				
s13lncost_ex07					2.15**	2.33		
s13lncost_im07					-1.73*	-1.92		
s13tariff							1.22***	4.58
Cons	-19.07***	-4.24	-19.87***	-4.40	-20.03***	-4.45	-19.11***	-4.24
N	1231		1231		1231		1231	
adj R-squared	0.4381		0.4397		0.4415		0.4381	

Notes: contig=dummy that equals 1 if trading partners are contiguous; comlang_off=dummy that equals 1 if trading partners share a common official language; lndist=natural logarithm of the distance between the trading partners' capitals (in kilometers); landl_ex=dummy that equals 1 if exporting country is landlocked; landl_im=dummy that equals 1 if importing country is landlocked; lntariff=natural logarithm of average tariffs applied by importing countries; servinfr05_im=proxy for services infrastructure of importing country; servinfr05_ex=proxy for services infrastructure of exporting country; lngdpim=natural logarithm of the importing country's GDP; lngdpex=natural logarithm of the exporting country's GDP; lnpopim=natural logarithm of the importing country's population; lnpopex=natural logarithm of the exporting country's population; s13time_ex07=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)* (time needed to export (days)); s13time_im07=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)* (time needed to import (days)); s13doc_ex07=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)* (documents needed to export (number)); s13doc_im07=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)* (documents needed to import (number)); s13lncost_ex07=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)* (natural logarithm of costs needed to export (USD per container)); s13lncost_im07=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)*(natural logarithm of costs needed to import (USD per container)); s13tariff=(dummy that equals 1 if both trading partners belong to SADC excluding South Africa)*(natural logarithm of average tariffs applied by importing countries); N=number of observations; asterisks denote the statistical significance of the coefficients at the 10% (*), 5% (**), and 1% (***) levels.

Table 4 repeats the exercise from Table 3, including all SADC members except South Africa. We find that time to trade does not impact significantly on intra-SADC13 trade. In other words, since this is the same result as for SADC14, we hereby prove that the irrelevance of time is not an issue related to South African trade. The number of documents needed to export has a significantly positive impact on intra-SADC13 trade. We should not interpret this result as 'the higher the number of documents the higher the trade flows'. We should instead consider that if markets

and business opportunities are interesting, exports will take place even if bureaucracy is complicated. The costs associated with trade also matter considerably in the case of intra-SADC13 trade; costs to export impact significantly positively (!) on trade flows, while costs to import impact significantly negatively on trade flows. Again, we should try to understand this result in the context of an ongoing but unequal process of tariff reduction.

Finally, also within SADC13, tariffs impact positively on trade flows. Recall that in Table 1 we found a different level of positive impact of SADC in general on trade, with or without South Africa. The overall impact is positive, but the impact without South Africa is even more positive. But now, checking on several details such as time, bureaucracy and costs, there is no difference for intra-SADC trade with or without South Africa. The results are just the same.

3. Conclusions

Private sector experiences with trade integration bodies different from SADC such as SACU or COMESA are 'better' than with SADC in the sense that exporting under COMESA or SACU rules is easier according to the opinion and experience of our interview partners. Nevertheless, empirical analysis shows quite different results, where SADC even happens to be a trade-increasing institution. One possible source for these contradictory results could be based on the fact that the qualitative interviews are not based on a representative selection.

Trade facilitation is more important for businessmen than mere tariff reductions. This private sector perception is consistent with empirical results. Several of our interview partners mentioned the hope that the implementation of an FTA would not only represent a tariff reduction but would go hand-in-hand with increasing trade facilitation.

Empirically, the most important source of trade facilitation is time. This is consistent with costs associated with a longer process for managing external trade in border customs offices. It is not the number of documents required. Surely fewer forms to fill in or easier forms to complete will represent a short saving of time, but, empirically, these possible savings happen to be of little importance considering the amount of time wasted due to slow transport.

Since this is true, implementing the FTA should be based on more efficiency in the border offices, and this efficiency gain is not necessarily linked to SADC procedures alone. A second important point regarding trade facilitation and the amount of time used for carrying out an export operation is infrastructure.

Interestingly, South Africa is empirically not that important for gaining advantages out of intra-SADC trade. In other words, there are SADC trade opportunities outside South Africa. Perhaps trade facilitation and an FTA could try to concentrate on these opportunities, identify them, and facilitate dissemination about their knowledge and access to them.

The empirical exercise showed that:

- Tariffs impact positively on trade (interpretation: problem of endogeneity, i.e. importing countries raise tariffs the more they import in order to augment government revenue).
- COMESA, ECOWAS and SADC impact positively on trade; however, IGAD impacts negatively on trade (this can be explained because all IGAD members are also COMESA members).
- The positive impact of SADC on trade is not due to a South African bias.
- Being a landlocked exporting country is significantly positive on trade (interpretation: it seems to be that non-landlocked countries prefer to export to overseas countries whereas landlocked countries export to neighbouring countries).
- Time to export has a significantly negative impact on trade flows in general.
- The number of documents needed to trade does not matter (neither positive nor negative impact).
- Costs to export have a significantly negative impact on trade flows; impact seems to be huge.
- Time to trade does not impact significantly on intra-SADC trade. This is because existing SADC trade would take place anyway, even if it were more time consuming, but it does not mean that there could be more and additional trading opportunities if time (and time-associated costs) were lower.
- Number of documents does not impact significantly on intra-SADC trade.

- Costs associated with trade matter considerably in the case of intra-SADC trade.
    - Costs to export have a significantly positive impact on trade flows (additional research required).
    - Costs to import have a significantly negative impact on trade flows.
- Also within SADC, tariffs impact positively on trade flows.

In conclusion, empirically seen, SADC is better for trade than businessmen perceive. We have been able to show that not all business opportunities are related to South Africa. So there seems to be important trade integration in SADC which does not flow through South Africa. Time and costs are crucial, but time and cost reduction do not seem to be closely related to number of documents. From a pragmatic point of view, this seems to mean that customs should rather 'make it quicker', which does not necessarily mean to 'make it easier'. Filling in eight or ten forms does not make a difference but waiting two or three days at the border does. This is understandable since more time in business means higher costs. 'Make it quicker' in practice could mean to double human resources in the customs office or even to expand customs infrastructure at the border. But it also means improving infrastructure (highways, railways, ports and airports) in order to move goods more quickly from one country to the other. Of course, no businessmen would complain about less bureaucracy, but data shows that the gains that could be achieved from these adjustments are less important than gains in time and costs. According to our empirical results, this is more important for intra-SADC trade rather than for trade from SADC to another African country outside SADC. As stated above, the fact that time and tariffs seem to not be important for intra-SADC trade does not mean that there could not be an intra-SADC trade increase or new or additional trading opportunities with lower tariffs or quicker trade facilitation. It means instead that the 2005 intra-SADC trade flows took place in spite of existing difficulties. But this is only true for exports; intra-SADC imports are more sensitive to the lack of trade facilitation than intra-SADC exports. This is consistent with the finding that SADC helps to increase exports, even to African countries outside the bloc. So we can see that there is an increasing export capacity in SADC countries; but not all of this increase goes to other SADC countries since there is a lack of import facilitation.

All these findings are consistent with the main results of the interview series with the private sector. Exporters do not object to tariff reduction, but cost reduction via better infrastructure and a shorter waiting time at the border have a much higher cost-reducing impact than tariff reduction could have had.

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Annex 1: Selection of countries, data, sources and variables

Country selection

- Trade flows from 2005:
    - exporting countries (33): Algeria, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African Republic, Côte d'Ivoire, Egypt, Ethiopia, Gabon, Gambia, Ghana, Madagascar, Malawi, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, São Tomé and Principe, Senegal, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe
    - importing countries: all 53 African countries
- 52*33=1716; N=1231 because of missing values, e.g. in the case of 'doing business' indicators
- Gravity equations based on trade data from 2006 were also calculated. The results of these regressions are not reported here because they yield very similar results. Furthermore, they have less explanatory power, since in 2006 there is only data on exports of 24 African countries (in comparison to 33 African countries in 2005); i.e. the number of observations in 2006 is smaller.

Data and sources

We have a data set for all African countries and a data set for Southern Africa.

Data sources:

- Data on bilateral trade flows stems from the UNCOMTRADE online database.
- Data on distances between trading partners, a common official language, being contiguous and being landlocked stems from the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), available: http://www.cepii.fr/anglaisgraph/bdd/distances.htm [30 March 2008].
- Data on average tariffs on imported goods stems from Market Access Map (International Trade Centre – UNCTAD/WTO, available: http://www.macmap.org/, 30 March 2008). We use tariffs from 2006 and 2007

respectively, depending on the country. Unfortunately, it was impossible to obtain data on tariffs from 2005. We assume that the average applied tariff from African countries did not change much between 2005 and 2007.

- Data to approximate services infrastructure stems from the World Bank's World Development Indicators 2007. The services infrastructure proxy is composed of three equally weighted parts: (i) telephones (fixed mainlines) per 1000 people in 2005, (ii) telephones (mobile subscribers) per 1000 people in 2005, (iii) internet users per 1000 people in 2005.
- Data on the Gross Domestic Product (GDP) (in US dollars) and population of trading partners stems from the World Bank's online 'quick query', available: (
- http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method= getMembers&userid=1&queryId=27 [30 March 2008].
- Data on African regional integration schemes stems from: The Economic Commission for Africa/African Union. 2006. *Assessing Regional Integration in Africa II – Rationalizing Regional Economic Communities*. Addis Ababa. The eight trading blocs used for this analysis (i.e. Arab Maghreb Union (UMA), Community of Sahel-Saharan States (CEN-SAD), Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), Inter-Governmental Authority on Development (IGAD), and the Southern African Development Community (SADC)) are the only African ones that are officially recognised by the African Union (cf. Economic Commission for Africa/African Union (2006:vii).
- Data on time, documents and costs for trade stems from the 'doing business' indicators of the World Bank (online database, available: http://www.doingbusiness.org/ [30 March 2008). In the analysis, 'doing business' indicators from 2007 were used, mainly due to two facts: (i) 'doing business' indicators are very stable over time, therefore it is reasonable to assume that the values from 2007 are almost the same as those from 2005; (ii) in 2007 there are many more 'doing business' indicators for African countries than in previous years.