Chapter 4

Aid for Trade and the Integration of Small and Vulnerable Economies into the Global Economy

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4.1 Background

This chapter extends the assessment of Aid for Trade (AfT) to a special group of countries, known as the small and vulnerable economies (SVEs). SVEs are a group of developing countries facing some unique challenges related to their integration into the global economy.[1] This group mainly includes Caribbean and Pacific small and island states, whose exports tend to be concentrated in a few sectors and are extremely vulnerable to the volatile international markets.

Because of their small populations, the domestic market is small in these countries. As a result, most of the firms are small and medium-sized enterprises with limited opportunities for reaping the benefits of economies of scale and investing in research and development.[2] Also, most SVEs have a poor investment climate and weak institutions, are remote and lack skilled labour or adequate human capital; these problems limit access to external capital and constrain industrial development. Small states are also characterised by lack of competition in product markets. This leads to a misallocation of resources, inefficiencies in production and lack of incentives for innovation. Moreover, the small size of the domestic market often implies that production cannot enjoy economies of scale in most sectors. All these factors contribute to high unit production costs for firms in these countries. The high production costs are compounded by high transport costs due to the remoteness and insularity of many small states. This implies that SVEs need to charge higher prices to stay in business or else accept lower returns on some part of their costs than larger economies.

The vulnerability of small states to fluctuations in input and output prices is aggravated by their undiversified economic bases, which themselves are in many cases an outcome of their limited size and the scarcity of human capital. For most economies in the Pacific and Caribbean regions, the combined share of the first and second commodity/service is over 50 per cent in the total exports of goods and services. Many other small states in different regions exhibit a similar pattern, which indicates the higher vulnerability of these states to internal and external shocks.

In addition, in the context of wider integration, Mattoo and Subramanian (2004) argue that small states face systematic problems within the multilateral trading system despite acquiring significant influence in the system since the Uruguay Round. This is because of their limited bargaining power in trade negotiations and misalignment of their interests with those of the broader trade liberalisation agenda. Importantly, the cost of doing business in small states seems to be generally higher than in other

countries. In a Commonwealth Secretariat study, Winters and Martins (2005) find that business costs, particularly transport and labour, are significantly higher in small states.[3] On average, micro (and very small) states face cost penalties ranging from 22 to 222 per cent relative to the median country. The authors argue that small consignment size, poor infrastructure, lack of competition and weak institutions inflate the costs of trade, and create such strong economic disadvantages for these countries.

In this context, well-designed trade-related assistance may help SVEs face the challenges posed by their characteristics. This is particularly the case during a time when the prospects for small states have deteriorated further because of (future) preference erosion and the emergence of new and large competitors (Briguglio et al. 2006). Many small economies are critically dependent on trade preferences that they have enjoyed for quite some time but are now being eroded because of the changing trade regimes in developed countries. There is evidence that some of these countries are likely to face severe consequences arising from further multilateral trade liberalisation. Given all this, a review of the small states agenda proposed in the Commonwealth Secretariat/World Bank Joint Task Force Report (2000) suggests the need for small states to reposition themselves in the global economy and move further into knowledge-based and service industries. Qureshi and te Velde (2008) suggest how this can be done, and AfT can play a role. The report also calls for a renewed effort of the donor community in helping small states address the challenges of an adjustment of the economy. It is worth pointing out that the scope of the World Trade Organization's (WTO's) AfT agenda comprises helping countries adjust to trade shocks and, given this, mitigating the loss in trade preferences through most favoured nation (MFN) tariff reductions by developed countries constitutes an interest of small states.

This chapter takes the issue of AfT in small states seriously. It sheds light on the extent to which SVEs have been able to access AfT funds and on whether or not and to what extent this assistance has helped SVEs improve their trade performance. It is organised as follows: Section 4.2 examines the rationale for AfT to SVEs by looking at the evolution of their significance in global trade, and the expected costs of adjustment from trade integration; Section 4.3 describes the programmes and institutions offering AfT and in particular to countries such as SVEs; Section 4.4 takes stock of the volumes and types of trade-related assistance that SVEs have received so far and compares them with other developing countries; Section 4.5 analyses how AfT could help developing countries integrate in the global economy through an export demand model with particular reference to SVEs and, furthermore, reviews some suggestive evidence on the effectiveness of AfT on trade-related performance; Section 4.6 provides empirical results associated with the impact of AfT on export performance in SVEs and other developing countries; and Section 4.7 concludes by drawing some policy implications for SVEs.

4.2 The rationale behind Aid for Trade in SVEs

Until the recent economic slowdown, the global process of economic integration amongst countries intensified, underpinned by an unprecedented rise in volume of trade and capital flows and a reduction in barriers to worldwide trade and investment

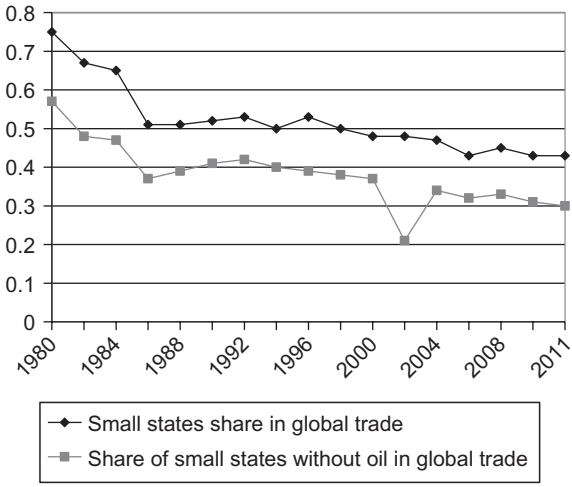
activities. This drive to globalisation received substantial impetus from the birth of the WTO, providing specific trade rules and procedures, and promising further liberalisation in the world trade regime. Despite these developments there remain serious concerns that small states have failed to derive significant benefits from the process of trade liberalisation and globalisation.

The introductory section above has highlighted a number of overriding problems constraining the economic development of small states. Most of these problems would potentially constrain these countries' international competitiveness, preventing their effective participation in global trade. The trade data seem to confirm this fear, suggesting that over the years small states have become marginalised in global trade. During the period between 1980 and 2011, combined global share of total goods and services of the set of 43 small states in our list had fallen from 0.75 per cent to 0.62 per cent.[4] When the five oil-exporting small states are excluded, the comparable share falls from 0.57 per cent to 0.3 per cent. The trends indicate sustained declining significance of small states. Even when considering only services trade, which is more important than merchandise trade for a number of small states, their declining significance cannot be overlooked. Small states' share in such trade has fallen from as high as 0.95 per cent in 1985 (when the first data on commercial services exports started to become available) to 0.7 per cent in 2011. When the set of Small Island Developing States (SIDS) is considered, the share falls from 0.58 per cent in 1980 to 0.21 per cent in 2012. Since the mid-1990s, both global merchandise and commercial services exports have grown on average at 10 per cent per annum, while merchandise exports from non-oil-exporting small states have registered a modest annual growth of only 6 per cent. The growth of commercial services exports from small states was also lower, at 8 per cent per annum. These figures are significantly lower than the average growth of merchandise and commercial services exports from least developed countries (LDCs), which are estimated to be about 18 and 10 per cent respectively over the same period of time (Calì et al. 2011).

Seventy per cent of the small states in our sample (i.e. 27 of the 39 countries referred to above) have a lower share in 2008 than in 1995. In the case of services, the corresponding share is 72 per cent (28 countries) (Calì et al. 2011). On the whole, small states' marginalisation in world trade remains unabated. Figure 4.1 shows that small states without the oil-exporting countries' share in global merchandise and commercial services have been subject to secular decline as it fell from 0.5 per cent in 1980 to 0.30 per cent in 2011.

Because of their inherent economic characteristics associated mainly with the small size of the domestic market, SVEs are more dependent on international trade for their growth and economic development. Indeed, the trade orientation in these countries is generally much higher than that of other developing countries. The mean ratio of exports to gross domestic product (GDP) in small states is about 55 per cent compared with less than 30 per cent for the world economies. Consequently, marginalisation of these economies in world trade could seriously jeopardise their growth and development. Along with the problem of smallness, which results in non-exploitation of increasing returns to scale in production and diversification opportunities into a

Figure 4.1 Exports and imports of goods and services, annual 1980–2011



Source: Authors' own estimates using UNCTAD data

wide range of activities, these countries also suffer from lack of productive capacity, trade-related infrastructures and adequate and effective trade policy and regulations. All this has contributed to dwindling comparative advantage, as reflected in their declining trade share. AfT has been specifically designed to address many of these issues and is thus extremely relevant to an international support regime that aims to foster beneficial participation of vulnerable countries in global trade.

Another important aim of AfT is to help developing countries adjust to multilateral trade liberalisation processes. There can be various adjustment requirements, ranging from tackling export shortfalls to capacity development for dealing with new trade measures and provisions, where support would be required. Amongst these, adjustment support for loss of trade preferences has become one of the most critical issues for many small and vulnerable economies. Calì et al. (2006) provide a review and summary of such estimates for a large sample of developing countries from which it is possible to compute the estimated losses for SVEs.

There are many estimates of these costs available, with those by the International Monetary Fund (IMF) and WTO probably the most consistent across countries and products. Gillson et al. (2004) has more detailed ones for sugar and bananas. We use various studies to provide the preference erosion figures reported in Table 4.1. The lower bound is obtained by adding two sets of estimates from WTO studies: Low et al. (2005) estimation of costs for non-agricultural products due to preference erosion and Low et al. (2006) estimation of costs for agricultural products due to preference erosion. The upper bound is computed by including additional estimates that use the highest figures for each country among the available lower bound estimates in Gillson et al. (2004), IMF (2003) and Alexandraki and Lankes (2004).

Table 4.1 Estimated costs by country of agricultural liberalisation and preference erosion (all figures in US$ millions)

	Pref. Erosion NAMA – WTO est.	Pref. Erosion Agric. – WTO est.	Total Pref. Erosion – lower bound	Banana and sugar Pref. Erosion – high lib.	Pref. Erosion (IMF estimates)	Total Pref. Erosion – upper bound
	Low et al. (2005)	Low et al. (2006)	Low et al. (2005); Low et al. (2006)	Gillson et al. (2004)	IMF (2003) and Alexandraki and Lankes (2004)	All sources
SVEs						
Barbados	0.1	1.2	1.3	18.4		18.4
Belize	0.7	9.5	10.2	32.7	18	32.7
Botswana	0.8	5.8	6.6			6.6
Dominica		1	1	14.6	2	14.6
Fiji		6.7	6.7	55.5	41	55.5
Guyana		6.6	6.6	69.3	41	69.3
Jamaica	6.4	8.5	14.9	80.5	46	80.5
Mauritius	31	23.4	54.4	205.6	201	205.6
Papua New Guinea		4.9	4.9			4.9
St Kitts and Nevis		0.5	0.5		3	3
St Lucia	0.3	3.1	3.4	30.5	4	30.5
St Vincent and the Grenadines		1.9	1.9	22	5	22
Swaziland	11.9	5.6	17.5	41.1	21	41.1
Trinidad and Tobago		1.8	1.8	16.7		16.7
Cape Verde			0		0.9	0.9
Comoros			0		0.3	0.3
Eq. Guinea			0		1.3	1.3
Gambia, The			0		0.3	0.3

(continued)

Table 4.1 Estimated costs by country of agricultural liberalisation and preference erosion (all figures in US$ millions) (continued)

	Pref. Erosion NAMA – WTO est.	Pref. Erosion Agric. – WTO est.	Total Pref. Erosion – lower bound	Banana and sugar Pref. Erosion – high lib.	Pref. Erosion (IMF estimates)	Total Pref. Erosion – upper bound
	Low et al. (2005)	Low et al. (2006)	Low et al. (2005); Low et al. (2006)	Gillson et al. (2004)	IMF (2003) and Alexandraki and Lankes (2004)	All sources
Guinea	0.2		0.2		1.6	1.6
Lesotho	30.1		30.1			30.1
Maldives			0		2.8	2.8
São Tomé and Principe			0		1.1	1.1
Seychelles			0		10	10
Solomon Islands	0.1		0.1		2.5	2.5
Vanuatu			0		1.9	1.9
Total SVEs	**81.6**	**80.5**	**162.1**	**586.9**	**404.7**	**654.2**
Others						
Albania	1.2		1.2		10	10
Bolivia		0.7	0.7			0.7
Cameroon	1	29.8	30.8			30.8
Cuba			0			0
Dom. Rep.	139.2	21	160.2		100	160.2
El Salvador	110.5	2.5	113			113
Ghana		0.6	0.6			0.6
Guatemala	141.7	1.9	143.6			143.6
Honduras	167		167			167
Jordan			0			0
Kenya	14	5.8	19.8	1.3		19.8
Namibia	10.7	6.5	17.2			17.2
Nicaragua	31	1.2	32.2			32.2

(continued)

Table 4.1 Estimated costs by country of agricultural liberalisation and preference erosion (all figures in US$ millions) (continued)

Sri Lanka		0.1	0.1			0.1
Zimbabwe	1.9	3	4.9	22.7		22.7
Angola	0.3	0	0.3		21.1	21.1
Bangladesh	61.6	0.1	61.7		222.4	222.4
Benin			0		0.3	0.3
Burkina Faso		1.6	1.6		0.3	1.6
Burundi			0		1	1
C. d'Ivoire	25.3	22.1	47.4	3.7	69	69
Cambodia	18.8		18.8		53.6	53.6
Cen. Afr. Rep.			0		0.7	0.7
Chad			0		0.1	0.1
DRC		0.1	0.1	0.7	0.8	0.8
Egypt		1.4	1.4			1.4
Ethiopia			0		15.4	15.4
Guinea B.			0		0.2	0.2
Haiti	21.7		21.7		3.9	21.7
Liberia			0		3.4	3.4
Madagascar	19.1		19.1	5.6	8.6	19.1
Malawi	2	0.8	2.8	13.9	48.6	48.6
Mali			0		0.1	0.1
Mauritania	1.7		1.7		40.4	40.4
Morocco			0		152	152
Mozambique	5.5		5.5		5.7	5.7
Myanmar	8.3		8.3		2.2	8.3
Nepal			0		17.8	17.8
Nigeria	1.3	0.1	1.4			1.4
Pakistan		2.7	2.7			2.7
Peru		8.4	8.4			8.4
Senegal	3.6	0.5	4.1		23.6	23.6
Serbia and M			0		45	45
Sierra Leone	0.2		0.2		2.5	2.5

(continued)

Table 4.1 Estimated costs by country of agricultural liberalisation and preference erosion (all figures in US$ millions) (continued)

	Pref. Erosion NAMA – WTO est.	Pref. Erosion Agric. – WTO est.	Total Pref. Erosion – lower bound	Banana and sugar Pref. Erosion – high lib.	Pref. Erosion (IMF estimates)	Total Pref. Erosion – upper bound
	Low et al. (2005)	Low et al. (2006)	Low et al. (2005); Low et al. (2006)	Gillson et al. (2004)	IMF (2003) and Alexandraki and Lankes (2004)	All sources
Sudan			0		6.9	6.9
Tanzania	1.2	1.4	2.6	5	28.9	28.9
Togo	0.2	0.1	0.3		1.3	1.3
Tunisia			0		146	146
Uganda	0.7	0.5	1.2		9.1	9.1
Venezuela	3.7	0.5	4.2			4.2
Zambia	0		0	5.5		5.5
Non-SVEs	**793.4**	**113.4**	**906.8**	**58.4**	**1040.9**	**1708.1**
SVEs (WTO)	**669.4**	**153.6**	**823**	**610.9**	**492**	**1319.3**
Non-SVEs (WTO)	**205.6**	**40.3**	**245.9**	**34.4**	**953.6**	**1043**
Total Pref. Erosion lower bound		**1,069**	Cumulative value of countries' estimates from Low et al. (2005) and Low et al. (2006)			
Total Pref. Erosion upper bound		**2,362**	Obtained by using the highest estimates for each country among the lower bound estimate, Gillson et al. (2004), IMF (2003) and Alexandraki and Lankes (2004)			

Source: Adapted from Calì et al. (2006)

Different assumptions (regarding the liberalisation process and the methods of calculation) produce different losses and gains for countries. Our central estimates are mainly based on WTO studies, as they employ the most up-to-date methodology in terms of the assumptions about what an eventual multilateral trade liberalisation may involve. An important part of this methodology is related to the adjustment of preference margins for competition and for utilisation rates (where available). The first type of adjustment accounts for the competition effects resulting from other exporters' benefiting from the same preferential scheme or other forms of preferences. The resultant estimates will be lower than those that do not take such effects into account. If there is significant liberalisation, leading to entry into the market by countries that are currently completely excluded, this will underestimate preference erosion. The latter type of adjustment considers the actual rate of utilisation of preferences by exporters from developing countries. This adjustment is computed only for the exports of non-agricultural products to the US market.

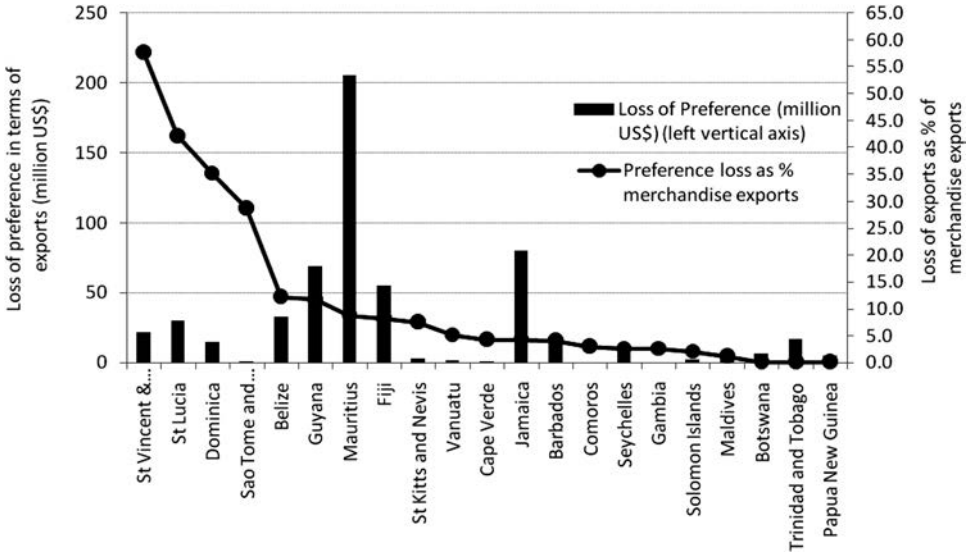
The estimates provided by IMF are not directly comparable with the WTO estimates, as they use different methodologies. Therefore, some caution is required in comparing these. Note also that all estimates are based on partial information and static calculation; hence, they are potentially subject to various types of biases. One such bias is because the extent of gains or preferential margins that actually accrue to the exporters is not known. The share is likely to be less than the 100 per cent assumed by the studies (except for sugar, where the quota scheme ensures that countries receive the rents). Other issues are due to the lack of consideration of elasticities of substitution and of dynamic interaction.

The calculations relying only on WTO studies give total estimates for SVEs, including textiles and clothing and sugar, of about US$162 million out of a total of US$1,070 million. These are lower bound estimates on current maximum expectations for the Doha Round; taking an upper bound estimate would give a loss of US$654 million for SVEs out of a total loss of US$2,362 million a year for all developing countries in the sample. According to these estimates the expected costs from preference erosion for SVEs range between 15 per cent (lower bound scenario) and 28 per cent (upper bound scenario) of total costs for developing countries. Considering that the share of population of SVEs in total population in the sample of countries in Table 4.1 is only 2.3 per cent, SVEs are effectively expected to bear a much higher than proportionate share of the costs from preference erosion.

Amongst the SVEs in our sample, Mauritius, Jamaica, Guyana, Fiji, Belize and St Lucia are likely to suffer most in terms of absolute loss of exports due to preference erosion. When measured as proportion to respective countries' total merchandise exports, export losses turn out to be massive for St Vincent and the Grenadines (58 per cent), St Lucia (42 per cent), Dominica (35 per cent) and São Tomé and Principe (29 per cent), as shown in Figure 4.2.

We also estimate the same costs for the group of SVEs as defined in the WTO. This is a larger group and it is expected to face most of the estimated costs of preference erosion: between 77 per cent (lower bound scenario) and 56 per cent (upper bound) of total costs for the countries in the sample. Again, these shares are well above the share of the WTO SVEs group in total population (around 14 per cent). This

Figure 4.2 Loss of preference of some SVEs



is unsurprising given that the majority of SVEs are preference-receiving countries, and the preferences often allow them to obtain (much) larger market shares in the preference-conceding countries than in a liberalised regime.

4.3 SVEs accessing Aid for Trade

4.3.1 Main programmes of relevance for SVEs

Calì et al. (2011) came up with a list of a variety of AfT programmes relevant for addressing the needs of SVEs, the majority of which are of small size (below US$200,000). This reflects the absence of infrastructure projects from the list, which are usually large as they may entail large capital investments. Conversely, the rest of trade-related assistance is inherently targeted to specific recipients (e.g. trade ministry, border-post authority, chamber of commerce) and does not usually include large fixed investments. On the other hand, projects of small size are more typical of the assistance to small economies, such as SVEs.

The larger projects on the list are those geared towards trade development, through strengthening both sectoral and general competitiveness, and towards assisting in the adjustment process following the preference erosion in key agricultural sectors, such as sugar, banana and rum. The latter programmes are funded by the European Commission and aim to strengthen the sectors that are going to be exposed to competition as well as to help diversify the economy away from those sectors. We review the strengths and weaknesses of some of those programmes below.

The **EU special fund for rum** was intended to help a sector damaged by trade reform in the EU. It was unusual in its direct assistance to the private sector. It attracted a high degree of regional ownership (private sector) and, because of this, showed some

success. It was, however, transitional and ended after the scheme's foreseen time of existence.

The **EU special framework for assistance for bananas** is an example of an assistance programme designed to meet the costs of countries that are damaged by trade reforms which could assist other developing countries. The programme faces the potential difficulties of choosing the most appropriate means of adjustment for sectors that start to be exposed to competition (see below a review of its effectiveness).

The **EU Action Plan for Sugar**, which from the beginning allowed for adjustment through increasing productivity, finding related production or a total change in production, thus attempted to avoid the problems of the banana scheme. Like the rum and banana schemes, it is an example of aid to provide adjustment assistance for countries which suffer losses because of trade reforms. It is an interesting precedent because it solves the problem that compensating African, Caribbean and Pacific (ACP) farmers for changes in European sugar policy is not strictly speaking aid by giving it a separate budget line: it uses grants and it bases eligibility on adjustment need, not on need for infrastructure.

The **Trade Integration Mechanism (TIM)** run by the IMF was established explicitly to deal with preference erosion, as implementation of the commitments made by the IMF and the World Bank before and at Cancún. As SVEs are among the largest losers of preferences (in relative terms), such a scheme may be particularly relevant to them. It is the clearest recognition by an international agency outside the WTO that there is a legitimate aid problem as a consequence of WTO obligations. It offers loans, rather than grants. Mitchell and Hoppe (2006) mention the IMF compensatory financing facility as another potential source of funds, but this also is based on loans (as part of the IMF), not grants.

Finally, as we mentioned above, the **Commonwealth Fund for Technical Co-operation (CFTC)** targets specifically SVEs, although it covers other areas than just AfT.

4.3.2 Eligibility criteria and implementation

Some programmes are aimed specifically at certain countries, for example the Enhanced Integrated Framework (EIF) for LDCs and the Joint Integrated Technical Assistance Programme (JITAP) for Africa. Others have certain specific requirements, such as the Millennium Challenge Corporation, which requires countries to demonstrate a commitment to policies that promote political and economic freedom, investments in education and health, the sustainable use of natural resources, control of corruption, and respect for civil liberties and the rule of law, as measured by 17 different policy indicators.

Virtually all donors require *ownership* as the main requisite to provide trade-related assistance to any countries. Trade needs to be prioritised in governments' planning documents, such as national and regional indicative programmes (NIPs and RIPs), in order for countries to receive AfT. An example of that is the criteria set out by the European Commission (EC) in its AfT strategy. The European Union (EU) and its member states claim that trade-related support can be made available only if it is taken up in the 'Country or Regional Strategy Papers' (CSPs/RSPs) as a priority. According

to the EC (2008) this would demonstrate that the country concerned considers trade-related assistance to be essential to its own national development agenda. The EC goes as far as stating that 'the particular challenge in fulfilling the commitments undertaken in the EU's AfT strategy is about how to create solid demand in Aid for Trade' (EC 2008: 5). This donor-induced concept of ownership does not sit easily with the original spirit of the Paris declaration of genuine ownership.

Aside from ownership, programmes differ in terms of eligibility criteria and geographic implementation. Some information provided by Calì et al. (2011), for example, shows that funds emerged out of specific concerns, for example the Sugar Action Plan to provide payments to ACP Sugar Protocol countries that need to adjust after sugar sector reform, and the TIM to provide temporary cushions to deal with preference erosion. Others were more general, for example schemes focusing on growth and poverty reduction. There had been quite a few funds that address diagnostics of what trade measures are required (the Integrated Framework – IF – part of EC Trade Related Assistance, JITAP, etc.) but far fewer programmes address supply-side constraints directly or implementation costs of trade agreements.

This review suggests that only a handful of trade-related programmes are not available to some SVEs, such as the EIF (not available to non-LDC SVEs), JITAP and the Emerging Africa Infrastructure Fund (EAIF) (not available to non-African SVEs). On the other hand, some of the funds are particularly accessible to SVEs, as they target some of the trade-related needs specific to (some of) the SVEs, such as the EC Sugar Action Plan and Special Framework for Assistance (SFA) for bananas, the TIM and the Inter-American Development Bank (IADB) trade-related activities (directed in particular at smaller Latin American and Caribbean countries). Thus, despite the absence of a specific fund addressing all the special needs of SVEs, there seems to be plenty of scope to access AfT for SVEs that are able to articulate their trade-related needs consistently. The next section examines to what extent this potential for assistance has turned into *actual* AfT for SVEs in the past and what form this assistance has taken.

4.4 Aid for Trade flows to SVEs

AfT has been on the increase for the last few years. Table 4.2 shows the main recipients (in millions of US dollars) of AfT disbursements between 2006 and 2011. We can identify two major types of AfT beneficiaries: large countries and countries in post-conflict situations. Most of the major ten recipients are large low-income countries, including China, India, Indonesia, Vietnam, Ethiopia and Egypt. Also, large amounts of AfT (especially in the form of economic infrastructure) have been given in recent years to Iraq and Afghanistan, which were not major recipients of aid before being occupied by US-led forces. The first sub-Saharan recipient, Ethiopia, is in the eighth position, confirming a different (less trade-related) model of development assistance for sub-Saharan Africa than for Asia (see Calì 2007). SVEs receive small absolute amounts of AfT, and the largest recipient of AfT is Papua New Guinea, which is only the fifty-second among all countries. Others SVEs are further down in the ranking (below sixty-fourth position). This clearly points to the relevance of size in AfT (as well as general aid) allocation.

Table 4.2 Main recipients of Aid for Trade (disbursement in current US$ million)

	Total 2006–11	2006	2007	2008	2009	2010	2011	Rank
India	11,091	1,159	1,268	1,905	2,064	2,463	2,232	1
Vietnam	9,174	1,026	1,376	1,358	1,502	1,843	2,069	2
Afghanistan	8,197	854	958	1,230	1,748	1,818	1,590	3
Iraq	6,903	3,042	1,710	788	373	487	503	4
Indonesia	5,837	921	844	1,092	905	1,214	860	5
China	4,456	859	945	943	660	543	505	6
Egypt	4,051	521	462	810	692	942	624	7
Ethiopia	3,959	533	522	573	1,086	594	650	8
Morocco	3,815	385	532	499	651	785	964	9
Turkey	3,349	353	319	674	826	774	403	10
SVEs								
Papua New Guinea	762	70	146	147	107	141	151	52
Cape Verde	529	50	48	101	77	166	87	65
Jamaica	305	26	43	76	71	56	32	81
Guyana	264	6	11	37	64	55	91	90
Vanuatu	185	6	17	50	56	38	18	98
Gabon	182	19	37	21	19	59	27	100
Gambia	180	15	17	17	35	36	59	101
Suriname	179	5	29	41	50	25	28	102
Solomon Islands	167	25	23	14	26	29	50	104
Lesotho	133	16	19	22	13	26	38	108
Samoa	126	11	11	11	22	35	36	111
Botswana	104	12	15	11	24	27	16	114
Mauritius	93	2	14	4	24	18	30	116
Swaziland	91	19	11	12	13	10	27	117
Dominica	88	7	11	12	24	20	15	119
Kiribati	61	13	16	8	7	4	13	127
Fiji	57	12	9	8	6	10	11	129
São Tomé and Principe	49	6	6	9	3	6	19	131
TOTAL 2006–2011	172,111	21,972	24,063	27,768	30,758	34,361	33,189	
TOTAL SVEs	3,555	320	483	601	641	761	748	

Source: Derived from data obtained from the OECD CRS database

In order to account for the importance of size in AfT allocation, we compute the values of AfT per capita received by beneficiaries. Table 4.3 presents the results. In fact this computation drastically changes the relative rankings of the major recipients, with small countries receiving proportionately more AfT. The main recipients in terms of per capita income are mainly small and very small islands in the Pacific and the Caribbean. Given this trend it is not surprising that SVEs receive relatively higher levels of AfT per capita. In fact 4 of the major 10 recipients and 12 of the major 20 are SVEs.

Table 4.3 Main recipients of Aid for Trade (disbursement in current US$ per capita)

	2006	2007	2008	2009	2010	2011[P]	*2006–2011*	Rank
St Helena	2,225.68	1,823.15	6,529.84	4,050.51	2,428.36	18,495.68	*5,925.53*	1
Montserrat	1,388.88	342.17	580.92	1,696.35	1,836.39	1,819.38	*1,322.34*	2
Nauru	1,085.56	1,083.32	1,473.48	881.32	97.51	97.01	*786.37*	3
Tuvalu	1,027.54	409.75	510.93	712.85	203.52	406.22	*545.14*	4
Palau	449.75	347.95	741.55	245.75	439.62	48.52	*378.86*	**5**
Wallis and Futuna	–	214.50	144.45	219.01	516.00	743.49	*367.49*	**6**
Anguilla	356.94	–	203.57	66.42	586.01	–	*303.24*	7
Dominica	101.89	160.73	176.06	353.35	295.17	221.65	*218.14*	**8**
Cape Verde	104.54	99.37	207.23	156.62	334.68	173.80	*179.37*	9
Mayotte	5.55	215.14	125.13	187.00	264.56	–	*159.48*	**10**
Tonga	59.06	136.91	48.58	115.92	355.57	162.67	*146.45*	11
Vanuatu	27.68	76.45	219.26	239.53	158.56	73.28	*132.46*	**12**
Samoa	60.85	60.68	60.50	120.61	191.17	195.79	*114.93*	**13**
Kiribati	138.99	168.34	82.87	71.41	40.18	128.59	*105.61*	**14**
St Vincent and G	27.54	91.69	174.03	118.97	36.59	82.29	*88.51*	**15**
St Lucia	23.95	41.47	76.19	115.97	137.71	62.48	*76.30*	**16**
Seychelles	83.05	23.54	35.06	121.79	57.79	80.57	*66.96*	**17**
Iraq	105.10	59.05	26.42	12.14	153.75	15.40	*61.97*	**18**
Suriname	9.90	56.85	79.60	96.18	47.65	52.89	*57.19*	**19**
Solomon Is.	51.76	46.33	27.44	49.61	48.31	91.20	*52.44*	**20**
St Kitts and Nevis	120.46	19.82	0	57.97	57.24	37.70	*48.87*	**21**
Antigua B.	35.31	0	11.51	22.78	78.91	122.25	*45.13*	**22**
S. Tome and P.	3.87	38.13	56.30	18.46	36.28	112.75	*44.29*	**23**
Grenada	9.71	9.67	19.28	28.82	95.71	95.34	*43.09*	**24**
Gabon	10.74	11.94	11.72	23.69	23.91	38.45	*20.08*	**25**

Source: Derived from data obtained from the OECD CRS database

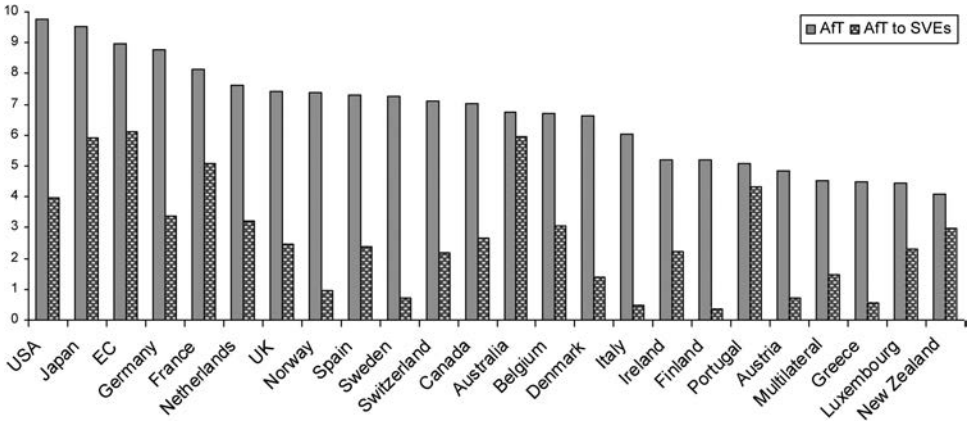
4.4.1 Current and past flows by donor

Calì et al. (2011) show the value of AfT disbursements by donors (in log scale) and the value going specifically to SVEs, with the USA being the largest donor between 2002 and 2007, mainly on account of the assistance provided in Iraq and Afghanistan for reconstruction (Figure 4.3). Taking away the US assistance, Japan became the largest provider of AfT, with the EC coming third, with member states Germany, France, the Netherlands, the UK, Spain and Sweden being important donors. The low share of multilateral donors is because they mainly manage funds provided by bilateral donors, while only a small part of their activities is funded directly by them. For Calì et al. (2011) the picture changed significantly when considering the trade-related assistance provided to SVEs, with the EC being the largest provider of AfT to SVEs in the 2002–07 period, followed by Australia and Japan. The USA, on the other hand, remained a fairly unimportant AfT donor for SVEs, preceded also by France and Portugal. As shown below, some countries prioritise assistance to certain SVEs, such as Australia, which funds activities in a number of SVEs in the Pacific region, and the members of the EC, which assist small states in the Caribbean and the Pacific through programmes aimed at diversifying their economies.

In order to understand the relative importance that donors attach to AfT, Calì et al. (2011) estimated the extent to which countries are specialised in this type of assistance by constructing a simple *index of specialisation* for all major aid donors (see Calì 2007). The index is the ratio of the share of a country in total AfT and the share of the country in total official development assistance (ODA):

$$S_i = \frac{AfT_i / \sum_{j=1}^{n} AfT}{A_i / (\sum_{j=1}^{n} A_j)} \tag{4.1}$$

Figure 4.3 Aid for Trade disbursements by donors (log of US$ million)



Source: Calì et al. (2011)

where AfT_i and A_i are AfT (in US dollars) and total ODA for country i respectively, and n is the total number of donors.[5] A value of the index greater than 1 indicates that the donor is spending proportionally more on AfT. Calì et al. (2011) report that Japan and the EC are the donors with the highest specialisation in AfT over the entire period 2002–07, although the intensity of this specialisation has been somewhat declining. The value for the EC is mainly driven by expenditure on trade policy and regulation and trade development, while Japan's value is the result of the focus on infrastructure in its development assistance strategy. Among the major donors, the United States has an index greater than 1 only since 2004, because of the shock in its aid pattern related to the reconstruction in Iraq and Afghanistan. All other main bilateral donors – except for Germany and Norway – have been spending little on trade-related assistance relative to general ODA, with Italy, France and the UK at the bottom of the list. The multilateral donors tend to have a specialisation in AfT quite consistently throughout the period.

4.4.2 AfT to SVEs

Calì et al. (2011) show the extent to which donors focus on SVEs in their AfT spending. Portugal, Australia and New Zealand devote a large share of their AfT to SVEs (around 40 per cent in 2007). In the case of the Oceanic countries, this is driven by the special attention granted to their neighbours in the Pacific, which are mainly small island developing countries, such as Papua New Guinea, Fiji, Samoa and Tonga. In the case of Portugal, the result is mainly due to its assistance to the former colony of Cape Verde. Among the major donors, the EC is the one providing the largest share of its AfT to SVEs (over 6 per cent of the total in 2007 and 5.7 per cent on average throughout the period).

The relative focus of donors on SVEs tells only part of the story about the largest providers of AfT to SVEs. Indeed Calì et al. (2011) show that the EC has been consistently the largest donor over 2002–07, with more than US$150 million disbursed in 2007, almost double the amount of 2006. Australia and Japan are the other main AfT donors to SVEs, with the former more than doubling its assistance in 2007.

The above analysis has provided some rationale for external assistance to SVEs in the form of AfT. Thus it is worth asking whether SVEs are receiving relatively more or less aid as AfT. According to the specialisation index computed by Calì et al. (2011), SVEs have received roughly the same proportion of AfT as that of ODA over the 2002–07 period. These swings suggest that there may not be a long-term strategy in terms of AfT allocation across countries, and to SVEs in particular. This is also a result of shocks that may have a large impact on aid (including AfT) allocation decisions, such as wars, natural calamities and changes in market access.

4.4.3 Types of Aid for Trade provided to SVEs

In order to identify what type of AfT is directed to SVEs, we divide it into three main categories (as from the OECD/DAC database): aid for economic infrastructure, for productive sectors and for trade policy and regulation (TPR). The majority of the AfT funds accrues to economic infrastructure, as is the case for other developing countries as well. In terms of per capita aid, the ratio between SVEs and non-SVEs for the economic infrastructure category is similar to that of total ODA, while the same ratio

is higher for aid to productive sectors, suggesting that AfT is relatively more targeted to this type of assistance. The opposite is true for TPR, for which the ratio (although usually higher than 1) is much lower than for the other categories. A relatively important category of AfT for SVEs, that of trade-related adjustment, appears with no records at the time when this study is being prepared, perhaps suggesting that donors have not yet started to provide it.

In sum, the analysis suggests that small countries, and thus SVEs, receive higher per capita amounts of AfT, just like general aid. However, AfT to SVEs declined somewhat in the years up to 2006, and it seems to have bounced back in 2007. The previous sections have provided some arguments that, in the context of increasing integration of the world economy, small states may be in particular need of AfT. This assistance is provided mainly by a few large donors, including the EC, Australia, Japan and, to a smaller extent, France, Portugal, the USA and New Zealand.

4.5 How Aid for Trade could help SVEs integrate into the global economy

How can AfT address the typical constraints of SVEs? There are a number of theoretical models that could account for the role that AfT may have in promoting export competitiveness of SVEs. One such model is developed by Limao and Venables (2002). They combine a traditional Hecksher–Ohlin model of trade with a spatial economics model in the spirit of von Thünen to show that regions located far away from the economic centre tend to develop import-substituting activities and small exports as a result of the transport cost disadvantage. A generalised reduction in the cost of trading (due, for instance, to globalisation) leads the regions far from the centre to gain a more than proportionate increase in export activities. If AfT were able to reduce the transport costs (i.e. the geographic remoteness in the model), the country's income would benefit. The Limao and Venables model is more concerned with incomes rather than export activities *per se*. This focus would make identifying the effects of AfT difficult. In fact, a review of a vast number of empirical studies on the impact of aid on income growth (Doucouliagos and Paldam 2007) concludes that this literature is fairly inconclusive. A number of factors may explain the inconclusiveness of these research efforts. Bourguignon and Sundberg (2007) argue that these mixed results are not surprising, given the heterogeneity of aid motives and the complex causality chain linking foreign aid to growth. Further, the impact of aid might depend on domestic economic policies, institutions and other conditions. The channels linking aid to economic growth are very complex and it is difficult for any reduced form equations to capture all these links. In particular, AfT is related specifically to trade-related performance; thus a more appropriate way to identify the impact of AfT is to measure it on trade-related variables.

4.5.1 A simple model

We present a simple exports demand model borrowed from Fontagné et al. (2002) to show some channels through which AfT may help countries (and SVEs in particular) increase their level of exports. In the model, each country produces only one good, differentiated from the others by the place of origin; the supply of each good is fixed;

and consumers have identical and homothetic preferences represented by a constant elasticity of substitution (CES) utility function. The collective utility function of individuals in country j is denoted by:

$$U_j = \left(\sum_{i=1}^{N} \alpha_i^{1/\sigma} c_{ij}^{(\sigma-1)/\sigma} \right)^{\frac{\sigma}{\sigma-1}} \tag{4.2}$$

where σ is the elasticity of substitution between all goods, α is the share of the good from i in total expenditure in j and c_{ij} the value of consumption of the good produced in country i by individuals in country j, with $i, j \in [1, N]$.

The utility function is subject to the budget constraint stating that the value of goods consumed by individuals in country j needs to equal the national income of j.

$$y_j = \sum_{i=1}^{N} c_{ij} p_{ij} \tag{4.3}$$

where p_{ij} is the price in j of the good produced in i. Defining p_i as the exporter's supply price, then $p_{ij} = p_i \tau_{ij}$ where $\tau_{ij} \geq 1$ and includes all types of trade costs, for example transport, tariffs, administrative costs of trade, information costs. These costs are modelled as the standard iceberg type.[6]

Maximising equation (4.2) subject to the budget constraint (4.3) and after some manipulation we obtain the total (real) consumption (i.e. import) of good i by country j:

$$C_{ij} = \frac{\alpha_i Y_j}{\tau_{ij} p_i} \left(\frac{\tau_{ij} p_i}{\Pi_j} \right)^{1-\sigma} \tag{4.4}$$

where

$$\Pi_j = \left(\sum_{i=1}^{N} \alpha_i \tau_{ij}^{1-\sigma} p_i^{1-\sigma} \right)^{\frac{1}{1-\sigma}} \tag{4.5}$$

is a CES index of the trade costs faced in exporting to j, that is an index of trade remoteness of country j; Y_j is total income in country j where $Y_j = p_j Q_j$. Following (4.4) the actual – free on board – value of exports of country i to country j is given by

$$X_{ij} = C_{ij} p_i = \frac{\alpha_i Y_j}{\tau_{ij}^{\sigma}} \left(\frac{\Pi_j}{p_i} \right)^{\sigma-1} \tag{4.6}$$

If we aggregate all bilateral exports from one source as defined in (4.6), we obtain the equation for the total value of exports from country i:

$$X_i = \frac{N \alpha_i}{p_i^{\sigma-1}} \sum_{j=1}^{N} \frac{Y_j \Pi_j^{\sigma-1}}{\tau_{ij}^{\sigma}} \tag{4.7}$$

This implies that the exports from i are positively related to countries' preferences for goods from i (i.e. a measure of how appealing good i is in the global market), to the demand capacity of all potential importing countries j (i.e. Y_j) and negatively related to trade costs faced by i in exporting to all other destinations. The direction of influence of the price of i on exports depends on σ; in particular, if $\sigma>1$ then $\partial X_i/\partial p_i<0$. This condition states that, when the elasticity of substitution (between goods) is high, an increase in price yields a more than proportionate reduction in export volumes.

AfT enters the picture in (4.7) essentially by influencing two parameters of the equation: τ_{ij} and α_i. Following Bouet et al. (2008), the former can be expressed as a function of administrative and legal barriers, distance and infrastructure:

$$\tau_{ij} = (1+t_{ij})b_i b_j f(I_i, I_j) d_{ij} \tag{4.8}$$

where t_{ij} is the bilateral import duty applied by country j on exports from i, and b_i (b_j) is the cost of processing exports (imports) in the exporting (importing) country; transportation costs are assumed to be a positive (linear) function of d_{ij} and a negative function of the level of economic infrastructures I in country i and j (i.e. $\partial f/\partial I_i<0$ and $\partial f/\partial I_j>0$). AfT to country i may affect both b_i and I_i. In particular, trade facilitation (TF) may reduce the time and costs of processing trade (b_i); and aid to economic infrastructure (*AINFRA*) may increase the level of I_i. To the extent that these types of AfT affect these variables, from (4.8) we have that $\partial\tau/\partial TF>0$ and $\partial\tau/\partial AINFRA>0$. It is important to note that our empirical analysis looks at the effects of AfT on a country's total exports (rather than bilateral exports) over time. Thus we are able to use country-fixed effects, which take care of the effects of bilateral distance in (4.8) (i.e. the country's location in our framework). Also, given the framework we use, we are interested not in bilateral trade costs but rather in unilateral trade costs, that is the costs of trading of country i with all other countries. Because of this, the other determinants of trade costs in (4.8) specific to the importing country j (i.e. b_j and I_j) can be approximated by time dummies in a panel data analysis (which capture the average level of these determinants across countries in any year). Finally, we would ideally need to have the bilateral tariffs faced by country i in each country; such tariffs have a fairly high variation across countries but a relatively small one over time, so country-fixed effects should be able to capture most of the variation in this case.

The other channel through which AfT may affect exports is by strengthening country i's production competitiveness, which would in turn raise α_i. This is the kind of assistance that aid to productive capacity (*Apc*) could provide. We can think of this as an improvement in the quality of good i which induces a relative increase in the preference of the rest of the world towards i. Given equation (4.7), other things being equal this would translate in an increase in exports.

Using this framework, we can speculate on the possible SVE-specific effects of AfT. One of the main features of SVEs is that d_{ij} is usually higher than average, thus the effects of any reductions in the other parameters in (4.8) may yield above-average decreases in trade costs. Thus AfT aimed at reducing the value of b or increasing the

level of I_i has the potential to yield substantial gains for SVEs. Another way in which (some of the) SVEs may be characterised in the model is through a comparatively high value of α in (4.7) for those preference-receiving countries. This follows from the fact that preferential market access (in markets such as bananas and sugar) guarantees artificially high preferences from goods from some SVEs (i.e. high values of α_i). As these preferences are going to be phased out, the value of α_i is likely to reduce in those countries receiving preferences, thus reducing the value of exports from them. AfT could help counter this reduction in α_i (through aid for productive capacity).

4.5.2 How effective have the programmes been?

After analysing the possible effect of AfT interventions, it is worth examining to what extent this assistance has been effective in removing the constraints to trade development faced by developing countries and by SVEs in particular.

This examination is challenging because of the difficulty in isolating the impact of AfT programmes on the recipients' economy. It is methodologically complicated to discern, for instance, what part of the changes in the export performance of a country could be attributed to more micro-level technical assistance programmes. This attribution problem has often resulted in a lack of clear and measurable objectives and indicators in programming documents (Lesser and Hayashikawa 2006).

This may be an important reason why the general evidence on the evaluation of the effectiveness of trade-related assistance programmes has mixed results. The OECD (2006) reviews the findings of various evaluations and identifies a number of problems across different donor programmes. The specific needs of a beneficiary country or programme were not always properly assessed in advance, and, even when such an exercise was carried out, the criteria set out tended to be too broad. This in turn made an accurate evaluation of the programmes more problematic. On the other hand, when AfT was targeted at specific stakeholders (e.g. private sector) or at particular participants – as in the case of certain United States Agency for International Development (USAID) and UN Economic and Social Commission for Asia and the Pacific (ESCAP) programmes – the evaluators found better results. However, in some instances it is possible to attribute more general positive results to AfT programmes, such as an improvement in the trade-negotiating environment or an increase in the awareness and knowledge of trade policy issues, for example the UK Department for International Development DFID and JITAP projects.

Another common shortcoming of trade-related programmes emerging out of the OECD review relates to issues of governance, on the part of both the donor community and the beneficiary country. For instance, DFID's Africa Trade and Poverty Programme (ATPP) suffered from inadequate management and the absence of clear governance structures as multiple agencies were responsible for the disbursement of funds and implementation of activities. The Dutch multilateral trade assistance programmes also failed to take other bilateral and private sector partners into account, to the detriment of the programme's effectiveness. There are also reports of lack of adequate communication between headquarters and field missions, with the result that the latter failed to take ownership of the initiated programmes – as in the case of JITAP (OECD 2006).

Existing conditions in the beneficiary country can also be held responsible for the lack of success of some AfT programmes. The OECD identifies two necessary preconditions for aid to have a sustainable impact: the existence of a favourable domestic business environment and the political will to use trade as an engine for development. The case of Cambodia is an oft-cited success story; trade-related assistance provided by the WTO/ESCAP training programme has been given credit for contributing to the country's accession to the WTO. However, it has also been pointed out that the determining factor was the involvement of the government and the level of interaction between officials across different ministries, who jointly took ownership of the entire process. This has not been the case in several trade-related technical assistance programmes, and a number of programmes are either unsuccessful or unsustainable owing to the lack of involvement from the beneficiary country's organisations.

4.5.3 Specific programmes

The evaluations of specific AfT programmes have tended to yield the same mixed results. We review a number of them here, covering both national as well as multilateral evaluations, and then we address programmes which are more geared towards helping countries tackle the types of challenges faced by SVEs.

Zaken (2005) evaluates the success of Trade-Related Technical Assistance (TRTA) programmes funded by the Netherlands – that is all programmes that aimed at strengthening the trade-related negotiating capacity, national trade policy and/or capacity to trade of developing countries. The main focus of the study was on multilateral programmes (IF, JITAP, UNCTAD technical assistance) and programmes funded through international organisations (Advisory Centre on WTO Law [ACWL], Agency for International Trade Information and Cooperation [AITIC] and Quaker United Nations Office [QUNO]). The results of the desk and case studies conducted suggested that the funds disbursed by the Dutch Ministry of Foreign Affairs (a total of €109.9 million from 1992 to 2002) were not very effective in achieving the intended aims.

The main finding of the study was that TRTA activities often lacked an adequate design and did not give due consideration to formulating and using measurable indicators to assess the success of the implemented programmes.[7] Large-scale multilateral programmes (such as the IF and JITAP) that specifically targeted least-developed economies were also considered mostly ineffective in achieving the stated objectives of enhancing trade-negotiating capacities and strengthening the ability to formulate pro-poor national trade policies. The failure of the integrated multilateral programmes was related to the limited absorptive capacity, to the lack of political commitment of the LDCs concerned and to the weak involvement of the private sector and civil society in these programmes. The report (Zaken 2005) also blamed poor communication between the Dutch embassies and the multilateral programmes, mainly since the former concentrated mainly on bilateral funding mechanisms. On the other hand, funds that were channelled through small and single-issue organisations to non-LDCs were considered to have been more effective, mainly since some of these countries' representatives were already quite active within multilateral and other trade negotiations.

The mid-term evaluation of JITAP II was carried out by the International Trade Centre (ITC), the managing agency for the programme (Divvaaker 2006). The beneficiary countries under study were a number of developing countries, including ten LDCs, and the study period extended from 2003 to 2007.

The main findings of the evaluation exercise were that the authorisation and disbursement of funds from donors and the Trust Fund to beneficiary countries had been efficient, but that the same could not be said for decentralised funds, whose utilisation had been poor. The report found that JITAP's most important contribution was to have enabled a cross-section of stakeholders in its beneficiary countries to develop and better articulate their negotiating priorities at the WTO. In terms of strengthening national trade negotiating capacities, however, high staff attrition rates at such centres had dispelled any chances of further dissemination of knowledge. This mainly arose from the lack of ownership and a lack of conviction of the effectiveness of these programmes on the part of the beneficiary country.

As noted above, there are no programmes of external assistance specifically targeted at SVEs but a number of programmes (described above) addressed specific challenges faced by SVEs. Among these programmes, the EU-funded banana and sugar special adjustment funds are ones for which some assessment is available.

As far as the **SFA for bananas** is concerned, the Commission had initially specified that funds be used for investments in the affected industry and, later, insisted on diversification. The low share of SFA funds spent on diversification has been raised as an important factor in the low levels of growth experienced in traditional ACP banana-producing countries, despite substantial financing. Support has not been the critical factor in increasing investment in the industry: prospects for market access and prices have been more important determinants. Most of the diversification projects funded under the SFA have been small-scale pilot projects within the agricultural sector. The approach has been rather ad hoc and has not addressed the key constraints in the wider business environment (e.g. public sector reform).

In designing its **sugar action plan**, the Commission and member states explicitly cited the precedent of the banana programme as an example of a badly designed programme. Gillson et al. (2004) refer to several critical evaluations. A major failure has been its tendency to support banana production in those countries that have limited potential to become competitive. Several country programmes (e.g. Jamaica, and St Vincent and the Grenadines) have used the funds provided to subsidise farmers' operating costs rather than finance new investments, hindering efforts to improve competitiveness. Only in some African countries has financing been effective in increasing productivity in the banana industry. This was largely as a result of it being used by multinational companies to complement their own investments (in productive facilities) by funding the development of cableways, drainage and irrigation.

CTA (2006) highlights that another problem for these SFA programmes is that ACP governments face major constraints in providing a lead in responding to production and trade adjustment challenges, whereas working through governments is central to the EC aid deployment process. With the growing emphasis on budget

support and the distinct preference for the deployment of sugar protocol, working through government is a central component of the EC approach to the extension of production and trade adjustment support. However, most ACP governments face constraints at two levels. The first relates to the understanding of ACP governments of the nature of the production and trade adjustment challenges (and opportunities) faced. This problem is particularly acute in those countries facing the greatest competitiveness challenges. The second relates to the administrative capacity of governments to effectively channel and deploy available support to what would need to be private sector-led restructuring efforts. The administrative constraints faced by ACP countries in dealing with EU procedures usually lead to very slow rates of aid disbursement, which may undermine the value of the assistance extended in support of time sensitive adjustment processes. Calì et al. (2011) illustrate the extent of this problem as far as SFA is concerned for a number of SVEs.

The results point towards the importance of ownership, alignment and harmonisation as critical factors of success of AfT, much in line with the traditional aid effectiveness literature (Rogerson 2005). The implications mainly refer to the need to involve stakeholders (e.g. private sector and civil society), and trade and other officials in beneficiary countries, at the very beginning, to help design programmes, devise specific objectives and implementation strategies, keeping country-specific conditions in mind. While this would ensure the evolution of better ways to measure the impact of such programmes, it would also create the necessary conditions for ownership of the programme within the partner country, which in turn would ensure long-term sustainability. An inclusive consultative process would also encourage partner country officials to be trained in assessing their trade performance through various toolkits provided by the World Bank and the ITC. This serves the dual purpose of developing skills and disseminating information at the same time.

Recommendations also include more specific targeting of sectors and activities which are aimed explicitly at poverty reduction or the inclusion of disadvantaged sections of society in trade; for example, DFID targeted small farmers in western Kenya through its bee-keeping project as a part of its business partnership programme. Other, more general, recommendations are aimed at enhancing the quality of communication channels across and within donor agencies, to avoid confusion with regard to delivery channels and programme implementation.

It is important to note that the impact evaluation of AfT has been carried out almost exclusively through success stories (see, for example, UNIDO 2008) which are usually self-assessed, and through ad hoc case studies, such as those presented above, which look at specific projects or programmes. In any instance, lack of proper data and benchmarks (e.g. in terms of outcome variables to rate the project against) has often constrained the possibility of properly assessing the effectiveness of AfT. A relevant exception is the recent work by Brenton and Von Uexkull (2008), who use quantitative techniques to study the systematic effect of product-specific AfT on countries' exports. They match data on technical assistance projects from German Development Cooperation (GIZ) with data on developing countries' trade performance on for the period 1975–2000. A partial equilibrium adjustment model is used to study

the impact of AfT on specific export goods: 88 export development programmes across 48 developing and LDCs. The results strongly suggest that exports may have increased owing to the effect of donor-funded export development programmes in a number of countries. However, a few caveats apply; although the programmes have preceded stronger export performance, causality cannot be expressly determined. As the authors point out, factors such as the initial size of the export sector, or selection bias (i.e. technical assistance may target products with already promising prospects) may be the real reasons behind the better performance of the targeted commodities.

We aim to bring out new, more systematic, evidence, looking at the overall impact of different types of trade-related assistance on specific trade-performance indicators. Our coverage is wider than that of Brenton and Von Uexkull (2008) in that it accounts for all AfT disbursements rather than only a sub-set of projects. Also, we rely on more indicators than only exports as dependent variables. Importantly, we try to identify the impact of this type of assistance on SVEs and other developing countries.

4.6 Empirical analysis on the effects of Aid for Trade on SVEs

We build on the previous study by Calì and te Velde (2008) to assess the impact of AfT on SVEs empirically and compare it with the rest of developing countries. Consistently with the rest of the work, we adopt the Commonwealth Secretariat definition of SVEs as the main way to identify those countries. As a robustness check, we also test the findings by using the WTO definition of SVEs.

Following the theoretical framework in the previous section, we use two ways of assessing the impact: first, a relatively narrow one looking at the effects of a specific category of AfT (i.e. trade facilitation) on the costs of trading; second, a broader assessment of the effects of AfT on exports, which represents an empirical implementation of equation (4.7).

4.6.1 The empirical models

Aid for Trade and the costs of trading

First, we estimate whether particular types of AfT have affected trade costs, namely whether trade facilitation (TF) has had any impact on b_i defined in equation (4.8). This is measured by investment climate indicators at the macro level, such as the time taken by customs to clear imports and exports, and the cost of exporting and importing goods across countries and over time (conditioning on other variables). These variables measure separately the time and costs (in US dollars) of handling and transporting a 20-foot container to (or from) the port of departure (or entry). In the case of costs, these include costs for documents, administrative fees for customs clearance and technical control, terminal handling charges and fees for in-country transport. The cost measure does not include tariffs or trade taxes. Only official costs are recorded. These cost and time variables only capture the efficiency with which exports and imports are handled *within* the country of interest. For instance, in the case of exports, procedures start after the goods are packed at the factory and include all official costs until the goods' departure from the point of exit. For imports,

procedures start when goods are unloaded from a vessel at the port of entry or when the vehicle carrying them has crossed the border, and go on until delivery at the factory or warehouse (see Calì et al. 2011 for a more complete description). Therefore these measures are not affected by the degree of isolation of the country (e.g. its distance from its trading partners), as the costs of transporting the goods from (or to) the point of departure (or destination) are excluded. In any case, we use country-fixed effects in some of the specifications to account for the potential influence of any time-invariant country-specific factor, such as geography and location. This analysis is important, as the costs faced and the time taken by firms to trade goods are significant determinants of a country's competitiveness. Djankov et al. (2006) find that each additional day that a product is delayed prior to shipping reduces trade by at least 1 per cent.

We employ a number of different specifications for the test at the macro level. We use both a semi-log (equation 4.9) and a log log specification (equation 4.9′):

$$\ln(IC)_{it}^{Z} = \alpha_i + \beta \mathrm{A}tf_{it-1} + \Gamma \mathbf{Z}_{it-1} + \gamma_t + \varepsilon_{it} \tag{4.9}$$

$$\ln(IC)_{it}^{Z} = \alpha_i + \phi \ln(1 + Atf)_{it-1} + \mathbf{K}\mathbf{Z}_{it-1} + \gamma_t + \mu_{it} \tag{4.9′}$$

where *IC* is a trade-related investment climate indicator for country *i*, such as the cost of trading, *Atf* is Aid for Trade facilitation (in millions of US dollars) lagged one year, α_i is country-fixed effects, γ_t are time effects, *Z* is a vector of other determinants of *IC*, and ε and μ are the error terms.[8]

Specifications (4.9) and (4.9′) test whether or not this type of AfT does indeed determine significant changes in the procedural costs of, and the time taken to, trade across borders. This is a direct test, as virtually all Aid for Trade facilitation is aimed at reducing the costs of trading across borders. According to the data description by OECD/DAC (2009), trade facilitation assistance is aimed at the simplification and harmonisation of international import and export procedures (e.g. customs valuation, licensing procedures, transport formalities, payments, insurance); support to customs departments; tariff reforms.[9] We specifically test whether or not the effects of *Atf* are different for SVEs from those for other developing countries.

We will also test for the effects of Aid for Trade education/training (*Atedu*) on IC variables. This type of aid is directed at human resources development in trade, including university programmes in trade (OECD/DAC 2009).

Other controls which may also affect trade include variables such as being landlocked, income levels, the size of the country and governance indicators from Kaufmann et al. (2008). Kaufmann indicators measure perceptions of the effectiveness of government. Income levels are important because higher levels are usually associated with better institutions and rules. The size and geographical status of countries clearly affect trade costs.

Aid for trade and exports

Second, we will estimate the effects of AfT on exports directly, using an augmented export demand equation which includes different types of AfT: (aid to) infrastructure

and productive capacities. This test follows from the theoretical model and represents a reduced form of equations (4.7) and (4.8).

$$X_{it} = \alpha_i + \gamma_1 Apc_{it-2} + \gamma_2 Ai_{it-2} + \gamma_3 MP_{it} + \gamma_4 p_{it} + \lambda_t + \varepsilon_{it} \quad (4.10)$$

where X is the (log of) exports value in constant prices (country i, time t), Apc is (log of 1 +) aid disbursed to productive capacity and Ai is (log of 1 +) aid disbursed to economic infrastructure, MP is a market potential measure and p is the level of prices (both in log); α_i country effects, λ_t estimation period effects. Unlike expression (4.9), we use a two-year lag for the AfT variables here, as AfT may take some time before affecting the level of exports, as its impact is mediated through other variables. On the other hand, the impact of Atf on trading costs is more direct and thus a one-year lag seems more appropriate. The results from (4.10) are generally robust to including one instead of two lags (results are available upon request). MP is computed as a distance weighted measure of other countries' GDP:

$$MP_{it} = \sum_{j=1}^{N} \frac{GDP_{jt}}{d_{ij}} \quad (4.11)$$

where GDP_{jt} is total GDP of country j at time t and d_{ij} is the distance in km between country j and country i (measured as the great circle distance between the respective capital cities).[10]

There are still a couple of potential problems with running specification (4.12). First, the AfT variables are possibly endogenous to exports. This is the case, for example, if better-performing and/or faster-reforming countries tend to receive more AfT than others. This would generate an upward bias in the AfT coefficients. Also, there could be some error in the measurement of the AfT variables, as this is based on voluntary reporting of disbursements by donors to the OECD secretariat. Such error could be caused by inefficiency in reporting and/or misclassification of projects and, if it is correlated to (time-varying) unobserved characteristics of recipients, could make the AfT coefficients inconsistent. In order to control for these potential issues, we use an instrument for AfT based on the degree of respect for civil liberties, as measured by Freedom House (2009). There is consistent evidence that donors tend to give relative more aid to countries which are considered to respect civil liberties and human rights (Alesina and Dollar 2000; Macdonald and Hoddinott 2004 for Canada). The Millennium Challenge Corporation, one of the major providers of US AfT, explicitly uses Freedom House indicators on respect for civil liberties and for political rights as criteria for recipient countries to be eligible for assistance. Other than being a good predictor of future aid allocation, this variable (*civil liberties*) is also not related to exports in any meaningful way, thus satisfying the conditions of exclusion restriction. It is hard to find any clear link between a country's respect of civil liberties and its capacity to export. This is also confirmed by the insignificant coefficient of *civil liberties* when we include it in specification (4.10).[11]

Another potential issue with the estimation of (4.10) is its lack of dynamics property. It is generally acknowledged (Senhadji and Montenegro 1999; Santos-Paulino and

Thirlwall 2004) that exports are fairly persistent over time, as they tend to depend on previous exports. Thus we test our results against a dynamic specification as well. We employ a first difference approach:

$$\Delta X_{it} = \gamma_1 \Delta Apc_{it-2} + \gamma_2 \Delta Ai_{it-2} + \gamma_3 \Delta MP_{it} + \gamma_4 \Delta p_{it} + \gamma_5 \Delta X_{it-1} + \lambda_t + \Delta \varepsilon_{it} \qquad (4.12)$$

where $\Delta X_{it} = X_{it} - X_{it-1}$

By construction ΔX_{it-1} is correlated with $\Delta \varepsilon_{it}$ in (4.14) (as X_{it-1} is correlated to ε_{it-1}). Hence we resort to the generalised methods of moments (GMM) estimator, which generates internal instrument using appropriate lagged values of the explanatory variables (Arellano and Bond 1991). The GMM technique serves also as a robustness test for the impact of AfT variables on exports, as it allows controlling for (weak) endogeneity of the AfT variables by using a different type of instrumental variables from that employed above. To make the analysis more robust, we also use the excluded instrument *civil liberties* in the GMM estimation of (4.12).

As the measurement error of the AfT variables could be determined not only by random errors but also by recipient-specific characteristics (e.g. if the disbursement process is cumbersome and thus under-reported in certain countries), we employ the GMM system estimator rather than the GMM difference estimator (Blundell and Bond 1998). This estimator uses the explanatory variables in levels in the regression and instruments them through their past values of first differences. In this way it allows controlling for unobserved recipient-specific effects that are potentially correlated with the explanatory variables.

We estimate (4.10) and (4.12) separately for SVE and non-SVE countries to check if aid to economic infrastructure (*Ainfra*) and aid to productive capacity (*Apc*) have a differential impact on SVEs (relative to other developing countries) along the lines described in Section 4.4.

Aid for Trade and sectoral exports

Aid to productive capacities (*Apc*) is usually targeted at specific sectors; it is typically provided to firms or (public and private) institutions active in a particular sector. Thus the identification of its effects on total exports – as it is the case in the specifications above – may be weak. Moreover, specifications (4.12) and (4.14) may still suffer to some extent from omitted variable bias of cross-country regressions due to unobservable time-varying differences across countries (e.g. country-specific shocks to productivity or institutions). These issues call for an identification strategy based on sectoral exports.

We divide *Apc* into aid to the different sectors and then relate sectoral aid to sector-specific exports. This helps to identify if sectors in the same country that receive more aid experience relatively faster growth in their exports (between-group component), as well as if exports of a sector grow faster in years in which that sector receives relatively higher levels of aid (within-group component). We also use value of exports as the dependent variable instead of real exports (as in specification (4.3)), which allows us to have more observations. This could be justified because we are now

comparing exports in the same sectors so the price effects may be less relevant in this instance. We use four large sectors of the economy for which export data (from the World Development Indicators) are available: food production, manufacturing, mineral extraction and tourism. These account for all exports of goods and some exports of services from the countries in the panel. We match these sectors with their counterparts in the aid data: agriculture and fishing, industry, mining and tourism.

We estimate the following equation for each of the four sectors separately (for SVEs and non-SVEs separately):

$$X_{ijt} = \alpha_{it} + \lambda_{jt} + \gamma_{ij} + \delta_1 Apc_{ijt-1} + \varepsilon_{ijt} \tag{4.13}$$

and

$$\Delta X_{ijt} = \Delta\alpha_{it} + \Delta\lambda_{jt} + \Delta\gamma_{ij} + \Delta X_{ijt-1} + \delta_1 \Delta Apc_{ijt-1} + \Delta\varepsilon_{ijt} \tag{4.14}$$

where X is the (log of) value of exports (for country i, sector j and time t), Apc is (log of 1 +) aid to productive capacity, α_{ij} is country–year fixed effects, λ_{jt} is time-varying sector-fixed effects and γ_{ij} is sector–country fixed effects. Given the discussion above, we estimate (4.13) through ordinary least squares (OLS) and (4.14) through GMM. Note that we do not have appropriate external instruments (i.e. country–sector time-specific variable) for Apc_{ijt}.

4.6.2 Data

We employ data from a variety of sources. Aid data come from the OECD/DAC (2009) Creditor Reporting System (CRS) database on disbursements. This database has covered a number of AfT activities since the mid-1970s, and reporting to the CRS is improving. However, data until 1994 have substantial gaps, so we base most of the analysis on the post-1994 period. We use different types of AfT data from this database, including Aid for Trade facilitation, for trade-related education, for productive capacity (both total and sectoral) and for economic infrastructure. These categories as well as the basic structure of the database are described in Box 4.1.

Data on investment climate indicators have become available for a large number of countries through the World Bank's 'Doing Business Report'. These surveys cover the number of documents, and the time and costs required to change a certain regulation (e.g. registering property, or dealing with licenses). We focus on indictors for trade across borders, provided in the 'Doing Business Report' report (see Appendix 3.1).

Exports data and most other controls, including population, CPI and GDP data, are from World Bank (2009). We also use the real effective exchange rate (REER) from the IMF (2009). Data on bilateral distances between capital cities come from Mayer and Zignago (2006), who compute geodesic distances through the great circle formula. Data on foreign market potential are computed by Mayer (2008) for the period 1970–2003. Government effectiveness indicators come from Kaufmann et al. (2008), while the index of *civil liberties* is computed by Freedom House (2009). This index is measured on a one-to-seven scale, with one representing the highest degree of freedom and seven the lowest.

Box 4.1 Aid for Trade data in the OECD CRS database

The OECD Development Co-operation Directorate bases its classification of the destinations of aid on the specific area of the social or economic structure in the receiving country that the aid transfer is intended to foster. The categories therefore refer to the overarching goal (e.g. trade facilitation), rather than the service provided through the funds (e.g. funding of regional trade agreements (RTAs) or training). The system of purpose codes summarises this classification in five digits: the first three refer to the respective DAC5 sector, and the remaining two represent numbering from more general (10–50) to more specific (60–90).

- ***Ainf*** *Aid to economic infrastructure*, coded as number 200, includes Transport & Storage, Communications, Energy, Banking & Financial Services and Business & Other Services, each with its own sub-components.
- ***Apc*** *Aid to production sectors*, coded as 300, includes the four sectors Agriculture–Forestry–Fishing, Industry–Mining–Construction, Trade Policy & Regulations and Tourism, treated separately.
- ***Atf*** *Aid for trade facilitation*, coded as 33120, is a single category.
- ***Atredu*** *Aid to trade education/training*, coded as 33181, is also a single category.

Tourism has only one final component: Tourism policy and administrative management. The other destinations for sectoral aid for productive capacity all have multiple ramifications and are further focused. Under the category Agriculture–Forestry–Fishing, *Agriculture* (coded 311) has 18 final components, ranging from the general Agricultural policy and administrative management (31110) to the specific Livestock/veterinary services (31195). *Fishing* (313) incorporates five possible destinations for aid. Also, the category Industry–Mining–Construction has among its sub-sections *Industry* (321) and *Mineral resources and mining* (322), which we use for proxying aid to manufacturing and minerals sectors respectively in the analysis below.

Source: OECD CRS website; also see Turner (2008)

4.6.3 Results

AfT and the cost of trading

We first test for the impact of Aid for Trade facilitation (*Atf*) on the costs of exporting (through equation (4.9)) using a repeated cross-section of 89 developing countries for which data is available. Table 4.4 presents the results, which show that *Atf* substantially reduces the cost of exporting.

Results reported in Table 4.4 suggest that a US$1 million increase in *Atf* (equivalent to a 171 per cent increase relative to the mean value) is associated with a 5.4 per cent or US$63 reduction in the cost of packing goods and loading them into a 20-foot

Table 4.4 The effects of Aid for Trade on the costs of export (without fixed effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Lcosexp	***Lcosexp***	***Lcosexp***	***Lcosexp***	***Lcosexp***	***Ltimexp***	***Lcosexp***	***Lcosexp***	***Lcosexp***
Atf(*t*–1)	−0.085***	−0.054***		−0.055***		−0.041***	−0.056***	−0.058***	−0.058***
	(−6.49)	(−5.23)		(−5.41)		(−4.20)	(−5.42)	(−4.01)	(−4.01)
Ln *Atf*(*t*–1)			−0.191***		−0.188***				
			(−4.39)		(−4.20)				
Atredu(*t*–1)								−0.255	−0.261
								(−1.45)	(−1.49)
Gov. Eff. (*t*–1)		−0.217***	−0.209***	−0.219***	−0.212***	−0.053	−0.218***	−0.172	−0.222*
		(−3.82)	(−3.73)	(−3.84)	(−3.77)	(−0.84)	(−3.82)	(−1.56)	(−1.98)
Ln pop (*t*–1)		0.114	0.154	−0.027	−0.025	−0.005	0.110	−0.028	−0.043
		(0.57)	(0.78)	(−1.56)	(−1.46)	(−0.38)	(0.54)	(−1.01)	(−1.60)
Ln pop (*t*–1) sq.		−0.004	−0.005				−0.004		
		(−0.66)	(−0.87)				(−0.62)		
GDP (*t*–1)		−0.002	−0.009	0.007	0.001	−0.134***	−0.002	−0.008	0.013
		(−0.059)	(−0.24)	(0.20)	(0.018)	(−3.30)	(−0.045)	(−0.11)	(0.19)
Landlocked		0.565***	0.570***	0.596***	0.601***	0.466***	0.565***	0.588***	0.516***
		(7.49)	(7.67)	(7.71)	(7.88)	(5.84)	(7.43)	(4.07)	(3.78)
Asia		−0.322***	−0.304***	−0.340***	−0.327***	0.038	−0.324***	−0.319***	−0.271***
		(−4.93)	(−4.67)	(−5.52)	(−5.35)	(0.70)	(−4.89)	(−3.36)	(−2.81)
America		−0.152*	−0.134	−0.178**	−0.159*	−0.069	−0.157*	−0.144	−0.166
		(−1.86)	(−1.65)	(−2.14)	(−1.93)	(−0.85)	(−1.84)	(−1.17)	(−1.31)

(continued)

Table 4.4 The effects of Aid for Trade on the costs of export (without fixed effects) (continued)

Europe		−0.348***	−0.322***	−0.396***	−0.370***	−0.426***	−0.348***	−0.090	−0.110
		(−3.27)	(−3.05)	(−3.62)	(−3.39)	(−2.88)	(−3.26)	(−0.49)	(−0.62)
Atf(*t*–1)* SVEs				−1.265**		−0.528			3.528*
				(−2.04)		(−1.05)			(1.90)
Ln *Atf*(*t*–1)* SVEs					−1.214*		0.012[a]		
					(−1.96)		(0.30)		
Atredu(*t*–1)* SVEs									−24.223**
									(−2.57)
Obs.	203	201	201	201	201	201	201	89	89
R-squared	0.089	0.551	0.555	0.559	0.560	0.490	0.552	0.581	0.609

[a] SVEs as defined by the WTO

Robust *t*-statistics in parentheses; * significant at 10 %; ** significant at 5 %; ***significant at 1 %

container, transporting them to the port of departure and loading them on the vessel or truck (column 2). Considering that in the year 2000 the number of 20-foot containers loaded and unloaded in African ports reached almost 7.3 million, including 2.5 million in sub-Saharan countries (UNCTAD 2003), the return on *Atf* is likely to be substantial. The control variables are in line with expectations: good governance reduces the costs of exports, whereas being landlocked considerably increases them. Asia and Europe have the lowest costs, with Africa having the highest.[12] The other variables are not significant, including population and GDP per capita. The insignificance of the latter is surprising but it is likely to be determined by two contrasting effects: on the one hand, higher income per capita is associated with higher costs of non-tradables, which in turn drive up the costs of exporting; on the other hand, higher income tends to be associated with higher efficiency in handling transport, logistics and administrative procedures, which bring the costs down. This is confirmed by the negative and significant coefficient of GDP per capita when using the time of processing exports – whose value is purged of the price effect – as the dependent variable (column 6). The results are also robust to using the double-log specification as in (4.9′), although the cost reduction is much higher in this case: a US$1 million increase in *Atf* is associated with a US$178 decrease in the costs of exporting (column 3).[13]

Importantly, this cost-reducing effect of *Atf* appears to be more relevant for SVEs than for other developing countries (column 4). This is also the case when using the double-log specification (column 5). When using the time taken to process exports, the differential impact of *Atf* on SVEs is negative but insignificant, whereas *Atf* has a significant time-reducing impact (column 6). On the other hand, there is no differential impact of *Atf* on the costs of exporting for SVEs identified according to the WTO definition (column 7). This is a much broader (and loosely defined) category than the one defined by the Commonwealth Secretariat and that may explain the insignificant differential impact. We also test for the effects of aid to trade-related education (*Atredu*) on the costs of exporting, and find a negative (though not significant) effect in a specification in levels (column 8). Interestingly, when we test for the differential impact of *Atf* and *Atredu* on SVEs, the latter turns out to have a significant reducing effect on the costs of exporting, while *Atf* has a differential positive impact (column 9) on SVEs. This reversal of the result of previous columns may be due to the restricted sample (less than half of the observations available) and to the high collinearity between the two SVEs interaction terms.

Table 4.5 gives the results of the fixed effects specifications that relate the changes in *Atf* to the changes in the cost of exporting, controlling for time-invariant characteristics of countries. The coefficient of *Atf* is still significant but is half of that in the specification without fixed effects (column 1). Now an increase in *Atf* of US$1 million is associated with a reduction in the cost of exporting of around US$30 (i.e. 2.5 per cent at the mean). This means that slightly over half of the impact of *Atf* is captured by time-invariant characteristics of recipient countries. This elasticity is robust to the exclusion of Egypt, although it shrinks a little (column 2). Again, the double-log specification yields a higher *Atf* elasticity of cost reduction (column 3), which is around twice as large as that in column 1. On the other hand the intensity of the effect of *Atf* on the timing of exports is analogous to that on the cost of exporting

Table 4.5 The effects of Aid for Trade on the costs of export (with fixed effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Sample	**All**	**No Egypt**	**All**	**All**	**All**	**All**	**TrEdu avail**	**TrEdu & TF avail**	**SVEs**	**Others**	**SVEs (WTO)**	**Others (WTO)**
Dep	**ln(X Cost)**	**ln(X Cost)**	**ln(X Cost)**	**ln(Xtime)**	**ln(Xtime)**	**ln(X Cost)**	**ln(X Cost)**	**ln(X Cost)**	**ln(X Cost)**	**ln(X Cost)**	**ln(X Cost)**	**ln(X Cost)**
Atf(*t*–1)	−0.025***	−0.020**		−0.024***		−0.018*		−0.029***				
	(−3.53)	(−2.26)		(−2.71)		(−3.16)		(−3.93)				
Ln *Atf*(*t*–1)			−0.074**		−0.048				−0.223	−0.079**	−0.150	−0.054
			(−2.14)		(−1.23)				(−1.34)	(−2.20)	(−1.68)	(−1.36)
Atredu(*t*–1)							−0.187*	−0.293***				
							(−1.90)	(−3.28)				
Gov. Eff. (*t*–1)	0.0986	0.0630	0.105	0.159	0.180	0.0618	0.355*	0.380**	0.0483	0.0969	0.121	0.130
	(0.78)	(0.49)	(0.79)	(0.75)	(0.84)	(0.61)	(1.78)	(2.18)	(0.26)	(0.58)	(0.60)	(0.84)
Ln pop (*t*–1)	8.622*	5.960	10.27*	11.88	12.10	−0.277	3.846	20.71	−10.33	12.98**	−11.25	10.72
	(1.83)	(1.16)	(1.84)	(1.30)	(1.24)	(−0.25)	(0.35)	(1.61)	(−0.87)	(2.30)	(−0.56)	(1.64)
Ln pop (*t*–1)	−0.274*	−0.191	−0.326*	−0.383	−0.397		−0.170	−0.813**	0.260	−0.401**	0.234	−0.317
sq.	(−1.91)	(−1.21)	(−1.89)	(−1.26)	(−1.23)		(−0.45)	(−2.31)	(0.58)	(−2.23)	(0.40)	(−1.56)
GDP (*t*–1)	0.0177	0.0762	0.232	−1.332**	−1.115	−0.150	−0.0572	−0.662	1.506*	0.230	0.0323	0.340
	(0.051)	(0.22)	(0.66)	(−2.04)	(−1.46)	(−0.44)	(−0.094)	(−1.07)	(1.91)	(0.58)	(0.031)	(0.94)
Ln documents						0.0222						
						(0.15)						
Constant	−59.87	−39.33	−74.37	−77.90	−79.35	12.54	−9.194	−102.9	88.18	−98.39**	123.8	−84.86
Observations	201	197	201	201	201	201	138	89	24	177	52	149
R-squared	0.372	0.335	0.330	0.361	0.342	0.353	0.208	0.561	0.770	0.327	0.511	0.328
Countries	86	85	86	86	86	86	76	48	11	75	25	61

All regressions include country and year effects; robust *t*-statistics in parentheses; * significant at 10 %; ** significant at 5 %; ***significant at 1 %

(column 4), while it is smaller (and not significant) in the double-log specification (column 5). The coefficient of Atf remains robust also to the inclusion the (log of the) number of documents necessary to export (column 6). *Atredu* is negative and significant in both specifications without and with *Atf* (columns 7–8).

We then test the impact of *Atf* separately for SVEs and non-SVEs (according to both definitions). In line with the results of the previous table we find that *Atf* has a (much) larger cost-reducing impact on SVEs than on non-SVEs. The coefficient for the former (column 9) is almost three times as large as that for the latter (column 10). This result is also valid when using the semi-log specification (results available from the authors upon request). Interestingly, this result applies (with similar relative magnitudes) to the case of SVEs defined according to the WTO definition (see columns 11 and 12), although the elasticity of cost reduction with respect to *Atf* is lower than for SVEs defined by the Commonwealth (see columns 9 and 11).

Overall, *Atf* seems to have a significant cost-reducing effect on the costs of handling exports, and back of the envelope calculations indicate that this appears to be an investment with an interesting return, especially for SVEs. These results appear all the more remarkable because cost of trading variables show substantial persistence over time, especially considering the short time frame of this analysis.

AfT and exports

Table 4.6 presents the results using the augmented export demand equation as in (4.10) estimated separately for SVEs and other developing countries. The results suggest the positive impact of aid to economic infrastructure (*Ainfra*) on exports, while aid to productive capacity (*Apc*) does not seem to have a significant effect on exports. However, these effects appear to differ over time. The first two columns present the results of the estimation for the 1995–2007 period only. Neither *Ainfra* nor *Apc* seems to have a significant effect on exports of SVEs (and the latter has a somewhat negative impact). On the other hand *Ainfra* has a positive effect on non-SVEs, while *Apc* has no effects (column 2). Restricting the analysis to a more recent period (1999–2007), the effect of *Ainfra* on SVEs becomes more positive, although it remains insignificant, while *Apc* becomes less negative. The coefficients of the aid variables are higher in the case of non-SVEs. Taken these results at their face value, they indicate that the support granted to the productive sector may have improved over time.[14] Also, trade-related assistance seems to be more effective in raising exports for non-SVEs than for SVEs. However, we still need to control for the endogeneity of the aid variables.

We do that only for the *Ainfra* variable for a number of reasons. First, we have one reliable excludable instrument available – civil liberties (CL) – and that happens to explain a much larger part of *Ainfra* than *Apc*. Second, leaving *Apc* out in the estimation of equation (4.10) turns out to affect the value of *Ainfra* (and the explanatory power of the regression) very marginally, whereas the opposite is not true (not shown here). The results are presented in columns 5 and 6. The coefficient of *Ainfra* seems to be robust to the endogeneity of aid; and the IV estimation (using CL as instrument for *Ainfra*) suggests that this endogeneity biases the coefficient of *Ainfra* downwards. The IV coefficient is three times larger than the OLS one for non-SVEs

Table 4.6 Total exports and Aid for Trade (1995–2007)

	(1)	(2)	(3)	(4)	(5)	(6)
Countries	**SVE**	**Non-SVE**	**SVE**	**Non-SVE**	**SVE**	**Non-SVE**
Period	**1995–2007**	**1995–2007**	**1999–2007**	**1999–2007**	**1999–2007**	**1999–2007**
Method	**FE**	**FE**	**FE**	**FE**	**FE IV**	**FE IV**
Aid for infra (*t*–1)	0.005	0.029*	0.023	0.032**	0.170	0.100***
	(0.16)	(1.94)	(0.68)	(2.21)	(0.97)	(2.71)
Aid to prod. capacity (*t*–1)	−0.054	0.004	−0.044	0.020		
	(−1.25)	(0.23)	(−1.08)	(1.47)		
CPI	0.475	−0.038	0.418	−0.082**	0.291	−0.061***
	(1.28)	(−0.89)	(0.88)	(−2.33)	(0.75)	(−3.15)
Market potential	−1.756	5.890***	0.799	5.088***	1.986	5.763***
	(−0.38)	(4.10)	(0.34)	(4.44)	(0.90)	(7.19)
Constant	33.704	−27.654**	11.978	−21.877**		
	(0.85)	(−2.29)	(0.62)	(−2.17)		
Observations	143	876	121	665	123	682
R-squared	0.571	0.641	0.505	0.649	0.299	0.609
Countries	17	83	17	83	17	82
Excluded instruments						
Civil Liberties (*t*–3)					−0.280*	−0.465***
					(−1.71)	(−5.72)
1st stage F-Stat (for Aid for infra)					2.91	32.77

Dependent variable is value of total exports in constant 2000 US$. All variables are in log; all regressions include year effects; robust *t*-statistics in parentheses; * significant at 10 %; ** significant at 5 %; *** significant at 1 %

(compare column 6 with column 4) and over six times larger for SVEs (column 5 versus column 3). The value of the F-statistics of the first stage along with the high significance of the CL coefficient indicates that the latter is a valid instrument for *Ainfra*. The downward bias from endogeneity may suggest that countries with poorer export capacity tend to receive proportionally more aid, which is somewhat intuitive. This is especially true for SVEs. Correcting for this bias makes the *Ainfra* coefficient larger for SVEs than for non-SVEs. This may represent some suggestive evidence of a differential effect of aid to infrastructure to SVEs: export performance in these countries seems to be more positively affected by support to infrastructure than in other developing countries. This is consistent with the idea that SVEs are relatively isolated from the main markets and, because of that and of the small population, suffer from an under-provision of trade-related infrastructure.

In order to take into account the persistence of exports we employ the dynamic specification described by equation (4.12) estimated through system GMM. Table 4.7 presents the results, which confirm the main findings of the previous analysis. For the period 1995–2007 the aid variables have an insignificant effect on exports for SVEs

Table 4.7 Total exports and Aid for Trade, GMM estimation

	(1)	(2)	(3)	(4)	(5)	(6)
Period	**1995–07**	**1995–07**	**1999–07**	**1999–07**	**1999–07**	**1999–07**
Countries	**SVE**	**non SVE**	**SVE**	**non SVE**	**SVE**	**non SVE**
Sample	**Aid > 0**	**Aid > 0**	**All**	**All**	**All**	**All**
Exports (*t*–1)	0.988***	0.990***	0.989***	0.993***	0.992***	0.996***
	(91.2)	(202)	(77.2)	(151)	(85.1)	(185)
Aid for infra (*t*–1)	0.004	0.013**	0.014	0.010		
	(0.44)	(2.29)	(1.31)	(1.62)		
Aid to prod. capacity (*t*–1)	−0.019	−0.005	−0.023	0.006		
	(−1.33)	(−0.57)	(−1.24)	(0.55)		
Aid for infra (*t*–2)					0.004	0.018***
					(0.47)	(2.74)
Aid to prod. capacity (*t*–2)					−0.014	−0.008
					(−1.03)	(−0.78)
CPI	0.052	−0.003	0.063	−0.019*	0.037	−0.020**
	(0.61)	(−0.27)	(0.51)	(−1.90)	(0.30)	(−2.11)
Market potential	−0.006	0.019	−0.003	0.039**	−0.015	0.035**
	(−0.14)	(1.47)	(−0.056)	(2.25)	(−0.31)	(2.23)
Observations	142	869	120	660	118	652
Countries	17	82	17	82	17	82

Dependent variable is value of total exports in constant 2000 US$. All regressions are estimated through the GMM-system estimator. All variables are in log; endogenous variables are lagged exports; *Ainfra* and *Apc* across all the specifications; civil liberties is included as excluded instrument; all regressions include year effects. Robust *t*-statistics in parentheses; * significant at 10 %; ** significant at 5 %; *** significant at 1 %

(column 1), while *Ainfra* has a positive impact for non-SVEs (column 2). In the period 1999–2007 the impact of *Ainfra* on exports appears to be more positive for SVEs (column 3) than for non-SVEs (column 4), while *Apc* has a negative value for SVEs (although it is not significant). These results change when lagging the aid variables two years. In the case of SVEs, the coefficients of both aid variables become smaller (column 5), while that of *Ainfra* increases for non-SVEs (column 6). This suggests that the bulk of the effects of *Ainfra* on exports occur over a shorter time frame for SVEs than non-SVEs.

Aid for Trade and sectoral exports

We also examine the effects of the two main types of AfT on exports in four broad sectors separately, using both specifications (4.13) and (4.14). The results are presented in Table 4.8 for tourism and food and Table 4.9 for manufacturing and minerals. For each sector we estimate separately for SVEs and non-SVEs a static specification with fixed and year effects and a dynamic specification with system GMM. The period we consider is 1999–2006. As far as tourism is concerned, the results suggest that sectoral aid (i.e. aid to productive capacity in the tourism sector) is particularly beneficial in

Table 4.8 Sectoral exports and Aid for Trade

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Tourism				Food			
Sample	SVE	Non-SVE	SVE	Non-SVE	SVE	Non-SVE	SVE	Non-SVE
Method	FE	FE	Sys-GMM	Sys-GMM	FE	FE	Sys-GMM	Sys-GMM
Aid sector (*t*–1)	0.153	0.007	0.196	0.064*	−0.157	0.058	−0.047	0.049**
	(0.50)	(0.12)	(1.30)	(1.88)	(−1.71)	(1.54)	(−0.57)	(2.31)
Aid Infra (*t*–1)	−0.071	−0.001	−0.001	−0.008	0.139	0.044	−0.002	−0.007
	(−1.05)	(−0.043)	(−0.026)	(−0.67)	(1.37)	(1.14)	(−0.033)	(−0.39)
CPI	−0.266	0.034	0.194*	−0.017	−1.403	−0.102	−0.068	−0.010
	(−1.17)	(0.39)	(1.98)	(−0.52)	(−1.57)	(−1.48)	(−0.15)	(−0.32)
Market Potential	3.303	2.908	0.012	0.150***	6.285	1.878	−0.113	0.092***
	(1.29)	(1.08)	(0.15)	(2.79)	(1.30)	(0.80)	(−0.80)	(2.78)
Pop	−7.373	8.091	−0.196	−0.039	−16.805	−32.295	−0.171	0.087
	(−0.53)	(0.92)	(−0.60)	(−0.30)	(−0.52)	(−1.49)	(−0.26)	(1.09)
Pop squared	0.345	−0.278	0.008	0.002	0.795	0.944	0.009	−0.003
	(0.60)	(−0.99)	(0.59)	(0.57)	(0.64)	(1.42)	(0.33)	(−1.02)
Exports (*t*–1)			0.979***	0.947***			0.931***	0.981***
			(49.1)	(46.6)			(31.7)	(70.2)
Constant	29.001	−62.788			53.346	278.102*		
	(0.32)	(−0.77)			(0.23)	(1.71)		
Excl. instrument		CL		CL		CL		CL
Observations	161	625	158	620	147	606	135	580
Countries	25	86	25	86	25	86	23	82
R-squared	0.266	0.445	.	.	0.254	0.296	.	.

Dependent variable is value of exports of the sector indicated in the second row; all regressions include year and country effects; all variables are in log; endogenous variables in the GMM specifications are lagged exports; *Ainfra* and *Apc*; all regressions include year effects; robust *t*-statistics in parentheses; * significant at 10 %; ** significant at 5 %; *** significant at 1 %

Table 4.9 Sectoral exports and Aid for Trade

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Manufacturing				Minerals			
	SVE	Non-SVE	SVE	Non-SVE	SVE	Non-SVE	SVE	Non-SVE
	FE	FE	Sys-GMM	Sys-GMM	FE	FE	Sys-GMM	Sys-GMM
Aid sector (*t*–1)	−0.278	0.009	0.027	−0.001	0.038	−0.096	0.329	−0.011
	(−0.65)	(0.32)	(0.15)	(−0.049)	(0.18)	(−1.58)	(1.22)	(−0.22)
Aid Infra (*t*–1)	−0.113	0.048	−0.073	0.029	0.405**	−0.032	0.128	0.012
	(−1.13)	(1.24)	(−0.97)	(1.32)	(2.09)	(−0.71)	(0.62)	(0.47)
CPI	0.576	0.035	0.622**	0.064**	1.769	−0.082	0.908	−0.034
	(0.95)	(0.76)	(2.11)	(2.42)	(1.00)	(−1.09)	(1.53)	(−0.80)
Market	16.238	2.754**	−0.026	0.100**	−16.62*	3.395*	−0.049	0.019
Potential	(1.16)	(2.01)	(−0.22)	(2.29)	(−1.84)	(1.87)	(−0.11)	(0.29)
Pop	9.686	−8.967	−0.906	0.055	−107.17	−10.37	−0.648	−0.154
	(0.34)	(−0.82)	(−1.51)	(0.52)	(−1.07)	(−0.97)	(−0.21)	(−0.80)
Pop squared	−0.511	0.320	0.038	−0.001	3.721	0.298	0.036	0.006
	(−0.43)	(0.96)	(1.55)	(−0.35)	(1.04)	(0.88)	(0.29)	(0.97)
Exports (*t*–1)			0.962***	0.974***			0.804***	0.946***
			(26.5)	(77.6)			(8.66)	(49.2)
Constant	−163.25	56.724			904.432	79.210		
	(−0.62)	(0.58)			(1.35)	(0.83)		
Excl. instrument		CL		CL		CL		CL
Observations	147	603	135	577	141	606	128	580
R-squared	0.156	0.392	·	·	0.144	0.405	·	·
Countries	25	86	23	81	24	86	23	82

Dependent variable is value of exports of the sector indicated in the second row; all regressions include year and country effects; all variables are in log; endogenous variables in the GMM specifications are lagged exports; *Ainfra* and *Apc*; all regressions include year effects; Robust *t*-statistics in parentheses; * significant at 10 %; ** significant at 5 %; *** significant at 1 %

SVEs (the coefficient is three times that for non-SVEs). On the other hand *Ainfra* is not significant for either group, suggesting that tourism exports are not highly constrained by the lack of infrastructure. This may not be surprising, as a lot of SVEs are heavily reliant on tourism, and activities that support the development of the sector may have high returns for the export activities. AfT seems to be ineffective for food exports in SVEs (columns 5 and 7), whereas sectoral aid has a positive effect on exports for non-SVEs (columns 6 and 8). Similarly, the impact of AfT is negligible on manufacturing exports in SVEs, whereas *Ainfra* has a positive effect in non-SVEs (columns 1–4, Table 4.8). Finally, AfT appears to have a positive (although significant only for *Ainfra* in the FE specification, see column 5) effect on mineral exports in SVEs, especially as far as sectoral aid is concerned (column 7), but not in other developing countries (columns 6 and 8).

4.7 Conclusions and policy implications

This study represents one of the first attempts to focus on effects of AfT in SVEs. The evidence in this chapter suggests that SVEs fall in a category of countries in special need of AfT because of their relative disadvantage in international trade and their higher expected adjustment costs to trade integration relative to other developing countries. Although the rationale for AfT is particularly clear for SVEs, no donor has a specific AfT focus on these countries. There are a number of programmes that may be particularly relevant for SVEs, as they address some of the trade-related shocks likely to be faced by these countries, such as the EU SFA for bananas, the Special Fund for Rum and the trade integration mechanism. However, there is no programme we are aware of that addresses specific trade constraints of SVEs such as dealing with consequences of remoteness and smallness. This may be a useful addition to consider, if SVEs are to compete effectively in an integrated trade regime.

Despite the lack of specific programmes for SVEs, these countries receive relatively higher levels of AfT per capita. Small countries, and thus SVEs as well, receive higher per capita amounts of AfT – just like general aid. However, AfT to SVEs often have large swings suggesting that there may not be a long-term strategy in terms of allocating AfT to them.

We then investigate in more detail how AfT is expected to influence trade performance. Using a simple export demand model we show how AfT may benefit exports of developing countries, and of SVEs in particular. The review of the evidence available on the effectiveness of past AfT on trade performance is mixed. This examination is challenging owing to the difficulty in isolating the impact of AfT programmes on the recipients' economy. This attribution problem has often resulted in a lack of clear and measurable objectives and indicators in programming documents. However, some problems in the programming and delivery of AfT seem apparent. For example, administrative constraints faced by ACP countries in dealing with EU procedures usually lead to very slow rates of aid disbursement, which may undermine the value of the assistance extended in support of time-sensitive adjustment processes. Moreover, our review suggests the importance of ownership, alignment and harmonisation as critical factors of success of AfT, much in line with the traditional aid effectiveness literature. The implications mainly refer to

the need to involve stakeholders, and trade and other officials, in beneficiary countries at the very beginning – to help design programmes, devise specific objectives and implementation strategies, keeping country-specific conditions in mind.

Lack of proper data and benchmarks (e.g. in terms of outcome variables to rate the project against) has often constrained the possibility of properly assessing the effectiveness of AfT over a large number of projects. By using a large panel dataset of developing countries we provide new systematic evidence on the effectiveness of AfT. Using original empirical models, we examine the overall impact of different types of trade-related assistance on specific trade-performance indicators. Importantly, we identify the impact of AfT on SVEs and other developing countries separately. The results suggest that a particular type of AfT, that is Aid for Trade facilitation, seems to have a significant cost-reducing effect on the costs of handling exports, and back of the envelope calculations indicate that this appears to be an investment with an interesting return. SVEs seem to enjoy particularly high returns on Aid for Trade facilitation, which is consistent with these countries having, on average, higher unit transaction costs on exports (as these are spread over smaller volumes of exports). Our results further suggest that aid to economic infrastructure increases overall exports for developing countries, and more so for SVEs, while aid to productive capacity has no significant effect on exports for either SVEs or non-SVEs. The weak effect of aid to productive capacity may be partly explained by a poor identification strategy, as this type of aid is mostly sectoral and thus should be measured against sectoral exports. When we do this (using sectoral exports and sectoral aid for four broad sectors), we find heterogeneous effects of AfT across sectors. In particular, sectoral AfT seems to have a positive impact on tourism and mineral exports, which is considerably larger in SVEs than in non-SVEs. On the other hand, food and manufacturing exports do not appear to benefit from higher AfT.

On the basis of these findings and the review of the evidence we provide suggestions for AfT by donors as well as for SVEs.

- First, donors could consider introducing AfT programmes (or projects) addressing specific trade-related constraints faced by SVEs, including remoteness and isolation, as these seem to be binding, especially in a world of trade. AfT could help by, inter alia, funding connective infrastructure and improving the efficiency of existing infrastructure.
- Second, donors should increase the speed of AfT disbursement, as slow disbursement tends to undermine the value of the assistance extended in support of time-sensitive adjustment processes, such as the trade-related ones experienced by SVEs.
- Third, it would be desirable for donors to programme their trade-related activities for longer time spans and with more active participation by the recipients. This would increase the predictability and ownership of AfT flows. These recommendations are in line with those for general aid, but, given the high variability of trade-related aid in particular towards SVEs, they may be of particular importance in this context.
- Fourth, donors could consider scaling up the level of Aid for Trade facilitation, as this appears to be a particularly cost-effective investment. This is particularly the case for SVEs.

- Fifth, as the impact of aid to economic infrastructure on exports seems to be especially high in SVEs, it would be worth considering the opportunity of increasing it.
- Sixth, donors should work with recipients to identify those contexts in which there is more need for aid to productive sectors, considering that this form of aid seems to work better in certain sectors in SVEs, such as tourism and minerals.

Notes

1 The Doha Ministerial Declaration of the WTO, adopted in 2001, established a Work Programme with the objective of framing responses to the trade-related issues identified for the fuller integration of small, vulnerable economies into the multilateral trading system. However, this was not meant to create a sub-category of WTO members. Although many SVEs receive trade preferences under various bilateral and regional arrangements, under the multilateral trade talks they are not considered for special preferences that are generally granted to the other group of countries known as the least developed countries (LDCs). For details on the status of SVEs in the WTO see Smith (2009).

2 See Qureshi and te Velde (2008) for a more complete analysis of the challenges faced by small states.

3 The study included also a substantial data collection effort on relevant indicators, such as wages of skilled, semi-skilled and unskilled labour, airfreight, sea freight and telecommunication costs.

4 These countries are Antigua and Barbuda, The Bahamas, Belize, Bhutan, Botswana, Brunei, Cape Verde, Comoros, the Cook Islands, Cyprus, Djibouti, Dominica, Equatorial Guinea, Fiji Islands, Gabon, The Gambia, Grenada, Guyana, Jamaica, Kiribati, Lesotho, Maldives, Malta, the Marshall Islands, Mauritius, Micronesia, Montenegro, Nauru, Niue, Palau, Papua New Guinea, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Samoa, Seychelles, Solomon Islands, Suriname, Swaziland, Timor-Leste, Tonga, Tuvalu and Vanuatu. The reported trade shares of these countries have been estimated based on the data (on total trade in goods and services of different countries in current US dollars) provided by the United Nations Conference on Trade and Development (UNCTAD).

5 Data for ODA are obtained from the OECD/DAC database on aid flows.

6 This means that, if an amount x_{ij} of good is shipped from i to j, only x_{ij}/τ_{ij} will reach location j.

7 More specifically, the impact of technical papers and regional seminars within UNCTAD's technical assistance programmes was in doubt, and the report also concluded that the former was not a transparent and efficient channel for allocation of TRTA funds.

8 We use $\ln(1 + Atpr)$ to avoid missing and negative values. The main results are robust to using $\ln(Atpr)$ as well.

9 This is reinforced by the data description given by WTO/OECD (2008), according to which 'trade facilitation relates to a wide range of activities such as import and export procedures (e.g. customs or licensing procedures); transport formalities; and payments, insurance, and other financial requirements […] Cutting red tape at the point where goods enter a country and providing easier access to this kind of information are two ways of "facilitating" trade.'

10 We also check the robustness of the results to using a foreign market potential measure computed by Mayer (2008) through bilateral trade data.

11 Not shown here, available from the authors upon request.

12 We include Oceania in Asia.

13 The average value of $\ln(1 + Atf)$ is 0.35; thus a 100 per cent increase in $(1 + Atf)$ is equivalent to an increase in Atf of US$1.35 million, which is associated with a 20 per cent decrease in costs of exporting. This means that a US$1 million rise in Atf is associated with a reduction in costs of 14.5 per cent (US$178).

14 Given the consistency of the $Ainfra$ coefficients across the different samples, we can probably rule out the other potential explanation for this change in the Apc coefficient, i.e. that reporting has improved over time, thus limiting the measurement error of the earlier period, which was driving the insignificant results of the 1995–2007 period.

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