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# PROCUREMENT OF GOODS AND SERVICES BY INTERNATIONAL ORGANISATIONS IN DONOR COUNTRIES

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## Abstract

This article examines the procurement of goods and services by multilateral organisations from suppliers, based on a panel data including industrialised countries and emerging economies over 11 years. It presents the results of an empirical study – the first of its kind – on the explanatory factors of variations between countries, which are mainly attributable to such factors as the strength of the manufacturing sector and business ties established in the past. The results seem to indicate that the contributions paid by donor countries may have a positive influence on the procurement of goods and services, despite the fact that multilateral organisations purchase goods and services through international tendering procedures. Geographical proximity, cultural and linguistic affinities and the presence of the headquarters of a multilateral organisation in the country also play a positive role. The purchase of goods and services by multilateral agencies may be considered as an indirect effect of official development assistance (ODA). With many donor countries facing serious economic and budgetary constraints, documentation of the 'return on investment' may serve as a means of encouraging policymakers to increase – or at least to not reduce – ODA budgets, including for multilateral agencies. Such arguments must nevertheless remain marginal with respect to the key debates on aid effectiveness and on the performance of multilateral organisations.

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## 1. Introduction

Voting budgets for official development assistance (ODA) often sparks intense debate on the relevance of aid and its return on investment, i.e. on what's in it for the donor country. Since most members of the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) face severe budgetary constraints, their aid agencies are under increasing pressure to demonstrate the effectiveness of ODA in reducing poverty so as to secure budgetary approval in parliament. At the same time, they need to highlight the positive effects that ODA brings to the donor country, be it the preservation of global public goods (e.g. security, public health, environment, food safety) or more directly in the form of job creation and the awarding of contracts.

Surprisingly, empirical studies on the economic effects of ODA on donor countries are still few and far between. Of these studies, none deal specifically with the purchase of goods and services by multilateral organisations. This is all the more surprising given that the literature on the motivations of ODA stresses the pursuit of donor interests (e.g. Alesina and Dollar, 2000; Charnoz and Severino, 2007, 37-51; Degnbol-Martinussen and Engberg-Pedersen, 2003; Morrissey, 1993; Riddell, 2007, 91-162). The paucity of research on the economic return to foreign aid may be due to the difficulty to get hold of the relevant data. But it also reflects the political sensitivity of the issue in donor countries: both low and high return rates may weaken the domestic coalition in favour of foreign aid. A low rate of return may diminish the support from industry and their representatives in parliament. A high return rate may antagonise civil society groups who may argue that this provides evidence that foreign aid serves domestic economic interests.

This article examines the 'indirect' effect of multilateral aid in over twenty industrialised countries and emerging economies whose companies supply goods and services to the United Nations System and development banks. This indirect effect has been defined and calculated in a previous study commissioned by Switzerland's Agency for Development and Cooperation and State Secretariat for Economic Affairs. The study revealed that, in 2010 alone, the indirect effect of goods and services procurement by multilateral organisations benefiting Swiss-based suppliers accounted for nearly half of the total primary effect of ODA on global demand in Switzerland (see Carbonnier et al. 2012; see Table 1).

Section 2 provides a brief review of the literature on the economic effects of ODA on donor countries and presents the research method. Section 3 analyses data and trends relating to the purchase of goods and services by multilateral organisations between 2000 and 2010. Section 4 presents the econometric model built to identify the factors explaining the purchase of goods and services by multilateral organisations. Section 5 and Section 6 present the results and conclude.

## 2. Economic effects of ODA pour les donor countries

The literature on the impact of ODA on the donor economy can be roughly divided into two groups. The greater portion investigates the long-term interaction between foreign aid and donor's exports to the recipient country (Arvin and Baum 1997; Zarin-Nejadan 2008) while a few empirical studies focus on the short-run impact of aid on the donor's gross domestic product (GDP) and labour market.

Arvin and Choudry (1997) attempt to assess how far untied aid disbursements create goodwill for donor exports, looking at Canada over the period 1982-1990. The authors conclude on the whole that untied aid may promote exports. Vogler-Ludwig *et al.* (1999) analyses the impact of German aid on exports to forty-two recipient countries over the period 1976-1995. As in the Canadian study, the authors use a bi- and tri-variate Granger-causality procedure to test different hypotheses and find a strong relationship between untied aid and German exports to recipient countries. In a more recent study on Germany, Nowak-Lehmann *et al.* (2009) confirm that the direction of causation goes from aid to exports rather than vice-versa. Interestingly, the authors find that ODA provided by other European countries tends to crowd out German exports.

The second group of studies seeks to assess the short-term return of aid on the donor's economy by taking into account the Keynesian multiplier effects. Schumacher (1988) assesses the impact of ODA on the German labour market based on a standard input-output model *à la* Leontief and concludes that effect is substantial (roughly 110,000 jobs in 1984). He goes on highlighting that technical assistance benefits mainly small and medium size enterprises while financial assistance programmes benefit larger firms. Roy and Vadlamundi (1993) find a positive and significant return of Australian official development assistance in terms of foreign direct investment over the period 1974-1988.

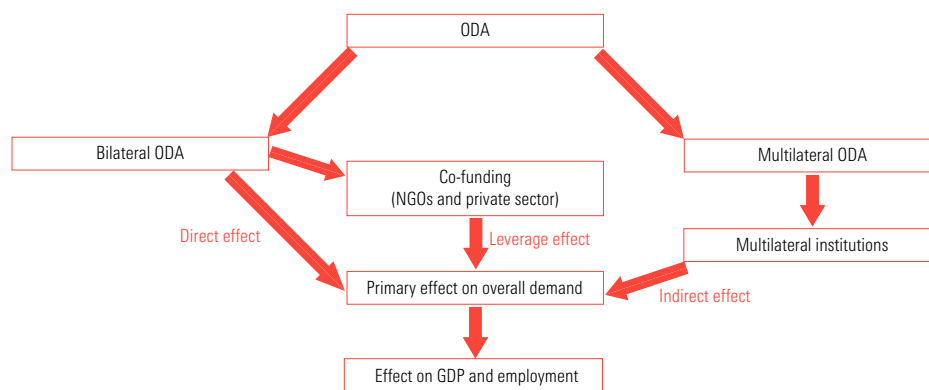
This article builds on a previous study of the effects of ODA on the Swiss economy, in which we examined the effects resulting from the purchase of goods and services as well as the payment of salaries and consulting fees under official development assistance (Carbonnier *et al.*, 2012). We calculated the impact on overall demand and then, through the multiplier effect, on GDP, which allowed estimating the impact on employment on the basis of average labour productivity. From a methodological standpoint, we drew a distinction between three effects of ODA on demand in the donor country, as shown in Figure 1:

- *The direct effect of bilateral ODA*, resulting from expenditure in terms of salaries and fees as well as the procurement of goods and services, including from non-governmental organisations and private firms that benefit from ODA funding;
- *The leverage effect*, when bilateral ODA encourages private companies and non-governmental organisations to provide additional contributions over and above ODA. In such cases, aid acts as a catalyst for expenditure by non-state agents that would not have taken place without public co-funding;

- *The indirect effect of multilateral ODA<sup>1</sup>*, which concerns the procurement of goods and services by international organisations that receive ODA funding. These agencies purchase goods and services all over the world, generally through international tendering procedures. For donor countries, this can be regarded as an indirect effect in the sense that purchase contracts are not directly associated with donations to these organisations. Nevertheless, it cannot be entirely excluded that multilateral ODA indirectly encourages the purchase of goods and services by international organisations. The assumption is that multilateral organisations may tend to channel goods and services procurement to suppliers based in major donor countries.

This article precisely focuses on the indirect effect between funding multilateral agencies and procurement of goods and services by those agencies.

**Figure 1 – Economic effects of ODA on the donor country**



Source: Carbonnier et al. (2012).

In the specific case of Switzerland, the results of the 2010 study showed that the indirect effect accounts for nearly 40% of the primary effect, i.e. the total impact of ODA on global demand (Table 1).

The eventual impact of this additional demand on GDP, via the multiplier effect, stood at 1.29 CHF per franc of ODA in 2010, which is slightly lower or comparable to the effect of other types of public expenditure in that country (e.g. higher education, public transport). The effects of ODA on employment amounted to 20 800 full-time equivalent jobs<sup>2</sup>. It is worth mentioning that these figures are considerably higher than those reported in a study using the same approach for Austria in 2010, particularly due to a less pronounced indirect effect of multilateral ODA (Schönenberger, 2012).

<sup>1</sup> Multilateral ODA includes both general and voluntary contributions to the United Nations System, the World Bank (International Development Association – IDA), regional development banks and other funds, programmes and multilateral bodies where all or part of this funding may be included in the calculation of ODA, as determined by DAC directives. For the purposes of this study, multilateral ODA also includes ‘multi-bilateral’ aid (cf. Section 3.1).

<sup>2</sup> Based on the value added by worker in the manufacturing sector for income generated from expenditure on goods and on the average productivity of services for income generated from expenditure on services.

**Table 1 – Primary effect of ODA on demand in Switzerland** (2010, in CHF million and per franc of ODA)

	2010	
	in millions Swiss francs	Per Swiss franc of ODA*
Direct effect*	939	0.67
Leverage effect*	306	0.22
Indirect effect*	807	0.87
<b>Total: primary effect*</b>	<b>2052</b>	<b>0.88</b>

\* In these calculations, the denominators are different because each type of effect refers to a specific component of ODA: the direct effect and the leverage effect are calculated per franc of bilateral ODA (CHF 1406 million) whereas the indirect effect is calculated per franc of multilateral ODA (CHF 924 million). The primary effect is calculated per franc of total ODA (CHF 2330 million).  
*Source:* Carbonnier et al. (2012).

### 3. Data

We collect data on the procurement of goods and services by multilateral organisations and the contributions made by donor countries to these organisations, for the period 2000-2010.<sup>3</sup>

#### 3.1. Sources and description

Regular contributions due by each member state to the United Nations (UN) is calculated based on criteria such as gross national income, per capita income, exchange rates and foreign debt.<sup>4</sup> In addition, several UN funds and programmes receive specific contributions, which are paid by member states on a voluntary basis. A distinction is drawn between two types of resources: core resources, which may be used in any manner the recipient organisation sees fit (i.e. unearmarked contributions) and which are included in the calculation of multilateral ODA; and non-core resources (also referred to as extra-budgetary resources), which generally must only be used for specific programmes or countries (i.e. earmarked contributions) and which are included in the DAC's calculation of bilateral ODA. In some cases, this second category is referred to as 'multi-bilateral' aid (Yussuf et al., 2007, 2-5).

Data on multilateral ODA contributions to the UN are taken from the DAC database.<sup>5</sup> Member state general contributions or 'contributions to the UN regular budget' come from annual reports on the state of contributions on 31 December (UN, 2000-2010). Delays or past-due payments have also been taken into account. In addition to the regular contributions from member countries, which are used in operating budgets, the development banks also

<sup>3</sup> The sources are listed in the 'References' section at the end of the article.

<sup>4</sup> For more information regarding the UN scale of assessments, see Resolution 64/248 adopted in February 2010 by the UN General Assembly (2010).

<sup>5</sup> Query Wizard for International Development Statistics (QWIDS, 2013).

receive contributions to replenish specific funds.<sup>6</sup> These amounts were taken from the QWIDS database.

Data on the purchase of goods and services by UN agencies come from annual statistical reports posted on the United Nations Global Marketplace (UNGM) (IAPSO, 2000-2007; UNOPS, 2008-2010)<sup>7</sup>. In addition to the United Nations System as a whole, we consider four specific funds and programmes for a more in-depth analysis: the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the Office of the United Nations High Commissioner for Refugees (UNHCR) and the World Food Programme (WFP). This choice is based on three criteria: first, contributions to these funds and programmes can be entirely recorded as ODA, in accordance with DAC directives. Second, each of these organisations has an annual budget exceeding USD 1 billion and draws a large portion of its funding from voluntary contributions from member states. Third, these organisations have their headquarters in different countries (Italy, Switzerland, United States), which allows us to consider the possible effect that the presence of the headquarters of such organisations has on relations between client and suppliers<sup>8</sup>.

Procurement of goods and services by the World Bank was determined on the basis of summary reports by the World Bank for the years 2000-2010 (World Bank, 2012). As for the regional development banks, data for the African Development Bank (AfDB) was gleaned from procurement data in AfDB annual reports (AfDB 2003-2010). Data on the Asian Development Bank (AsDB) came from its own quarterly procurement statistics (AsDB, 2001-2007). In these two latter cases, any gaps in data were filled by the Swiss Agency for Development and Cooperation (SDC). The data on the Inter-American Development Bank (IDB) came from the IDB's procurement database for the years 2000-2010 (IDB, 2013).

Salaries paid by multilateral agencies to their employees are not included in this study, despite the fact that they represent in some cases a very sizeable portion of their operating budgets.

### 3.2. UN Procurement

The procurement volume of the United Nations System increased considerably, from USD 3.7 billion in 2000 to USD 14.5 billion in 2010 (IAPSO, 2000-2007; UNOPS, 2008-2010). In 2000, the ten main supplier countries to the UN (nine of which were industrialised countries) reached over 50%.<sup>9</sup> In 2010, this share<sup>10</sup> fell to 45.5% but included three developing countries where

<sup>6</sup> This is the case, for instance, with regular replenishment of the capital of the World Bank's International Development Association (IDA), or replenishment of the African Development Fund (AfDF), the Asian Development Fund (AsDF) or the Fund for Special Operations (FSO) of the Inter-American Development Bank (IDB).

<sup>7</sup> Following the partial merger of the Inter-Agency Procurement Services Office (IAPSO) and the United Nations Office for Project Services (UNOPS) in 2008, responsibility for compiling these reports was transferred to UNOPS.

<sup>8</sup> The volume of procurement of goods and services was also determined from data contained in UNGM reports. Statistics on donor country contributions to the regular budgets of multilateral agencies were drawn from the QWIDS database whereas the extra-budgetary contributions were drawn from the annual reports of each agency. Some of the annual reports do not mention the total contributions received, but only those over USD 1 million or those from the ten major donors.

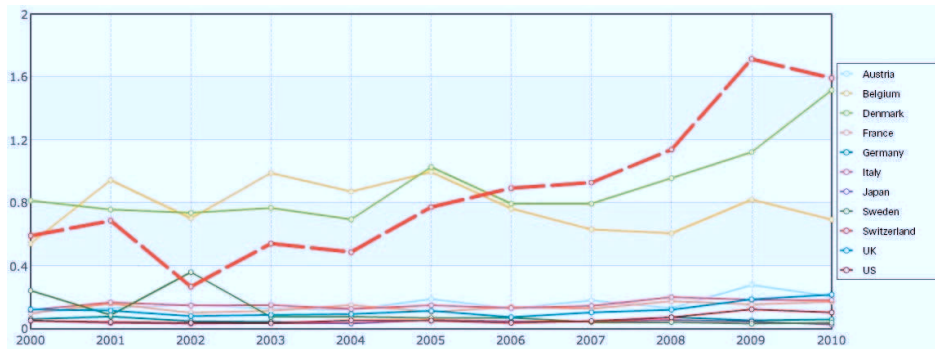
<sup>9</sup> Procurement volumes in absolute terms, in decreasing order: United States, Japan, United Kingdom, Switzerland, India, Italy, France, Denmark, Belgium and Germany.

<sup>10</sup> United States, Switzerland, Afghanistan, Sudan, India, Russian Federation, United Kingdom, Denmark, Pakistan and France.

the UN carries out extensive operations (Afghanistan, Sudan and Pakistan) as well as two emerging economies (India<sup>11</sup> and Russia).

Figure 1 shows the progression of UN procurement from 2000 to 2010, with the vertical axis showing the corresponding value in per mil (‰) of GDP for each country. Belgium (yellow line), Denmark (light green line) and Switzerland (dotted red line) clearly stand out. Starting in 2002, the year when it joined the UN, Switzerland's position steadily improved, surpassing all other countries from 2006 onwards.

**Figure 1 – Variations in the purchase of goods and services by the United Nations from main suppliers** (industrialised countries; 2000–2010, in ‰ of GDP)



Annual reports on UN procurement mention the largest categories of goods and services purchased during the year. Medical equipment, for example, is the largest category for Switzerland<sup>12</sup>, Belgium, Denmark and the United States. The second largest category is pharmaceuticals (except for Denmark). Likewise, IT equipment and electronics also figure prominently in UN procurement from suppliers in the United States, or audiovisual equipment from suppliers in Switzerland. It is interesting to note that the countries at the top of the list have varying, but not necessarily high, rates of tied bilateral aid. Denmark, for example, had a relatively low level of tied aid towards the end of the period considered even if it continued to resort to mixed credits to encourage its exports (*Development Today*, 2006).

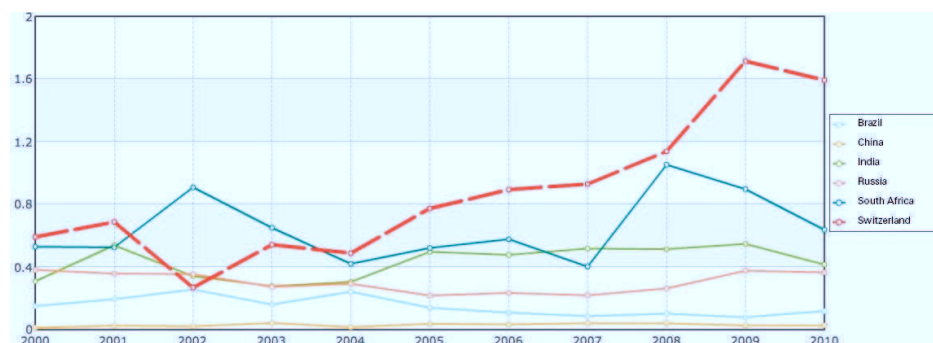
Figure 2 compares the level of UN procurement from suppliers based in emerging economies (Brazil, China, India, Russia and South Africa – BRICS). Switzerland is also listed to facilitate comparison with the previous chart. While procurement volumes from suppliers in BRICS have increased substantially, they remains rather stable in proportion of their GDP due to strong economic growth during the period under review.

<sup>11</sup> India was already listed among the ten main suppliers in 2000.

<sup>12</sup> Table A1, in the Appendix, contains a list of categories of goods and services supplied by Switzerland between 2000 and 2010.



**Figure 2 – Goods and services procurement by the United Nations in BRICS and Switzerland (2000–2010, in % of GDP)**



If we consider selected developing countries where the UN carries out extensive operations, we find them at the top of the list due to the relatively small size of their GDP in relation to the local procurement made by UN agencies. In Afghanistan, for example, following the intervention of coalition forces, UN procurement reached 57% of GDP in 2005, to level out at around 40%; in Kenya and Uganda, these procurement account for around 5 to 10% of their respective GDP between 2005 and 2010 (Table 2). These figures are considerably lower for middle-income countries like Colombia or Pakistan due to the larger size of their economy.

In the specific case of the UNDP, procurement of goods and services went from USD 589 million in 2000 to USD 2.9 billion in 2010. Denmark tops the list with Belgium, far ahead of the other industrialised countries<sup>13</sup>. In 2010 alone, the list of goods and services purchased in Denmark includes hundreds of different items, particularly relating to maritime and air transport, vaccines and medical supplies or office equipment. We also find procurement of voting and identification equipment, such as in the case of Belgium in 2005, probably related to the preparation of elections in the DRC. The pre-eminence of Denmark, illustrated in Figure 3 compared to Switzerland and Belgium, is mainly due to the fact that the UNDP's Nordic Representation Office (NRO), Staff Administrative Services (SAS) and Procurement Support Office (PSO) are all located in Copenhagen.<sup>14</sup> Figure 4 shows the variations for the other industrialised countries that supply goods and services to the UNDP.<sup>15</sup> Switzerland is also listed to facilitate comparison with Figure 3. Despite the presence of UNDP headquarters in New York, the United States does not appear at the top of the list due to the sheer size of its economy.

<sup>13</sup> As suggested by the econometric analysis presented in Section 4, tied aid does not seem to be a determinant explanatory factor.

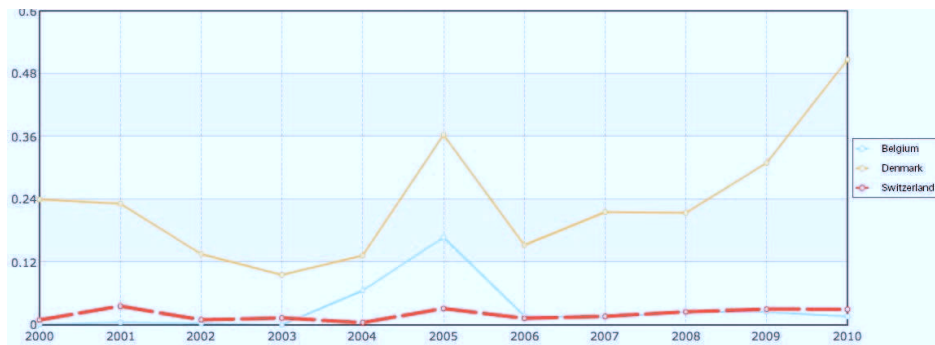
<sup>14</sup> See UN in Denmark (2012).

<sup>15</sup> Had Denmark and Belgium been included in this chart, the effect would have been to modify the scale and 'flatten' the other countries, making their curves impossible to distinguish from one another.

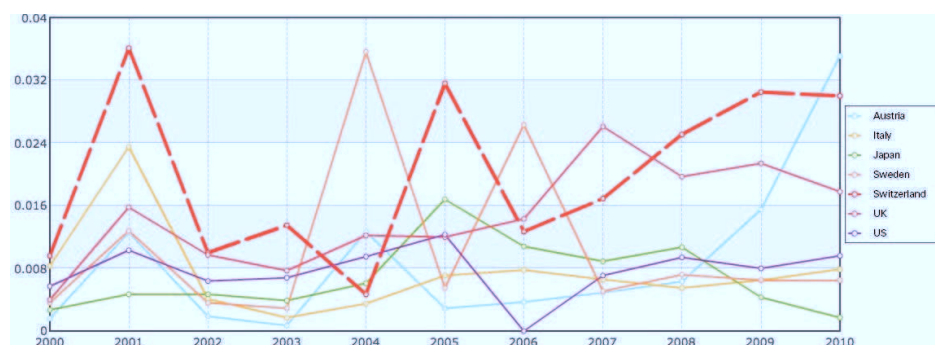
**Table 2 – Procurement of goods and services by the United Nations in selected developing countries**  
(2000–2010, in % of GDP)

	Afghanistan	Colombia	Kenya	Uganda	Pakistan
2000		0.49	4.64	1.44	0.16
2001		0.61	2.08	1.93	0.46
2002	1.046	0.90	4.72	2.11	0.003
2003	9.28	0.64	3.80	5.13	0.03
2004	37.58	0.46	4.11	3.97	0.0003
2005	56.97	0.35	8.06	8.83	0.76
2006	44.95	0.51	10.13	5.47	1.03
2007	33.21	0.43	4.98	7.59	0.72
2008	40.79	0.45	6.25	6.84	0.54
2009	34.97	0.34	9.17	8.16	1.14
2010	43.06	0.03	8.73	7.21	2.65

**Figure 3 – Goods and services procurement by the UNDP in Belgium, Denmark and, for comparison, Switzerland** (2000–2010, in % of GDP)

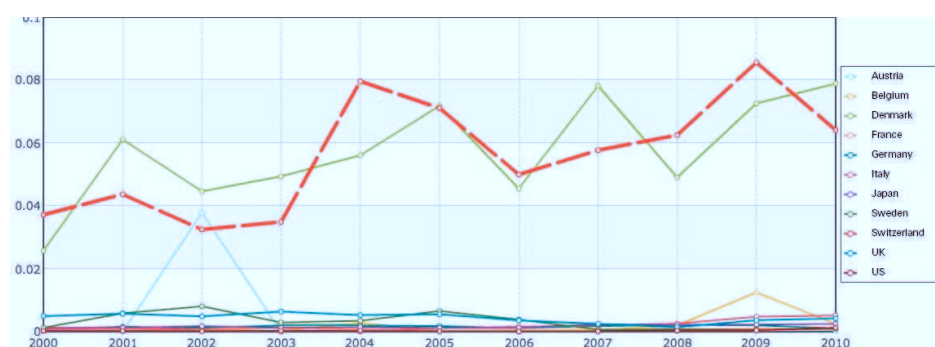


**Figure 4 – Procurement of goods and services by the UNDP in industrialised countries, excluding Belgium and Denmark (2000–2010, in % of GDP)**



The total volume of UNHCR’s procurement remained below USD 100 million from 2000 to 2006, then grew sharply to reach USD 423 million in 2010. Among DAC member countries, Switzerland and Denmark appear at the top among suppliers of the UNHCR relative to their GDP (Figure 5). In 2004, Switzerland became the main supplier of services (telecommunications, construction and maintenance, administrative services, etc.), which can be explained by the presence of UNHCR headquarters in Geneva. In 2010, for example, and only considering DAC member countries<sup>16</sup>, the UNHCR purchased one-third of its services in Switzerland, versus 21% in the United States and 18% in Denmark. In the latter, procurement mainly related to electronic or audiovisual equipment, pharmaceuticals, transport services as well as vehicles and spare parts.

**Figure 5 – UNHCR procurement, main suppliers (industrialised countries; 2000–2010, in % of GDP)**

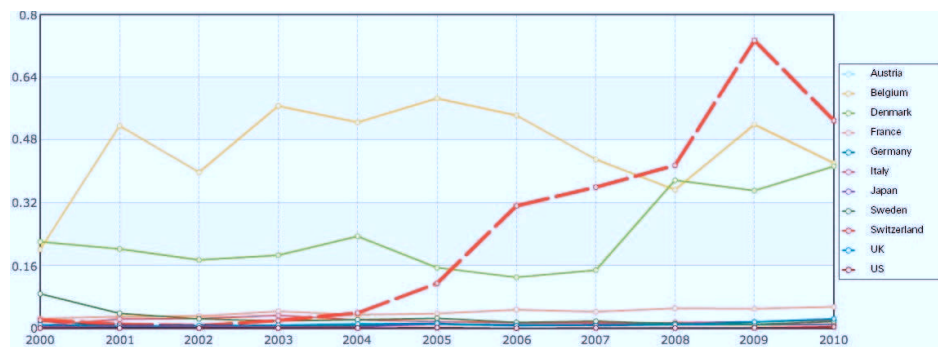


Turning to UNICEF, goods and services procurement went from USD 502 million in 2000 to USD 1.82 billion in 2010. Once again, Denmark, Belgium and Switzerland appear at the top of the list. However, Switzerland stands apart as top supplier from 2008 onwards (Figure 6). Unlike the UNHCR, which purchases mainly services from Switzerland, UNICEF purchases almost exclusively

**16** In 2010, 54% of UNHCR procurement of services were made in non-DAC member countries.

goods. In 2010 (still considering only DAC member countries), over one-fourth of all goods purchased by UNICEF came from Switzerland, versus 18.6% from Belgium, 13.4% from France and 12.1% from Denmark<sup>17</sup>. The largest amounts related to vaccines and biologicals (USD 190.4 million), pharmaceuticals (USD 23.2 million) and household technology (USD 62.3 million).

**Figure 6 – Procurement of goods and services by UNICEF in industrialized countries**  
(2000–2010, in % of GDP)



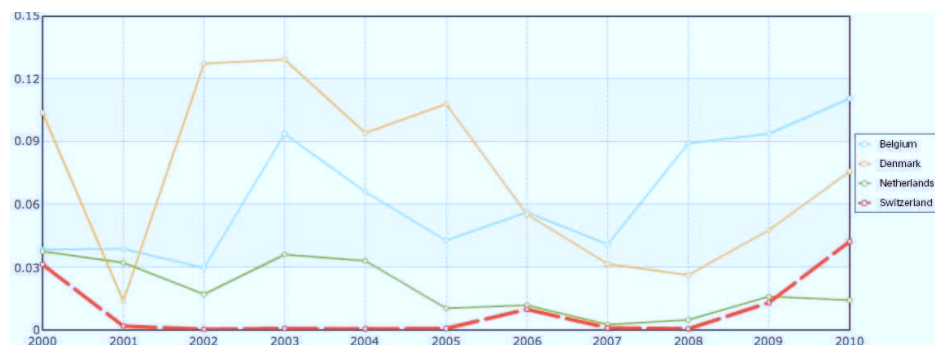
Regular contributions to the WFP are less sizeable than for the programmes shown above due to the size of contributions in kind (food and transport) supplied by the organisation's main donors, which include the United States. Finally, WFP procurement increased from USD 724.8 million in 2000 to USD 2.7 billion in 2010. As with the UNDP, limitations of scale require data to be presented in two separate charts (Figures 7 and 8).

The main supplier countries are Denmark, whose procurement reach up to 0.13% of GDP, Belgium (0.11%), the Netherlands (until 2005) and Italy. Unlike Denmark and Belgium, which mainly supply foodstuffs, Italy supplies a broad range of goods and services, including non-food products (e.g. tents, storage and construction equipment) and fuel. While the presence of WFP headquarters in Rome is certainly an influencing factor for Italy, the impact is less than the presence of UNHCR headquarters in Geneva for Switzerland. This is due, among other things, to the larger size of the Italian economy and hence the lesser impact that such a headquarters can have on the overall Italian economy.<sup>18</sup>

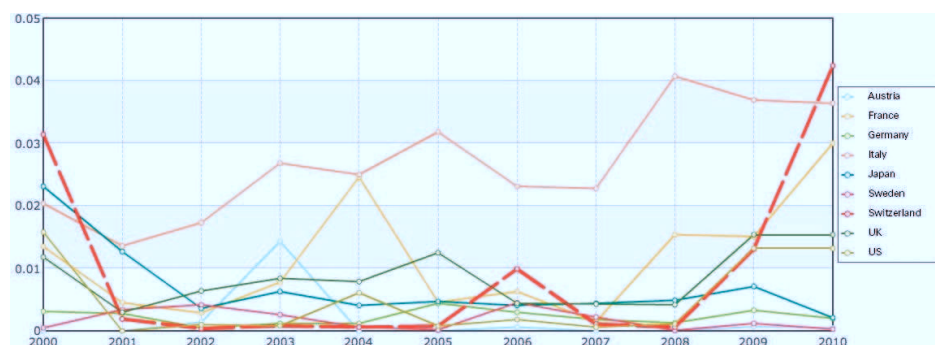
<sup>17</sup> DAC member countries alone accounted for 58% of total UNICEF procurement of goods this year. Switzerland's share in total UNICEF procurement was 15.3%.

<sup>18</sup> The two peaks observed for Switzerland at the start and end of the period considered result from the purchase of transport services for amounts exceeding USD 7 million and USD 22 million respectively. Moreover, Swiss voluntary contributions to the WFP normally are in the form of donations of foodstuffs (e.g. dairy products) and technical cooperation, with the deployment of experts from the SDC's Humanitarian Aid Unit (SHA).

**Figure 7 – Procurement of goods and services by WFP in Belgium, Denmark, the Netherlands and Switzerland (2000–2010, in % of GDP)**



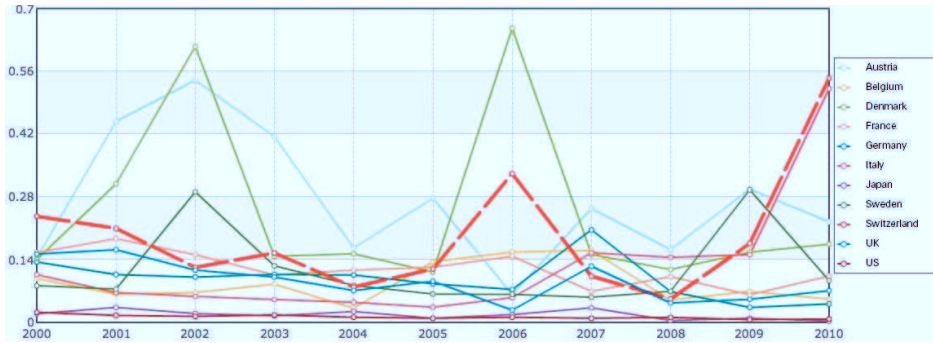
**Figure 8 – Procurement of goods and services by WFP from main suppliers (industrialised countries), excluding Belgium, Denmark and the Netherlands (2000–2010, in % of GDP)**



### 3.3. Procurement by development banks

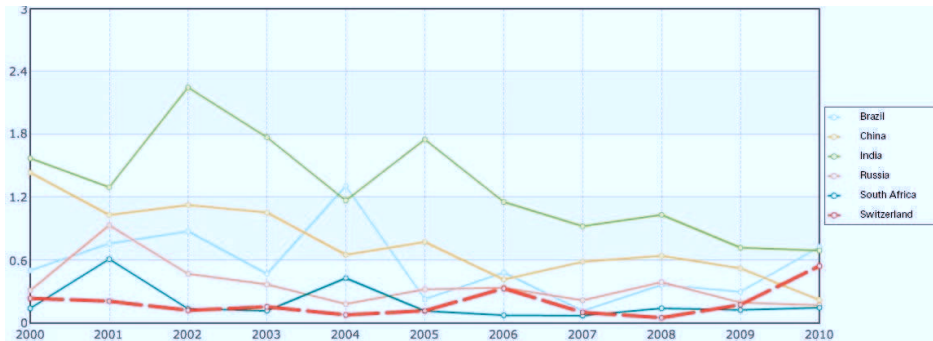
During the period considered, the total volume of procurement of goods and services by the World Bank initially fluctuated at around USD 8 billion between 2000 and 2006, then substantially increased to reach USD 13.2 billion in 2010. Figure 9 compares procurement by the World Bank in eleven industrialised countries, still in relation to GDP. The sharp annual variations are mainly due to major contracts for infrastructure projects. Within this context, Switzerland holds the top position, followed by Austria and Denmark. With respect to the United Nations, differences between industrialised countries are less pronounced but the variations from one year to the next are more apparent.

**Figure 9 – World Bank’s procurement of goods and services in industrialised countries**  
(2000-2010, in ‰ of GDP)



Procurement of goods and services by the World Bank from suppliers in emerging economies tend to be at higher levels in proportion to their GDP (Figure 10). The decrease observed for China and India over the period considered must be put into proper perspective given the strong economic growth rates that these countries experienced over this decade.

**Figure 10 – Procurement of goods and services by the World Bank in BRICS and Switzerland**  
(2000–2010, in ‰ of GDP)



It should be noted that, like procurement made by the UN, procurement by the World Bank expressed in proportion of GDP are far higher in developing countries where the World Bank carries out extensive operations, such as in Kenya and Uganda. Table 3 shows that, depending on the year, these procurement exceed 1% of GDP in Afghanistan, versus 3‰ in Kenya or Uganda and 1‰ in Colombia and Pakistan.

**Table 3 – Variations in the purchase of goods and services by the World Bank in five developing countries** (2000–2010, in ‰ of GDP)

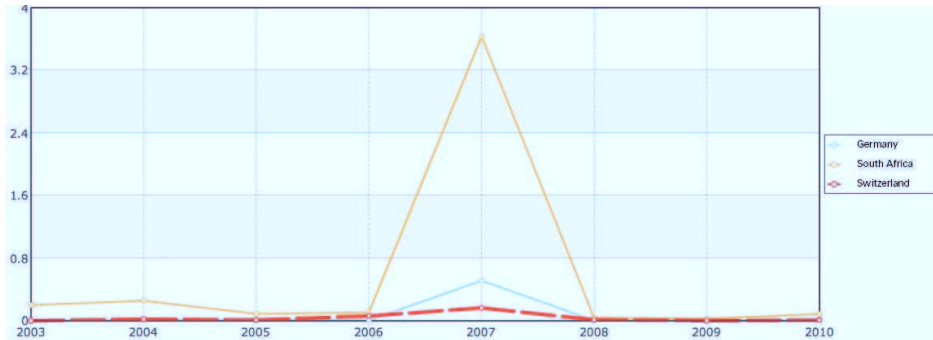
	Afghanistan	Colombia	Kenya	Uganda	Pakistan
2000		1.54	2.37	2.02	0.57
2001		0.48	3.81	3.17	0.36
2002		0.20	1.18	1.96	0.26
2003	18.01	0.21	0.49	1.88	0.20
2004	25.75	0.18	0.60	3.19	0.71
2005	2.21	0.23	1.31	2.36	0.85
2006	5.46	0.15	1.92	3.02	1.27
2007	18.26	0.07	1.93	1.12	0.73
2008	11.15	0.05	0.63	3.44	0.29
2009	13.86	0.23	1.22	0.95	0.96
2010	15.49	0.09	1.50	1.76	0.24

During the period considered, procurement of goods and services by the AfDB increased from USD 506.1 million to around USD 2 billion. This upward trend experienced strong variations with a peak in 2007, particularly in South Africa and Germany, for which it represented 3.6‰ and 0.5‰ of their GDP respectively in that year. For greater clarity, these two countries are presented separately (Figure 11) from the other main suppliers (Figure 12). We find that China, which became increasingly active on the African continent during the decade under review, was already among the main suppliers in relative terms in 2004 and 2005. With a steady increase that began in 2006, China reached the top position in 2008 and 2009. In contrast, South Africa, despite its geographical position and economic weight on the continent, remains at a relatively low level over the entire period, except for 2007.

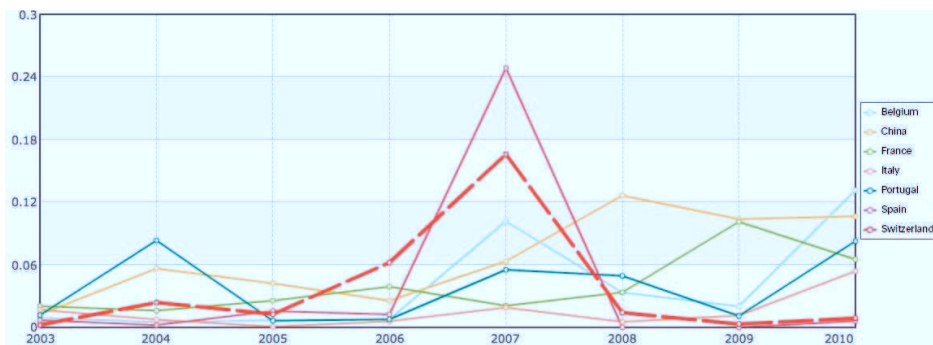
Procurement of goods and services by the AsDB went from USD 3.5 billion in 2000 (USD 2.7 billion in 2001 for the lowest value) to USD 6.9 billion in 2010 (USD 10.7 billion in 2009 for the highest value). As shown in Figure 13, most of the time India is ahead of China and South Korea, whose sales increased sharply from 2007 to 2009. It can be argued that these countries may benefit from the effect of geographical proximity and, for India and China, from operations carried out by the AsDB on their own territory. Figure 14 shows that among the industrialised countries (except for New Zealand, presented in Figure 13 for reasons of scale), it is Australia that dominates, ahead of Belgium, Japan, Sweden and Switzerland. Japan is often in the fourth position, which could imply that it benefits to a limited extent from its geographical proximity to AsDB operations and Australia. Nevertheless, given the size of

the Japanese economy (world's third largest), the actual procurement volume by the AsDB in Japan is very high.

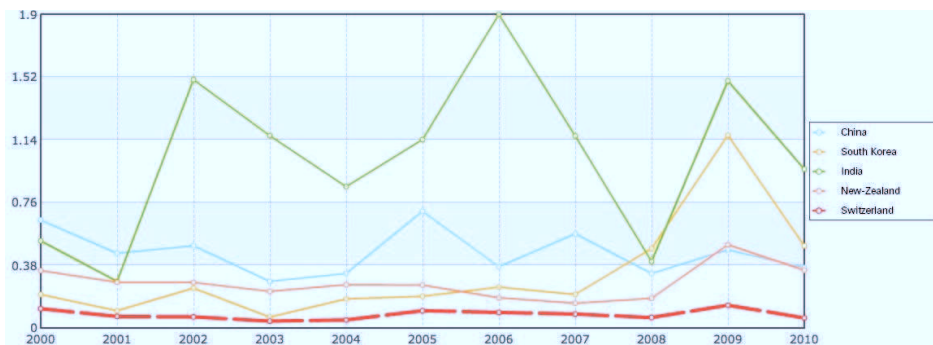
**Figure 11 – Goods and services procurement by the AfDB in Germany, South Africa and, for comparison, Switzerland (2003–2010, in % of GDP)**



**Figure 12 – AfDB procurement from seven main suppliers except South Africa and Germany (2003–2010, in % of GDP)**

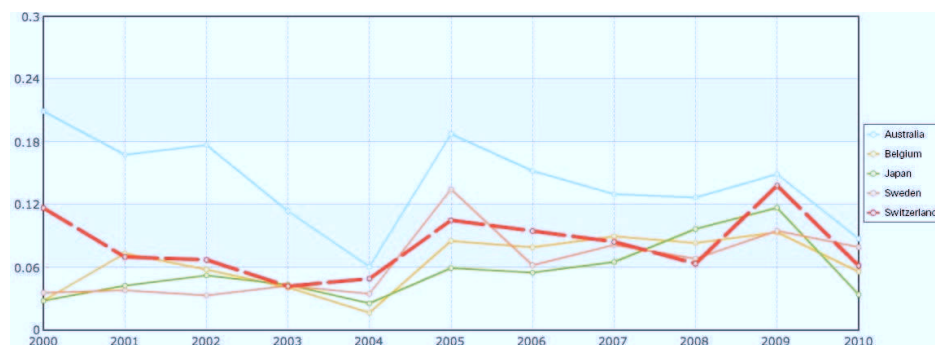


**Figure 13 – AsDB procurement in China, South Korea, India, New Zealand and, for comparison, Switzerland (2000–2010, in % of GDP)**



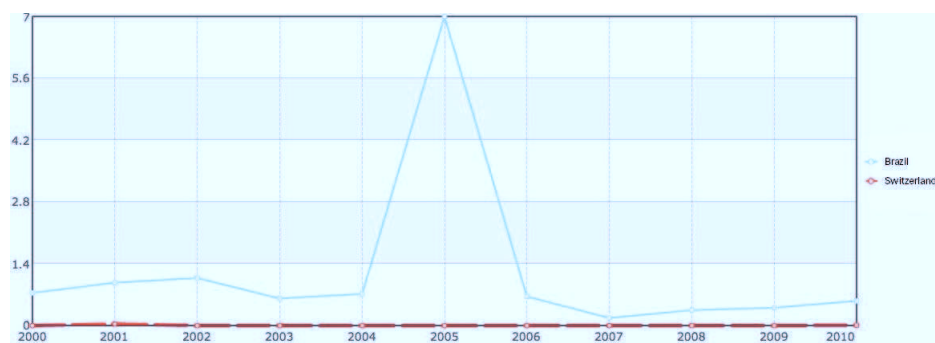


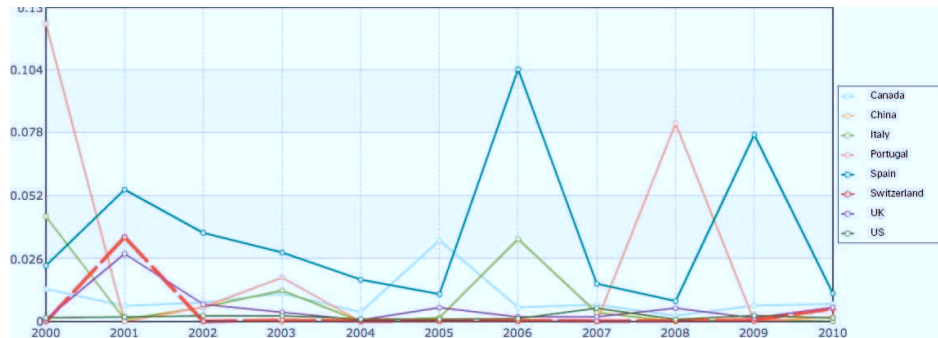
**Figure 14 – AsDB procurement from major supplier countries, excluding China, South Korea, India and New Zealand (2000–2010, in ‰ of GDP)**



For the IDB, the procurement volume went from around USD 1.9 billion in 2000 to some USD 5 billion in 2010. The values vary considerably from one year to the next for all countries. For greater clarity, Brazil is presented in a separate chart (Figure 15). It surpasses all other supplier countries by a clear margin, with procurement totalling 7‰ of its GDP in 2005, or USD 6.16 billion, of which over 80% in the form of procurement of goods distributed over several hundreds of contracts (the following year, these purchases then fell to USD 0.85 billion). It is worth mentioning that Brazil also benefits from certain projects funded by the IDB on its territory. Figure 16 shows that Spain and Portugal are the main suppliers of the IDB in several of the years considered, consistent with our hypothesis regarding the influence of linguistic affinity and former colonial power status.

**Figure 15 – IDB procurement in Brazil and, for comparison, Switzerland (2000–2010, in ‰ of GDP)**



**Figure 16 – IDB procurement in eight main supplier countries except for Brazil (2000–2010, in % of GDP)**

To what extent can the level of voluntary contributions paid to each multilateral organisation explain differences in procurement between supplier countries? To what extent is the balance ‘positive’? The case of Switzerland presented in the Appendix reveals a mixed balance that may result from various factors: presence of the headquarters of a UN institution in Geneva (UNHCR), size of procurement in specific sectors where the Swiss economy is a leader (capital goods, pharmaceuticals or advisory services), etc. In Section 4, we attempt to identify the main explanatory variables for the entire group of industrialised countries.

#### 4. Hypotheses and econometric model

We empirically test various hypotheses that may explain variations in the procurement of goods and services by multilateral organisations in DAC member countries between 2000 and 2010. Given the limited availability of data for all of the organisations and variables selected, the dataset includes 22 DAC member countries<sup>19</sup> over a period of eleven years.

To our knowledge, no theoretical or empirical study has ever been published previously on that topic. From a theoretical standpoint, various studies have shown that a substantial, sudden variation in exchange rates can have a strong impact on exports, depending on the sector concerned. Second, countries whose exports represent a sizeable portion of total worldwide exports in a given sector are well-positioned to secure contracts in international calls for tenders from multilateral organisations for the goods or services concerned. Third, we wish to determine the extent to which more generous donor countries are able to favour their suppliers. We thus formulate a series of initial hypotheses regarding the factors that influence the volume of procurement of goods and services by multilateral organisations (still expressed in % of GDP for a given country):

<sup>19</sup> The DAC is comprised of 24 member countries. However, our dataset does not take into account the European Commission or South Korea, which only joined in December 2009.

- 1) *The share of manufacturing in the economy*: a country with a competitive industrial base has a better chance of securing contracts in international calls for tenders from multilateral organisations;
- 2) *Variations in purchasing power parity (PPP)*, based on a comparison of purchase power of national currencies. Here we are considering a negative impact, i.e. that an overvalued currency leads to a loss of competitiveness and, in turn, a decrease in the sale of goods and services;
- 3) *The level of ODA contributions paid by a given country to multilateral organisations*: a high volume elicits a response from multilateral organisations in the form of a large volume of procurement of goods and services from suppliers in the same donor country. This should normally not occur if procurement are made through international tendering procedures, where contracts are awarded on a competitive basis. Nevertheless, in practice, such an influence cannot be excluded *outright*;
- 4) *The share of tied aid in total ODA from the donor country*: the larger the share of tied ODA, the larger the volume of procurement of goods and services. In principle, this should not be the case for multilateral organisations, unless a donor country that is very active in encouraging its export activities through bilateral ODA also tries to influence the procurement of multilateral organisations in this direction as well.

Other factors may also have an impact on procurement by multilateral organisations: holding a permanent seat on the UN Security Council (for procurement made by the United Nations); being a former colonial power that enjoys solid business relations with former colonies; having the headquarters of one or more multilateral organisations on the national territory, which results in these organisations spending a portion of their operating budget locally; having English or one of the official languages of a multilateral organisation as a national language, which facilitates the establishment of business relations. Unlike the quantitative nature of variables 1 to 4, these factors take into account qualitative phenomena that are expressed in our model as dummy variables.

We also postulate that, as with long-term relations between client and supplier, the volume of goods and services procured during a given year depends to a certain extent on purchases made with the same suppliers in the previous year, underlying the dynamic nature of the dataset.

The econometric study focuses on those multilateral organisations that retained our attention in Section 3, namely the United Nations System (UN), the World Bank, UNDP, UNHCR, UNICEF and WFP. We have not included the three regional development banks (AfDB, AsDB and IDB) because of the limited number of observations –between 60 for the IDB and 95 for the AsDB – too small to produce conclusive results. In the case of the WFP, the list of relevant explanatory variables was adjusted so that calculations include not only the impact of the manufacturing sector in supplier countries but also the size of the agricultural sector, since foodstuffs account for a significant portion of WFP procurement. Apart from the data presented above, we add the volume of special contributions mentioned in the annual reports of the

four individual UN agencies and programmes. The data on tied aid<sup>20</sup> and the PPP index are taken from DAC statistics, and those on the size of the manufacturing sector from the World Bank (2013).

#### 4.1. Specification and estimation of the model

Given the dynamic nature of the data generating process, we opt for the generalized method of moments (GMM) developed by Arellano and Bover (1995) and Blundell and Bond (1998). This method takes into account country heterogeneity and shocks affecting all countries in our sample (e.g. economic and financial crisis of 2008-2009), and allows estimating the model in an efficient manner.<sup>21</sup> The system GMM estimator is based on an estimation of the model both in levels and difference.

The basic econometric model reads as follows:<sup>22</sup>

$$Procur_{it} = \beta_1 Procur_{it-1} + \beta_2 Contr_{it} + \beta_3 Tiedaid_{it} + \beta_4 Manuf_{it} + \beta_5 PPP_{it} + \lambda_t + \nu_i + \varepsilon_{it}$$

where  $\beta_{1-4}$  are the parameters to be estimated;  $Procur_{it}$  is the endogenous variable, i.e. the value of procurement of goods and services by multilateral organisations from companies of the country  $i$  at time  $t$  (year), expressed as a percentage of GDP of country  $i$ ;  $Procur_{it-1}$  is the lagged endogenous variable;  $Contr_{it}$  are financial contributions paid to multilateral organisations (still by country  $i$  at time  $t$ );  $Tiedaid_{it}$  is the portion of ODA<sup>23</sup> of country  $i$ , which is tied at time  $t$ ;  $Manuf_{it}$  is the size of the manufacturing sector in the economy of country  $i$  at time  $t$ ;  $PPP_{it}$  is the purchasing power parity index for the currency of country  $i$  at time  $t$ . Due to the skewed data distribution, we transform these variables into logarithmic values (log):  $\lambda_t$  capture time-fixed effects;  $\nu_i$  country-fixed effects;  $\varepsilon_{it}$  is the term of errors relating to non-observed factors.

<sup>20</sup> The data refers to tied bilateral aid, whose relevance is currently the subject of debate. It has been argued, for example, that technical cooperation contracts are often not included in the calculation of tied aid although they tend to benefit nationals from donor countries.

<sup>21</sup> The difference estimator is less efficient when the series under study are close to random walk. Because past levels bear little information about future changes, as these changes represent the stochastic innovations, first differences instrumented with past levels will poorly identify the coefficients, as the lagged levels are only weakly correlated with the first differences. We follow Arellano and Bover (1995) and opt for System GMM. In addition to instrumenting first differences with lagged levels, levels are instrumented with differences.

<sup>22</sup> Dummy variables (permanent seat on UN Security Council, languages, former colonial power status, presence of headquarters of a UN institution or the World Bank) retain the same value for the entire period. Due to multicollinearity, we do not include them.

<sup>23</sup> Our aim is to determine whether strongly tied bilateral aid has a positive impact when it comes to securing contracts from multilateral agencies. We therefore consider tied aid in proportion to total ODA rather than in proportion to GDP in order to avoid a bias in calculations given the difference in ODA to GDP ratios among donor countries.

## 5. Results

The results in Table 4 report, for each multilateral organisation, the coefficient associated with each explanatory variable along with their statistical significance.

**Table 4 – Determinants of the procurement of goods and services in 22 DAC member countries (2000-2010)**

	1	2	3	4	5	6
	UN	World Bank	UNDP	UNHCR	UNICEF	WFP
<i>lag Procurement</i>	0.377* (0.219)	0.326*** (0.0848)	0.518** (0.237)	0.765*** (0.0960)	0.903*** (0.0682)	0.811*** (0.136)
<b>Contributions</b>	0.222+ (0.146)	0.135*** (0.0443)	0.280 (0.225)	0.169* (0.0912)	0.0137 (0.0556)	-0.0654 (0.0833)
<b>Tied aid</b>	-0.0498 (0.0726)	-0.0479 (0.0460)	0.0232 (0.145)	0.0393 (0.0625)	-0.0472 (0.0347)	0.00786 (0.0742)
<b>Manufacturing Sector</b>	1.170* (0.691)	1.259*** (0.427)	0.292 (0.340)	0.0475 (0.318)	0.257 (0.242)	-0.496 (0.539)
<b>PPP</b>	-0.131+ (0.0870)	-0.122 (0.0792)	0.0794 (0.0905)	0.0151 (0.0381)	-0.0151 (0.0323)	-0.0281 (0.0526)
<b>No of observations</b>	171	160	142	115	136	127
<b>No of countries</b>	22	22	20	18	20	20
<b>No of instruments</b>	13	13	13	13	13	13
<b>AR test (2) in first difference (p-value)</b>	0.0925	0.154	0.874	0.612	0.744	0.704
<b>Hansen test (p-value)</b>	0.266	0.961	0.303	0.253	0.813	0.241

Dynamic panel data estimates using two-step system GMM, robust. Number of observations, countries and instruments at the bottom of the table, together with p-values for Arellano-Bond and Hansen tests. All specifications include time-fixed effects.

\*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% level respectively; +stands for a p-value <0.13. Standard errors in parentheses.

Column 1 shows the results for procurement by the United Nations as a whole. Firstly, all of the coefficients have the expected sign (except for tied aid where the coefficient is negative but not significant). Secondly, only the coefficients of the lagged endogenous variable and to the manufacturing sector are significant at 10%. These results confirm the positive role of relations established in the past with suppliers as well as the importance of the manufacturing sector. The p-values of the coefficients associated with financial contributions and purchasing power parity are close to 0.13. Contributions to the United Nations may have a positive impact, which would need to be further explored in order to validate or invalidate this hypothesis with a larger panel data. Moreover, it would be necessary to add the total voluntary and/or programme contributions in addition to the regular contribution variable in order to draw clearer conclusions on the correlation between donations to the United Nations and the purchase of goods and services. Lastly, the prevalence of non-significant coefficients is not very surprising given the fact that the explanatory variables in our model vary little over time whereas variations between countries are captured partly through fixed effects and partly through the lagged endogenous variable.

Turning to procurement by the World Bank (column 2), financial contributions to the organization and the size of the manufacturing sector clearly have a positive influence, as do previously established commercial ties: all three coefficients are highly significant (at 1%). The purchasing power parity coefficient has a negative sign, as expected under our hypothesis, but a p-value of 0.12 only. As was the case for the United Nations, tied aid does not have a significant influence on World Bank procurement. These results confirm that a strong manufacturing sector is an essential asset enabling countries to secure contracts from international calls for tenders issued by the World Bank. The contributions paid to the World Bank also seem to play a significant positive role.

Columns 3 to 6 present the findings for the UNDP, the UNHCR, UNICEF and the WFP respectively. Only the coefficient of the lagged endogenous variable is highly significant with respect to procurement made by these four institutions. In other words, previously established relations with suppliers in a given country do indeed have a determinant influence on current procurement of goods and services. The other coefficients are not significant, except for the contributions paid to the UNHCR (with a p-value <0.1). For the WFP, the inclusion of a variable relating to the share of agriculture in the economy does not provide significant result (and is therefore not reported in Table 4). It would be premature to draw definitive conclusions regarding these four agencies: the number of observations is weaker than for the World Bank and the United Nations System as a whole. A substantial data gathering effort from each agency would enable to increase the size of the sample to confirm or invalidate these preliminary findings.

On the whole, pre-existing commercial relations and the strength of the manufacturing sector seem to play a preponderant role. At the same time, contributions to organisations may indeed have a positive influence, but this must be confirmed with larger panel data.

## 6. Conclusion

Most studies on the return on investment of aid for donor countries focus on the long-term effects of ODA on exports. This study is a first attempt to determine the indirect effect of multilateral ODA on donor countries. The aim is to shed light on specific factors that may explain variations in the procurement by multilateral agencies. The empirical analysis is based on a panel data comprising 22 DAC member countries over a eleven-year period.

The volume of procurement of goods and services by major multilateral development agencies expressed in current USD grew at a remarkable rate during the first decade of the millennium, at a multiple of three to five depending on the organisation considered – except for the World Bank whose procurement increased by 65% ‘only’. In 2010, the UN and the World Bank made the largest procurement (USD 12.8 and USD 12.4 billion respectively), followed by the AsDB (7.1 billion USD), the IDB (USD 5 billion) and the AfDB (USD 2 billion). As for the four UN agencies considered, the UNDP tops the list ahead of the WFP, UNICEF and the UNHCR, with procurement volumes ranging from USD 0.4 to USD 2.7 billion.

This study does not include the salaries paid by multilateral organisations to their employees, whose share in total expenditure varies greatly from one agency to another. In addition, procurement by multilateral organisations represents only one class of economic effects on donor countries. This indirect effect is generally smaller than the direct effect of bilateral aid-related expenditure. Procurement from suppliers based in DAC member countries only rarely exceed 2‰ of GDP. They may nevertheless be significant for some sectors and individual suppliers.

Together with Denmark and Belgium, Switzerland is among the industrialised countries that benefit the most from procurement made by the UN and its agencies. In proportion to the size of its economy, Switzerland has risen to the top of the list of suppliers of the United Nations System by the middle of first decade of the 21st century, a few years after getting full UN membership. Switzerland is also among the main suppliers of the World Bank and is relatively well-positioned with respect to other industrialised countries with regards to the AsDB. As a result, the indirect effect on overall demand in 2010, which was estimated at 87 centimes par franc of ODA for Switzerland (Table 1), is undoubtedly higher than for other DAC member countries, as illustrated by recent Austrian case study.

During the period under review, emerging economies experienced a robust increase in their sales of goods and services to multilateral organisations. However, when measured in proportion to their GDP, these sales remained constant, or even diminished somewhat over the course of the decade, due to the sustained growth of their economy. During the same period, the World Bank and the UN substantially increased their procurement volumes. With regard to the regional development banks, China and India are – as expected – among the main suppliers of the AsDB whereas Brazil is the top supplier to the IDB (always in proportion of GDP). In addition, China joined the ranks of the main suppliers of the AfDB over the past decade, ahead of South Africa, which reflects China’s growing presence on the African continent.

This study does not include developing countries, where the UN and development banks pursue extensive programmes. However, as an illustration, we provided some indications that show that UN procurement of goods and services account for up to 5% of Afghan GDP, 1% of Kenyan GDP and 0.8% of Ugandan GDP. Further research is required to assess the economic effects of local procurement of goods and services and identify current trends in developing countries, particularly in light of the fact that some of these countries are already among the top-ten suppliers of multilateral organisations.

The results of our empirical study show that, for all of the organisations considered, pre-existing commercial relations play an important role. Multilateral organisations tend to keep the same suppliers over several years. The presence of a large manufacturing sector is an asset for countries that supply goods to the UN and the World Bank. This is for example the case of Switzerland, in particular with regard to pharmaceuticals and medical equipment.

We have attempted to determine whether there is a positive causal link between contributions by industrialised countries and subsequent procurement of goods and services by the recipient organisation. Our findings seem to indicate that such a link exists in the case of the World Bank and the UNHCR and, albeit less significantly, in the case of the United Nations as a whole. Given the lack of data, it was not possible to include all contributions to the UN system, in particular voluntary ones. Since voluntary contributions are generally earmarked for a specific purpose, it would be particularly interesting to factor them into the analysis. The proportion of tied aid, for its part, has no significant influence on the procurement of goods and services by multilateral organisations, which is not surprising to the extent that tied aid data refer to bilateral ODA.

Finally, the presence of organizations' headquarters in the country plays a role, particularly when considering services. The presence in Geneva of numerous international organisations undoubtedly has a substantial impact on UN procurement from Swiss suppliers. The same applies for geographical proximity, which plays a non-negligible role for instance in the case of AsDB procurement from China, India, South Korea, as well as from suppliers based in Australia, Japan and New Zealand. Our hypotheses on the role of linguistic affinities and historical ties have also been confirmed in the case of IDB procurement from Spanish and Portuguese suppliers.

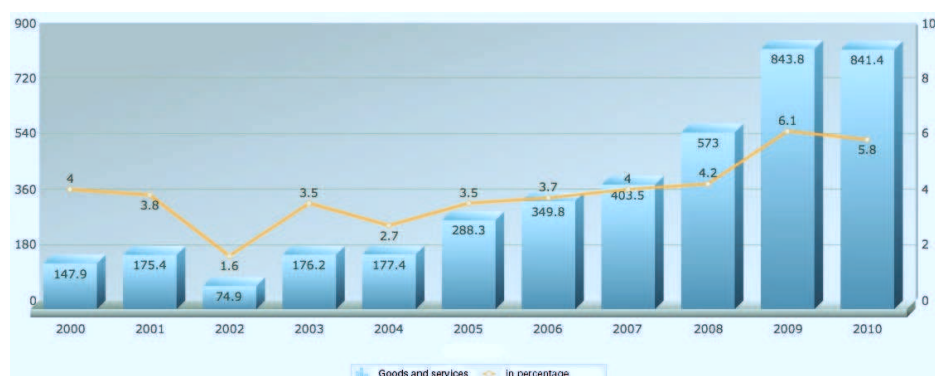
Since the majority of DAC member countries face serious budgetary constraints, the question of 'return on investment' is increasingly being advanced as an argument to convince policymakers to increase – or at least to not reduce – ODA budgets. It goes without saying that such considerations should not take precedence over debates on aid effectiveness and the performance of multilateral organisations. Besides, the issue of return on investment is politically sensitive: parliamentarians who are opposed to any increases in ODA may use it to claim that aid is not being spent to fight poverty (in the case of high return on investment) or does not adequately serve national interests (in the case of low return on investment). Yet, given mounting attention to donor 'enlightened self-interest', this type of study can help to rally undecided parliamentarians to form a majority in favour of aid budgets.



## APPENDIX I – THE UN AND THE WORLD BANK: COMMENTS ON SWITZERLAND

Switzerland ranks among the ten main suppliers of the United Nations between 2000 and 2010, except 2002. Figure A1 presents total UN procurement of goods and services from Swiss suppliers in USD million (left vertical axis and vertical blue bars) and in % of total UN procurement of goods and services (right vertical axis and yellow line).

**Figure A1 – Variations in the purchase of goods and services by the United Nations in Switzerland**  
(2000-2010, in USD million and percentage of total procurement)



Starting in 2004, the proportion of UN procurement of goods and services from Swiss suppliers increased in a regular and significant manner, from 2.7% in 2004 to nearly 6% in 2009 and 2010. In 2009, Switzerland became the UN's second largest supplier of goods and services in absolute terms, behind the United States.

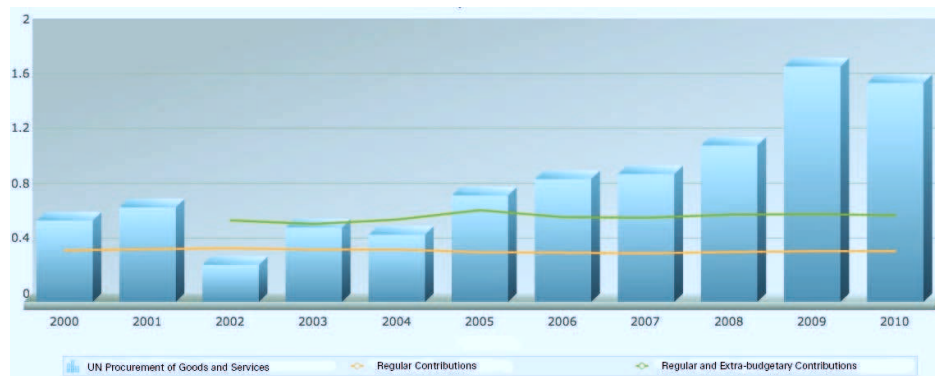
UNGM statistical reports provide, for some countries, a list of the main categories of goods and services purchased during the year. As shown in Table A1, pharmaceuticals appear each year among the main categories of goods purchased by the UN in Switzerland, followed by audiovisual equipment as well as medical equipment and supplies, mentioned 10 times in the 11 annual reports examined. As for services, 'Management advisory services' is the most frequently mentioned category, in 9 out of the 11 annual reports. A more detailed analysis by category of goods and services per year cannot be conducted due to a lack of sectoral data .

**Table A1 – Categories of Swiss-supplied goods and services mentioned in UNGM annual reports (2000-2010)**

<b>Goods</b>	<b>Frequency</b>	<b>Services</b>	<b>Frequency</b>
Pharmaceuticals	11	Management advisory services	9
Audio-visual equipment	10	Computer services (incl. programming)	7
Medical equipment and supplies	10	Freight forwarding	6
Water pipes & pumps	8	Construction and engineering services	5
Computers	5	Environmental science	4
Furniture	5	Farming systems	4
Drilling rigs	4	Demining services	3
Earth moving equipment	4	Environmental management	3
Engines and turbines	4	Leasing and rental services	3
Laboratory equipment	4	Energy management	2
Communication & software equipment	3	Travel services	2
Food supplies & nutrition	3	Building maintenance & repair (cleaning and fire installation)	1
Office supplies	3	Business and administration services	1
Vaccines and biological products	3	Civil engineering	1
IT and office supplies	2	Insurance services	1
Mosquito nets	2	Office equipment leasing and rentals	1
Household technology	1	Professional training	1
Motor vehicles	1	Real estate services	1
Shelters and field equipment	1	Transport services	1

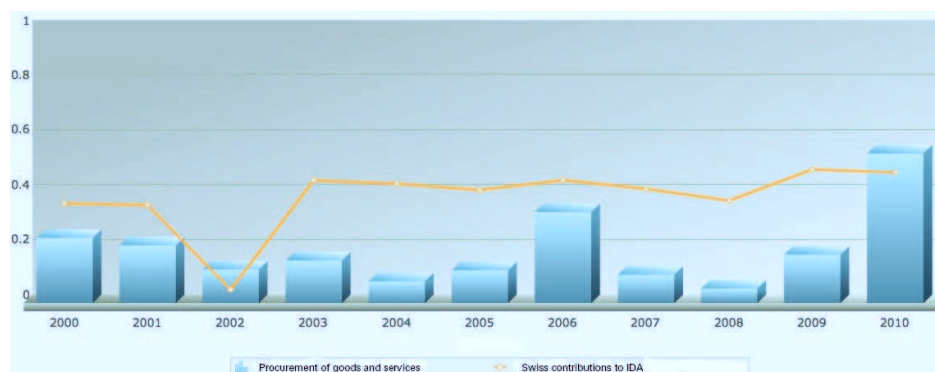
As far as Swiss contributions to the UN are concerned, general contributions have remained relatively stable, varying between 0.29‰ and 0.33‰ of GDP. Since 2002, the SDC publishes data on Swiss contributions to specific programmes and projects (multi-bilateral aid – *non core*). The total of Swiss contributions to the United Nations stands between 0.50‰ and 0.61‰ of GDP, as shown in Figure A2.

**Figure A2 – UN procurement of goods and services in Switzerland and Swiss contributions to the UN** (2000-2010, in ‰ of GDP)



World Bank’s procurement of goods and services in Switzerland are generally lower than average Swiss contributions to replenishment of IDA resources (Figure A3).

**Figure A3 – World Bank’s procurement of goods and services in Switzerland and Swiss contributions to IDA** (2000-2010, in ‰ of GDP)



The two procurement peaks observed in 2006 and 2010 are primarily due to sales relating to civil engineering: an amount of USD 104.7 million for the first year and USD 221.3 million for the second year are indeed tied to construction contracts in Kenya signed with a holding company based in Switzerland.

If we subtract the amount of Switzerland’s contributions to each organisation from the procurement of goods and services made by that same organisation, we find that:

- The balance is positive over the entire period considered for the AsDB. Starting in 2005, it becomes positive for the UN as a whole and for UNICEF in particular;

- The balance is positive for the UNHCR starting in 2004 until the end of the period considered (except for 2006);
- The balance is 'negative' for the UNDP and the WFP as well as for the AfDB (except for 2007) and the IDB (except for 2001 and 2010);
- Finally, the balance is positive for the World Bank only in 2002<sup>24</sup> and 2010.

The balance is therefore mixed and depends on several factors that vary from one organisation to another, such as the presence of a UN headquarters in Geneva (UNHCR), procurement volumes in sectors where the Swiss economy holds a leading position (capital goods, pharmaceuticals or advisory services), the priority given by Switzerland to contribute to such and such organisation, or replenishment cycles for specific funds of multilateral banks.

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<sup>24</sup> This exception is due to the fact that, for technical reasons, Switzerland's contribution was only recorded the following year, in 2003.

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