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Does corporate aid really help fighting worldwide poverty? A case study of Nestlé's aid allocation

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# **Working Papers**

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Does Corporate Aid Really Help Fighting Worldwide Poverty? A Case Study of Nestlé's Aid Allocation

by

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# Does Corporate Aid Really Help Fighting Worldwide Poverty? A Case Study of Nestlé's Aid Allocation\*

Laura Metzger, Peter Nunnenkamp, Toman Omar Mahmoud

Having passed the "market test", private aid is claimed by its proponents to be better-targeted than official development assistance (ODA). But empirical evidence is largely lacking. We contribute to closing this gap by performing a case study of Nestlé, one of the frontrunners among multinational corporations being actively involved in the alleviation of poverty. The targeting of Nestlé's aid is compared to that of Swiss ODA and NGO aid, testing for both altruistic and selfish aid motivations. It turns out that Nestlé favored more democratic but also more corrupt recipient countries. Moreover, Nestlé's aid clearly lacks focus in terms of targeting poor countries, which appears to be the downside of the strong link between commercial presence and aid. By contrast, Swiss ODA and NGO aid is more altruistic and poverty-oriented.

**Keywords** — aid allocation, private aid, corporate social responsibility, official development assistance, NGO aid, Millennium Development Goals, Nestlé

**JEL codes** — F35; M14

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### I. Introduction

According to the World Bank (2006: 10), "achieving the Millennium Development Goals (MDGs) will not be possible unless businesses of all sizes engage fully in bringing their skills, resources and economic development power to partnerships with NGOs and governments." Peter Brabeck-Letmathe, CEO of Nestlé (1997-2008), the world's leading food and beverage company, agrees: "The achievement of the U.N. Millennium Development Goals is the joint responsibility of the United Nations system, governments, and civil society organizations with support of the private sector, companies and business coalitions" (Nestlé 2006: 4). Adelman (2003) even claims that aid from private donors having passed the "crucial 'market test'" may achieve better results with respect to poverty alleviation, economic growth and the provision of social services than official development assistance (ODA).

However, little is known about where private aid is spent and how well it works. The allocation of ODA across recipient countries as well as its composition according to the purposes **ODA** meant documented detail is serve is in great to (http://www.oecd.org/dataoecd/50/17/5037721.htm). In sharp contrast, the data situation is highly deficient when it comes to private aid. Some studies evaluate the allocation of aid by private charities, even though various charities report little more than regional aggregates of their aid (Section II). However, we are not aware of any systematic analysis of the aid efforts of private companies, many of which have committed themselves to the two objectives of the UN Global Compact: (i) aligning business strategies and operations with the Ten Principles in the areas of human rights, labor, the environment and anti-corruption, and (ii) catalyzing of actions in support broader UN goals such as the MDGs (http://www.unglobalcompact.org/AboutTheGC/index.html).

The present paper contributes to closing this gap by assessing the allocation of aid by Swissbased Nestlé SA. According to UNCTAD's index of transnationality, Nestlé ranks sixth among the top 100 non-financial multinationals (UNCTAD 2007: 229). Companies of the Nestlé Group are spread across 107 countries (Nestlé 2007). At the same time, Kolk and van Tulder (2006) list Nestlé as one of the frontrunners in the corporate sector being actively involved in the alleviation of poverty. It fits into this picture that Nestlé provided financial support to local community projects in about 70 countries in 2007 (see Annex 4). Overall

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<sup>&</sup>lt;sup>1</sup> The index of transnationality is calculated using the average of the shares of a company's assets, sales and employment located abroad.

project financing in various fields, including in developed OECD countries, amounted to about US\$ 55 million in 2007.<sup>2</sup> This may appear marginal compared to about US\$ 1.4 billion of bilateral Swiss ODA in 2005 (OECD 2007: table 13). Per head of Nestlé's worldwide employment (265.000 in 2006), however, its aid of slightly more than US\$ 200 is very close to ODA in the order of US\$ 190 per head of Swiss population.<sup>3</sup>

While other companies report still higher donations,<sup>4</sup> the choice of Nestlé for a case study is because it stands out with respect to the richness and detail of data offered for assessing the allocation of aid by private companies. As shown in Section III, most of the projects supported by Nestlé are related to a specific MDG the project is meant to help achieve. Moreover, Nestlé kindly provided us with project-specific financial contributions in 2007 across a large number of recipient countries. This renders it possible to perform econometric estimations, as described in Section IV, in order to identify the major determinants of Nestlé's aid allocation.

Our findings are in some conflict with the view that private companies fight worldwide poverty effectively by providing well-targeted aid (Section V). This is even though Nestlé favors more democratic countries when allocating aid – in contrast to many public and private non-profit donors. However, recipient need does not seem to play a decisive role in the selection of countries and the amount of aid disbursed to them. In addition, Nestlé appears to give more aid to more corrupt countries. This appears to be the downside of the strong links between Nestlé's commercial presence and its aid in both stages of the aid allocation process. These major findings prove to be fairly robust; they also apply to aid flows that are meant to address specific MDGs (Section VI). The concluding section summarizes and discusses possible ways to overcome the obvious limitations of the present case study.

# II. Why Private Aid May (Not) Be Superior to ODA

Development aid by so-called private voluntary agencies based in the member countries of the OECD's Development Assistance Committee (DAC) amounted to almost US\$15 billion

<sup>&</sup>lt;sup>2</sup> This figure does not include about US\$ 3.3 million spent on community projects in Nestlé's home country Switzerland.

<sup>&</sup>lt;sup>3</sup> Nestlé's aid accounted for about 0.5 percent of Nestlé Group earnings before interest and taxes (EBIT of US\$ 10.6 billion in 2006).

<sup>&</sup>lt;sup>4</sup> For instance, Unilever reports donations in the order of € 78 million (US\$ 97.5 million) in 2006, while Unilever's worldwide employment of 179.000 was lower than that of Nestlé (<a href="http://www.unilever.com/ourvalues/environment-society/indices/millennium-development-goals.asp?linkid=dropdown">http://www.unilever.com/ourvalues/environment-society/indices/millennium-development-goals.asp?linkid=dropdown</a>; accessed: January 2008).

in 2005, thus exceeding bilateral ODA from every individual DAC country except for the United States (OECD 2007: table 13). Apart from adding to overall aid resources, however, private donors may help achieve the MDGs by providing better-targeted aid than official donors.

The allocation of ODA suffers from several flaws that may undermine aid effectiveness. Various studies argue that the targeting of ODA to needy recipient countries with reasonably good local conditions (in terms of basic institutions and economic policies) is far from perfect (Burnside and Dollar 2000; Collier and Dollar 2002). Most of ODA is transferred to self-interested and often corrupt governments, giving rise to embezzlement and leakages. The needs-based allocation of ODA may also be distorted by selfish donor motives. Alesina and Dollar (2000) found that bilateral ODA was dictated as much by political and strategic motives of donors as by need and local conditions in recipient countries. More recently, Berthélemy (2006) still labeled various donors to be "egoistic", rather than altruistic. Some official donors tend to use aid to promote exports to recipient countries (see also Berthélemy and Tichit 2004; Canavire et al. 2006); others "buy" political support by granting ODA (e.g., Kuziemko and Werker 2006; Dreher, Nunnenkamp and Thiele 2008).

Previous literature on whether private donors may provide better-targeted and less selfish aid is largely confined to private charities and foundations, i.e. NGOs engaged in international development cooperation.<sup>7</sup> The "New Policy Agenda" of the 1990s (Edwards and Hulme 1996: 961) stressed the role of NGOs in international poverty alleviation. According to Nancy and Yontcheva (2006), the allocation of NGO aid should be less distorted by commercial and political interests of donor governments.<sup>8</sup> The poverty focus of NGO aid is widely believed to be stronger than that of ODA: NGOs may be better in reaching the poor by circumventing governments in the recipient country and dealing directly with local target groups (Riddell, Bebbington and Peck 1995: 25).

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<sup>&</sup>lt;sup>5</sup> According to McGillivray (2003) as well as Dollar and Levin (2006), the poverty and policy orientation of several official donors has improved recently, but targeting by some major bilateral donors (e.g., France and the United States) still leaves much to be desired. The recent meta study of Doucouliagos and Paldam (2007: 25) reveals that most donors indeed grant more aid to poorer countries, but "the inverse aid-income relation explains only about 10% of the variation in the data."

<sup>&</sup>lt;sup>6</sup> Alesina and Weder (2002) rejected the rhetoric of donors that ODA rewarded efficient and honest governments.

<sup>&</sup>lt;sup>7</sup> Virtually all types of private bodies can be recognized as NGOs at the UN. However, "non-profit-making" is one of the defining characteristics of NGOs (Willetts 2002) so that aid by private business does not fall under NGO aid.

<sup>&</sup>lt;sup>8</sup> For a more detailed review of the literature on NGO aid, see Dreher, Mölders and Nunnenkamp (2007).

However, empirical verification of such "articles of faith" (Tendler 1982: 2) is still largely lacking. The view that NGOs have a clear focus on the poor has come under attack. Many NGOs depend on government refinancing. This may have as a result that NGOs become "the implementer of the policy agendas" of governments (Edwards and Hulme 1996: 970). The principal-agent model of Fruttero and Gauri (2005) reveals that the dependence of NGOs (the agents) on external funding (from principals, often including official aid agencies) tends to drive a wedge between organizational imperatives related to future funding and charitable objectives such as poverty alleviation in locations where NGOs engage.

The few empirical studies addressing the allocation of NGO aid across recipient countries come to opposing results. Nancy and Yontcheva (2006) find that poverty in recipient countries was the major determinant of aid allocation by European NGOs in the 1990s. NGO aid appears to be independent of official EU aid, indicating that officially refinanced NGOs are not merely implementing EU aid policies. In some contrast, Koch (2006) as well as Koch, Westeneng and Ruben (2007) find that NGOs depending on official funding tend to follow the country-wise distribution of aid by official donors. Furthermore, neither Dutch NGOs (Koch 2006) nor Swedish NGOs (Dreher, Mölders and Nunnenkamp 2007) seem to have accounted for indicators of need in the recipient countries in the second step of the aid allocation process, i.e., when deciding on the amount of aid to countries having passed the eligibility test.

Similar to NGO aid, the case for emphasizing the role of private business in providing aid largely rests "on ideological grounds rather than empirical verification" (Edwards and Hulme 1996: 961). Adelman's (2003) claim that private aid having passed the "market test" is superior to ODA is based on the debatable belief that markets and private sector initiative are services 10 social more efficient in alleviating poverty and providing "philanthrocapitalism" (The Economist July 1, 2006) of private donors may well introduce modern business practices into the allocation of aid and thereby foster aid effectiveness; and the private sector may well "make important contributions, which civil society and the public sector were lacking, including money, skills transfer, and in-kind contributions" (World Bank

<sup>&</sup>lt;sup>9</sup> While the focus of this paper is on corporate aid, a different strand of literature argues that the corporate sector may help alleviate poverty through profitable activities such as foreign direct investment in poor developing countries; see, e.g., Jain and Vachani (2006) and Bhagwati (2007); for a more skeptical view, see Nunnenkamp (2004).

<sup>&</sup>lt;sup>10</sup> John Dunning's call for "upgrading the quality of global capitalism" is largely because he supposes free-market institutions to fail in meeting the "demands of the majority of the world's people" for social goods and services (Dunning 2006: 371).

2006: 10). Nevertheless, it cannot be taken for granted that aid by private companies is better-targeted and less selfish than ODA.

With respect to the targeting of aid it may be noted that, compared to official aid agencies, even large multinational companies tend to support a relatively small number of recipient countries. For instance, Nestlé financed projects in about 50 low- and middle-income countries, whereas about 120 low- and middle-income countries received Swiss ODA. The broader country coverage may impair the poverty focus of ODA, especially if indiscriminate donor behavior is not limited to the first step of selecting eligible recipients but extends to the second step of distributing the amount of aid among eligible recipients. However, greater selectivity in the first step does not necessarily imply better-targeted corporate aid. Mapping the recipient countries of Nestlé's aid rather points to a bias against particularly poor countries in sub-Saharan Africa, many of which also remain white spots with regard to Nestlé's FDI. It remains to be seen from the multivariate analysis presented below whether the poverty focus of corporate aid is weakened further by FDI being concentrated in more advanced host countries, and charitable and commercial activities being strongly correlated beyond the first step of selecting eligible recipient countries.

The poverty orientation of corporate aid may also suffer from decentralized decision-making on financial support for local community projects. This is even though a company such as Unilever explicitly makes the case for decentralized decisions on private aid, arguing that local staff knows best about need and poverty issues. Yet it is difficult to imagine that a coherent poverty strategy could emerge from decentralized project decisions unless headquarters determines the overall size of country-wise aid budgets according to the relative severity of poverty in the recipient countries. Local staff cannot reasonably be expected to weigh context-specific poverty issues by taking worldwide benchmarks into account. The fact that Nestlé reports a fairly large number of poverty-related community projects in advanced countries (see subsequent section) may provide a first indication to this effect.

Compared to NGOs, it may be easier for private companies to distinguish themselves from the (widely criticized) aid strategies of official aid agencies. As noted above, NGOs are often dependent on funding from the government and may thus tend to mimic official aid

<sup>11</sup> Note that Nestlé's aid database includes just one country (Tanzania) where the company did not own any capital stocks in 2006 (Nestlé 2007; see also map in Annex 4).

Unilever provides information on its MDG-related activities under: <a href="http://www.unilever.com/Images/es\_MDG-index\_tcm13-42100.pdf">http://www.unilever.com/Images/es\_MDG-index\_tcm13-42100.pdf</a>; accessed: January 2008. Nestlé

allocation. Financial independence from official "backdonors" might have the effect that the allocation of corporate aid is less distorted by *political* interests of home country governments. Financial independence does not necessarily mean, however, that corporate aid is less affected by donors' self-interest than ODA. For several reasons, *commercial* self-interest can rather be expected to have a stronger impact on corporate aid than on ODA.

Some projects reported as corporate contributions to the MDGs would be highly unlikely to exist if the company was not engaged in the respective country either as a foreign investor or a trading partner. This may be most obvious in cases where financial support for community projects helps mitigate the opposition of people feeling negatively affected by the commercial activities of the company. Environment-related projects financed by multinational oil companies spring to mind. But various projects reported by multinational food companies also appear to be business-related. Unilever frankly admits that "more than a quarter of our projects seek clear commercial benefits alongside positive community impacts" (http://www.unilever.com/ourvalues/environment-society/sus-dev-

<u>report/communities/default.asp</u>; accessed: January 2008). Several projects listed in Nestlé (2006) under the headings "Helping coffee farmers" and "Helping milk farmers" also fall into this category.<sup>13</sup>

Links between the company's self-interest and private aid may result from both the demand for, and supply of community projects. As concerns the supply side, company staff responsible for community projects and poverty-oriented donations would probably have their activities more readily accepted and supported by senior management and shareholders if a "business case" can be made, by demonstrating that the projects are related in some way or another to the company's own performance goals (Teegen 2006: 262). Corporate aid for health projects, notably the fight against HIV/Aids, provides a case in point: Demonstrating that the benefits of health projects are concentrated on company staff and their families, or areas where the company is recruiting, would probably render it much easier to get MDG-related project proposals approved.<sup>14</sup>

headquarters did not know how much its subsidiaries had spent on community projects when we first inquired about quantitative financial support in the context of the present paper.

<sup>&</sup>lt;sup>13</sup> Examples include: the Arabica Coffee Experimental and Development Coffee Farm in Doi Tung, Northern Thailand, and Nestlé's investments in Moga, India, to develop the local milk economy (village cooling centers, etc.).

<sup>&</sup>lt;sup>14</sup> For instance, Nestlé (2006: 37) reports that the company adopted its first internal HIV/AIDS prevention policy for employees in the Rep. of South Africa in 1986.

With respect to the demand side, financial support of projects is more likely to be granted by the company if requests come from politically important agents in the recipient country. Applications for project support from local communities and self-help groups may have a clearer poverty focus than those from ministries and the bureaucracy. But circumventing state agents is less an option for corporate donors than for northern NGOs dealing directly with the poor in the south. Especially if also engaged as investors and producers in the country, corporate donors depend on the goodwill of local governments, e.g., when investment and business regulations are at stake. Hence, companies may be inclined to accept official project proposals to ease the process of doing business, even if alternative project proposals have a stronger impact on poverty alleviation.

# III. Data and Stylized Facts

As mentioned before, we make use of unpublished project-specific data of Nestlé's financial support in a large number of countries in 2007.<sup>15</sup> These data were collected by Nestlé's headquarters in Vevey, Switzerland, from the various foreign affiliates only after we had presented our research idea to senior company staff. The decentralized decision-making on Nestlé's aid is also evident from the fact that it took several rounds of inquiry from headquarters until a complete and consistent dataset emerged. Nestlé's affiliates in several low- and middle-income countries did not report any aid activities.<sup>16</sup> We assume Nestlé's aid to be zero in these countries. In addition, a few aid projects in Central America cover several recipient countries;<sup>17</sup> hence Nestlé's aid to Costa Rica, El Salvador, Nicaragua, Guatemala, Honduras, and Panama is understated as the amounts for joint projects cannot be accounted for in the estimations.<sup>18</sup> However, we test for robustness of our results by excluding these two groups of countries (Section VI).

With the few exceptions just mentioned, Nestlé's financial support resembles bilateral ODA in that it benefits one particular recipient country. Furthermore, most projects are explicitly

<sup>&</sup>lt;sup>15</sup> While (annual) financial contributions to specific projects are not publicly disclosed, the list of projects Nestlé supported and a short description of the projects can be accessed under: <a href="http://www.community.nestle.com/Sitemap.htm">http://www.community.nestle.com/Sitemap.htm</a>. See also Nestlé (2006). The benchmark of Swiss ODA and NGO aid refers to 2005; more recent ODA and NGO data were not available when the estimations were performed.

<sup>&</sup>lt;sup>16</sup> Barbados, Bosnia and Herzegovina, Cambodia, Croatia, Cuba, Guinea, Iran, Lebanon, Lithuania, Macedonia, Mauritius, Mozambique, Niger, Oman, Saudi Arabia, Serbia and Montenegro, Senegal, Syria, Tunisia, Ukraine, Uruguay, Uzbekistan, Viet Nam, and Zimbabwe.

<sup>&</sup>lt;sup>17</sup> Projects covering several countries account for less than 0.5 percent of Nestlé's overall aid.

<sup>&</sup>lt;sup>18</sup> Note that the same typically applies to ODA; the aid statistics of various DAC donor countries report aid flows that cannot be allocated on a country-by-country basis.

related to a specific MDG the project is meant to help achieve.<sup>19</sup> Hence, the database allows us not only to assess the allocation of Nestlé's aid across a large number of recipient countries; we can also compare Nestlé with other donors (i.e., the Swiss government and Swiss NGOs) as far as the allocation of aggregate aid is concerned, and it is possible to check whether Nestlé's aid allocation differs across specific MDG-related aid items.

Our analysis focuses on low- and middle-income countries (LMICs) as recipients of Nestlé's aid, but the database also covers projects financed in high-income countries. Indeed, projects in high-income countries accounted for about one third of Nestlé's overall financial support in 2007, whereas this country group hardly received any aid from the Swiss government and Swiss NGOs (Figure 1).<sup>20</sup> Nevertheless, Nestlé's aid is concentrated in LMICs whose aid share was five times their share in capital stocks held abroad by companies of the Nestlé Group (Nestlé's FDI for short).

Nestlé's aid and FDI appear to be correlated when high-income countries are excluded from the sample. The aid and FDI shares resemble each other for the three remaining country subgroups of low-income, lower middle-income, and upper middle-income countries. Lower middle-income countries received the bulk of Nestlé's aid (about two thirds of its aid to all LMICs), while both ODA and NGO aid were concentrated strongly on the low-income group.

Figure 2 portrays the median as well as the range of per-capita income within the sample of LMICs with (N-Aid=1) and without aid (N-Aid=0) from Nestlé, compared to countries with and without Swiss ODA, NGO aid, or FDI from Nestlé. The overall range of countries having received aid is similarly wide for Nestlé's aid, ODA and NGO aid. All three donors also have in common that the maximum per-capita income of aid recipient countries is about US\$1500 below the maximum per-capita income of sample countries not having received aid. Yet Nestlé appears to differ in major respects from both official Swiss donors and NGOs. Most notably, the median of per-capita income is more than twice as high for recipients of Nestlé's aid than for recipients of ODA and NGO aid. Furthermore, the median of per-capita income for countries with N-Aid=1 considerably exceeds the median of per-capita income for countries with N-Aid=0. While the same pattern prevails with respect to FDI from Nestlé, this

<sup>&</sup>lt;sup>19</sup> For about 20 percent of Nestlé's overall financial contributions an explicit link to the MDGs is either missing, or the project is claimed to serve several MDGs at the same time; see also Figure 5 below.

<sup>&</sup>lt;sup>20</sup> Income groups are defined according to the World Bank's classification (GNI per capita in 2005). High-income countries are those with a per-capita income of at least US\$ 10,726 in 2005.

<sup>&</sup>lt;sup>21</sup> It is interesting to note that there are hardly any differences between Swiss ODA and NGO aid according to Figure 2.

is in striking contrast to ODA and NGO aid for both of which the median of per-capita income is considerably lower for aid recipients than for non-recipients.

Countries with and without aid from Nestlé as well as countries with and without aid from other sources may also be compared with regard to the development of institutions. In Figures 3 and 4, we use "voice and accountability" and "control of corruption", respectively, as presented by Kaufmann, Kraay and Mastruzzi (2007), with higher index values indicating more developed institutions. Similar to the previous figure on per-capita income, Nestlé stands out with respect to "voice and accountability" in countries with and without aid. The median (as well as the minimum) of "voice and accountability" for recipients of Nestlé's aid is higher than the corresponding index values for the recipients of ODA and NGO aid. At the same time, the median of "voice and accountability" is higher for N-Aid=1 than for N-Aid=0, which closely resembles the pattern for N-FDI=1 and N-FDI=0. When it comes to "control of corruption", however, the emerging pattern is less clear. While Nestlé's FDI seems to be located in less corrupt countries, the median of "control of corruption" does not differ between N-Aid=1 and N-Aid=0. Still, the minimum and the maximum of "control of corruption" are higher for countries receiving Nestlé's aid.

Figures 2, 3 and 4 leave it open to question what actually drives Nestlé's aid. On the one hand, the poverty orientation may be relatively weak, compared to the allocation of Swiss ODA and NGO aid, considering that access to Nestlé's aid is essentially restricted to the company's host countries of FDI. On the other hand, Nestlé may have adhered more strictly than other Swiss donors to the World Bank's (disputed) message that donors should favor better-governed countries for aid to become more effective (World Bank 1998).

Before outlining our multivariate estimation approach in the subsequent section, we shortly portray the distribution of Nestlé's aid across specific MDGs.<sup>25</sup> According to Figure 5, MDG 6 ("Combat HIV/AIDS, malaria and other diseases") has received most attention, followed by MDG 1 ("Eradicate extreme poverty and hunger"). However, the share of MDG 6 would decline to just six percent if one outstandingly large project (out of the total of about 400

<sup>&</sup>lt;sup>22</sup> Both indices range from -2.5 to 2.5.

 $<sup>^{23}</sup>$  And again, the patterns portrayed in Figure 3 are almost the same for the recipients of ODA and NGO aid ODA and NGO = 1), and for countries not having received ODA and NGO aid (ODA and NGO = 0).

<sup>&</sup>lt;sup>24</sup> Note, however, that the minimum of "voice and accountability" is lower for host countries of FDI than for recipient countries of aid, which may suggest that Nestlé is somewhat stricter on democracy as a precondition for aid

<sup>&</sup>lt;sup>25</sup> A comparison between Nestlé and other Swiss donors is not possible with respect to MDG-specific aid; neither ODA nor NGO aid can be disaggregated according to MDGs. See Annex 3 for a complete list of MDGs.

projects) is excluded. MDG 1 would then clearly have attracted the largest share of Nestlé's aid in LMICs, followed by MDGs 2 ("achieve universal primary education") and 8 ("Develop a global partnership for development"). The prominence of MDG 1 is also reflected in the fact that this goal is included in various combinations with other MDGs which particular projects are supposed to help achieve.<sup>26</sup>

# IV. Estimation Approach

Our dependent variable of major interest is defined as Nestlé's aid disbursements. Even though its aid activities are widely spread, Nestlé gives aid to a limited number of recipient countries (about 70 in 2007). Thus, the dependent variable takes the value of zero for a significant fraction of the sample but is roughly continuously distributed over strictly positive values for the remaining part.<sup>27</sup> Performing OLS on such a variable is very likely to bias the results. Furthermore, with OLS one would obtain negative predictions for a substantial part of the dependent variable (*y*). It is suggestive for our purposes, however, to use a model that by construction implies non-negative predicted values for *y*.

Three alternatives have been suggested in the literature to deal with the potentially large bias of OLS estimations when the dependent aid variable is bounded (Neumayer 2003; Berthélemy and Tichit 2004). The first approach is Cragg's two-part model, where the first step involves a Probit estimation that determines the probability of receiving aid (selection equation), and the second step an OLS estimation that determines the amounts of aid for the sub-sample of positive aid observations (allocation equation). The crucial assumption underlying this approach is that the choice of the recipient and the amount of aid allocated are independent of each other (the error terms of both equations are not correlated), which allows for the possibility that the same variable has a different effect in the selection and the allocation equation. If the assumption does not hold, which appears to be highly likely, the regression in the second step suffers from a selection bias.

The second approach is the sample selection or Heckman model, which resembles the twopart model, except that the error terms are not assumed to be independent. Again, a Probit

<sup>&</sup>lt;sup>26</sup> More than half of the financing of such multi-purpose projects (included in "not attributable" aid in Figure 5) is meant to help achieve MDG 1 in combination with other goals.

<sup>&</sup>lt;sup>27</sup> Nestlé reports aid only in the form of grants which cannot be negative. By contrast, (net) aid in the form of subsidized loans may be negative when interest and amortization payments of the recipient exceed new loans from the donor. However, Swiss bilateral ODA in 2005 consisted to more than 98 percent of grants and grant-like contributions; <a href="http://www.oecd.org/dataoecd/52/9/1893143.xls">http://www.oecd.org/dataoecd/52/9/1893143.xls</a>; Table 12 (accessed: January 2008). This means that the aid variable is non-negative for both Nestlé and the ODA benchmark.

estimation is performed in the first step. In the second step, the so-called inverse Mill's ratio from the first step is added to the set of explanatory variables in order to correct for the selection bias. The Heckman model also allows for the possibility that a variable has a different effect in the selection and the allocation equation. This model requires, however, finding an exclusion variable that affects the selection of a recipient but does not affect the amount of aid disbursed.

The third approach is the Tobit model which estimates the amount of aid allocated to a certain country, taking the qualitative difference between zero and continuous observations into account. Aid to a specific recipient is specified as the maximum of zero and a linear combination of the explanatory variables so as to guarantee that predicted aid flows cannot become negative.

The Tobit model is more restrictive than the Heckman model by assuming that the (direction of) the effect of a variable on the selection and on the allocation equation is the same, and assessing both in one step. A single Tobit coefficient thus combines, or averages, the two effects. However, the Heckman procedure suffers from its own problems. Estimates may be unreliable due to serious multicollinearity problems within the set of explanatory variables employed in both equations. Moreover, it is very difficult to find appropriate exclusion variables for the first step of the Heckman procedure.<sup>28</sup> We thus follow large parts of the relevant literature and prefer the Tobit model for our regression analysis.<sup>29</sup>

We use two commonly applied ways to check whether the Tobit model appropriately fits the data: First, the results of a separately estimated Probit model should be consistent with the Tobit results as regards sign and statistical significance of the regressors. Second, Tobit coefficients can be scaled in order to make them comparable to Probit coefficients. If the Tobit specification holds, the coefficients of both models should be "close" to each other. Both requirements hold, as will be shown for Nestlé's aid in Table 3 below.

Note that Tobit coefficients are not identical to their marginal effects, which have to be calculated separately. The "overall effect" of a marginal change in one of the regressors can then be decomposed into two effects: One of them works by changing the expected (mean)

<sup>&</sup>lt;sup>28</sup> If no (reasonable) exclusion variable is found, it may be impossible to distinguish sample selection from a misspecification of the functional form: see Wooldridge (2002) for further discussion.

<sup>&</sup>lt;sup>29</sup> For empirical applications of Tobit models in the context of aid allocation, see e.g. Alesina and Dollar (2000), Alesina and Weder (2002), and Berthélemy and Tichit (2004).

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value of y in the positive part of the distribution, and the other by changing the probability that an observation will be in the positive part. This provides additional insight on the magnitude of the effect an individual regressor has on the dependent variable at the selection and the level stage.

Concerning the estimation technique, heteroskedasticity corrected, or "robust", standard errors are employed for every model we estimated. We take (natural) logarithms of all dependent and independent variables, except for "voice and accountability" and "control of corruption", the indicators of institutional quality.<sup>31</sup> In all estimations, we control for the population size of recipient countries, which is required as the dependent variable is not in per-capita terms.

In line with the previous literature on aid allocation, the per-capita income of recipient countries provides an encompassing indicator of need. Its coefficient should be negative if aid is concentrated on particularly poor recipient countries. Per-capita income has repeatedly been shown to shape the distribution of aid (Berthélemy and Tichit 2004; Berthélemy 2006; Nunnenkamp and Thiele 2006; Dollar and Levin 2006; Thiele, Nunnenkamp and Dreher 2007).

However, recipient countries may receive less aid than indicators of need would suggest if donors follow the influential World Bank study "Assessing Aid" (World Bank 1998) and require recipient countries to meet basic institutional preconditions for aid to be effective. As noted before, we measure the quality of institutions by considering "voice and accountability" and "control of corruption" (Kaufmann, Kraay and Mastruzzi 2007) to be a determinant of aid. The development of democratic and non-corrupt institutions is often mentioned by donors as a guiding principle of aid allocation, and there is at least some evidence that official donors granted more aid to democratic governments (Gates and Hoeffler 2004). Hence, we would expect these variables to carry a positive sign, considering that higher index values indicate better institutions. On the other hand, aid granted by NGOs may be negatively related to institutional quality if NGOs choose to work in "difficult" environments, i.e., locations with

<sup>&</sup>lt;sup>30</sup> If the specification of the Tobit model is correct, the probit estimators should be close to  $(1/\sigma)\beta$ , where  $\beta$  is the Tobit coefficient and  $\sigma$  is the standard error of the error term. Because of sampling error they will never be identical.

<sup>&</sup>lt;sup>31</sup> Taking logs helps further to reduce heteroskedasticity in the variables and pulls outliers closer to the "bulk", making estimation results more reliable.

<sup>&</sup>lt;sup>32</sup> Less corrupt governments, however, do not appear to receive more foreign aid (Alesina and Weder 2002).

weak institutions in which NGOs may have comparative advantage over official donors.<sup>33</sup> As concerns private aid from companies such as Nestlé, it is difficult to decide *ex ante* on the sign of the democracy or corruption variable.

In addition, we estimate an extended model to also consider the commercial self-interest donors might have in granting aid. Models of ODA allocation often refer to trade-related interests and include the donor country's exports to the recipient country to reflect such interests.<sup>34</sup> Bilateral relations with respect to foreign direct investment (FDI) represent another aspect of commercial ties that may motivate aid. ODA models ignore this aspect as bilateral FDI data are typically available for a limited number of developing countries only. In the case of Nestlé, the data situation is exactly the opposite: While bilateral trade flows are not available, FDI stocks are reported for all countries in which companies of the Nestlé Group are engaged. The measure we suppose to reflect Nestlé's commercial interests refers to the value of capital stocks (in US\$) of companies of the Nestlé Group, which were located in the respective host country at the end of 2006 (Nestlé 2007). Unfortunately, other potentially superior indicators such as Nestlé's employment, value added or sales were not available to us on a country-by-country basis.

Arguably, some of the explanatory variables may not be exogenous. For instance, effective aid may help raising the per-capita income of recipient countries. Aid may also help stabilizing democratic governments. For several reasons, however, reverse causation is unlikely to distort our empirical results. Various aid items are unlikely to have *short-term* effects on economic outcomes (Clemens, Radelet and Bhavnani 2004). As concerns the impact on institutions, short-term effects are still more unlikely. According to Burnside and Dollar (2004: 4), "researchers coming from the left, the right, and the center have all concluded that aid as traditionally practiced has not had systematic, beneficial effects on institutions and policies." Finally, Nestlé is too small a donor to shape economic and political outcomes in a significant way by its aid allocation (the same applies to the Swiss government and Swiss NGOs). Nevertheless, we lag all explanatory variables in order to minimize the risk of any reverse causation. Definition and sources of the variables are provided in the Annex 1, summary statistics in Annex 2.

<sup>&</sup>lt;sup>33</sup> For instance, UNDP (2005) argues that the international community can play a role in countries ranking consistently low on civil liberties, political freedoms and human rights by delivering aid through NGOs. This view is echoed in the aid policy documents of various bilateral donors. See Koch et al. (2008) for details.

<sup>&</sup>lt;sup>34</sup> Examples include: Berthélemy (2006) and Canavire et al. (2006). Nancy and Yontcheva (2006) consider the ratio of the recipient's imports from the donor country to the recipient's total imports. This measure appears to be less suitable to reflect the importance of bilateral trade relations for the *donor*.

# V. Major Results

The sample underlying empirical analyses of ODA allocation is typically restricted to recipient countries covered by the widely used OECD/DAC statistics (OECD 2007) or national aid statistics of the specific donor country: Relatively advanced emerging market economies are included on the recipient side (even those that by now have become donors themselves), but high-income countries only appear on the donor side. Likewise, we focus on LMICs as recipients of Nestlé's aid.

Nevertheless, to fully use the information on project financing and charitable activities as provided by Nestlé, we begin with a sample including high-income countries, which adds up to 186 observations. Results for the basic model (excluding donor interest) are presented in column 1 of Tables 1 and 2. All explanatory variables are statistically significant. Not surprisingly, countries with a larger population receive more aid. In sharp contrast to what one might expect, however, countries with higher per-capita income also receive more aid from Nestlé. The results for institutional quality are ambiguous. On the one hand, Nestlé favors more democratic countries. On the other hand, it disburses more aid in more corrupt countries.

The decentralized nature of Nestlé's decision-making on aid complicates the interpretation of the findings on democracy and corruption. The institutional variables could just proxy the environment in which such decisions are taken. For instance, it may well be that staff members in countries with higher levels of "voice and accountability" are more likely to raise ideas for community projects and get them accepted and supported by senior management. At the same time, more corrupt local governments might request more financial support of projects in return for good investment and business relations with Nestlé affiliates.

Adding Nestlé's FDI to the regressors improves the model fit quite a bit: The Pseudo R² indicates that the extended model accounts for 59 percent of the variability in the dependent variable, as compared to the 48 percent of the basic model. It remains that Nestlé favors larger countries (measured in population size) with more democratic but also more corrupt institutions. The coefficient on per-capita income is still positive, but statistically insignificant. Hence, Nestlé's aid is no longer biased in favor of richer countries, but neither is it poverty-oriented in the sense of being targeted to the needlest countries. Nestlé's FDI levels are statistically significant at the one percent level (column 2 of Table 1). The model predicts that an increase in FDI stocks has a positive influence on the probability of being selected as a recipient country and on the level of aid allocated (see column 2 in Table 2 for marginal

effects). Commercial presence can therefore be assumed to play a significant role for Nestlé's aid allocation.

The number of observations declines from 186 to 144, when replicating the estimations on Nestlé's aid for the LMIC sample.<sup>35</sup> Yet, the results are strikingly robust (columns 3 and 4 in Tables 1 and 2). Sign and significance of the coefficients of the explanatory variables do not change and the marginal effects indicate that all the variables described above have a significant effect on the probability of receiving aid and on the amount disbursed thereafter. Most importantly, restricting the sample to LMICs has no effect on the lacking poverty orientation of Nestlé's aid.

Corresponding estimations are also shown for Swiss ODA and NGO aid, to see how Nestlé measures up to other Swiss donors (columns 5-8 in Tables 1 and 2). Since the results of the basic and the extended model are very similar, we focus the presentation and discussion of results on the extended model with donor self-interest included.

Comparing the different donors, Nestlé stands out in several respects, while the allocation of ODA and NGO aid is remarkably similar.<sup>36</sup> First, the Swiss government and NGOs appear to be more altruistic than corporate donors, if Nestlé is representative of the latter. It has to be recalled that we have to refer to exports, rather than FDI, as a proxy of donor self-interest in the ODA and NGO aid model. Consequently, the results on commercial self-interest are not fully comparable across the three donors under consideration. However, exports and FDI typically are strongly correlated.<sup>37</sup> Bilateral exports are not significant in the ODA model, while they are significantly negative (though only at the 10 percent level) for NGO aid. The finding that Swiss ODA is not driven by commercial interest is in line with Berthélemy and Tichit (2004) as well as Berthélemy (2006). The bias of NGO aid against more important trading partners of Switzerland resembles the findings of Nunnenkamp et al. (2008).

<sup>&</sup>lt;sup>35</sup> The LMIC sample consists of non-OECD countries with a per-capita income of less than US\$ 10,725. ODA and NGO aid models are estimated for the same sample, but the inclusion of the bilateral export variable results in a loss of six observations. The results for Nestlé are not affected when these six observations are also excluded in the Nestlé sample.

<sup>&</sup>lt;sup>36</sup> Note that the effects of population on all types of Swiss aid turn out to be surprisingly large. A closer inspection reveals that Swiss aid in 2005 was indeed biased towards countries with larger population size – in contrast to the small country bias often found in the literature for other donors. The fact that small projects below a certain minimum go unreported in Swiss aid statistics (DCC various issues) may provide at least part of the explanation. Results would be biased towards larger countries if projects below the threshold are concentrated in small recipient countries.

<sup>&</sup>lt;sup>37</sup> This even applies to the correlation between total Swiss exports and Nestlé's FDI; the correlation coefficient amounts to 0.55.

Second, the allocation of both ODA and NGO aid is clearly more poverty-oriented than Nestlé's aid. In the basic models on ODA and NGO aid, per-capita income enters significantly negative at the one percent level. In the extended models with bilateral exports included, the significance of the coefficient on per-capita income weakens considerably, but remains significant at the 10 percent level.<sup>38</sup>

Third, the aid allocation of both the Swiss government and Swiss NGOs is not affected by the institutional quality of recipient countries. This result does not change when the list of explanatory variables includes only one proxy for the quality of institutions (either "voice and accountability" or "control of corruption"). By contrast, Nestlé favors more democratic, yet also more corrupt countries.

# VI. Robustness Tests and MDG-Specific Estimations

Before turning to MDG-specific aid items, we perform several robustness tests of our preferred specification on total aid from Nestlé for the LMIC sample in column 4 of Table 1. It turns out that all major findings on Nestlé's aid allocation are robust to various changes in the estimation strategy. In the first column of Table 3, we estimate a Probit rather than a Tobit model. As explained in Section IV, this allows us to assess whether the Tobit model is appropriate. The Probit and Tobit estimates are consistent with respect to sign and significance of the regressors; and the scaled Tobit coefficients (column 1a of Table 3) are fairly close to Probit coefficients. This supports the choice of our estimation method.

Next, we replicate the preferred Tobit specification for smaller samples by excluding LMICs for which data uncertainties remain. In column 2 of Table 3, we exclude six Central American countries for which Nestlé reports aid projects covering several countries belonging to this group. The country-specific aid amounts are thus slightly understated. The estimation results are almost the same as those of our preferred specification. Likewise, the results are hardly affected when the Philippines, a striking outlier in terms of the amount of aid received from Nestlé, are excluded from the sample (column 3).

It is only when we reduce our sample by a fairly large number of LMICs that some of our basic results are affected. The estimation reported in column 4 of Table 3 is based on just 121 countries: We exclude all countries for which local Nestlé staff did not report any project financing in 2007 (listed in footnote 16 above), rather than assuming Nestlé's aid to be zero in

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<sup>&</sup>lt;sup>38</sup> This is very likely due to multicollinearity between per-capita income and exports.

all these cases. This modification strengthens the relation between Nestlé's FDI and aid: the magnitude of the overall marginal effect of the former is now more than twice as high (column 4 of Table 4). At the same time, population size turns insignificant and the coefficient on per-capita income now becomes negative but is not significant. In other words, Nestlé's aid allocation appears to be less biased against poorer countries than before. The effects of the institutional variables remain unchanged. Nestlé still favors more democratic and more corrupt places.

It essentially depends on the validity of the "zero assumption" concerning aid in the non-reporting countries whether the results shown in column 4 of Table 3 are more reliable than the benchmark in column 4 of Table 1. Obviously, the assumption underlying our previous estimations would be violated if local staff could have reported MDG-related project financing, but did not respond to repeated requests from headquarters to do so. Local staff might have ignored reporting requests for several reasons, ranging from time constraints to uneasiness about headquarters interfering with the traditionally decentralized approach of giving aid. However, it is rather unlikely that aid activities went unreported for such reasons in all, or even most of the countries excluded in column 4 of Table 3. Rather, the incentives for company staff to fully report their "doing good" appear to be fairly strong with corporate social responsibility in general, and private giving in particular figuring increasingly high on the business agenda (*The Economist* January 19<sup>th</sup>, 2008). Hence, we consider our baseline results to be more reliable.

Going back to the sample of all LMICs, there is another way to assess whether the poverty orientation of Nestlé's aid allocation was understated before: We replace the per-capita income of recipient countries by the Human Development Index as an alternative indicator of need (column 5). In this way, we account for the possibility that Nestlé follows a more holistic approach to poverty, similar to the claim of various official donors and NGOs that their aid allocation takes account of different dimensions of need.<sup>39</sup> Although the coefficient on the Human Development Index is negative, it fails to pass conventional levels of significance. Hence, even taking this alternative indicator of need hardly improves the poverty orientation of Nestlé's aid.

As a next robustness test, we add either Swiss ODA or NGO aid to the list of independent variables (columns 6 and 7 of Table 3). Our previous results, however, are hardly affected.

<sup>&</sup>lt;sup>39</sup> See the definition of variables in Annex 1 for the components of UNDP's Human Development Index.

The finding that the coefficient on ODA is insignificant indicates that Nestlé, unlike Swiss NGOs, allocates its aid autonomously, which is not surprising in the absence of financial dependence on official backdonors.

So far, our sample consisted of all LMICs, irrespectively of whether or not a Nestlé affiliate is located in the country. However, given the relatively small aid budget and the high transaction costs of identifying and implementing community projects, one can reasonably argue that Nestlé might only be expected to disburse aid in those countries in which it has a physical presence. This "FDI bias" is reinforced by the decentralized decision-making on Nestlé's aid activities. Indeed, there is only one country (Tanzania; see map in Annex 4), where Nestlé was engaged in community projects but did not own any capital stocks. For this reason, we reduce the sample to include only LMICs with positive amounts of Nestlé FDI to re-assess the aid allocation of Nestlé compared to that of the Swiss government and Swiss NGOs (columns 8a-8c of Table 3). Even then, the observations made with regard to our preferred specification remain unchallenged. Nestlé still favors richer countries with higher levels of Nestlé FDI and more democratic but also more corrupt institutions. By contrast, both Swiss ODA and NGOs continue being poverty-oriented and rather altruistic.

Finally, we perform additional estimations by making use of the assignment of most of Nestlé's aid to specific MDGs. The estimations are based on the sample of all LMICs and we apply the preferred specification of the equation as in column 4 of Table 1. The presentation of the results in Tables 5 and 6 is restricted to those MDGs (1, 2, 6, 7, and 8) that account for more than a marginal share in Nestlé's overall aid (see Figure 5).

Our results turn out to be fairly stable once more. It is only for MDG 8 ("develop a global partnership for development") that most of the coefficients, including the coefficient on FDI, are insignificant. As before, Nestlé does not seem to focus on poorer countries in any of the MDGs examined. And again, its engagement as a foreign direct investor in the recipient country clearly drives the company's aid activities across various MDGs. With the exception of MDG 8, the coefficient on "voice and accountability" enters significantly positive in all estimations. The other proxy for institutional quality, "control of corruption", however, remains insignificant for MDG 2 ("achieve universal primary education"), MDG 7 ("ensure environmental sustainability") and MDG 8.

# VII. Summary and Conclusions

The view that aid from private donors may achieve better results with respect to poverty alleviation, economic growth and the provision of social services than ODA is based mainly on the failures of the latter. However, little is known about where private aid is spent and how well it works. A case study of one particular company can, of course, narrow this gap only slightly. But Nestlé as one of the frontrunners in the corporate sector being actively involved in the alleviation of poverty (Kolk and van Tulder 2006) offers some interesting insights that may temper the current euphoria about private aid and, at the same time, invite corporate donors to review their aid strategies.

Some basic principles of aid allocation tend to command widespread support even though the optimal donor strategy continues to be discussed controversially. Donors often are advised to (i) focus on the poor, (ii) favor recipient countries where basic preconditions are in place for aid to be effective, and (iii) not mingle aid with commercial and political self-interest. In none of these respects does the case of Nestlé suggest that private aid is particularly well-targeted. This observation even holds when the sample is reduced to the countries in which Nestlé is present as a foreign investor. There is one aspect though on which Nestlé does better than Swiss ODA and NGO aid: Nestlé's aid allocation clearly favors more democratic countries. At the same time, however, Nestlé tends to engage more in aid activities in more corrupt countries. In addition, Nestlé's aid lacks focus in terms of targeting poor countries; it even seems to be biased in favor of richer countries. The finding that aid projects supported financially by Nestlé are located almost exclusively where the company is engaged as a foreign direct investor may not really be surprising. But FDI still prevails as a major driving force of Nestlé's aid in the second stage of allocating aid amounts among countries having passed the eligibility stage.

Consequently, it not only depends on the amount of resources whether private sector engagement improves the chances of achieving the MDGs. Progress with respect to the MDGs is insufficient in various low-income countries: "sub-Saharan Africa is not on track to achieve any of the goals" (UN 2007: 1). This region also falls behind in attracting FDI, with Nestlé being fairly representative in this regard: sub-Saharan Africa hosted less than one percent of Nestlé's FDI stocks and less than two percent of worldwide FDI stocks in 2006, respectively (Nestlé 2007; UNCTAD 2007). With FDI being strongly concentrated in a few relatively advanced host countries and absent in large parts of Africa, corporate aid activities

tend to widen the gap between the haves and have-nots, rather than helping achieve the MDGs where needed most – unless corporate aid is delinked from commercial presence.

Further research is required to reveal whether Nestlé is also representative in that commercial presence appears to be one of the major driving forces of corporate aid. The strength of this link may depend on various factors, including the company's industry, its size, and internationalization strategy. For instance, the link may be relatively strong for companies with long-standing worldwide engagements as foreign direct investors, compared to companies with a more flexible and less persistent trade-related internationalization strategy. Hence, it would be desirable to perform comparative studies across different types of companies — as far as the data situation allows. Additional insights may also be gained by applying alternative indicators of the companies' commercial interest across a wide range of partner countries (e.g., employment, sales, exports).

Finally, companies differ in the way they decide on aid. For instance, Unilever argues in favor of decentralized decisions on private aid while Google hired a "guru of giving" to define its aid strategy (*The Economist* January 19<sup>th</sup>, 2008: 62). The case of Nestlé tends to support the view that a coherent poverty strategy is unlikely to emerge from fully decentralized decisions on local community projects. Local staff cannot reasonably be expected to weigh context-specific poverty issues by taking worldwide benchmarks into account. Consequently, headquarters would have to determine the overall size of country-wise aid budgets according to the relative severity of poverty in the recipient countries.

Centralization with respect to overall aid budgets appears necessary to delink aid from commercial presence in the second step of aid allocation, while local staff knowing better about specific need and poverty issues may still decide on which projects to spend the budget. Centralization might also help to discourage corrupt local governments to request aid in return for better business relations. However, a more radical approach may be required to delink aid from commercial presence in the first step, too. Most likely, white spots with respect to commercial presence (as for Nestlé's FDI in large parts of Africa) would also remain white spots for corporate aid unless the job of "doing good" by granting aid is delegated to a completely independent foundation.

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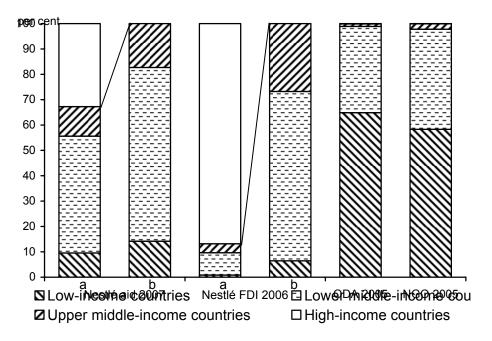
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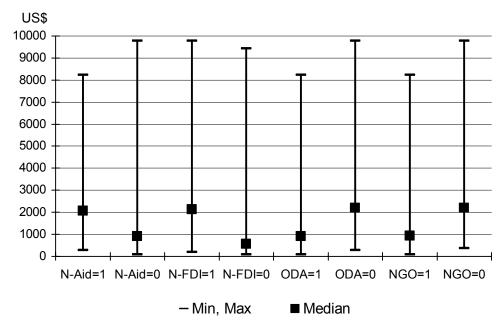
Figure 1 — Share of Income Groups in Nestlé's FDI and Aid, compared to Swiss ODA and NGO Aid



Note: a/b = including/excluding high-income countries.

Source: Nestlé (2007) and unpublished database; DCC (2007).

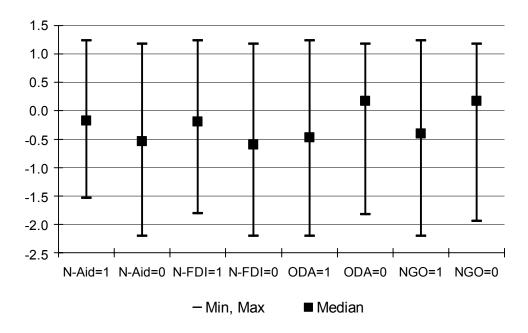
Figure 2 — Median and Range of Per-Capita Income for Low and Middle Income Countries With and Without Nestlé Aid and FDI, Compared to Swiss ODA and NGO Aid



Note: N-Aid = Nestlé's aid in 2007; N-FDI = FDI from Nestlé at the end of 2006; ODA = Swiss official development assistance in 2005; NGO = aid from Swiss NGOs in 2005; for all categories: "=1" ("=0") for sample countries with (without) aid or FDI.

Source: Nestlé (2007) and unpublished database; DCC (2007).

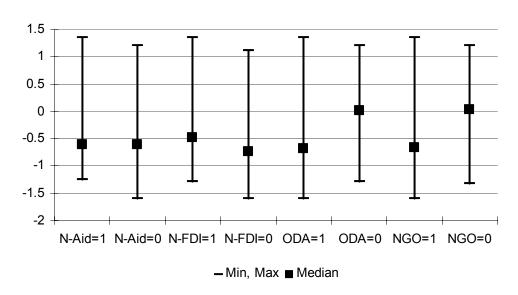
Figure 3 — Median and Range of Democratic Institutions for Low and Middle Income Countries With and Without Nestlé Aid and FDI, Compared to Swiss ODA and NGO Aid



Note: N-Aid = Nestlé's aid in 2007; N-FDI = FDI from Nestlé at the end of 2006; ODA = Swiss official development assistance in 2005; NGO = aid from Swiss NGOs in 2005; for all categories: "=1" ("=0") for sample countries with (without) aid or FDI.

Source: Nestlé (2007) and unpublished database; DCC (2007).

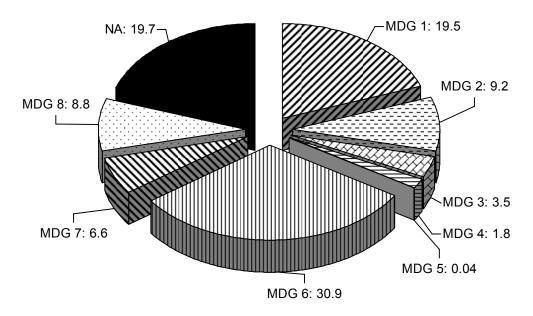
Figure 4 — Median and Range of Control of Corruption for Low and Middle Income Countries With and Without Nestlé Aid and FDI, Compared to Swiss ODA and NGO Aid



Note: N-Aid = Nestlé's aid in 2007; N-FDI = FDI from Nestlé at the end of 2006; ODA = Swiss official development assistance in 2005; NGO = aid from Swiss NGOs in 2005; for all categories: "=1" ("=0") for sample countries with (without) aid or FDI.

Source: Nestlé (2007) and unpublished database; DCC (2007).

*Figure 5* — MDG-related Distribution of Nestlé's Aid: Low- and Middle-income Countries, 2007 (percent)



Note: NA = not attributable to particular MDG. See Annex 3 for the list of MDGs.

Source: Nestlé unpublished database.

Table 1 — Nestlé Aid, Swiss ODA, Swiss NGO Aid -- Tobit

		Nest	lé aid	Swiss	ODA	Swiss NGO aid		
	All countries		LM	IICs	LMICs		LMICs	
	1	2	3	4	5	6	7	8
GDP per capita	3.90***	0.42	6.42***	2.20*	-0.88***	-0.71*	-0.88***	-0.49
	(0.98)	(1.14)	(1.12)	(1.32)	(0.30)	(0.41)	(0.23)	(0.30)
Voice and accountability	6.41***	4.93***	9.58***	7.73***	0.49	0.63	0.70	0.73
	(1.82)	(1.79)	(1.96)	(1.74)	(0.55)	(0.55)	(0.45)	(0.46)
Control of corruption	-6.60***	-4.03*	-11.65***	-9.85***	-0.44	-0.57	-0.54	-0.52
	(2.30)	(2.23)	(3.16)	(2.85)	(0.78)	(0.80)	(0.61)	(0.61)
Population size	4.37***	2.12***	5.21***	2.37***	1.57***	1.64***	1.29***	1.62***
	(0.42)	(0.55)	(0.57)	(0.70)	(0.17)	(0.34)	(0.13)	(0.22)
Nestlé FDI		1.01***		1.04***				
		(0.16)		(0.21)				
Bilateral exports						-0.18		-0.38*
						(0.31)		(0.21)
Constant	-71.21***	-34.88***	-98.09***	-52.12***	-1.92	-3.18	0.13	-4.45
	(8.66)	(10.38)	(11.11)	(13.15)	(2.65)	(4.50)	(2.06)	(3.14)
Observations	186	186	144	144	144	138	144	138
log L	-283.12	-266.32	-177.42	-163.00	-304.34	-293.57	-286.67	-272.17
sigma	9.08	8.05	8.67	7.27	2.93	2.83	2.34	2.27
Pseudo R2	0.44	0.54	0.48	0.59	0.58	0.58	0.61	0.62
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Robust standard errors in parentheses

<sup>\*</sup> significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 2 — Nestlé Aid, Swiss ODA, Swiss NGO Aid -- Marginal Effects (evaluated at the sample mean values of the explanatory variables)

	_		Nest	lé aid		Swiss	ODA	Swiss N	NGO aid
	_	All co	All countries		IICs	LMICs		LMICs	
	mfx	1	2	3	4	5	6	7	8
GDP per capita	1	1.37***	0.12	1.41***	0.34*	-0.85***	-0.70*	-0.87***	-0.49*
	2	0.16***	0.02	0.22***	0.07*	-0.02*	-0.01	-0.01*	-0.01
	3	1.12***	0.11	1.46***	0.43*	-0.76***	-0.64*	-0.81***	-0.46*
Voice and accountability	1	2.25***	1.45***	2.11***	1.19**	0.48	0.61	0.69	0.72
	2	0.26***	0.21***	0.33***	0.25***	0.01	0.01	0.01	0.01
	3	1.85***	1.29***	2.18***	1.52***	0.42	0.56	0.64	0.68
Control of corruption	1	-2.32***	-1.18*	-2.57***	-1.52***	-0.43	-0.56	-0.53	-0.52
	2	-0.27***	-0.17*	-0.40***	-0.32***	-0.01	-0.01	-0.01	-0.01
	3	-1.90***	-1.05*	-2.66***	-1.94***	-0.38	-0.51	-0.49	-0.49
Population size	1	1.54***	0.62***	1.15***	0.37**	1.52***	1.61***	1.27***	1.60***
	2	0.18***	0.09***	0.18***	0.08***	0.04***	0.03**	0.02*	0.02*
	3	1.26***	0.55***	1.19***	0.47***	1.35***	1.46***	1.17***	1.51***
Nestlé FDI	1		0.30***		0.16***				
	2		0.04***		0.03***				
	3		0.27***		0.21***				
Bilateral exports	1						-0.18		-0.37*
	2						-3.27E-03		-4.90E-03
	3						-0.16		-0.35*

mfx 1: overall marginal effect; mfx 2: marginal effect on probability that y is positive; mfx 3: marginal effect on expected value of y \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

*Table 3* — Robustness Checks

				1	Nestle aid LMIC	's				Swiss ODA LMICs	Swiss NGO aid LMICs
	1	1a	2	3	4	5	6	7	8a	8b	8c
Model	Probit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
GDP per capita	0.39	0.30*	2.23*	2.21*	-0.25		1.69	2.16	2.81*	-1.73***	-1.00**
	(0.24)	(0.18)	(1.31)	(1.33)	(0.51)		(1.31)	(1.38)	(1.55)	(0.57)	(0.50)
Voice and accountability	1.28***	1.06***	7.73***	7.75***	2.85**	7.81***	7.77***	7.76***	7.30***	0.40	1.19**
	(0.36)	(0.24)	(1.69)	(1.77)	(1.44)	(1.80)	(1.75)	(1.81)	(1.80)	(0.60)	(0.54)
Control of corruption	-1.62***	-1.35***	-9.32***	-9.89***	-3.48**	-8.14***	-9.66***	-9.87***	-10.34***	0.11	-1.06
	(0.58)	(0.39)	(2.75)	(2.87)	(1.67)	(2.53)	(2.81)	(2.88)	(2.95)	(0.92)	(0.67)
Population size	0.52***	0.33***	2.35***	2.37***	0.66	1.73**	2.65***	2.40***	2.15***	0.83	0.77**
	(0.17)	(0.1)	(0.70)	(0.70)	(0.40)	(0.69)	(0.81)	(0.81)	(0.71)	(0.58)	(0.33)
Nestlé FDI	0.12***	0.14***	1.02***	1.05***	1.09***	1.25***	1.05***	1.04***	0.87*		
	(0.03)	(0.02)	(0.21)	(0.22)	(0.13)	(0.24)	(0.21)	(0.21)	(0.47)		
HDI						-1.37					
						(8.67)					
Swiss ODA							-0.34				
							(0.37)				
Swiss NGO aid								-0.04			
								(0.49)			
Bilateral exports										0.06	-0.05
										(0.51)	(0.32)
Constant	-9.75***	-7.17***	-51.37***	-52.44***	-12.07**	-30.77***	-48.66***	-51.85***	-51.67***	11.63	6.33
	(2.81)	(1.81)	(13.06)	(13.23)	(5.68)	(8.75)	(12.46)	(13.17)	(14.32)	(7.16)	(5.19)
Observations	144	144	138	143	121	134	144	144	66	66	66
log L	-36.38	-163.00	-149.69	-160.08	-125.64	-162.03	-162.68	-163.00	-153.43	-139.83	-132.63
sigma		7.27	7.08	7.37	3.87	7.27	7.20	7.26	6.93	2.24	1.92
Pseudo R2	0.57	0.59	0.60	0.58	0.79	0.59	0.59	0.59	0.40	0.53	0.51
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Robust standard errors in parentheses

<sup>\*</sup> significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

*Table 4* — Robustness Checks -- Marginal Effects (evaluated at the sample mean values of the explanatory variables)

					Nestlé aid LMIC	s			Swiss ODA LMICs	Swiss NGO aid LMICs
	mfx	2	3	4	5	6	7	8a	8b	8c
Model		Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
GDP per capita	1	0.33*	0.33*	-0.09		0.27	0.33	2.17*	-1.73***	-1.00**
	2	0.07*	0.07*	-0.02		0.06	0.07	0.12*	-2.53E-02	-0.97E-03
	3	0.43*	0.43*	-0.07		0.34	0.43	1.56*	-1.71***	-0.99**
Voice and accountability	1	1.13***	1.15***	1.04**	1.37***	1.25***	1.20***	5.66***	0.40	1.19**
	2	0.25***	0.24***	0.28**	0.28***	0.26***	0.25***	0.32***	0.58E-03	1.15E-03
	3	1.49***	1.51***	0.84**	1.62***	1.56***	1.53***	4.07***	0.40	1.18***
Control of corruption	1	-1.36***	-1.47***	-1.27**	-1.43***	-1.55***	-1.53***	-8.01***	0.11	-1.06
-	2	-0.30***	-0.31***	-0.34**	-0.29***	-0.33***	-0.33***	-0.45***	0.15E-03	-1.03E-03
	3	-1.79***	-1.92***	-1.03**	-1.69***	-1.93***	-1.95***	-5.77***	0.10	-1.06
Population size	1	0.34**	0.35**	0.24	0.30*	0.43**	0.37**	1.67***	0.83	0.77**
	2	0.08***	0.07***	0.06*	0.06**	0.09***	0.08***	0.09***	1.21E-08	7.50E-03
	3	0.45***	0.46***	0.19	0.36**	0.53***	0.47***	1.20***	0.82	0.77**
Nestlé FDI	1	0.15***	0.16***	0.40***	0.22***	0.17***	0.16***	0.67*		
	2	0.03***	0.03***	0.11***	0.04***	0.04***	0.03***	0.04*		
	3	0.20***	0.20***	0.32***	0.26***	0.21***	0.21***	0.48*		
HDI	1				-0.24					
	2				-0.05					
	3				-0.28					
Swiss ODA	1					-0.06				
	2					-0.01				
	3					-0.07				
Swiss NGO aid	1						-0.01			
	2						-1.46E-03			
	3						-0.01			
Bilateral exports	1								0.06	-0.05
	2								9.00E-05	5.00E-07
	3								0.06	-0.05

mfx 1: overall marginal effect; mfx 2: marginal effect on probability that y is positive; mfx 3: marginal effect on expected value of y \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

*Table 5* — Nestlé MDG-Specific Aid -- Tobit

	Nestle MDG-specific aid LMICs								
	1	2	3	3a	4	5			
	MDG1	MDG2	MDG6	MDG6	MDG7	MDG8			
GDP per capita	3.83*	2.26	-1.11	-0.81	0.60	-0.30			
	(2.11)	(2.31)	(3.17)	(3.19)	(2.91)	(3.83)			
Voice and accountability	10.27***	5.53*	10.92***	10.32***	7.64**	1.75			
	(2.59)	(2.98)	(3.70)	(3.71)	(3.32)	(2.78)			
Control of corruption	-12.70***	-3.51	-13.24**	-12.85**	-5.47	6.06			
	(4.14)	(5.09)	(6.01)	(6.05)	(6.06)	(5.76)			
Population size	3.05***	3.34***	1.22	1.23	2.34	5.77***			
	(1.02)	(1.07)	(1.48)	(1.48)	(1.57)	(1.94)			
Nestlé FDI	0.95***	1.11***	2.38***	2.22***	1.47***	1.83			
	(0.22)	(0.25)	(0.78)	(0.67)	(0.43)	(1.38)			
Constant	-78.27***	-70.82***	-51.77*	-52.06*	-59.22**	-94.81***			
	(19.79)	(21.75)	(28.10)	(28.46)	(26.38)	(32.98)			
Observations	143	144	144	143	144	144			
log L	-113.94	-107.48	-86.12	-82.29	-84.06	-50.26			
sigma	10.65	11.43	12.54	12.75	12.87	11.60			
Pseudo R2									
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00			

Robust standard errors in parentheses

<sup>\*</sup> significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

*Table 6* — Nestlé MDG-Specific Aid -- Marginal Effects (evaluated at the sample mean values of the explanatory variables)

		Nestle MDG-specific aid LMICs								
	-	1	2	3	3a	4	5			
	mfx	MDG1	MDG2	MDG6	MDG6	MDG7	MDG8			
GDP per capita	1	0.22*	0.11	-0.01	-0.01	0.02	0.17E-03			
	2	0.04*	0.02	-1.90E-03	-1.68E-03	2.84E-03	0.01E-03			
	3	0.55*	0.31	-0.10	-0.08	0.07	-0.02			
Voice and accountability	1	0.59***	0.27*	0-09	0.10	0.20	1.01E-03			
	2	0.11***	0.05*	0.02	0.02	0.04	0.31E-03			
	3	1.47***	0.76*	1.01***	1.00***	0.90**	0.11			
Control of corruption	1	-0.72***	-0.17	-0.10	-0.13	-0.14	3.52E-03			
	2	-0.14***	-0.03	-0.02	-0.03	-0.03	1.07E-03			
	3	-1.82***	-0.48	-1.23**	-1.24**	-0.65	0.38			
Population size	1	0.17***	0.16***	0.01	0.01	0.06	3.35E-03			
	2	0.03***	0.03***	2.08E-03	2.55E-03	0.01	1.02E-03			
	3	0.44***	0.46***	0.11	0.12	0.28	0.36			
Nestlé FDI	1	0.05**	0.05**	0.02	0.02	0.04**	1.06E-03			
	2	0.01***	0.01***	4.06E-03	4.62E-03	0.01**	0.32E-03			
	3	0.14***	0.15***	0.22***	0.22***	0.17***	0.12**			

mfx 1: overall marginal effect; mfx 2: marginal effect on probability that y is positive; mfx 3: marginal effect on expected value of y \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Annex 1 — Definition of Variables

Variable	Definition	Source
GDP per capita	GDP per capita in international US\$. Average over the years 2001-2004.	WDI database
Voice and accountability 2005	Measures the ability of a country's citizens to participate in selecting their government, the freedom of expression, and the freedom of association and free media. The index ranges from -2.5 to 2.5 with higher values corresponding to better governance.	Kaufmann et al. 2007, www.govindicators.org
Control of corruption 2005	Measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. The index ranges from -2.5 to 2.5 with higher values corresponding to better governance.	Kaufmann et al. 2007, www.govindicators.org
Population	Total population as of 2005.	WDI database
Nestlé aid	Nestlé aid 2007 in US\$; taken as aggregate value per country. (Amounts not attributable to individual countries excluded from estimations)	Nestlé unpublished data
Nestlé MDG- specific aid	Nestlé aid 2007 in US\$, assigned to single MDGs; taken as aggregate value per MDG and country. (Amounts not attributable to single MDGs excluded from MDG specific estimations)	Nestlé unpublished data
Nestlé FDI	Capital stocks in US\$ of companies of the Nestlé Group outside of Switzerland, as of 31 December 2006.	Nestlé
Total Swiss ODA	Official development assistance of Switzerland in 2005; US\$.	Direction du dévelopement et de la cooperation (DDC), Switzerland
Total Swiss NGO aid	Private donations disbursed by Swiss non-profit organizations active in development and humanitarian aid to low and middle income countries in 2005; US\$.	Direction du dévelopement et de la cooperation (DDC), Switzerland
Bilateral exports	Swiss exports to other countries in 2005; US\$.	Datastream 2008; based on IMF, Direction of Trade Statistics
HDI	Human Development Index 2004; Composite index of life expectancy at birth, adult literacy rate, gross enrolment rate for primary, secondary, and tertiary schools and GDP per capita (PPP US\$).	UNDP 2008 http://hdr.undp.org/en/

Annex 2 — Summary Statistics (for all LMICs)

Variable	Mean	Std. dev.	Min	Max
GDP per capita (in US\$)	1942.60	2139.85	91.93	9772.83
Voice and accountability	-0.42	0.83	-2.20	1.24
Control of corruption	-0.48	0.66	-1.60	1.35
Population size (in million)	36.13	143.50	0.05	1304.50
Nestlé aid (in thousand US\$)	226	1017	0	9878
Nestlé FDI (in thousand US\$)	13975	58931	0	548223
Swiss ODA (in thousand US\$)	6287	15469	0	163617
Swiss NGO aid (in thousand US\$)	2110	4016	0	26391
Bilateral exports (in million US\$)	109	308	0	2784
HDI	0.65	0.16	0.31	0.88

#### Annex 3 — List of MDGs

MDG 1: Eradicate extreme poverty and hunger

MDG 2: Achieve universal primary education

MDG 3: Promote gender equality and empower women

MDG 4: Reduce child mortality

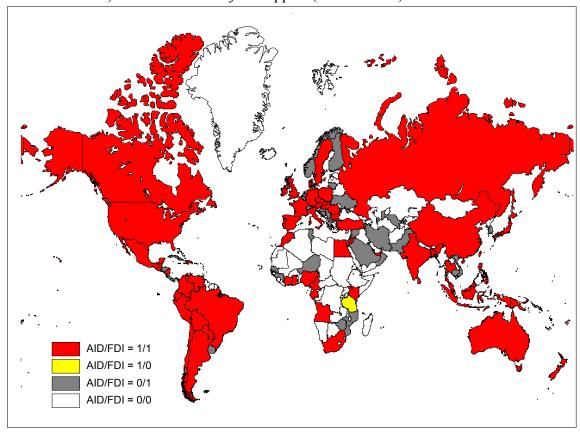
MDG 5: Improve maternal mortality

MDG 6: Combat HIV/AIDS, malaria and other diseases

MDG 7: Ensure environmental sustainability

MDG 8: Develop a global partnership for development

Annex 4 — Nestlé Group: Country Coverage With Respect to Group Companies (FDI in 2006) and Financial Project Support (AID in 2007)



Source: Nestlé (2007) and unpublished database.