Why Northern NGOs Hire too many Expatriates and what Southern Governments Do about It*

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Abstract

Non governmental organizations (NGOs) working in poor countries often hire many workers from their rich home countries, paying what for the host countries is exorbitant wages. We consider the fund-raising benefits to an NGO of hiring home-country workers, finding that the mix of home and host country workers is not cost-minimizing. Competition among duopolist NGOs leads to even greater use of expatriate workers than under monopoly. We also show that quotas imposed by the host country on the number of highly-paid foreign workers increase the number of host-country workers an NGO hires, but reduce its output.

Keywords: Development NGOs, fund-raising, expatriate workers, regulation

1 Introduction

Non-governmental organizations (NGOs) in rich (Northern) countries are active in foreign aid. They run their own offices in aid-receiving countries led by foreigners, and they bring in foreign workers, such as teachers and nurses. This paper models an NGO’s choice of how many high-wage Northern workers (expatriates) to hire and how many low-wage Southern workers to hire. Expatriates

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are hugely expensive compared to local workers, typically earning rich-country
wages and enjoying generous allowances. Still, NGOs employ expatriates to the
extent that governments in the South intervene to change the mix of domestic
and foreign workers. Our approach is to include the role of expatriates in both
the production by an NGO and in its financing. The starting point is the ob-
ervation by Dichter (1986) and Fowler (1997) that donors are more willing to
finance projects that are headed by expatriates. This link between the use of
foreign versus local workers and the financing of the organizations in the North
is the core of the analysis.

The monopoly NGO model, discussed below, shows how the bias in hiring
relates to donor financing. The fund-raising effect of expatriates implies that
the effective wage of Northern workers is lower than the market wage, and the
result, not surprisingly, is excessive use of Northern workers. But we do more
than demonstrate this mechanism. We examine the size of the bias, consider
the effects on output of a quota imposed on the number of Northern workers
the NGO hires, study the effects of such a quota on the number of Southern
workers hired, and evaluate how the behavior of duopolist NGOs differs from
the behavior of a monopoly.

The use of expatriates by NGOs is controversial. Historically, Northern-
based NGOs received work permits for their personnel as a formality. They
have also been allowed to run their operations in the South as they see best. In
practice, they have worked as autonomous foreign-driven operations with large
turnover in management and limited connection to local societies.

Further concerns of governments in the South are the functioning of their
own public services and the working of local labor markets. In a study of the
health sector in Mozambique, Pfeiffer (2003) discusses the concern that NGOs
fragment the local health system, undermine local control of health programs,
and generate new social inequalities. Both the expatriate administrators and the
foreign workers they bring with them are paid much more than their domestic
counterparts and create a gap in wages and living standards between expatriates
and “nationals.” Pfeiffer (2003, p. 732) finds that NGO salaries for trained
health professionals in Mozambique are in a different league: “In one year of
work for an NGO, one could potentially earn the equivalent of 20 years salary
in the national health service.” A decade later, health officials still state that
the exodus of qualified personnel from the public sector to foreign NGOs flush
with aid money is a major concern (Mussa et al. 2013, Sherr et al. 2012).

These experiences have led to a revision of Southern government policies
toward Northern-based NGOs. A study of health workers in Tanzania notes
that whereas the 1990s showed a move from the public sector to church-run and
private health facilities due to their superior terms of employment, the trend has
reversed itself in recent years. Indeed, the government now offers packages that
are so attractive that “differences in employment conditions, including salary,
allowance and pension, is an issue of major concern” (Songstad et al. 2012).

The most dramatic initiative was announced in Uganda in 2012, where NGOs
were banned from taking on expatriates unless they can show that no one from
Uganda with the same skills can fill the post. The government indicated that
“international organizations, particularly those dealing with health, agriculture and community development, bring in unqualified staff from outside the country, pay them more and install them as supervisors over better qualified Ugandan employees.”

Many low-income countries in Africa and Asia have adopted regulations working in the same direction. Examples include regulations in Ethiopia, requiring that NGOs “shall be responsible for replacing, within a limited period, such expatriate personnel by Ethiopians by arranging the necessary training thereof.” In a guide to the Cambodian labor law for NGOs, the starting point is simple: “Preference must be given to Cambodian nationals when hiring.”

Given that wage contagion and internal brain drain are frequently mentioned problems generated by foreign NGOs, these regulations seem puzzling. Forcing Northern charities to hire more Southern personnel can only serve to reduce the number of workers available for the public sector of the host countries, thus forcing them to inflate wages and benefits if governments want to remain competitive in the labour market. We offer an explanation for why the restrictions might be a rational response, suggesting a mechanism leading to an excessive number of expatriates being hired by foreign NGOs.

Our work relates to the literature on fund-raising by charitable organizations. Costly fund-raising with donors learning about a charity only once they receive a solicitation is modelled by Rose-Ackerman (1982), and by Andreoni and Payne (2003). Rose-Ackerman (1982) also examines, as we do, competition among charities, finding that an increase in their number can increase spending on fund-raising. As suggested above, one way our paper extends that work is by considering employees of the organization as the fund-raisers. The importance of personal solicitations (though not necessarily by workers at the organization who also provide the service) is empirically verified by DellaVigna, List, and Malmendier (2012). Donation requests increase the propensity to give by about nineteen percentage points for those who are asked to give (Yoruk 2009). And we extend other work by considering limits on the amount that a charitable organization can spend on fund-raising, interpreted as a quota on the number of Northern workers it employs.

Our assumption that an NGO needs expensive, Northern, workers to raise funds obviously implies that the NGO will hire more Northern workers than it would were Southern workers equally effective in raising funds. But not obvious are answers to other questions we raise. Will a limit on the number of Northern workers increase or reduce the number of Southern workers? Will competition increase or reduce the number of Northern workers? Will aggregate contributions be higher under monopoly than under duopoly? Will output be higher under monopoly than under duopoly? Does a quota on the hiring of Northern workers have different effects on the hiring of Southern workers when the NGO is a monopoly than when it faces competition?

We do not claim that our explanation is the only one. For example, NGOs may use foreign workers to monitor domestic workers, or to provide skills not

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1See http://www.lexpatriates.com/uganda-curbs-ngo-jobs-for-expatriates.
available locally. The effects we discuss would then make for further increase in the use of foreign workers. But we also believe that a monitoring or expertise explanation is not fully consistent with observed behavior. We referred above to studies showing that foreign workers do not increase the skills of domestic workers. And many foreign workers engage in activities that requires little skill—say recent college graduates working in construction of houses or schools. In the delivery of health services, the ignorance of foreign workers of the local language and customs can make their productivity especially low. And if the foreign workers had skills not possessed by domestic workers, there would seem to be little need for domestic governments to issue regulations, mentioned above, allowing NGOs to hire foreign workers only when domestic workers with similar skills are unavailable.

An additional possible benefit of having expatriate workers is the training they provide to domestic workers. Some evidence in support of that is found in a study of plants owned by multinational corporations: plant-level data for Colombia shows that the use of a foreign expert in a plant increases the wages of domestic workers and the value added per worker (Markusen and Trofimenko 2009). But this effect appears to apply to production which requires somewhat advanced technology, not to the types of tasks usually undertaken by NGOs. Thus, a study of Korean firms that invest abroad finds that the use of domestic managers rather than of expatriate managers increases productivity in underdeveloped countries for firms that are not R&D intensive (Hahn, Hayakawa, and Ito 2013). Also of relevance is the behavior of Japanese firms engaging in foreign direct investment in Asia: localization of the affiliate, or a large share of sales sold in the domestic market, reduces the share of expatriates hired (Belderbos and Heijltjes 2005). Because NGOs in a country provide local services rather than exporting services from a poor country, such behavior suggests limited productivity benefits from hiring expatriates.

Moreover, the broad understanding is that NGOs have transmitted little knowledge. The studies by Dichter (1986) and Fowler (1997) are critical of the capacity-building effect of the NGOs, and especially the transfer of skills. A case study of NGOs in Vietnam by Zhu and Purnell (2006) shows that expatriates are weakly linked to local cultures and institutions, but are more a part of an international market for NGO expertise, accountable to NGO headquarters in the North. An evaluation of Dutch support to capacity building by Lange (2013) confirms the donor dependency resulting from expatriate-led operations in the South. Based on the literature and a case study of NGOs in Uganda, Mukasa (1999) questions the arguments for having expatriate staff. She argues that expatriates take away work from qualified workers locally and thus weaken the building of local capacities and that the foreign NGO projects are not sustainable when the expatriates leave.

We start with a monopoly model of a NGO in section 2, including the analysis of a binding quota on foreign workers. Section 3 looks at NGO competition under duopoly.
2 Monopoly NGO

2.1 Assumptions

Consider a Northern NGO producing a single output, which finances its operation in a developing country through private contributions from contributors in its home country. Output is produced using both Northern ($N$) and Southern ($S$) labour. Each employee works a fixed number of hours, normalised to one. For concreteness, we assume that the production function is Cobb-Douglas:

$$Q(N, S) = N^\alpha S^{1-\alpha}.$$  

The wage (or salary) of a Northern worker is exogenously set at $w_N$; the wage of a Southern worker is $w_S$. A key feature of our model is that the effective wage of expatriates differs from the market wage because these employees can be used in fund-raising. For example, Northern workers may return home and inform potential contributors about the project, simultaneously collecting contributions. Expatriates help in writing applications for funding from Northern foundations and international aid agencies. Furthermore, employment of Northern workers may signal high project quality, as contributors probably have a home bias in their assessment of the qualifications of NGO staff. The presence of expatriates should then make private contributors more inclined to contribute. Either way, hiring more expatriates should affect both production, and the contributions to the NGO. Thus, one can in principle distinguish between extensive and intensive margins in fund-raising, that is, the number of expatriates and the time they devote to fund-raising in total. As we aim to analyse the effects of a host country quota on the number of foreign NGO workers, we ignore this inconsequential distinction and talk only of the absolute number used.

This effect is captured by the assumption that the number of people who donate to the NGO, $M$, increases with the number of expatriates hired:

$$M(N) = m + \mu N,$$

where $m$ and $\mu$ are positive constants. As $m = M(0)$, this parameter can be thought of as the number of contributors even when not exposed to fund-raising. The marginal (and average) number of contributors who are induced to give by fund-raising is denoted by $\mu$.

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2 People are much less likely to donate if they are not explicitly asked to do so. This empirical regularity has been dubbed “the power of asking” by Andreoni (2006). The expatriates’ asking power should be present both when they ask in person and when the NGOs inform potential contributors about their role in advertising material.

3 In Aldashev and Verdier (2010), only the intensive margin is operative, as each NGO in their model is run by an entrepreneur allocating her time between production and fund-raising. While this is likely to be an important trade-off for one-woman NGOs, most development NGOs have a number of employees and thus need to make the choice that we focus on: how many host country workers and foreigners to hire.
contributors derive warm-glow utility from contributing. More specifically, the utility function of the representative contributor is

\[ U(x, c) = u(y - c) + \gamma c, \]

where \( c \) is the contribution to the NGO; private consumption \( x \) is income minus the contribution. Assuming that the utility of private consumption is a strictly concave function, the solution to the donor’s problem is unique, which solution is labelled \( c^* \).\(^4\) Hence, total contributions to the NGO are

\[ C(N) = M(N)c^*. \]

We assume that \( C \) is the only source of funds for the NGO. We could other revenues some without changing the results that follow, but it is important that the NGO’s output is not sold in a market or provided at a fee. It does not matter whether \( Q \) is a private good distributed for free, or a collective good provided in the host country. Also note that we allow for multiple producers of a good; all that we require is that the NGO be a monopoly in the sense of having no competitors in the market for contributions. Many NGOs can operate in the developing country in question as long as they draw their private contributions from separate pools.

When contributors are motivated only by warm glow, the exact timing of the game is unimportant. For simplicity, assume that the NGO and its contributors make their decisions simultaneously.

### 2.2 Maximizing output

The NGO’s decision problem is

\[ \text{Max}_{N,S} Q(N, S) \text{ s.t. } C(N) \geq w_N N + w_S S. \]

The constraint holds as an equality at the optimum, as not spending all funds reduces the levels of inputs and so reduces output. Combining the first-order conditions with respect to \( N \) and \( S \) of the Lagrangian yields

\[ \frac{\alpha S^*}{(1 - \alpha) N^*} = \frac{w_N - C'(N^*)}{w_S} = \frac{w_N - \mu c^*}{w_S}. \] (2)

Two notes about this result. First, because the NGO can use expatriates in both production and fund-raising, their effective wage is lower than the market wage. In this sense, foreign workers subsidize themselves and, therefore, their relative effective wage is lower than their relative wage at market rates. Second, at an interior optimum expatriates are costly after factoring in their effect on contributions \((w_N - \mu c^* > 0)\), otherwise the NGO would want to hire an infinite number of them.\(^5\)

\(^4\)The value of \( c^* \) is determined by the first-order condition \( u'(y - c^*) = \gamma \).

\(^5\)We therefore adopt this assumption in the following. With this assumption, the second-order conditions hold. In fact, as long as \( C(N) \) is linear and \( w_N - C'(N^*) > 0 \), they hold for any \( Q(N, S) \) with standard properties, i.e., \( Q_{NN}, Q_{SS} < 0 \) and \( Q_{NS} \geq 0 \).
The optimal absolute values of $N$ and $S$ can be found by solving (2) for $S^*$ and substituting the result in $C(N) = w_N N + w_S S$, yielding

$$N^* = \frac{\alpha mc^*}{w_N - \mu c^*};$$

$$S^* = \frac{(1 - \alpha) mc^*}{w_S}.$$

It follows that the NGO’s output NGO is

$$Q^* \equiv Q(N^*, S^*) = \left(\frac{\alpha}{w_N - \mu c^*}\right)^\alpha \left(\frac{1 - \alpha}{w_S}\right)^{1-\alpha} mc^* \equiv \frac{mc^*}{w}.$$

Total contributions are

$$C^* = \frac{[w_N - (1 - \alpha) \mu c^*] mc^*}{w_N - \mu c^*}.$$

If the NGO had no contributors ($m = 0$), the project would never get off the ground. The reason is that when $M(N)$ is linear, all expatriates are costly (net), not just the marginal one. Hence, no infra-marginal Northern worker generates a surplus that can be used to subsidise others. This limit to fund raising is the most realistic situation; that is, the fund-raising effect is never sufficiently large so that some expatriates make a net financial contribution to the NGO. Of course, endowments or other sources of funds that are not contingent on how the NGO implements the project (for example, a block grant from a foundation or a Northern government) would also constitute the kind of seed money the NGO needs to get it going.

### 2.3 Comparison to NGO with no fund raising

It is instructive to compare these results to the outcome with an otherwise identical NGO that has only exogenous funding. Suppose this NGO receives a grant of $C^*$ and no private contributions. The NGO, not needing to raise money, would then choose the cost-minimising ratio of $S$ to $N$ at market wages, rather than hiring an excessive number of Northern workers who must be paid high wages.

**Proposition 1**

The optimal ratio of Southern to Northern labour for a monopoly NGO is lower than the cost-minimising ratio using market wages:

$$\left(\frac{S}{N}\right)^* = \frac{(1 - \alpha) (w_N - \mu c^*)}{\alpha w_S} < \left(\frac{1 - \alpha}{\alpha w_S}\right)^0 \frac{S}{N}.$$

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6A successful application could conceivably result in a grant that would more than cover the cost of the marginal expatriate involved in formulating it. Such major funding applications, however, are prepared by specialist fund-raising staff at headquarters, not by field workers. Hence, we ignore this possibility.
2.4 Constraint on the number of Northern workers

What happens if the host government imposes a binding quota on the number of expatriates the monopoly NGO can hire, that is, $N < N^*$, beyond the direct effect of reducing $N$? The number of Southern workers is then determined by the budget constraint, or

$$S = \frac{C(N) - w_N N}{w_S} = \frac{mc^* - (w_N - \mu c^*) N}{w_S}.$$

We see that $S$ declines with $N$, as each expatriate is costly even after taking into account the additional contributions she draws in. Hence, starting at $N^*$, reducing the number of Northern workers automatically creates more space for Southerners. In this sense, a quota increases both the absolute and the relative number of Southern NGO workers.

For an NGO that maximizes output, a binding quota on $N$ reduces output:

$$Q = N mc^* \left[ w_N c^* \right]<Q^*.$$

As total contributions to the NGO increase with $N$, contributions will decline if the organisation is restricted in using Northern workers.

Proposition 2 summarises the effects of a quota on an NGO facing no competition in the market for contributions:

**Proposition 2**

A binding quota on the use of expatriates reduces output and funding for a monopoly NGO. The quota increases both the absolute and relative number of Southern workers employed.

We proceed to analyse the more realistic and interesting case where Northern NGOs compete for the contributions of their home-country contributors.

3 Competition among NGOs

3.1 Assumptions

Consider two NGOs, 1 and 2, which are identical in all respects. Most importantly, they operate in the same Southern country and draw their funding from the same pool of contributors in the North. The common donor pool implies that the size of the market is enlarged by the combined fund-raising efforts of the two organizations, that is, the total number of home-country workers they employ:

$$C(N) = M(N) c^*.$$

The variable $N$ is still the total number of Northern workers, but this total is now a sum: $N = N_1 + N_2$.

Let each NGO’s share of total contributions equal its share of total fund-raising effort. Funding for NGO $i$ is thus
\[ C_i (N_i, N_j) = \left( \frac{N_i}{N} \right) C (N) \equiv \sigma_i C (N). \]

Using (1) establishes that
\[ \frac{\partial C_i (N_i, N_j)}{\partial N_i} = (1 - \sigma_i) \frac{mc^*}{N} + \sigma_i mc^* = (1 - \sigma_i) \frac{mc^*}{N} + \mu c^*. \quad (3) \]

### 3.2 Equilibrium behavior

An NGO that hires additional expatriates affects its contributions in two ways. First, it increases the number of contributors, though it does not get contributions from all of them. Second, the NGO increases its market share. The business stealing effect is obviously not present when the NGO has a monopoly in the market for contributions,\(^7\) and strengthens the incentive to hire Northerners. On the other hand, because the market is shared here, the first effect is weaker than for a monopoly. In general, the total effect could thus be either larger or smaller in a duopoly; but with our specification of how total contributions depend on \(N\) it turns out to be larger.\(^8\) Thus, as shown by the rightmost expression in (3), competition increases the marginal incentive to hire expatriates to raise more contributions.

The NGOs play Nash against each other; contributors are also assumed to engage in a Nash game. Thus, the first-order conditions for a duopolist NGO are structurally identical to the conditions for monopoly, though the effect of increased \(N\) on contributions now depends on the number of expatriates the other NGO hires. Combining the two first-order conditions pertaining to the optimal values of \(N\) and \(S\) yields
\[ \frac{\alpha S_{i}^{**}}{(1 - \alpha) N_{i}^{**}} = \frac{w_N - \frac{\partial C_i (N_i, N_j)}{\partial N_i}}{w_S}. \quad (4) \]

A look at (3) shows that the optimal ratio of Southern to Northern workers in a duopoly is lower than the optimal ratio for a monopoly NGO. In this sense, competition worsens the excessive use of expatriates relative to the cost-minimising standard.

To find the absolute numbers in the Nash-equilibrium, solve (4) for \(S_{i}^{**}\) and substitute the result into the budget constraint. The value of \(N_{i}^{**}\) can then be derived as a function of \(N_j\); this is the reaction function of NGO \(i\):\(^9\)

\[ N_{i}^{**} (N_j) = \frac{\alpha mc^* + \sqrt{(\alpha mc^*)^2 + 4 (1 - \alpha) mc^* (w_N - \mu c^*) N_j}}{2 (w_N - \mu c^*)} - N_j \quad (5) \]

\(^7\) As may be seen, if \(\sigma_i = 1\) the expression just derived reduces to the one for monopoly.
\(^8\) This is seen by writing the contributions function: \(C_i (N_i) = \sigma_i mc^* + \mu c^* N_i\).
\(^9\) The second solution to the quadratic function we have to solve can be ruled out on the grounds that it implies a negative number of expatriates. Furthermore, the second solution is inapplicable because the second-order conditions hold, as shown in the appendix, demonstrating that \(N_{i}^{**} (N_j)\) is a unique global optimum for \(i\).
Differentiating this reaction function shows that it is strictly concave, but not necessarily monotonic. The analysis for the other NGO is analogous. The upper panel of Figure 1 illustrates these findings for $\alpha \geq 0.5$, when the reaction functions are everywhere downward sloping. The lower panel of Figure 1 shows them in the case of $\alpha < 0.5$, when $N_2^* (N_1)$ can be upward-sloping for “small” $N_2$ and $N_2^* (N_1)$ can be upward-sloping for “small” $N_1$.\footnote{Small in this context means smaller than the equilibrium value. The critical value at which the slope of the reaction function $N_i^* (N_j)$ changes sign in this case can be shown to be $N_i^* = \frac{(1 - 2\alpha) mc^*}{(1 - \alpha) w N}$, c.f. the appendix.}

It turns out that even under non-monotonicity, a unique, symmetric, equilibrium exists, which of course lies along the 45-degree line (as illustrated in Figure 1). Hence, in equilibrium, $\sigma_i = \sigma_j = 0.5$. With this result, we can solve (4) for $S_i^*$, use the result in the budget constraint, and then set $\sigma_i = \sigma_j = 0.5$.\footnote{To verify that the equilibrium is unique, substitute $N_2^* (N_1)$ into $N_2^* (N_1)$ and solve for the equilibrium values the hard way.} Doing this, yields the absolute numbers of workers hired as

\[
N_i^* = \frac{1}{4} \left( \frac{(1 + \alpha) mc^*}{w_N - \mu c^*} \right) ;
\]

\[
S_i^* = \frac{1}{4} \left( \frac{(1 - \alpha) mc^*}{w_S} \right).
\]

### 3.3 Comparing duopoly to monopoly

Comparing these values to those of the monopolist shows that fewer Southern workers are hired by an NGO facing competition in the market for contributions. Hence, the relative input of local workers falls, and the absolute number of them also declines. Indeed, in equilibrium the number of local workers is only half of that under monopoly: $2S_i^* = 0.5S^*$.

Whether a duopolist optimally hires fewer or more expatriates than a monopolist NGO depends on how important they are in production, not on their productivity in fund-raising or their effective wage: $N^* \geq N_i^* \Leftrightarrow \alpha \geq \frac{1}{3}$. That is, if expatriates matter little for production, a duopolist NGO hires more of them in equilibrium than a monopolist, whereas it is the other way around if their marginal product is sufficiently high. The total number of expatriates employed by the duopolists, however, exceeds the number one of them would choose if it had the market to itself (that is, $N^* < 2N_i^*$).

The equilibrium output of an NGO duopolist is

\[
Q_i^* = S_i^* (\frac{1 + \alpha}{\alpha})^{\alpha} \frac{mc^*}{w}.
\]

Comparing this output to output under monopoly shows that $Q^* > 2Q_i^*$: a monopoly NGO produces more than a duopolist, and total output under duopoly is lower than under monopoly.
The case of $a = 0.5$

The case of $a < 0.5$

Figure 1: Reaction functions
Whereas output can be found by just inserting the optimal quantities of the two types of labour into the production function, the equilibrium contributions to an NGO in equilibrium depend on both its own choice of \( N \) and on the number of expatriates hired by its competitor. As the NGOs optimally make the same decisions, the total number of expatriates is just \( 2N_i^{**} \). In turn, this pins down total contributions at \( M \left( 2N_i^{**} \right) c^* \), of which NGO \( i \) receives 50%. That is,

\[
\begin{align*}
C^{**} & = \left[ \frac{w_N - 0.5 \left( 1 - \alpha \right) \mu c^*}{w_N - \mu c^*} \right] mc^*; \\
C_i^{**} & = \frac{1}{2} \left[ \frac{w_N - 0.5 \left( 1 - \alpha \right) \mu c^*}{w_N - \mu c^*} \right] mc^*.
\end{align*}
\]

The contributions raised by a single NGO duopolist may be larger or smaller than the contributions raised by a monopolist. The exact condition turns out to be \( w_N \gtrless 1.5\mu c^* \), that is, if the wages of expatriates exceed one and a half times the marginal total contribution they generate, the monopolist has higher revenues than a duopolist. Even so, the size of the market is always larger under duopoly (\( C^{**} > C^* \)).

Proposition 3 summarises the results derived so far for the NGO-duopoly.

Proposition 3

In a duopoly, total contributions are higher and total output is lower than when an NGO has a monopoly in the market for contributions. Moreover, the number of expatriates is larger and the number of local workers is smaller.

3.4 Constraint on the number of Northern workers

What happens now if the host government applies quotas to the number of expatriates the NGO hires? We will assume that any quota applies to NGOs symmetrically. If the quota is to be binding, it must imply a lower number of expatriates than in the Nash-equilibrium. Assuming that \( N_1 = N_2 = \overline{N} < N_i^{**} \), the budget constraint implies that each NGO will hire a number of Southerners that is equal to

\[
S = \frac{0.5C \left( 2\overline{N} \right) - w_N \overline{N}}{w_S} = \frac{0.5mc^* - \left( w_N - \mu c^* \right) \overline{N}}{w_S}.
\]

Examining this expression shows that the response of \( S \) (and thus the total number \( 2S \)) to changes in \( \overline{N} \) is the same as under monopoly. That is, the number of local workers declines with the number of expatriates, and, hence, a quota on foreign workers increases the number of local workers. The intuition is the same: net, each expatriate makes a financial “claim” of \( w_N - \mu c^* \) on the unearned revenues of the NGO (\( mc^* \)), reducing the funds available to hire local workers. A binding quota on \( N \) reduces the extent to which expatriates crowd out local workers. It also follows that the effect of binding expatriate quotas on the relative number of local workers is positive. Moreover, as both NGOs are
output-maximizers, binding quotas on the use of expatriates will reduce their output.\textsuperscript{12}

4 Conclusion

The analysis above considered NGOs based in a rich country operating in a poor country. But the reasoning used can also apply to the behavior of NGOs operating in a rich country, and can contribute to our understanding of the fund-raising activity of charitable organizations. Our main idea is that fund-raising is often best accomplished when the workers at a charitable organization resemble the potential contributors to that organization. We should not be surprised if, for example, fund raisers at a university are alumni at that university. But furthermore, if contributors are wealthy, then fund raisers may be more effective if they too are wealthy, attending similar social functions, sending their children to the same schools, attending the same cultural events, and so on. The high wages paid to executives of charitable organizations may therefore be justified by fund-raising considerations. Efficiency in production may generate inefficiencies in fund raising.

Another application of the model, which is analytically very similar to what we discussed, is to consider not two types of workers, but instead to consider capital and labor. Contributions can increase with the number of workers at the NGO, while productive efficiency may require the use of capital. Analytically, we can think of Southern workers as capital, which increases output but not contributions. We would then predict that NGOs might be especially common in sectors of the economy which are labor intensive (support for this pattern is in Salamon and Sokolowski (2005)). The analysis also suggests that non-profits in a given industry use more labor than required to maximize output for a given level of spending on inputs.\textsuperscript{13}

The approach presented above can be applied to additional fund-raising situations. Northern workers may not only increase the number of private contributors. A similar effect can appear if Northern governments give money to a Northern NGO, with the political support for such funding increasing with the number of Northern workers at the NGO. Such workers can make governmental officials aware of the NGO’s activities, can inform voters of the NGO’s activities, and so increase political support among voters for governmental assistance, and can directly lobby governmental officials. Southern workers, not residing and not voting in the Northern country, do not have such ability to influence government. The influence of volunteers or workers at a non-profit is well-illustrated by Teach for America, a non-profit in the United States which recruits high-achieving young college graduates to teach in poor communities.

\textsuperscript{12}Allowing for asymmetric quotas does not change these conclusions. Under asymmetric quotas, $S_i = [\sigma_i C (N_i + N_j) - w_N N_i] / w_S = [\sigma_i mc^* - (w_N - \mu^*) N_i] / w_S$. Hence, $S_i + S_j = [mc^* - (w_N - \mu^*) (N_i + N_j)] / w_S$.

\textsuperscript{13}This effect, however, can be attenuated if contributors want to fund buildings which bear their names.
for two years, and then uses these former teachers to influence policy:\textsuperscript{14} 

TFA is now embedding select alumni in congressional offices and in high-ranking jobs in major school districts, including New York City and D.C. It’s providing start-up cash to alumni to launch “game-changing” advocacy groups and business ventures. Its political arm, meanwhile, is recruiting veteran tacticians to identify key levers of power in cities such as Houston — then help alumni seize them...

When TFA alumni gain political clout, they often push to expand TFA’s role in their communities, a cycle that has fueled TFA’s rapid growth in recent years. “To have this financial juggernaut trying to place more people in positions of power, it’s a concern,” said Fege, president of Public Advocacy for Kids. “They’re a special interest. And their interest is in making sure of the survival of their organization.”

Lastly, fund-raising is expensive; a typical charity will spend from 5 to 25 percent of its contributions on further fund-raising activities (Andreoni 1998). Our analysis suggests that the costs are even higher. To increase the contributions it receives, a charity may distort its input choices, increasing its costs of production.

\textsuperscript{14}Simon (2013).
5 Appendix

This appendix provides the details behind the duopoly Nash-equilibrium. Taking $N_j$ and $S_j$ as given, the decision problem of NGO $i$ is

$$\max_{N_i, S_i} Q(N_i, S_i) \text{ s.t. } C(N_i + N_j) \geq w_N N_i + w_S S_i.$$  

The resulting Lagrangian is $L = Q(N_i, S_i) + \lambda_i [C(N_i + N_j) - w_N N_i - w_S S_i]$. The first-order conditions are

$$\frac{\partial L}{\partial N_i} = C(N_i + N_j) - w_N N_i - w_S S_i = 0; \quad (A1a)$$

$$\frac{\partial L}{\partial S_i} = \frac{\partial Q}{\partial N_i} + \lambda \left[ \frac{\partial C_i}{\partial N_i} - w_N \right] = 0; \quad (A1b)$$

$$\frac{\partial L}{\partial S_i} = \frac{\partial Q}{\partial S_i} - \lambda w_S = 0. \quad (A1c)$$

The first derivative is set to zero, as an output-maximising NGO will not throw away any contributions. Using that assumption and that the production function is Cobb-Douglas, combining $(A1b)$ and $(A1c)$ gives us $(4)$ in the main text. In turn, this equation and the budget constraint can be solved for $S_i^{**}$ and $N_i^{**}$. $N_j^{**} (N_j)$ is the positive solution to the quadratic equation

$$- (w_N - \mu \epsilon^*) N_i^{2} + [\alpha \mu \epsilon^* - 2 (w_N - \mu \epsilon^*) N_j] N_i + [\mu \epsilon^* N_j - (w_N - \mu \epsilon^*) N_j^{2}] = 0.$$  

The determinant of the bordered Hessian for the optimisation problem of NGO $i$, taking the choices of NGO $j$ as given, is

$$\Delta = \begin{vmatrix} 0 & \frac{\partial C_i}{\partial N_i} - w_N & -w_S \\ \frac{\partial^2 Q}{\partial N_i^2} - w_N & \frac{\partial^2 C_i}{\partial N_i^2} + \lambda & \frac{\partial^2 Q}{\partial N_i \partial S_i} \\ -w_S & \frac{\partial^2 Q}{\partial S_i \partial N_i} & \frac{\partial^2 Q}{\partial S_i^2} \end{vmatrix}.$$  

As $\frac{\partial^2 Q}{\partial N_i^2}, \frac{\partial^2 Q}{\partial S_i^2} < 0$ and $\frac{\partial^2 Q}{\partial N_i \partial S_i} > 0$ by assumption and $\frac{\partial^2 C_i}{\partial N_i^2} - w_N < 0$ by the first-order conditions, $\frac{\partial^2 C_i}{\partial N_i^2} < 0$ suffices to ensure that $\Delta > 0$. Starting from $(3)$ in the main text, we find that

$$\frac{\partial^2 C_i}{\partial N_i^2} = -2 (1 - \sigma_i) \mu \epsilon^* < 0.$$  

Hence, $\Delta > 0$, implying that the second-order conditions for an interior optimum hold and thus that there is a unique optimal reaction of NGO $i$ to $N_j$ in terms of $N_i$. ($S_j$ obviously does not matter as it does not affect contributions, the only factor linking the two NGOs). Equivalently, as one cannot hire a negative number of expatriates, it follows that the solution to the
quadratic equation is given by (5) in the main text. Differentiating the reaction function yields

\[
\frac{\partial N_i^{**}(N_j)}{\partial N_j} = \frac{(1 - \alpha) mc^*}{\sqrt{(mc^*)^2 + 4 (1 - \alpha) mc^* (w_N - \mu c^*) N_j}} - 1;
\]

\[
\frac{\partial^2 N_i^{**}(N_j)}{\partial N_j^2} = -\frac{2 (1 - \alpha)^2 (mc^*)^2 (w_N - \mu c^*)}{[\alpha^2 mc^* + 4 (1 - \alpha) mc^* (w_N - \mu c^*) N_j]^{3/2}} < 0.
\]

Thus, \(N_i^{**}(N_j)\) is a strictly concave function. Checking for the sign of the first derivative yields

\[
\frac{\partial N_i^{**}(N_j)}{\partial N_j} \leq 0 \iff N_j \geq \frac{(1 - 2\alpha) mc^*}{4 (1 - \alpha) (w_N - \mu c^*)} = \tilde{N}_j.
\]

We see that for \(\alpha \geq 0.5\), \(\tilde{N}_j < 0\), and, hence, \(\frac{\partial N_i^{**}(N_j)}{\partial N_j} < 0\) for all values of \(N_j\). Figure 1a in the main text illustrates this case. For \(\alpha < 0.5\) (as in Figure 1b), however, \(\frac{\partial N_i^{**}(N_j)}{\partial N_j} > 0\) for \(N_j < \tilde{N}_j\) and \(\frac{\partial N_i^{**}(N_j)}{\partial N_j} < 0\) for \(N_j > \tilde{N}_j\). Even in this case \(\tilde{N}_i, \tilde{N}_j < N_i^{**} = N_j^{**}\). Thus, as already shown, the non-monotonicity does not create multiple equilibria.
References


