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Aid Proliferation and Economic Growth: A Cross-Country Analysis

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Summary. — We examine whether aid proliferation hinders economic growth by applying the standard aid-growth regression to Roodman's (2007) dataset, with proper correction for possible biases arising from omitted variable and endogeneity problems. Specifically, we include a donor-concentration index to capture a low degree of donor proliferation and its interaction terms with aid variables as additional independent variables. Our empirical results show that the effect of aid concentration on economic growth is positive and favors the hypothesis that aid proliferation has a negative effect on the economic growth of recipient countries, especially in Africa. © 2011 Elsevier Ltd. All rights reserved.

Key words — aid, aid proliferation, economic growth

1. INTRODUCTION

James D. Wolfensohn, the former president of the World Bank, stated that Tanzania annually files 2,400 reports to aid donors and hosts 1,000 aid missions from donor countries each year (Roodman, 2006b).¹ Under such circumstances, the efficiency of official capital inflow can be undermined significantly. This is a situation of aid proliferation or aid bombardment, where large numbers of donors and projects overwhelm the recipient government's capacity to manage and administer aid inflows. The immediate consequence of aid proliferation is an increase in the transaction costs incurred by recipient governments while absorbing foreign aid (Acharya, de Lima, & Moore, 2006). More than 20 years ago, Morss (1984) stated that "[t]he most important feature distinguishing foreign aid in the 1970s from earlier programmes was the proliferation of donors and projects." Cassen *et al.* (1994) also pointed out that "aid projects are planted here and there in an almost haphazard way and in excessive numbers, with a variety of untoward consequences" (p. 175). The issue appears to have been worsening over the past decades: on average, the number of donors acting in aid recipient countries has continued to increase during the last 30 years (Figure 1).

Recently, studies addressing the issue of aid proliferation have emerged, such as Acharya *et al.* (2006), Arimoto and Kono (2008), Easterly and Pfutze (2008), Knack and Rahman (2007), and Roodman (2006a,b). The subject is of great policy relevance these days, as donors and international agencies continue to strive for greater harmonization and coordination of practices—as per the recent Accra Declaration on Aid Effectiveness and its predecessors, the 2005 Paris and 2003 Rome Declarations. Aid proliferation induces competition for local experts or the available local matching funds for aid and thus decreases the average bureaucratic quality and effectiveness of aid projects, respectively, in aid recipient

countries (Arimoto & Kono, 2008; Knack & Rahman, 2007).² Roodman (2006a) presents theoretical arguments regarding the proliferation of aid projects and the associated administrative burden for recipients. Largely speaking, since aid proliferation increases transaction costs, the effectiveness of aid is reduced significantly (Acharya *et al.*, 2006). However, as far as we are aware, there is no empirical study that investigates the effect of aid proliferation on the economic performance of a recipient country. This paper aims to bridge this gap by augmenting a standard cross-country growth regression approach to measuring aid effectiveness by including an aid proliferation index as an independent variable.

Our research strategy is based on the extensive existing literature, which spans over 30 years, on the aid-growth nexus (Burnside & Dollar, 2000; Clemens, 2005; Easterly, Levine, & Roodman, 2004; Rajan & Subramanian, 2008; Roodman, 2007). Burnside and Dollar (2000), the most influential work, demonstrates that foreign aid improves the income growth of a recipient country when it has a healthy policy environment. However, subsequent studies such as Hansen and Tarp (2001), Easterly *et al.* (2004), Roodman (2007), and Rajan and Subr-

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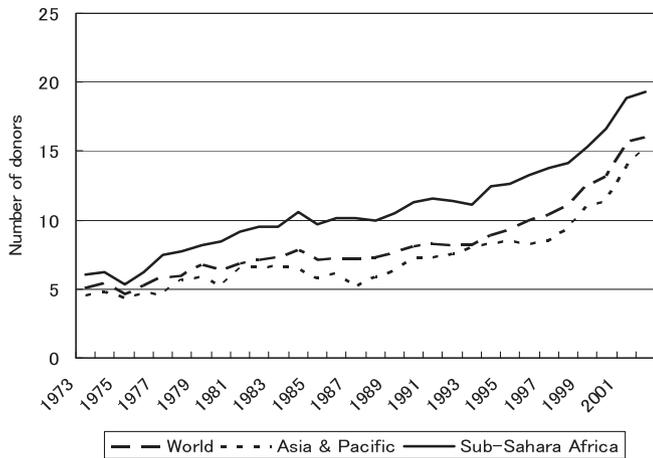


Figure 1. Average number of bilateral DAC donors (per recipient country).
Source: CRS/OECD.

amanian (2008) find that the results of Burnside and Dollar (2000) are not robust to alternative specifications, extended data, or estimation methods.³ An emerging consensus seems to be that, at best, there is a small positive, though insignificant, impact of aid on growth (Bourguignon & Sundberg, 2007). Yet, a common feature of these studies is their treatment of aid as being homogeneous regardless of its modality.⁴ Clemens (2005), which examines the effect of short-term aid, is one of the few papers that take into account the heterogeneity of aid quality. Our study also attempts to address heterogeneity in foreign aid, distinguishing the degree of donor concentration from the amount of aid. To preview our findings using Roodman's (2007) data with proper corrections for possible endogeneity bias, our best empirical results are in favor of the hypothesis that aid proliferation has a negative effect on the economic growth of recipient countries, especially in Africa.

The remainder of the paper is organized as follows. Section 2 describes the data and variables, including the aid proliferation index, and then provides the results of the baseline estimation and robustness tests. Finally, in Section 3, we present our concluding remarks along with some policy implications.

2. DATA AND ESTIMATION RESULTS

The hypothesis to be tested in this paper is as follows: aid proliferation hinders aid effectiveness and economic growth. Before proceeding to the detailed investigations, it is necessary to clarify the definition of aid proliferation.

(a) An aid proliferation index

In the literature, there is no standard definition of aid proliferation. In order to quantify the degree of aid proliferation, we follow Knack and Rahman (2007) in constructing a Herfindahl Index of donor concentration⁵ by summing the squared shares of aid over all donor agencies.⁶ Suppose that the total amount of aid provided to a recipient country in a certain year is represented by Q and that there are N donors. The amount of aid supplied by donor i to this recipient is represented by q_i . It follows that

$$HI = \sum_{i=1}^N s_i^2, \quad (1)$$

where donor i 's aid share is defined as $s_i \equiv q_i/Q$. Let us denote the mean and variance of donor shares by μ and σ^2 , respectively. Then, we have $\mu \equiv \sum s_i/N = 1/N$ and $\sigma^2 \equiv \sum (s_i - \mu)^2/N = (HI/N) - (1/N^2)$. Therefore, the Herfindahl Index of donor concentration can be expressed by the following equation:

$$HI = N\sigma^2 + \frac{1}{N}. \quad (2)$$

If all donors have identical shares, then the variance becomes zero and HI equals $1/N$. Alternatively, if the number of donors is held constant, a higher variance will result in a higher index value. Hence, this index decreases when the aid proliferation becomes serious.

We assume that an index of aid proliferation should be considered in the context of "gross aid" because the absolute gross amount of aid inflows affects the efficient use of aid. Even small amounts of grants or concessional loans with a low grant element impose a burden on the absorptive capacity of the recipient government and may hinder the government's effectiveness. Similarly, net aid variables do not precisely depict the situation of aid proliferation. Therefore, based on the Creditor Reporting System (CRS) database of the Organization for Economic Cooperation and Development (OECD), we compute the donor Herfindahl concentration index with Eqn. (2), which acts as a proxy for aid proliferation in recipient countries.

The CRS provides detailed information on each activity funded by foreign aid from the member countries of OECD or OECD's Development Assistance Committee (DAC).⁷ We use the disbursed amount, rather than the committed amount, of bilateral and multilateral foreign aid by donor and year to calculate the index for each recipient because a large part of the transaction cost associated with aid proliferation would be only incurred if committed amount is actually disbursed.⁸ The computed Herfindahl Index ranges from zero to one, where a higher value indicates greater donor concentration.

(b) Patterns of aid proliferation

Figure 1 presents the upward trend in the average number of bilateral DAC donors per aid recipient country during the period 1973–2002. This trend may be understated because of the participation of not only bilateral DAC donors—as captured in Figure 1—but also multilateral donors, non-DAC bilateral donors such as China and the OPEC countries,⁹ and numer-

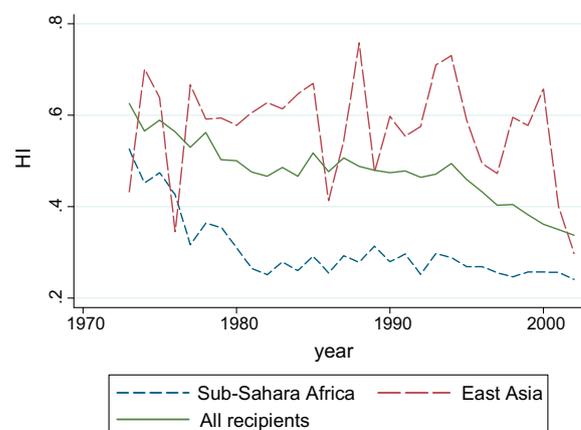


Figure 2. Trend of Herfindahl index by recipients. Calculated by recipient countries and shown as regional averages. Source: CRS/OECD.

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