On the Role of Official Development Assistance

in Facilitating Growth and Reducing Poverty:

Views from Japan and East Asia

by

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1. Introduction

Since the mid 1990's, the international community's development objectives seem to have converged to poverty reduction. The current policy statements of multilateral institutions and aid donor countries are stressing explicitly the importance of poverty mitigation at the global level. Particularly, the international community is supporting the initiatives in order to achieve the Millennium Development Goals (MDGs). The MDGs, which are based on the Millennium Declaration adopted by the United Nations Millennium Summit held in September 2000, define specific targets and time frame of reducing poverty in the world. The first goal of the Millennium Development Goals (MDGs) is to eradicate extreme poverty and hunger in the world by the year of 2015. The explicit numerical target employed in this goal is to halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.

In this paper, we discuss how development assistance has been and should be designed in pursuing this goal from views of Japan. In fact, international discussions on development aid have come to a major turning point. This reflects the transition from aid for economic growth to direct aid for poverty reduction, from project-based aid to budget support aid, from loan-centered to debt reduction aid and grants, and from bilateral to multilateral aid. More importantly, we have been observing continued economic growth in Sub Sahara African countries which are used to be heavily dependent on foreign aid.[1]

Recently in academia, there is an emerging dispute over the effectiveness of foreign aid in facilitating economic growth (Burnside and Dollar 2000; Easterly et al. 2004; Dalgaard, et al. 2005; Roodman, 2007; Rajan and Subramanian, 2008). Burnside and Dollar (2000), one of the most influential papers in this issue, found that the impact of aid on the growth of recipients is positive, conditional on good policies. However, other studies cast doubts on this conditional linkage between aid and growth (Easterly et al. 2004; Easterly 2003; Roodman, 2007; Rajan and Subramanian, 2008). As a result, there is no consensus on aid effectiveness in the already rich academic literature on foreign aid. Roodman (2007) describes that the current situation as an "anarchy." Moreover, the current policy debate has been dominated largely by North American and European philosophies on ODA and thus there is a serious lack of views from successful development experience of Japan and East Asia.

In this paper, we aim to bridge these gaps in the literature by providing further evidence on ODA, giving a particular focus on heterogeneities in ODA. The rest of the paper is composed of four parts. In Section 2, after clarifying the roles of ODA, we summarize history, current state, and future prospects of Japanese ODA from the viewpoint of East Asia. Section 4 formulates a framework to capture the governance structure of foreign aid. The final section presents concluding remarks.

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[1] There are three possible factors leading to the current African growth: first, massive inflows of foreign direct investments in natural resource sectors; second, a sharp increase in trade with China; and finally, rapid expansion of "BOP" markets in the region.

2. Official Development Assistance: An Overview

In this section, we summarize definitions and Basic Facts on ODA. First of all, we should note that ODA is a mode of international financial flows from developed countries to financially-constrained developing countries out of the five modalities, i.e., foreign direct investments (hereafter FDI), bank lending, bond financing, and official flows. In the process of economic development, there is a general "pecking order" of financial flows from (multilateral) ODA to FDI, bank loans, bond financing, and security investments (Figure 1a-1d).

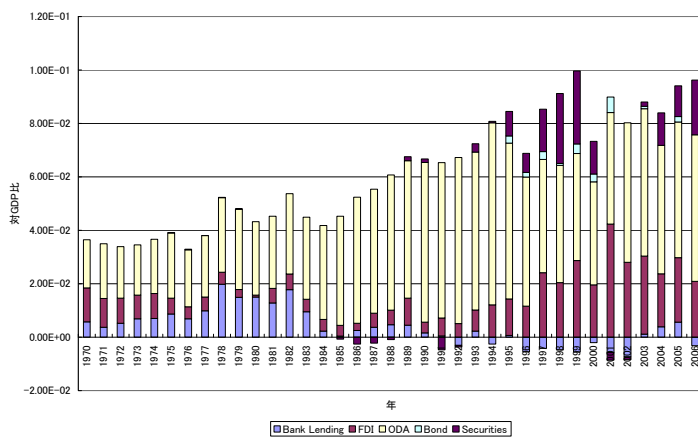**Figure 1a.   Financial Flows to Sub Sahara African Countries**

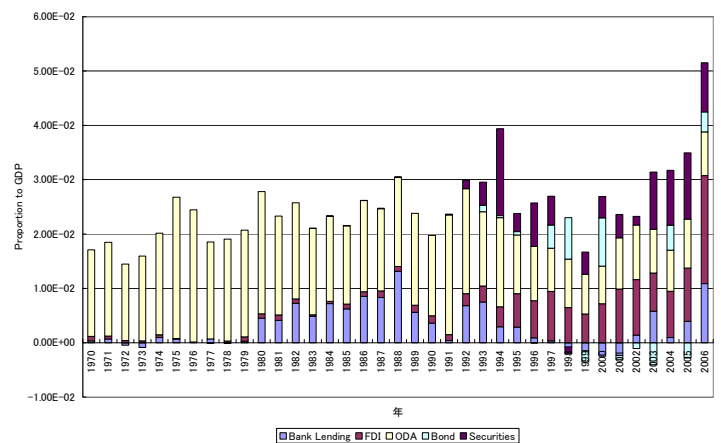**Figure 1b.   Financial Flows to South Asian Countries**

Figure 1c. Financial Flows to East Asian and Pacific Economies
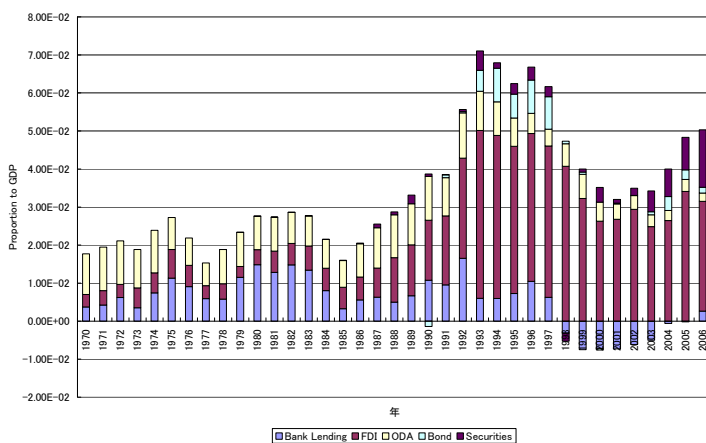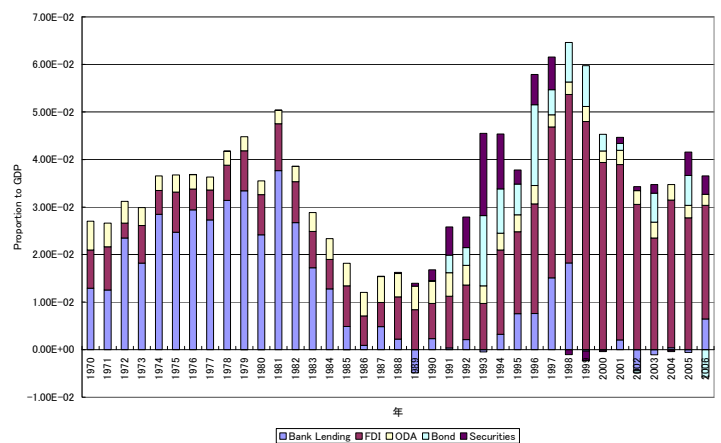

**Figure 1d.   Financial Flows to Latin American Countries**

Data) World Development Indicators Online, the World Bank.

OECD defines Official Development Assistance (ODA) as financial flows from developed to developing countries which satisfy the following three conditions: first, the flows provided by the official sector; with promotion of economic development and welfare

as the main objective; and at *concessional* financial terms (if a loan, having a grant element of at least 25 per cent).   ODA flows include contributions by donor government agencies at all levels to developing countries directly (i.e., bilateral ODA) or indirectly (i.e., multilateral institutions).

While there are recent policy and academic debates over the relative effectiveness of ODA (Burnside and Dollar 2000; Easterly et al. 2004; Dalgaard, et al. 2005; Roodman, 2007; Rajan and Subramanian, 2008), these studies treat aid as homogeneous official capital flows from developed to developing countries.   Indeed, three types of foreign aid flows exist: loans, grants, and technical cooperation aid (hereafter, TC).   By the Development Assistance Committee (DAC) of OECD, loans, grants, and TC are defined, respectively, as "transfers for which repayment is required," "transfers made in cash, goods, or services for which no repayment is required," and "activities whose primary purpose is to augment the level of knowledge, skills, and technical know-how or productive aptitudes of the population of developing countries."   Figure 2 shows the trend of these three aid components.   While there are recent policy and academic debates over the relative effectiveness of loans and grants (Meltzer 2000; Bulow and Rogoff 2005; Iimi and Ojima 2008; Cordella and Ulku 2004; and Gupta et al. 2003), only a few existing studies explicitly analyze heterogeneities in these types of aid.

Figure 2 ODA Decomposition
(All donors total, Gross Disbursements, 2005 USD million)
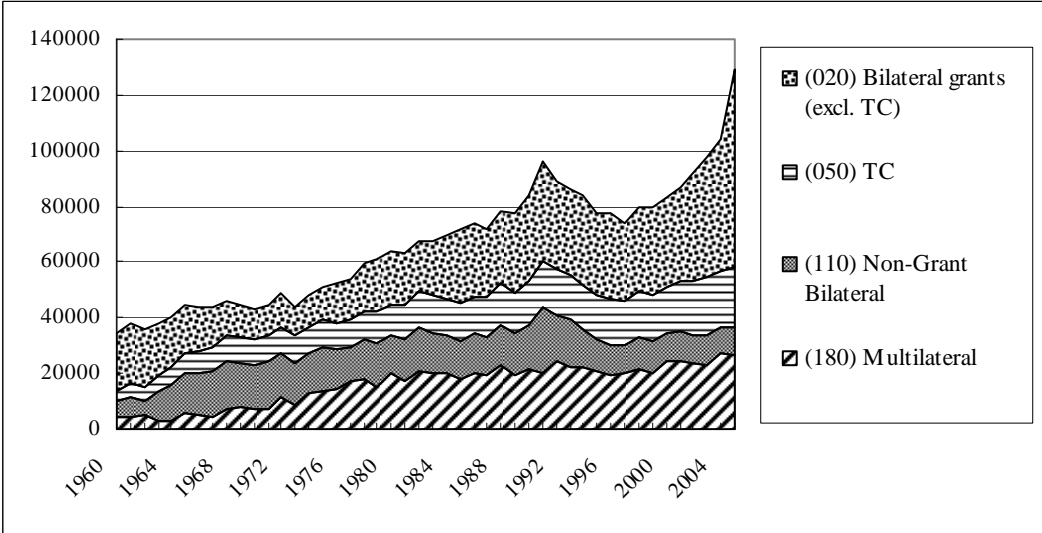
Note: Numbers in parentheses are DAC codes.   Bilateral grants, total (020) is the sum of investment project aid (046) including Technical co-operation (050), programme aid (047) and other (080).   The bilateral grants in the figure represent the amount without TC.   Technical co-operation (050) is grants for the provision of training, research and associated costs.   Non-grant bilateral ODA (110) is the sum of all ODA lending activities, i.e. loans by government or official agencies (131), acquisition of equity (170), other lending (175) and offsetting entries for debt forgiveness (101).   Basically, this represents the amount of loans.   Finally, Multilateral Official Development Assistance (180) is the sum of grants and capital subscriptions (code 186) and concessional lending (210) to multilateral agencies.

3. Japan's ODA: Its History, Current State, and Future Prospects

Since the 1970s, foreign aid has been one of Japan's leading foreign policy tools. Nowadays, Japan is one of the major actors in the international aid arena and is currently making a tremendous contribution to international development assistance.   Yet, because of prolonged recession in Japan, the government has been facing intensive pressure to cut ODA budget and to employ ODA for its own economic and political interests.   While Japan has been the largest donor in the world from 1991 to 2000, its position among DAC donors declined sharply in terms of quantity of ODA (Figure 3).

Figure 3
ODA Net Disbursement

Source) ODA White Paper 2009

3.1 Main Features of Japan's ODA

There are five basic characteristics of Japanese ODA.   First, from the end of World War II, Japan transformed itself from being a recipient of foreign aid to becoming one of the world's largest donor countries.   Japan as an aid recipient started in 1946 when it received humanitarian aid through GARIOA (Government and Relief in Occupied Areas), EROA (Economic Rehabilitation in Occupied Areas), international organizations such as WHO and UNICEF, and international NGOs such as CARE and LARA.   More importantly, in 1952, Japan began to borrow investment loans from World Bank (IBRD) to finance infrastructure investments.   The total amount of thirty one loans made between 1953 and 1966 is $863 million and Japan has completed the final repayment in July 1990.

In contrast, Japan as a donor started in 1951 when it started making reparation for the war under the San Francisco Peace Treaty.   In 1954, Japan also started provisions of TC aid by participating in the Colombo plan, i.e., development consortium for South and Southeast Asia.   In 1960s and 1970s, Japan increased Yen loans and grants to finance infrastructure investments in developing countries, which made Japan the world's largest aid donor counties in 1990.

Second, ODA has been the very important diplomatic tool even under the ruling Democratic Party of Japan which heavily attacked Japan International Cooperation Agency (JICA) in the budgetary screening process, i.e., *Jigyou Shiwake*.   In fact, Japanese constitution inflicted Japan from spending its budget on military which in turn allowed a large budgetary allocation on ODA, making ODA as a powerful policy instrument in the international diplomacy arena.   As a result, unlike other leading donors, Japan has chosen not to give much aid to military allies or former colonies as formally tested by Sawada and Yamanda (2003).   Moreover, as we have seen already, grant allocations of Japan were

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consistent with the theory of poverty targeting in the late 1990's, aligning the global policy goals, i.e., MDGs.

Third, Japan has provided the high percentage of loans and of aid for economic infrastructure.[2] Partly, this is a reflection of budget financing structure of ODA: the fiscal investment loan program (FILP) has been utilized to finance ODA loans, allowing a rapid expansion of ODA loans without serious restrictions of general budget. By nature of FILP, ODA loans have been important financing devices for economic infrastructure. As such, a higher proportion of Japan's total ODA is in the form of loans, while a lower proportion of ODA is through grants, often has been criticized since Japan's ODA may be provided in the hard and non-humanitarian end of the ODA spectrum, and that most other DAC donors have an aid program softer on the recipient (Rix 1990).[3]

Are these criticisms fair and accurate? In fact, it is widely recognized that physical infrastructure plays an important role in the process of economic development (Jalan and Ravallion, 2003; Lokshin and Yemtsov, 2004, 2005; Brockerhoff and Derose, 1996; Jacoby, 2000; Gibson and Rozelle, 2003; and Jacoby and Minten, 2008; Duflo and Pande, 2007). Recently, the role of infrastructure is recognized as an effective poverty reduction device. For example, Datt and Ravallion (1998) employ state-level poverty data from India for the period 1957-91, concluding that state-level differences in poverty reduction can be attributed to differences in initial conditions, especially physical infrastructure and human resources. Cross-country studies by Canning and Bennathan (2000) and Canning (1999) indicate that infrastructure, particularly telecommunication infrastructure, significantly increase economic growth. Since growth is identified as an indispensable component of poverty reduction, ODA for infrastructure should facilitate indirect growth approach of poverty reduction.

Moreover, in the context of Japanese foreign aid, it has been commonly argued that the repayment obligations prevent recipient countries from investing in ineffective projects; therefore, discipline is imposed on project selection and management (Kohama, 1995). To test the validity of this hypothesis, Sawada, Kohama, and Kono (2005) estimate cross-country aid growth regressions in line of Burnside and Dollar (2000), Easterly, Levine and Roodman (2004), Roodman (2008), Rajan and Subramanian (2008) by decomposing the aid variable into loans and grants. Sawada, Kohama, and Kono (2005) data set is exactly the same as the one employed by Easterly, Levine and Roodman (2004). The only difference is that Sawada, Kohama, and Kono (2005) decomposed the effective development aid (EDA) variable compiled by Chang *et al.* (1998) into the values of loans and grants. Using the data set for 1970-97, the regression results by Easterly, Levine, and Roorman (2004) can be replicated. Sawada, Kohama, and Kono (2005) found that the total effect of loans on economic growth will be positive in the relevant range. This

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[2] Amazingly, contributions of Japanese ODA loans to the Jakarta's water supply infrastructure is amounted to 60% of the total costs (Kohama, 1995, 1998).

[3] However, the poverty targeting consistency of Japan's grant allocation identified by Sawada and Yamada (2003) and Sawada, Yamada, and Kurosaki (2009) suggests that the criticisms of Japan's aid are basically inaccurate, a finding which is consistent with the official emphasis of Japan's aid on humanitarian considerations.

empirical result implies that the incentive-enhancing effect of loans dominates the disincentive effect arising from payment obligations, in the context of foreign aid. The challenge that remains is to model and evaluate the different incentive effects of loans and grants more directly.[4]

Fourth, Japan has a large proportion of aid allocated to Asia, although ODA portfolio to Sub-Sahara Africa has been increasing sharply.   Japan's geographical ODA distribution pattern is a reflection of spatial, economic, social, and political proximity to Asian countries.   The pattern also reflects its genesis as war reparations and quasi-reparations to Asian countries.   Yet, another notable feature is a drastic increase of ODA to SSA countries: in 2007, about 30% of Japan's bilateral ODA net disbursements were made to SSA.

The final and possibly most important feature of Japan's ODA is its complicated internal governance structure involving many actors.   Institutionally, there are three tiers in the current policy making structure of Japanese ODA (Figure 4).   In April 2006, the Overseas Economic Cooperation Council has been established under the Koizumi regime in order to set national strategies of ODA.   At the second policy planning level, the International Cooperation Bureau of Ministry of Foreign Affairs (MOFA) was launched in August 2006.   The third tier of policy making structure is set for policy implementation all of three modalities of ODA, i.e., loans, technical cooperation, and grant aid.   In October 2008, the new JICA started as the implementation body of these three ODA modalities in an integrated manner.

Figure 4
Policy Making Structure of Japanese ODA

Strategy: **Overseas Economic Cooperation Council** **under the direction of the Prime Minister**
Policy Planning: **International Cooperation Bureau** **of Ministry of Foreign Affairs**
Implementation:

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[4] In the literature on optimal design of public transfers under asymmetric information, the work requirements of workfare programs (Besley and Coate, 1992) or in-kind transfers (Blackorby and Donaldson, 1988) can be used as self-sorting and incentive enhancement devices.   Similarly, repayment requirement of subsidized loans should be an effective solution for incentive problems. On the other hand, there could be an opposite disincentive effect of loan provisions on investments, particularly when the amount of outstanding debt becomes excessive (Krugman, 1988).

Original Source) ODA White Paper 2007

Yet, institutionally, three ministries, MOFA, the Ministry of Finance (MOF), and the Ministry of Economics, Trade and Industry (METI) still play important roles in setting ODA strategies under the Overseas Economic Cooperation Council.   By nature, these three ministries have different objectives of ODA: MOFA advocates the use of aid to support Japan's international diplomacy and to pursue the internationally accepted goal of improving the socio-economic conditions of low-income nations; and MOF aims to use aid to maintain an orderly global financial system; and METI advocates the use of aid to support Japan's own economic interest (Kawai and Takagi, 2004).   As such, the Japanese aid program still involves a complex decision making process, gradually moving to a more integrated framework.

4.2 ODA Charter

The responsibilities for aid administration use to be divided among the above mentioned three main ministries, MOFA, MOF, and METI plus other ministries and agencies concerned with particular types of projects such as health-related projects implemented through consultation with the Ministry of Health, Labor and Welfare.   In 1990s and 80s, conflicts between these responsible ministries and agencies had confused the purpose of Japan's aid and obstructed effective direction of the program (Yasutomo 1986, Orr 1990, and Rix 1990).   Aid by the Japanese government has been given mainly as an international obligation, both to assist world peace and prosperity and as a foreign policy mechanism to preserve Japan's peace and prosperity.   In a publication, Philosophies of Economic Cooperation: Why Official Development Assistance? issued in 1980, the Ministry of Foreign Affairs stated that, officially, Japan's economic cooperation is guided by two rationales: 'humanitarian and moral considerations' and 'the recognition of interdependence among nations' (Ministry of Foreign Affairs 1994).

In order to clarify the nature and rationale of Japanese ODA policies, on June 30, 1992, the Japanese Cabinet adopted Japan's Official Development Assistance Charter (ODA Charter), in which philosophies and objectives are extended.   With regard to the basic philosophies of Japan's ODA, the ODA Charter lists: (i) humanitarian considerations; (ii) recognition of interdependence among nations of the international community; (iii) environmental consideration; and (iv) support for self-help efforts of recipient countries (Ministry of Foreign Affairs 1994).   The government aimed at gaining broader support for Japan's ODA both at home and abroad, and to implement it more effectively and efficiently.

In August 2003, after ten years of the original ODA Charter, the Cabinet approved the revised ODA Charter, reflecting those changes: (i) as the globalization progresses, the development issue is becoming more important for the international community; (i) concepts including "Sustainable development", "poverty reduction", "human security" and new fields, such as "peace building", and furthermore "the U.N. Millennium Development

Goals" are becoming the major international development agenda; (ii) in Japan, under severe economical and fiscal conditions, it is required that the implementation of ODA should be more strategic, prompt, transparent, and efficient; (iii) a growing range of organizations, including NGOs, volunteers, universities, local governments and business circles, have emerged as key players in the field of development assistance, and further public participation is required.   There are two notable changes in revising the ODA Charter.   First, it states the strategic value to help ensure Japan's own security and prosperity.   Second, to contribute to the peace and development of the international community, the new Charter explicitly adopted the key concept of "human security," which is to build a society in which each person can live a dignified life, through placing people at the center and enhancing the protection and capabilities of individuals and communities which are potentially exposed to threats or are currently under threat.

4. The Roles of ODA

In this section, we investigate how development assistance has been and should be designed in pursuing this goal.   While ODA is identified as a critical policy instrument in achieving the MDGs, we discuss two specific roles of ODA.   The first role is to reduce poverty directly through financing transfers to the poor; and the second role is to reduce poverty by facilitating pro-poor growth.   We call the former "direct transfer approach" and the latter "indirect growth approach."

4.1 Direct Transfer Approach

In halving global poverty captured by the head count ratio of 29.8% in 1990 by 2015, Besley and Burgess (2003) reveal that in the direct transfer approach, African countries need to cut cross-sectional standard deviation of domestic income from 0.86 to 0.64.   By doing so, the head count ratio can be reduced by 62%.   Yet, the magnitude of such domestic resource redistribution is comparable to the one implemented under land reform and dissolution of *Zaibatsu* in Japan after WWII under the US occupation.   In addition, there are fundamental problems in poverty targeting policies for income redistribution such as the screening problem and inclusion & exclusion errors (Grosh, 1994) as well as moral hazard problem of the transfer recipients (Sahn and Alderman, 1995; Dreze and Sen, 1989) and the issue of local elite capture (Reinikka and Svensson, 2004).

In terms of necessary financial resources, Besley and Burgess (2003) computed the amount of aid need to halve global poverty only through pure income transfers, finding that the amount is: 1.22 billion people $/2 \times 1\text{USD} \times 365\text{days} = 252.76$ billion USD where the total number of people under one dollar per day is 1.22 billion.   Since in 2000, the total bi- and multi-lateral ODA amount is 65.5 billion USD, it is unrealistic to use aid directly to reduce poverty and achieve the first target of MDGs directly.   Moreover, the strategic nature of aid is apparent (Alesina and Dollar, 2000) and aid allocation does not necessarily reflect the degree of poverty in ODA recipient countries (Burnside and Dollar, 2001; Alesina and Weder, 2002; Svensson, 2000).

4.2 Indirect Growth Approach

Can we achieve "halving global poverty" by attaining economic growth? According to the existing empirical studies, the answer seems to be yes because relevant studies mostly found that growth is a necessary condition of poverty reduction (Dollar and Kraay, 2002; Ravallion, 2001; Besley and Burgess, 2003).

The next natural question would be whether ODA can facilitate economic growth of the recipient countries.   A group of existing studies claims that aid and investment nexus (Boone, 1996; Burnside and Dollar, 2001) and investment and growth nexus are both missing (Easterly, 1999,2001).   Yet, using a cross-country regression approach, Burnsie and Dollar (2000) found that aid facilitates growth if the recipient has good policy level. The implication that aid is effective to facilitate growth only if governance is good has been (ab)used in US aid policies as, for example, the eligibility criteria of the Millennium Challenge Corporation.

However, subsequent studies such as Hansen and Tarp (2001), Easterly, Levine, and Roodman (2004), Roodman (2007a), and Rajan and Subramanian (2008) find that the results of Burnside and Dollar (2000) are not robust to alternative specifications, extended data, or estimation methods.   An emerging consensus seems to be that, at best, there is a small positive, though insignificant, impact of aid on growth (Bourguignon and Sundberg 2007).

4.3 Foreign Aid Governance

We can summarize the arguments so far into a unified scheme of the foreign aid governance (Figure 5).   In Figure 5, there are three components of the governance structure of foreign aid: first, the decision structure of donors; second, the decision structure of aid recipient countries with "ownership" for the use of ODA resources; and finally, generic incentive structure embedded in three modalities of foreign aid, i.e., grants, technical assistance, and concessional loans.   While there are recent policy and academic debates over the relative effectiveness of loans and grants (Meltzer 2000; Bulow and Rogoff 2005; Iimi and Ojima 2008; Cordella and Ulku 2004; and Gupta et al. 2003), there are only a few existing studies which explicitly analyze heterogeneities in types of aid and the complex decision structures.   Only exception known to us is the one constructed by Ostrom et al. (2002).   Ostrom et al. (2002) formulate the International Development Cooperation Octangle which characterizes the incentive structure of development cooperation as a set of nested relationships among eight major actors: donor government, recipient government, other donors, a donor's international development agency, third-party implementing organizations, e.g., NGOs and private contractors, organized interest groups within the donor and recipient countries, and targeted beneficiaries.

Figure 5
Foreign Aid Governance Structure
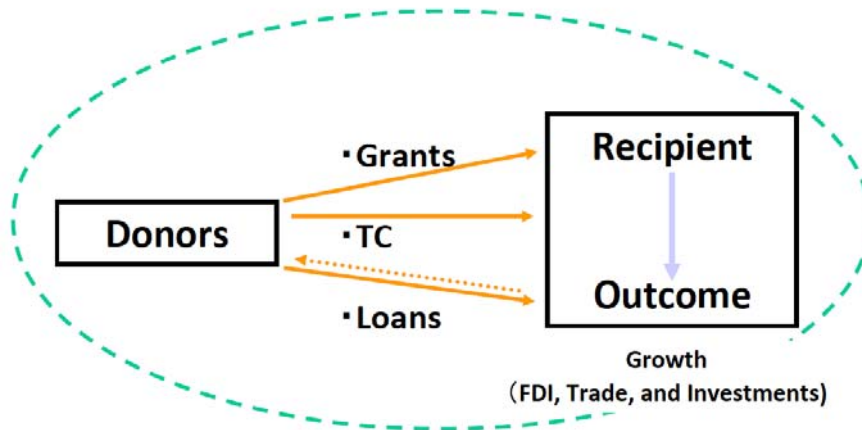
4.4 Three Necessary Conditions for Successful ODA

Under this aid governance structure, there are three major requirements, or "necessary conditions," of ODA to be effective in reducing the global poverty.   First, the aid should be allocated towards the countries where the poverty has been an important issue and not to the relatively developed countries.   This is the first requirement for effective aid allocations imposed by the aid donors.   Second, external assistance should be the one facilitating economic growth directly through international technological transfers and indirectly through promoting private investments and economic activities.   Third, transaction costs of aid inflows should be minimized: aid proliferation should be carefully controlled, ownership should be with the recipient countries, and aid flows should be more tightly combined with the recipients' efforts.   In countries where policies are inconsistent with efforts to reduce poverty, foreign aid will achieve far less.   This is partly due to the fungibility with which it is difficult for donors to target particular groups.   In the following subsections, we investigate these three requirements through econometric analysis.

2.4.1 Necessary Condition #1: Grant Allocation Should be Consistent with Global Poverty Reduction?
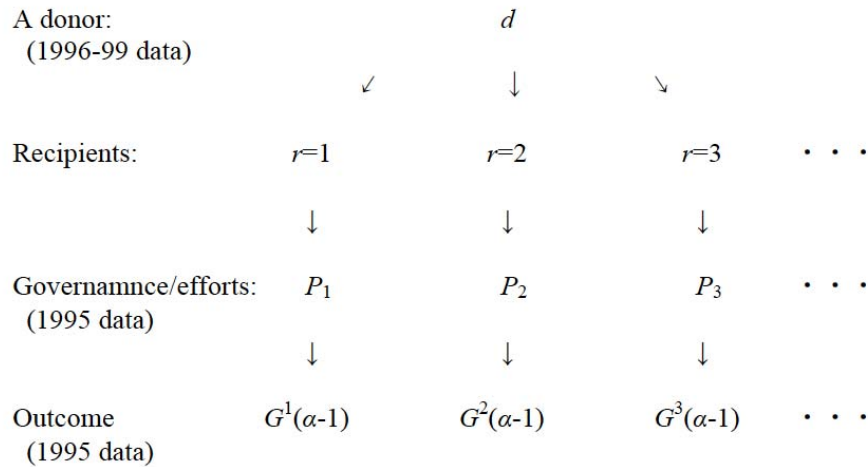
As to the first necessary condition of successful ODA, i.e., poverty targeting consistency, we investigate the gap between the first goal of the MDGs and the donors' actual aid allocation in the late-1990s.   By doing so, we aim to identify necessary policy changes to achieve the MDGs.   To this aim, we construct a theoretical framework of global poverty reduction, which formalizes the first goal of the MDGs. Then, by employing cross-country data, we extend Besley and Kanbur's (1988) model of targeting of food subsidies to the international aid provisions.   Note that this application was adopted first by Sawada (1996).

In order to quantitatively evaluate the effectiveness of aid in terms of poverty reduction, we need to define an indicator of poverty.   Suppose that the world's income distirbution function is represented by $f(y)$.   Then by using the Foster et al. (1984)'s FGT

poverty index, we can define an index of global poverty, $G(\alpha)$.   If a donor's objective is to minimize the global poverty, $G(\alpha)$, then the recipient with the better policy environment, P, and the higher poverty index, $G^r(\alpha\text{-}1)$, should be targeted at the margin (Figure 6).   This theoretical result gives us a testable hypothesis of targeting through foreign aid provision (Sawada and Yamada, 2003; Sawada, Yamada, and Kurosaki, 2009).

Suppose that the global poverty index is defined as the squared poverty gap index, i.e., α equals two.   In this case, the optimal policy for a donor to minimize global poverty is to target towards countries with high poverty gap index and good policies.   Accordingly, we can set up an econometric model to investigate whether aid allocation of donor countries and international institutions are consistent with the poverty reduction criteria. We regress bilateral and multilateral donors' aid allocation on poverty gap index, $G^r(1)$, a proxy variable for the political rights, P_r, log of total population, POP_r, and other control variables, X.

Figure 6
Grant Allocation Consistency with Global Poverty Reduction

A donor: d
  (1996-99 data)

                             ↙   ↓   ↘

Recipients: $r=1$ $r=2$ $r=3$ · · ·

                             ↓   ↓   ↓

Governamnce/efforts: P_1 P_2 P_3 · · ·
  (1995 data)
                             ↓   ↓   ↓

Outcome $G^1(\alpha-1)$ $G^2(\alpha-1)$ $G^3(\alpha-1)$ · · ·
  (1995 data)

      To implement this empirical analysis, Sawada and Yamada (2003) employ data from eleven donor countries (France, Germany, Japan, Netherlands, U.K., U.S.A., Canada, Italy, Finland, Norway, and Sweden) and four multinational institutions (IBRD, IDA, UNDP, UNFPA, UNHCR, and UNDP). Distinguishing them from loans, Sawada and Yamada (2003) employ logged values of per capita gross grant as the dependent variable, which are total ODA/OA grant from OECD data averaged over 1996-1999. With respect to the multinational institutions data, note that the amount of total official gross disbursement is equivalent to total official gross amount including OOF for IBRD, gross ODA loan for IDA, and ODA grant for UNDP, UNFPA, UNHCR, and UNDP.

      As for the independent variables, 1995 data of the following independent variables are extracted. First, poverty gap index is taken from the World Bank (2002) data file and is available for 82 countries. Although survey year of poverty gap index varies by countries to some extent, Sawada and Yamada (2003) adopt an index at the nearest of 1995 by assuming situation of poverty does not change so rapidly. Second, in order to capture the political rights, Sawada and Yamada (2003) employ the Freedom House's political rights index in 1995.[5] Third, to control for the scale of recipients, Sawada and Yamada (2003) include recipients' population in 1995 as an independent variable which is taken from World Bank (2001). This term is expected to capture non-linearity between per capita aid provisions and population size of recipients.

      Table 1 shows the estimation result, revealing that grant allocations of Japan, the Netherlands, U.K., Canada, Norway, and Sweden, i.e., in six out of eleven donor countries

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[5] The Freedom House does not rate governments *per se*, but rather the rights and freedoms enjoyed by individuals in each country or territory. The index considers not only the political conditions in a country or territory such as the prevalence of terrorism or war, but also the effect that these conditions have on freedom. Note that the political rights index ranges from 1 (best) to 7 (worst).

have positive and statistically significant coefficients on poverty gap indicator.   These results are consistent with the theory of poverty targeting, i.e., these six donor countries provide more grants to the recipient countries where poverty is severe.   On the other hand, no donor country is sensitive to democracy when it allocates grant, except Canada whose coefficient is significantly negative, indicating that Canada allocate more aid to countries with better political rights.

In Sawada and Yamada (2003), the overall results for multilateral donors indicate that allocation patterns are consistent with the theory of poverty targeting.   Sawada, Yamada and Kurosaki (2009) also examine the gap between the first goal of the MDGs and the actual aid allocation in the early-2000s, finding that there has been a recent improvement in coordination among major donors in reducing global poverty.

Table 1
General Results, ODA/OA Grant of Bilateral Donors

Dependent Variable: log(1+ODA/OA Grant per capita) for each country (avg. 1996-99)
Estimation Method: Tobit

	(1) France	(2) Germany	(3) Japan	(4) Nether-lands	(5) U.K.	(6) U.S.A.	(7) Canada	(8) Italy	(9) Finland	(10) Norway	(11) Sweden
Poverty Gap	0.038	0.029	0.087	0.091	0.059	0.014	0.046	0.021	0.028	0.069	0.052
	(1.21)	(1.40)	(3.29)**	(4.71)**	(2.64)*	(0.41)	(3.60)**	(1.89)	(1.62)	(3.93)**	(2.52)*
Political Rights	0.079	-0.072	0.032	-0.082	-0.025	-0.034	-0.119	0.018	-0.066	-0.034	-0.113
	(0.51)	(0.72)	(0.25)	(0.86)	(0.23)	(0.20)	(1.94)*	(0.33)	(0.82)	(0.41)	(1.12)
Population	-0.148	-0.233	-0.190	-0.107	-0.111	-0.197	-0.033	-0.027	-0.033	-0.099	-0.135
	(2.53)*	(6.18)**	(3.92)**	(3.01)**	(2.75)**	(3.14)**	(1.45)	(1.34)	(1.11)	(3.22)**	(3.59)**
Constant	3.041	4.883	3.936	2.282	2.257	4.222	0.936	0.567	0.661	1.892	2.682
	(3.26)**	(8.11)**	(5.09)**	(4.01)**	(3.51)**	(4.23)**	(2.55)*	(1.74)	(1.37)	(3.85)**	(4.45)**
# of Obs	83	83	83	83	83	83	83	83	83	83	83

Source) Sawada and Yamada (2003) Table 3
Note) Absolute value of t statistics in parentheses.   * significant at 5%; ** significant at 1%

2.4.2. Necessary Condition #2: Aid Flows Should be Growth Enhancing

As the second necessary condition, foreign aid inflows should be the one facilitating economic growth of the recipients directly through international technological transfers and indirectly through promoting private investments economic activities.

Direct Channel

As the direct channel, aid should accompany significant international technology transfers to be sustainable because aid dependency will persist otherwise.   Conceptually, it may be obvious that, by nature, there are positive spillover effects of international

technology transfers through TC aid, as some international aid agencies state explicitly (JICA 2007; GTZ 2007).   TC's range of coverage is wide: training staff to deliver technological skills in the areas of agriculture, forestry, engineering, and ICT; to convey management skills in the areas of education, and business and banking; to design effective policies in the areas of social security, housing, health, and family planning.[6] TC in a wide variety of sectors has also played an important role in increasing the stock of human intellectual capital, or the capacity for more effective use of existing factor endowment. However, to our knowledge, its effectiveness has not yet been quantitatively measured. Indeed, Cassen et al. (1994) pointed out the absence of ready methodology for measuring the effectiveness of aggregate long-run effects of TC and difficulties in measuring the impacts have hindered academia from conducting quantitative evaluations of TC.   To bridge this gap in the literature, Sawada, Matsuda, and Kimura (2010) analyze the role of TC in facilitating technology transfers from donors to aid recipients.   They employ Total Factor Productivity (TFP) data, which is a broad measure of a country's aggregate productivity, and evaluate overall impact of TC on closing the TFP gap between the technological leader and developing countries.

In growth theories, technological progress has been regarded as a core element in long-run growth (Barro and Sala-i-Martin 2004; Aghion and Howitt 1998).   The source of such technological progress in developing countries is multi-faceted.   In addition to TC, we also examine the other three possibly important determinants of international technological transfers from developed to developing countries.   First, for developing countries as latecomers, the adoption, imitation, and assimilation of the flows of technical know-how from developed countries, rather than the development of domestic R&D sectors, augment their productivity to catch-up to the technological leader.[7] This also suggests the importance of absorptive capacity of advanced foreign technologies in developing countries (Ohkawa and Rosovsky, 1973; Abramovitz, 1986; Glass and Saggi 1998; Lucas 1993; Eaton and Kortum 1996; Keller 2004).   The absorptive capacity, with which the gap between the technology frontier and the current level of productivity is filled, should closely depend on the level of human capital (Nelson and Phelps 1966; Keller 2004; Benhabib and Spiegel 2005).

Second, FDI has long been considered an important channel for technological diffusion (Keller 2004).   Existing case studies and cross-country regression results found that FDI contributes relatively more to economic growth than do domestic investments (Balasubramanyam et al. 1996; Borensztein et al. 1998; de Mello 1999; Eaton and Kortum 1999; van Pottelsberghe de la Potterie and Lichtenberg 2001; Carkovic and Levine 2005; Li and Liu 2005).   Interestingly, this positive nexus between FDI and growth is observed particularly when a sufficient absorptive capability of advanced technologies is available in

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[6] For example, Cassen et al (1994) claims that smallpox eradication is one of the major successful achievements of worldwide technical cooperation aid. (p.149)

[7] Ohkawa and Rosovsky (1973) and Ohkawa and Kohama (1989) suggest that Japan is a typical example of borrowed technology-driven industrialization.   They argue that Japan's success was attributable to its rapid human capital accumulation by which absorptive capacity of foreign technology has been built.

the host economy (Borensztein et al. 1998). This finding suggests that FDI may be an important route of international technological spillover (Keller 2004).

Finally, international trade has been identified as an important means of transferring foreign technology (Keller 2004).[8] Knowledge spillovers will increase with the number of commercial interactions between domestic and foreign agents (Grossman and Helpman 1991). We also need to distinguish between imports and exports. Imports have been regarded as a significant channel of technology diffusion because, obviously, technologies move from an exporting country of intermediate inputs to another (Keller 2004). Coe and Helpman (1995) find that foreign R&D capital stocks have stronger effects on domestic productivity the larger the share of domestic imports in GDP. Also, exports may be important because firms can learn foreign technologies through exporting experiences (Keller 2004).

Sawada, Matsuda, and Kimura (2010) compare the relative importance of these different channels in facilitating international technology transfers quantitatively. Their strategy is to extend a standard model of international technology transfer of Benhabib and Spiegel (2005) by incorporating TC, FDI, and external openness, and to explore the role of TC as a channel of technological diffusion through comparisons of FDI and openness. Using a long-run cross-country dataset, a representative estimation result of Sawada, Matsuda, and Kimura (2010) is summarized as the following equation:

$$\frac{1}{T}\left(log\,A_{iT} - log\,A_{i0}\right) = \underbrace{0.015\left(h_i + 0.007TC_i + 0.0004FDI_i + 0.012OPEN_i\right)}_{INNOVATION}$$

$$\underbrace{-\,b_2\left(h_i + 0.007TC_i + 0.0004FDI_i + 0.012OPEN_i\right)\left(\frac{A_{i0}}{A_{m0}}\right)^{0.014}}_{IMITATION} + \hat{u}_i,$$

where the coefficients are all statistically significant based on specification (3-4) of Sawada, Matsuda, and Kimura (2010). A_{it} is the level of total factor productivity (TFP) for country i at year t. Country m is the technological leader, e.g., the US, and i is a follower country. Hence, the term, A_{i0}/A_{m0}, indicates the difficulty of adopting distant technologies. The innovation and imitation parts should be a function of the initial or long-term average level of human capital, h, the amount of TC received, TC, the flow of FDI, FDI, and the degree of external trade openness, $OPEN$.

In Sawada, Matsuda, and Kimura (2010), two sets of robust empirical findings emerge. First, TC, FDI, and openness all contribute to facilitating international technology transfers. Yet, among these three channels, openness seems to contribute the

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[8] In the initial phases of development, much of the R&D undertaken in Japan was absorptive, aimed at integrating foreign technologies (Blumenthal 1976). More recently, countries such as Mexico, Brazil, India, and China view FDI by firms from technologically advanced countries as a vehicle of technology transfer (Glass and Saggi 1998).

most, followed by TC.   Also, TC seems to compensate for the lack of sufficient human capital in developing countries.   Second, around six to 17 countries out of 85 in our sample fail to catch up to the technological leader over the 36 years.   These results suggest that as a policy instrument, TC can play an important role in facilitating technological catch-up of developing countries.   Technology involves non-codified tacit knowledge which can be transferred only through face-to-face interaction (Keller 2004).   TC, which is composed of technological training by experts sent by developed countries to developing countries and trainees sent by the latter to the former, can facilitate person-to-person interactions in international transfers of non-codified tacit knowledge and technologies.

Cassen et al. (1994) stated that "[m]any factors make it impossible to produce a single measure of the overall effectiveness of TC, among them, the difficulties of setting verifiable objectives and the great variety of TC activities.   However, it is probably the case that the attempts to evaluate TC have understated its effectiveness.   This is because the evaluation literature concentrates disproportionately on 'soft' TC activities (where success is harder to achieve) and the tendency of evaluators to look for failure so as to improve their institution's performance (p. 167)."   The use of the TFP concept, which is the broad measure of a country's aggregate productivity including institutional and intangible elements, is suitable in order to evaluate overall unbiased effectiveness of TC, involving both soft and hard TC activities.

Indirect Channel

Aid inflows, particularly concessional loans, have been important financing devices for economic infrastructure.   Since the classical works of development theory such as Hirschman (1958), development economists have considered infrastructure as an indispensable precondition of industrialization.   Indeed, using cross-country data, Canning and Bennathan (2000) and Canning (1999) indicate that infrastructure, particularly telecommunication infrastructure, significantly increase economic growth.

One of the most important mechanisms of aid effectiveness in infrastructure investments and growth is through facilitation of FDI.   FDI has long been considered an important channel for capital accumulation, technological diffusion, and growth.   This positive nexus between FDI and growth is observed particularly when adequate level of industrial infrastructure to accommodate investments and a sufficient absorptive capability of advanced technologies are available in the host economy.   Such complementarities between ODA, FDI, and economic growth are fabricated as the "ODA Trinity" hypothesis by Japanese Ministry of Economy, Trade and Industry (METI).   While empirical supports for the validity of such hypothesis is still not necessarily strong, Kimura and Todo (2010), using a gravity equation approach applied to a cross-country Data for each ODA and FDI source-recipient pair, find that while foreign aid in general does not have any significant effect on FDI, there is robust evidence that Japanese aid promotes FDI from Japan but does not attract FDI from other countries.   In other words, Japanese ODA has a feature as a vanguard of FDI from Japan.   Kimura and Todo (2010) find a strong positive "vanguard effect," through which foreign aid from a particular donor country promotes FDI from the same donor country but not from other countries.   There may be several reasons for this

vanguard effect.   First, when foreign aid is provided, information on the local business environment of the recipient country can be exclusively transmitted to firms of the donor country.   Second, the fact that the government provides aid may reduce the recipient country's investment risks perceived subjectively by firms of the donor country.   Third, aid may bring the donor country specific business practices, rules, and institutions into recipient countries. Those effects of foreign aid should promote FDI from the same donor country but does not necessarily promote FDI from other countries.   Intriguingly, Kang, Lee, and Park (2010) find that only aid from Korea and Japan is followed by more inflow of foreign investment.   Moreover, the effect is stronger for Korean aid than Japanese aid.


2.4.3 Necessary Condition #3: Negative Impacts of Aid Proliferation Should be Carefully Controlled

Aid proliferation or "aid bombardment" is a growing concern among the international aid community and the aid recipients.   Often, the presence of a large number of donors and projects overwhelm the recipient government's capacity to manage and administer aid inflows.   For example, 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).   Figure 6 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 7—but also multilateral donors, non-DAC bilateral donors such as China and the OPEC countries, and numerous NGOs, which facilitate the further proliferation of aid.   As a consequence, for the period 1973–2002, the average Herfindahl Index of donor concentration has been decreasing since 1973 (Figure 8).

It is also useful to compare rapidly growing East Asian countries with the Sub-Saharan African countries, which have been swamped by low economic growth rates until last decade.   In East Asia, Japan appears to be the dominant donor throughout, while in Sub-Saharan Africa, aid is more or less equally shared by numerous donors.   While in the 1970s, there was no difference in the Herfindahl Index between East Asia and Sub-Saharan Africa, significant differences emerged afterwards, which suggests that aid proliferation is more serious in Sub-Saharan Africa than in East Asia.   These differences between East Asia and Sub-Saharan Africa suggest a positive nexus between economic growth and aid concentration or, equivalently, a negative relationship between growth and aid proliferation.
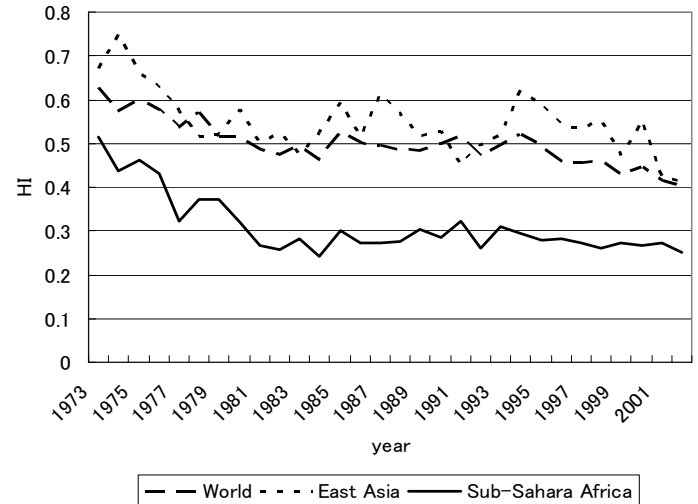
Figure 7

Average Number of Bilateral DAC Donors (per recipient country)
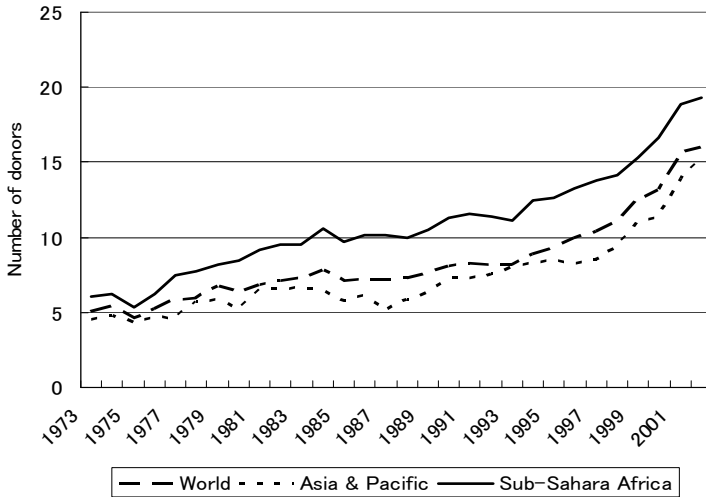
Source: CRS/OECD, Commitment Base

Figure 8

Trend of Herfindahl Index by Recipients

Source: CRS/OECD, Commitment Base. Calculated by recipient countries and shown as regional averages.

The immediate consequence of aid proliferation is an increase in the transaction costs incurred by recipient governments while absorbing foreign aid (Acharya et al. 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 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 7).

Recently, rigorous studies addressing the issue of aid proliferation have emerged, such as Acharya et al. (2006), Knack and Rahman (2007), Roodman (2006a, 2006b), Arimoto and Kono (2009), Kimura, Sawada, and Mori (2008), and Rahman and Sawada (2010).　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 (Knack and Rahman 2007; Arimoto and Kono 2009). Roodman (2006a) presents theoretical arguments regarding the proliferation of aid projects and the associated administrative burden for recipients.

This aid proliferation problem highlights the importance of ownership and governance of the recipient countries.　Obviously, ODA should be more tightly combined with the recipients' efforts and performance to be effective.　Yet, empirically, it is widely known that aid increases consumption rather than investments (Boone, 1996; Burnside and

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Dollar, 2000). Easterly (2004) attributed this finding to the classic Samaritan's dilemma, where aid could actually worsen incentives to invest if the recipient believes that future poverty will call forth future aid.

Largely speaking, since aid proliferation increases transaction costs, the effectiveness of aid is reduced significantly (Acharya et al. 2006). Yet, only a few study has investigated the effect of aid proliferation on the performance of a recipient country, with the exception of Kimura et al. (2007).

Rahman and Sawada (2010) augment Holmstrom's (1982) team production model in the context of aid effectiveness. In addition, they show how donor proliferation leads to inefficient supply of aid in the recipient country because of the free-riding problem faced by the donors. They empirical findings support the theoretical prediction with regard to donor proliferation. As we can see from Figure 9, there is a negative relationship between the aid amount per donor as a share of GDP and number of donors. These findings are consistent with the free-rider mechanism.

Figure 9
Aid Proliferation
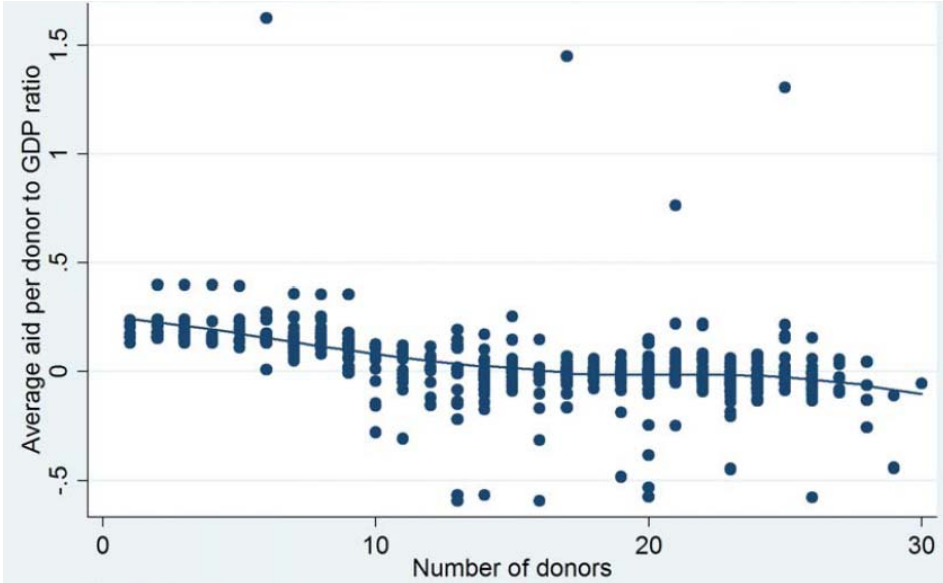
Source) Rahman and Sawada (2010). The result is based on a semi-parametric regression conditional on country fixed effects.

6**. Concluding Remarks**

        The current policy debate on ODA has been dominated largely by North American and European philosophies. Academic research on ODA is characterized by "anarchy," i.e., there is no consensus on aid effectiveness in the already rich academic literature on foreign aid. Since there is a serious lack of views from successful development experience of Japan and East Asia, in this paper, we discuss how development assistance has been and should be designed in pursuing this goal from views of Japan and East Asia. In bridging these gaps in the existing academic research and policy debate, a particular focus was placed on heterogeneous nature of ODA.

        In pursuing successful ODA under the ODA governance structure, there are three necessary conditions: first, the aid allocation should be consistent with global poverty targeting framework; second, ODA as a mode of capital inflows should be the one facilitating the recipients' efforts and growth directly and indirectly; and third, aid governance should be designed to minimize transaction costs arising from aid proliferation. In achieving these three conditions, experiences of Japan and East Asia in providing ODA in apolitical way to align international agendas, in utilizing loans to develop infrastructure, and in achieving borrowed technology-driven industrialization with rapid human capital accumulation, will provide important insights in setting future global development policies. Also, in the current efforts with regard to donor coordination in the international aid community, it would be indispensable to take the "ingredients approach" in which details of tangible organizational units such as enterprises, official bureaus, and industrial projects are carefully designed and coordinated. Finally, the "ODA Trinity," i.e., complementarities between ODA, FDI, and economic growth are the key in the next generation's ODA policies. Under these circumstances, it would be natural for Korea and Japan to coordinate and cooperate in setting global development agendas.

        Since Korea has just joined DAC of OECD in January 2010, it would be natural to ask whether Korea and Japan collaboration is possible in the arena of ODA in the coming years. There are several key factors in achieving this collaboration. First, two countries share the same experience of being ODA recipient and donor. These rare experiences should be decoded, formulated, and disseminated as important global public goods. In doing so, Korea and Japan should take initiatives in reforming rules and guidelines in DAC, Multilateral Development Banks (MDBs), and UN agencies. Second, Korea and Japan can play an important role together in tacking global issues such as climate change and natural & manmade disasters. Specific issues included would be political disasters and post-conflict rehabilitation, natural disasters (epidemics, natural calamities, and technological disasters), economic disasters and financial crisis, environmental issues in mitigation and adaptation of global climate change. Third, two countries can work together and utilize ODA positively to materialize the "ODA trinity," facilitating private sector investments in low income countries.

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