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An Analysis of ODA Allocation of Basic Education Sector

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ABSTRACT

The focus of this study is on the allocation of Official Development Assistance (ODA) with particular reference of education sector. Since year 2000, there were several ambitious attempts to improve educational level of every country as a core indicator of human development such as MDG 2 by UN and EFA by UNESCO and related organizations. And after a decade passed, there is a controversy on assessing the achievements of aid. One argues the useless impact of aid and the other side provides successful case to show the positive effect of it.

Regardless of this counter analysis, all agree on the importance of aid effectiveness and it becomes one of the key issues in the field of development.

Besides glamorous rhetoric over the aid effectiveness, many empirical analyses suggest aim-driven aid i.e. targeting of aid to maximize the effect of the aid to reduce poverty and development. This study also examines the issue of targeting of aid, especially the Official Development Assistance (ODA) of OECD DAC countries. Through empirical analysis, it reveals the correlation of donor's education aid allocation with the educational condition of recipient countries in order to investigate whether the need of the recipient becomes the determinant of aid allocation.

Unlike other earlier studies on aid allocation by education sector, this study considers more indicators which reflect the educational need of the recipient by including completion rate, literacy rate and ratio of girls to boys besides school enrollment rate. Those indicators all together show the educational need of recipients, and it should be one of the most important variables to be considered for education aid allocation.

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Key words: ODA, education, basic education, aid allocation, aid effectiveness, OECD/DAC

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I. INTRODUCTION

I-1. Background and Purpose of Study

Since the Millennium Declaration, well over a decade has been passed and only a couple of years left to the designated year of 2015. Regarding the achievement over past years and its effectiveness, there have been heated debates. Critics such as William Easterly(2006), David Roodman, Finn Tarp (2006) and Peter Bauer denounce aid that it has done "so much ill and so little good."[1] According to their argument, aid has worsen the government bureaucracies, perpetuated corruption, enriched the few elite in poor countries, or just been wasted. On the other hand, Jeffrey Sachs, Joseph Stiglitz, Henrik Hansen, Nicholas Stern and others believe that aid has helped to reduce poverty and supported growth in some countries; therefore, the volume of it has to be enlarged to expand its effectiveness.

The evidence of both arguments is counter to each other. The negative view on aid cites chronic poverty in Sub-Saharan Africa and South Asia especially the Democratic Republic of Congo, Haiti, Papua New Guinea and Somalia that have received tremendous aid yet have made any better records. On the contrary, there are some successful cases such as Korea, Botswana, Indonesia and Tanzania that

[1] William Easterly (2006), The White Man's Burden: *Why the West's Efforts to Aid the Rest Have Done Much Ill and so Little Good.* Net York: Penguin Press.

have shown records of growth receiving substantial aid[2]. Therefore, there are both evidence to support whether aid works or not. However, interestingly enough, despite the counter evidences that they underpin, they both agree on that donors are more responsible for the results than the recipient and the aid practice should be reformed or reconsidered to improve effectiveness.

To reconcile both counter arguments, aid effectiveness has been one of the major issues in the field of development for over a decade. The movement of aid effectiveness started from 2002 at the Conference on Financing for Development in Monterrey, Mexico. In next year, OECD promised to developing countries to build stronger partnership. And in early 2005 in Paris, countries from over the world gathered to endorse the Paris Declaration on Aid Effectiveness which set up the five principles of the way donors to coordinate with developing countries. Later in 2008, there were 3rd high level forum in Accra, Ghana and in 2011 in Busan, Korea.

It can never emphasize too much the importance of effectiveness of aid when the resource is deficient to be distributed to achieve what we aim. With the volume of scarcity, to make the aid more effective and efficient, it is called for aim-driven as well as targeting of aid. In the latest MDGs report, the Secretary-general of the UN mentioned the importance of aim-driven aid as well as targeting of aid by saying:

[2] Steven Radelet (2006), A primer on foreign aid, *Economics of Development*, 6th

"In more than a decade of experience in working towards the MDGs, we have learned that focused global development efforts can make a difference[3]." In order to have the desired outcome with finite amount of aid, a number of studies proved that aid effectiveness could be enhanced if aid is better targeted to recipient countries in need[4].

In this paper, with much appreciation of how does the ODA improve millions of lives; we will look more closely the pattern and trends of ODA flows and its effectiveness by analyzing sectorally disaggregated data. There have been extensive studies on the allocation of aid. For instance, Alesina and Dollar[5] (2000), Dollar and Levin[6] (2004) and Sawada et al.[7] (2007) investigated the determinants of aid allocation across countries. These studies provide empirical evidence that donors allocate aid in accordance with the political relations, historical background, and of economic and social conditions. Some donors in Scandinavian region are selective for poverty and the major donors like Japan and US show mixed results. It could be partially attributed to the use of aggregate data on aid because there are

[3] The Millennium Development Goals Report 2013, p.3
[4] Collier, P., and D. Dollar (2002), Aid Allocation and Poverty Reduction. *European Economic Review* 46(8): 1475-1500
[5] Alesina and Dollar (2000), Who gives foreign aid to whom and why? Journal of Economic Growth 5, pp.33-63
[6] Dollar and Levin (2004), *The increasing selectivity of foreign aid*, 1984-2002. World Bank Policy Research Working Paper 3299. Washington DC: World bank.
[7] Sawada, Yamada and Kurosaki (2007), *Is aid allocation consistent with global poverty reduction?* RIETI International Workshop on Economics of Foreign Aid, July 2nd.

myriad kinds of aid projects with various purposes.

In much of the literature, it is still common to run regressions with aggregate aid data as the explanatory variable; however, Clemens et al. (2004) on short-impact aid research has initiated a shift toward using disaggregated aid data[8]. There are two types of aid allocation that can be examined through sectoral data on aid: one is aid allocation across recipients within a sector and the other is aid allocation across sectors in a recipient country.[9] And the former is reviewed in this study in following section, with particular reference to the education sector.

There are not many aid allocation studies conducted in terms of education sector and its impact and effectiveness of aid. Education has been central indicator of development and highlighted area for human development as well as economic growth of a nation. Nevertheless, related studies and empirical analysis on this area have not been examined sufficiently compare to other fields of development.

According to the MDGs Report 2013, still too many children are denied their right to primary education. And with current trends, the world will not meet the goal of

[8] Axel Dreher, Peter Nunnenkamp and Rainer Thiele. (2008), Does Aid for Education Educate Children? Evidence from Panel Data, *The World Bank Economic Review*, vol.22, no.2, pp.291-314

[9] Hidefumi Kasuga (2008), Aid allocation across sectors, RIETI Discussion Paper Series 08-E-039, p.4

universal primary education by 2015. In 2011, 57 million children of primary school age were out of school, down from 102 million in 2000. And more than half of those out-of school children reside in sub-Saharan Africa. Globally, 123 million youth (aged 15 to 24) lack literacy skills and 61 per cent of them are young women.

This study examines effectiveness of aid by analyzing whether donors are allocating their ODA to those in needs, as well as how much the allocated aid had impact on achieving targets. The target which considered in this analysis is the betterment of level and environment of basic education as both MDG 2 and EFA aim. The indicators are found in Data Appendix and they are selected based on actual UN monitoring progress indicators.

I-2. Research Question and Hypothesis

Research Question: How well do donors allocate ODA to achieve targeted goals?

Q1: Is there correlation between education ODA and educational condition of recipient countries?

Q2: Is educational need of the recipient a determinant factor for aid allocation?

II. LITERATURE REVIEW

Most of preceding studies on the purpose of aid use the research model of Donor's Interest (DI) vs. Recipient's Need (RN)[12]. By comparing aid flow of four different states – the United States, Japan, France and Sweden – Schraeder et al. find four types of motivation behind aid[13]. ODA was a political tool for the United States during the Cold War period and Japan favored ODA partners which could cause more economic benefits. France showed a tendency to give more aid to their former colonies and Sweden to humanitarian purpose. Therefore, the purpose of aid varies across donors and eras.

There are more studies regarding aid allocation than education aid allocation. Burnside and Dollar[14] (2000) reveals in their study that smaller and poorer countries receive more aid regardless of 'good policy' by putting policy indicator in their analysis. In addition, standards of public expenditure management become

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[12] Sohn Hyuk-sang et al, (2011), What matters in Determining Korean ODA Allocation, Korean Political Science Review, vol.25, no.6

[13] Schraeder, P.J., S.W. Hook, and B. Taylor. 1998." Clarifying the Foreign Aid Puzzle: A Comparison of American, Japanese, French, and Swedish Aid Flows."*World Politics* 50, No. 2, pp. 294-323

[14] Craig Burnside and David Dollar. (2000), "Aid policies and growth." *The American Economic Review,* vol.90, no.4, pp.862-863.

closely assessed by Beynon[15] (2001) in terms of governance issue on aid allocation. In more recent work, Dollar and Levin[16] (2006) indicates the importance of good governance, economic institutions and policies of the recipient and its impact on decision making process of allocating aid.

As Clemens et al[17].(2004) point out in his study that the long-term effects of aid on growth is difficult to capture, favorable long-term effects of educational improvement on economic growth might not be easy to be measured with conventional econometric methods. However, after recognizing this difficulty of probing the relation between education and economic growth, Pritchett[18] (2001) argues the importance of improved education outcome in its own right because of its direct and indirect beneficial effects beyond raising economic output to the society and the people.

Dreher (2008) uncovers the problem of confined research on relationship between aid and economic growth by saying "a verdict on the effectiveness of aid can be

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[15] Jonathan Beynon. (2001), "Policy implications for aid allocations of recent research on aid effectiveness and selectivity." *Aid Effectiveness, Selectivity and Poor Performers*, P.38.
[16] David Dollar and Victoria Levin. (2006), "The increasing selectivity of foreign aid, 1984-2003.", *World Development*, vol.34, No.12.
[17] Michael Clemens, Steven Radelet, and Rikhil Bhavnani. (2004), *Counting Chickens When They Hatch: The Short-term Effects of Aid on Growth*. Center for Global Development Working Paper 44, Washington D.C.
[18] Lant Pritchett .(2001), "Where has All the Education Gone?" World Bank Economic Review 15(3). pp. 367-391

reached at all as long as the analysis is restricted to the aid-growth nexus." Since many donor countries give aid with multiple objectives not only the economic growth, the outcome of specific-purpose aid could be easily excluded from the analysis of impact on growth. Therefore, it seems more appropriate to pursue a different avenue for assessing each sector, especially the education. Dreher (2008) argues that in education sector, the most obvious factor for selectivity of aid should be the recipient's need for education aid. Therefore recipient countries with poorer educational condition should receive more education aid. In his study, educational need was reflected in enrollment and completion rate variables. Adding to his argument, Thiele et al (2007) also emphasize the importance of targeting of aid for education according to the recipient's educational need.

Through empirical analysis Kasuga[19] (2008) shows that while most of the sectors, for instance health, indicate a significant association with aid and recipient's need, aid for education sector seems not in all years from 1971 to 2005 for most donors. Earlier studies using sectoral data also show that aid for education is not closely associated with the need. For example, using primary school enrolment rate, primary completion rate, ratio girls/boys in primary and secondary education and

[19] Kasuga Hidefumi. (2008), Aid allocation across sectors: Does aid fit well with recipients' development peiorities? RIETI Discussion Paper Series 08-E-039

literacy rate as indicators of need, Thiele et al[20] (2006) shows that the correlations concerning educational target are very low and it is lower when running for aid in basic education.

However, most of studies on education aid allocation such as Dreher et al. (2008) and Kasuga (2008) use enrollment and completion rate as outcome variable and use limited indicators to examine correlation in education sector; gross primary enrolment rate and ratio of persistence to grade 5 which are not sufficient as well as inappropriate to indicate the recipient's need for respective sector. The gross enrolment rate expresses the total enrolment, regardless of age, which includes under-aged and over-aged students; therefore, it does not reflect the early or late school entrance and grade repetition[21]. The empirical analysis taken by Thiele et al[22].(2006) use more indicators to reveal educational environment of the recipient; however, it uses only three years of data from 2002 to 2004 and the number of observations is quite small so that only France shows the significance in correlation result.

[20] Thiele, Nunnenkamp, and Dreher (2006), *Sectoral Aid Priorities: Are donors really doing their best to achieve the Millennium Development Goals?* Kiel Working Paper 1266. Kiel Institute for the World Economy.

[21] The World Bank's World Development Indicators(WDI): http://data.worldbank.org/indicator/SE.PRM.ENRR

[22] Thiele, Nunnenkamp, and Dreher (2006), *Sectoral Aid Priorities: Are donors really doing their best to achieve the Millennium Development Goals?* Kiel Working Paper 1266. Kiel Institute for the World Economy.

Therefore, this study uses disaggregated data of the education sector from OECD CRS in the period of 2001 to 2011, which shows the particular efforts to education since Millennium Declaration and Education for All (EFA) initiative., The variables will be expand to primary enrollment and completion rate, literacy of youth and adult, and girls to boys ratio in primary education to reflect the educational need of the recipient. Keeping in mind that each project has its own purposes therefore, some sectors like education does not necessarily contribute to income growth in a short period.[23] However, considering the meaning of aid effectiveness as the achievement of targets, within education sector the aid can be effective only if donors select aid projects appropriately considering the recipient's educational needs.

[23] Michael Clemens, Steven Radelet, and Rikhil Bhavnani. (2004), *Counting Chickens When They Hatch: The Short-term Effects of Aid on Growth*. Center for Global Development Working Paper 44, Washington D.C.

III. ODA ALLOCATION OF EDUCATION SECTOR

III-1. OECD/DAC Countries

To see the overall picture of donor countries in OECD Development Assistance Committee (DAC), data of bilateral aid from the OECD's Creditor Reporting System (CRS) is used from 2001 to the most recently updated data of year 2011. Referring to Kasuga[24] (2008), I divided about 200 distinct purposes of aid for all donors into eight sectors as follows: 1) Education; 2) Health; 3) Transport and storage; 4) Communications; 5) Energy generation and supply; 6) Food aid; 7) Debt relief; and 8) Humanitarian aid. Each sector consists of relevant purpose codes of CRS and the lists are found in the Data Appendix B.

Table 1 shows the top five donors in each sector by sorting accumulated bilateral aid by respective purposes code out of disbursement of total bilateral aid from 2001 to 2011. It shows the contribution of each donor to each sector. In education sector, France is the biggest donor in terms of aid volume followed by Germany, Japan, USA and Netherland. USA shows strength in health, food aid and humanitarian aid sector and Japan in more economic-infrastructure sectors such as transportation, energy and communications.

[24] Kasuga Hidefumi. (2008), Aid allocation across sectors: Does aid fit well with recipients' development peiorities? RIETI Discussion Paper Series 08-E-039

Since this rank is based on the nominal term of aid disbursement, I calculated the share of each sector for each donor country and the figure is in parentheses. For example, France, the biggest donor in education sector, allocates 18 percent of her total aid disbursement for education. For this reason, even though USA is 4th biggest donor in education sector, the figure of her share for respective sector is smaller compare to Netherland. In addition, by comparing the total amount of disbursement for each sector, you can also assume the priorities among sectors. By simple comparison, debt related aid is the largest and second largest sector is humanitarian aid. Education is the third largest sector among those eight sectors.

Table 1: Major donors in each sector

	1	2	3	4	5	6	7	8
1st	FRA	USA	JPN	JPN	JPN	USA	JPN	USA
	(0.181)	(0.045)	(0.210)	(0.007)	(0.123)	(0.031)	(0.167)	(0.140)
2nd	DEU	GRB	USA	USA	USA	JPN	FRA	GRB
	(0.147)	(0.074)	(0.034)	(0.002)	(0.041)	(0.011)	(0.270)	(0.079)
3rd	JPN	CAN	FRA	GRB	DEU	GRB	DEU	JPN
	(0.058)	(0.124)	(0.058)	(0.007)	(0.090)	(0.010)	(0.187)	(0.028)
4th	USA	JPN	GRB	KOR	FRA	ESP	USA	NLD
	(0.028)	(0.021)	(0.019)	(0.060)	(0.019)	(0.016)	(0.040)	(0.067)
5th	NLD	FRA	KOR	NLD	NOR	FRA	GRB	DEU
	(0.107)	(0.031)	(0.239)	(0.004)	(0.051)	(0.006)	(0.157)	(0.035)
Total*	77,867	43,823	57,198	4,006	47,969	13,789	113,003	78,180

* Accumulated bilateral aid in constant 2011 USD millions, CRS 2001-2011. Figures in parentheses are the donor's share of total bilateral aid for the sector. Refer to the Data Appendix B to find CRS purpose codes for each sector.

Since it is based on bilateral accumulated total aid which consists of many subsectors, it does not reflect the priorities of each donor country within a sector. For example, there are subsectors within education sector such as basic education, secondary education, higher education, vocational education and so on. Therefore, biggest donor in total education sector is not necessarily the biggest donor in each subsector. In fact, France is putting a heavy weight on higher education and very little on other education sub sectors.

In order to look more closely on allocation within education sector, this study divided it into seven subsectors in accordance to CRS purpose codes. And to see the change of trend, the period is divided as well into two terms; from 2001 to 2005 and from 2006 to 2011. While aid allocation across countries varies across donors[25], aid allocation across sectors and sub-sectors also varies. Table 2 demonstrates the preference over aid purposes within a sector are varied across countries; for example, France, Germany, Japan, New Zealand, and Portugal prioritize post-secondary (purpose code 114) education aid and six major donors in basic education (purpose code: 112) sector are Canada, Netherland, Norway, Sweden, UK and USA. Likewise, each subsector has different major donors.

[25] Alesina and Dollar (2000), Who gives foreign aid to whom and why? Journal of Economic Growth 5, pp.33-63

Table 2: The share of DAC countries total aid per education sub-sectors

Donor	Period	Sub-sectors						
		11110	11120	11130	11182	112	113	114
AUS	2001-2005	0.124	0.090	0.050	0.005	0.409	0.111	0.231
	2006-2011	0.255	0.117	0.005	0.000	0.277	0.119	0.247
AUT	2001-2005	0.028	0.010	0.001	0.000	0.027	0.066	0.868
	2006-2011	0.019	0.010	0.003	0.000	0.024	0.132	0.813
BEL	2001-2005	0.020	0.087	0.059	0.002	0.116	0.118	0.599
	2006-2011	0.077	0.044	0.059	0.001	0.096	0.123	0.600
CAN	2001-2005	0.137	0.043	0.053	0.007	0.496	0.037	0.227
	2006-2011	0.202	0.128	0.071	0.009	0.358	0.091	0.141
CZE	2001-2005							
	2006-2011	0.060	0.024	0.023	0.000	0.075	0.027	0.791
DNK	2001-2005	0.379	0.159	0.063	0.017	0.350	0.075	0.041
	2006-2011	0.150	0.283	0.013	0.007	0.359	0.062	0.183
FIN	2001-2005	0.419	0.044	0.135	0.001	0.253	0.035	0.115
	2006-2011	0.422	0.060	0.135	0.006	0.177	0.045	0.156
FRA	2001-2005	0.255	0.005	0.011	0.001	0.036	0.027	0.670
	2006-2011	0.059	0.021	0.011	0.000	0.108	0.123	0.684
DEU	2001-2005	0.024	0.025	0.014	0.001	0.108	0.098	0.729
	2006-2011	0.021	0.083	0.018	0.000	0.097	0.090	0.690
GRC	2001-2005	0.000	0.178	0.096	0.022	0.336	0.290	0.323
	2006-2011	0.016	0.066	0.001	0.146	0.040	0.044	0.825
ISL	2001-2005							
	2006-2011	0.094	0.000	0.015	0.000	0.891	0.000	0.000
IRL	2001-2005	0.211	0.268	0.054	0.004	0.331	0.043	0.091
	2006-2011	0.409	0.074	0.012	0.010	0.359	0.076	0.059
ITA	2001-2005	0.588	0.028	0.004	0.005	0.065	0.090	0.223
	2006-2011	0.208	0.154	0.029	0.008	0.167	0.127	0.305
JPN	2001-2005	0.174	0.022	0.009	0.000	0.154	0.094	0.620
	2006-2011	0.101	0.194	0.004	0.002	0.113	0.080	0.506
KOR	2001-2005							
	2006-2011	0.020	0.155	0.029	0.003	0.059	0.391	0.343
LUX	2001-2005	0.096	0.238	0.011	0.004	0.294	0.490	0.012
	2006-2011	0.043	0.125	0.034	0.000	0.218	0.571	0.009
NLD	2001-2005	0.098	0.015	0.009	0.004	0.641	0.023	0.216
	2006-2011	0.065	0.051	0.026	0.007	0.503	0.049	0.307
NZL	2001-2005	0.022	0.012	0.017	0.006	0.351	0.088	0.504
	2006-2011	0.067	0.017	0.015	0.003	0.355	0.046	0.504

NOR	2001-2005	0.130	0.096	0.032	0.009	0.472	0.035	0.226
	2006-2011	0.105	0.085	0.012	0.004	0.533	0.031	0.231
PRT	2001-2005	0.027	0.122	0.008	0.000	0.084	0.115	0.643
	2006-2011	0.078	0.036	0.093	0.000	0.055	0.106	0.631
ESP	2001-2005	0.064	0.173	0.029	0.004	0.193	0.203	0.336
	2006-2011	0.174	0.112	0.026	0.046	0.288	0.150	0.204
SWE	2001-2005	0.293	0.004	0.015	0.002	0.528	0.032	0.141
	2006-2011	0.214	0.055	0.019	0.039	0.598	0.035	0.066
CHE	2001-2005	0.155	0.002	0.000	0.000	0.375	0.389	0.081
	2006-2011	0.235	0.000	0.000	0.000	0.269	0.252	0.244
GBR	2001-2005	0.152	0.030	0.019	0.012	0.768	0.004	0.019
	2006-2011	0.419	0.049	0.012	0.001	0.413	0.041	0.066
USA	2001-2005	0.077	0.007	0.003	0.000	0.760	0.041	0.134
	2006-2011	0.152	0.046	0.000	0.000	0.657	0.021	0.124
Total	2001-2005	0.152	0.078	0.029	0.009	0.295	0.116	0.340
	2006-2011	0.152	0.077	0.028	0.009	0.301	0.114	0.338

* Sub-sector purpose code: 11110 Education policy and administrative management, 11120, Education facilities and training, 11130 Teacher training, 11182 Educational research, 112 Basic Education, 113 Secondary Education, 114 Post-secondary Education
* No data available from CRS for Czech Republic, Iceland, and Korea in the period 2001-2005.

According to the table 2, while total average of basic education has been increased between two periods, major basic education donors' share is declined significantly. UK dropped from 77% to 41, USA from 76% to 66% and Canada from 50% to 36%. Referring to the table 1, three biggest donors in total education sector are France, Germany and Japan, and those countries' share on education is heavily focused on post-secondary education. Therefore, even though education seems the central sector in development, if we calculate the share of basic education which is the key elements of MDG 2 and EFA as well as pre-requisite condition of human development, it accounts for less than one thirds of the total education aid.

III-2. Major Donor Countries

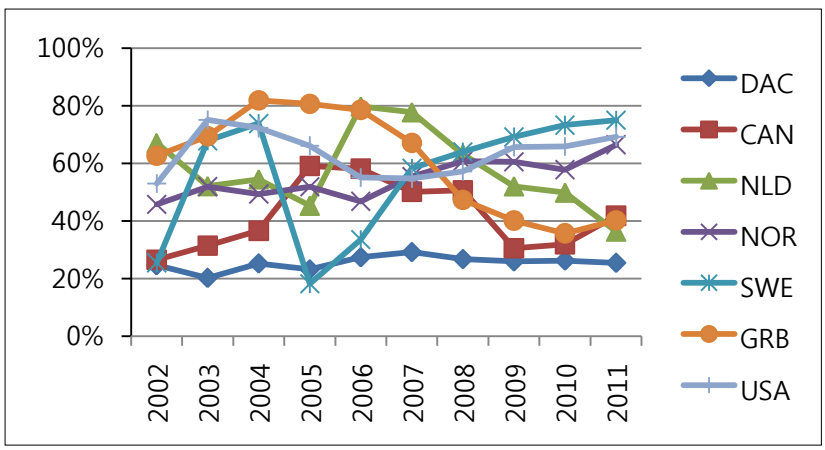
In this section, basic education subsector is more closely examined by both donor and recipient perspectives before moving on to the empirical analysis. The results of correlation between educational need of the recipient and education ODA, which is quite low, will be discussed in the next chapter and its result could be possibly explained by witnessing the fluctuation of basic education ODA of major donor countries.

There are six major donors in basic education subsector including Canada, Netherland, Norway, Sweden, UK and USA. While the average share of basic education within education sector is below 30 percent among DAC member countries, some major countries such as Sweden, USA, UK and Norway shows above 65 percent. And the sum of those six major countries' ODA of basic education accounts for up to 70 percent of total basic education ODA of DAC countries. Therefore, investigating the ODA flow of those major donors may imply some patterns of current ODA flow to basic education.

Figure 1 shows the six major donors' share of basic education of total education ODA for last ten years. Unlike DAC average share of basic education sector, most of major donors' share show severe fluctuation. For instance, the share of Sweden and Netherland show significant drop in year 2005 and of UK has dramatically

declined since 2006. Therefore, all major donors of basic education except Norway present unpredictable share for basic education of their education ODA.

Figure1. Proportion of Basic Education of Education ODA



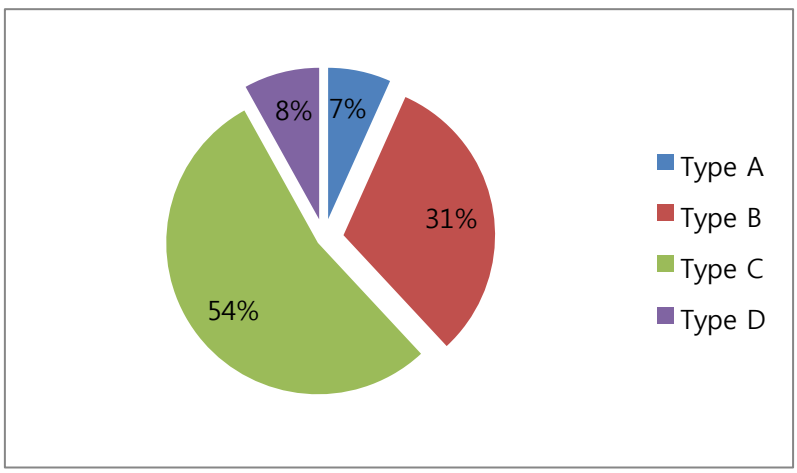
Total disbursement of basic education sub-sector in the period of 2002-2011/ CRS, OECD

In order to explain the instability of ODA share in basic education subsector, future studies are required to investigate the determinants of education ODA of those major donors as well as Norwegian basic education ODA policies. Earlier studies have already shown empirical results that there are not much correlations or significant indicators that account for education ODA determinants; however, they were mostly conducted with aggregate data and more studies should focus on determinants of each donor country through sectoral approach.

One possible explanation could be clued by the type of ODA. According to the

CRS code, there are eight different types of aid. And in the basic education subsector, major types of aid are type A: budget support, type B: core contribution and pooled programs and funds, type C: project type intervention, and type D: experts and other technical assistance.

Figure 2. Type of Aid

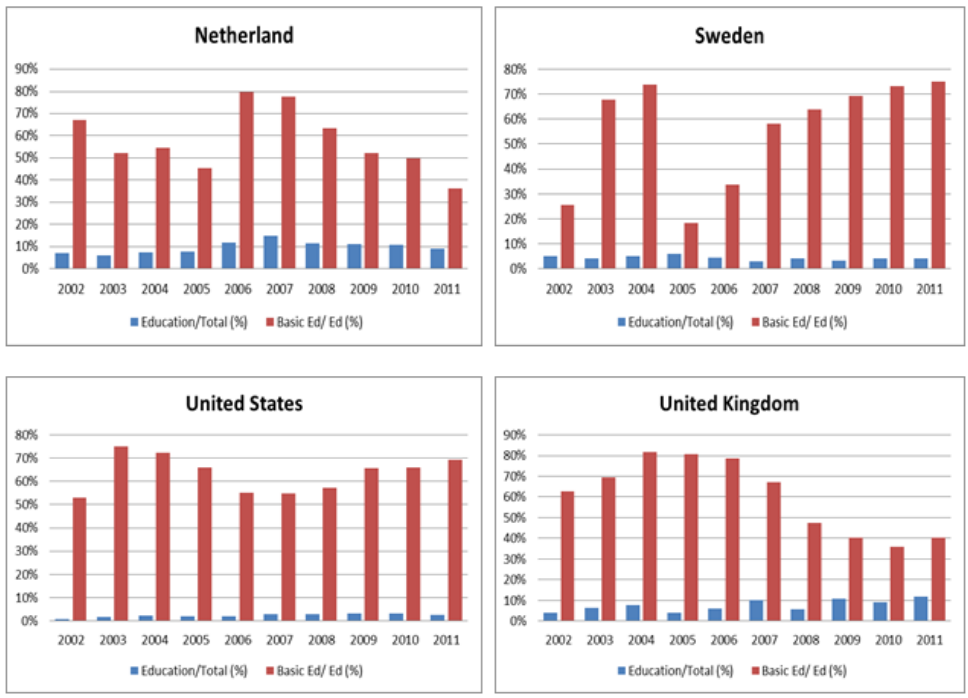


If we look at the type of education ODA, according to the figure 2, more than half of basic education ODA is categorized by project type intervention. It may give some room to explain this insecure pattern of basic education share. According to OECD, project type intervention which is coded by C01 is defined as projects which proposed by donors with defined time frame, budget, and geographical area in order to achieve specific outcomes and objectives. It has to be agreed by partner countries and the size of financial resources and length of the project could vary significantly.

There seems to be confusion on understanding project type ODA by comparing it with programme type in terms of financial volume and of length. Of course there is certain tendency that the period of project type is shorter and the budget size is smaller than that of programme type. However, this tendency could not generalize the overall characteristic of project type ODA. By following the definition given by OECD, there are large projects with more significant budget amount and successive phases that can last many years. Therefore, project type ODA should be interpreted more comprehensive way.

Unlike type B, which accurately demonstrates the relinquishment of exclusive control of donor country, project type only requires the condition of agreement of partner country. Therefore, type C, the project type intervention, gives more room for donor country to withdraw or enlarge the resources of their ODA at her whim so that it does not require responsibility or commitment as much as other types of ODA. Therefore, it is more appropriate to interpret the project type intervention as more donor-centered ODA because while other type of ODA such as budget support, type A, and core contribution and pooled programmes and funds, type B, guarantee more ownership of partner country. With this reason, the fickle ratio of basic education of major donors could be attributed to its large share of project type intervention of basic education ODA.

Figure 3. Share of Basic Education



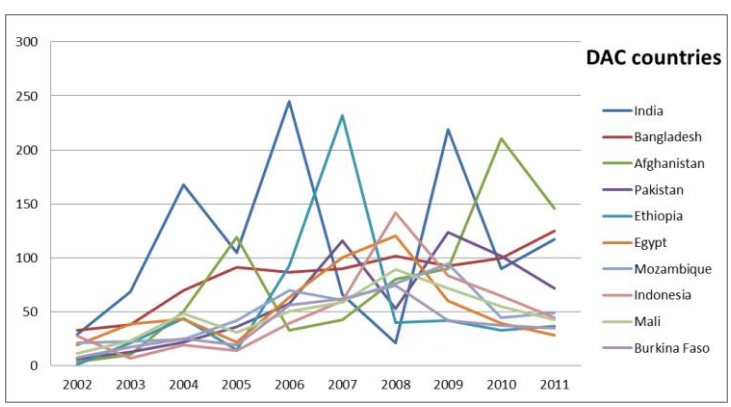
In figure 3, while the share of total education ODA stables, the share of basic education shows ups and downs among major donors. The United States seems to keep relatively stable share in basic education sub-sector; however, Netherland and Sweden do not. This inconstancy might reflect the absence of clear commitment or strong will of determining ODA allocation of donor countries in basic education sector.

With this in mind, so as to assume that donors' wavering ODA allocation might affect to the recipient as well. The analysis on whether this impact is negative or

positive will be discussed in the next chapter. Without any evidence, this study is not going to assume the causality between determinants and ODA share of basic education sector; however, it seems quite clear that at least no strong and long-term policies or strategies underpin the determinant of basic education ODA with current pattern of the share.

Supporting the argument, figure 4 shows the insecure ODA flow to recipient countries. Listed countries are the biggest recipient countries of basic education ODA of OECD DAC countries for last decade in constant USD millions. India received the largest and followed by Bangladesh, Afghanistan, Pakistan, and Ethiopia. And as similar to the pattern of donor side, the amount of aid which goes to recipient countries differs significantly across years.

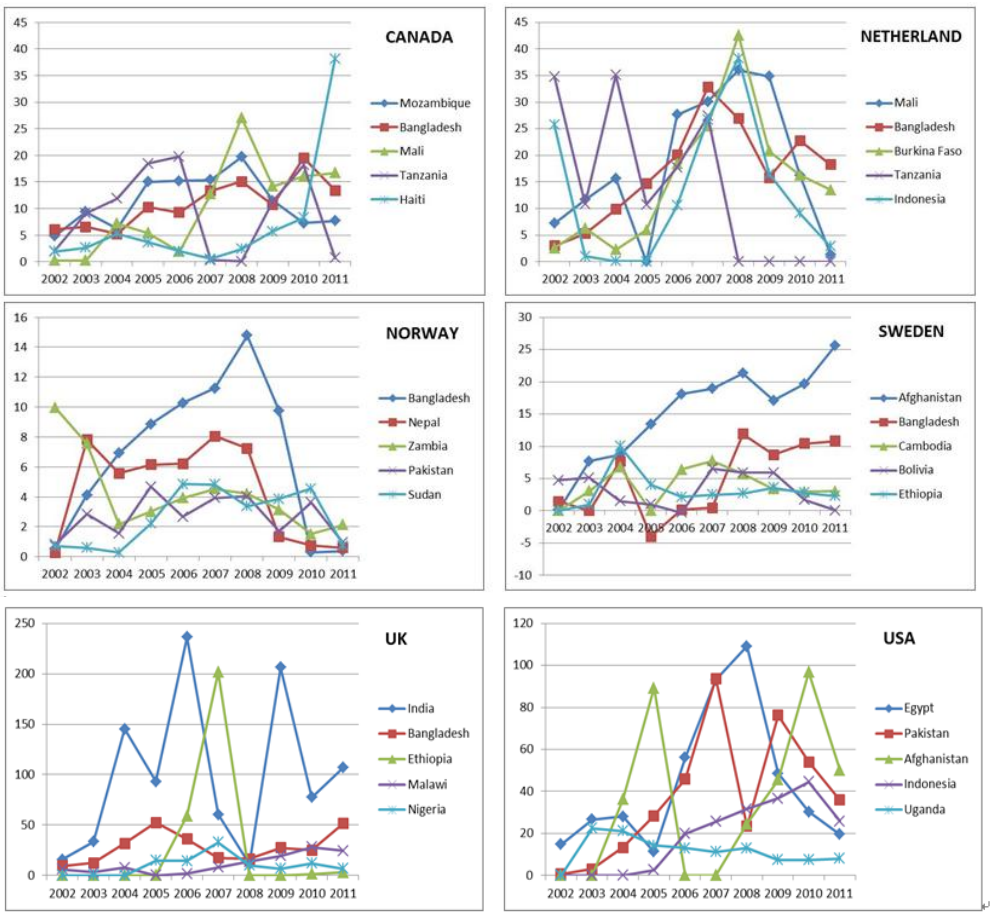
Figure 4. Basic Education ODA flow to the recipient



According to figure 5, each major donor county also shows the similar pattern of

ODA disbursement to the recipient. Figure 5 indicates the biggest five recipient countries of each donor in basic education sector.

Figure 5. Five biggest recipient countries by major donors



The graph of the volume and share of basic education ODA in each recipient country dances along the time line. The largest recipient country differs across

years and donors. However, unlike this discrepancy of donor's whim and commitment to those recipient countries, educational level and environments of them are not quite as dramatic as this ODA flow. Many of those listed recipient countries are unfortunately put in the most marginalized condition thus even the data on education is not freely available. Therefore, future study is suggested to examine the effectiveness of basic education aid to know how much aid help to enhance educational level and condition.

In next chapter, the empirical analysis will investigate more closely whether there is correlation between basic education ODA and the need of the recipient. After probing the correlation, the determinants of basic education are analyzed through disaggregated panel data in order to investigate whether the need of recipient becomes significant determinant factor for donor's ODA allocation.

IV. EMPIRICAL ANALYSIS

IV-1. Methodological Framework

IV-1.1. Methods

Spearman rank correlations and panel analysis are employed in this analysis. For revealing the correlation between ODA disbursement and the need of the recipient, spearman rank correlation is used and the regression for determinants of basic education ODA.

First of all, in order to assess whether donors have allocated total as well as sector-specific aid in accordance to indicators for overall OECD-recognizing recipient countries, Spearman rank correlations (non-parametric) is used which does not require the assumption that the relationship between the variables is linear. Though this study assumes that good donors should give more aid to the recipient in more needs, the volume of aid does not necessarily increase linearly with the recipient's need.

Indicators are selected based on the suggestions made by the World Bank to evaluate progress made towards the MDGs as well as UNESCO to EFA: educational environment would be reflected on enrollment and completion rate of primary, literacy rate of youth and adult, and the ratio of girls to boys in primary

level of education. Based on the average rate of above mentioned five indicators, the variable of educational condition is made to reflect educational need of the recipient. Because those five indicators are all percentage figures, the variable of educational condition is calculated by simple average.

Though many of earlier studies on determinant of education aid only focused on attendance ratio to interpret the educational achievement as well as conditions[26], this study adds more indicators in order to reflect the reality of educational environment as closely as possible. There are of course more aspects to be considered to reflect educational need in the variable, however because of the poor data availability it was the best way of procedure at the moment.

Secondly, regression through disaggregated panel data is employed to see whether donors' allocation of aid is affected by the need of the recipient. In the regression model, the effect of ten-year period is fixed as dummy variable.

IV-1.2. Regression Equations

The base of regression equation is as follows:

(1) $BsicEd\_dis = \alpha + \beta\ ed\_con + \gamma\ GDPpc + \delta\ population + \varepsilon\ Gov\_effect$

[26] See Thiele at al. (2006, 2007), Kansai (2007, 2008), Clemens et al. (2004)

The first equation is to examine whether educational need of recipients may influence over the allocation of basic education aid of OECD DAC countries. In addition to the GDP per capita and population, government effectiveness indicator is included as control variables. However, it could be one of the aspects to see whether the policy implementation of the recipient might effect on donor's aid allocation.

With respect to investigate whether donors react to the need of recipients in terms of aid allocation, major countries' aid disbursement will be placed on dependent variable as well as DAC total disbursement.

(1) $Major\_dis = \alpha + \beta\ ed\_con + \gamma\ GDPpc + \delta\ population + \varepsilon\ Gov\_effect$

Due to strong emphasis on universal primary education in new millennia[27], net enrollment rate of primary education indeed made good records that over 43 million children worldwide were enrolled in school between 1999 and 2009 and the rate of enrollment in Sub-Saharan African has increased from 58 to 76 percent[28]. However, still 57 million children are out of school worldwide in 2011 and 123

[27] MDG, EFA, Jomtien
[28] http://www.endpoverty2015.org/mdg-success-stories/mdg-2-universal-education/

million youth are not able to read and write[29].

Therefore, acknowledging that enrollment rate is not sufficient enough to reflect the reality, I decided to put indicator of completion rate of primary to show closer view of educational level of countries. Nevertheless, there is a drawback of data scarcity in this study and it is a significant limitation because the poorer the country is, the lesser data that I could collect.

After examining the determinant of DAC aid disbursement in basic education sector, aid of major donors is also reviewed with the same equation and aid per capita can be also replaced to. The panel data is estimated for about 130 recipient countries between 2001 and 2011. Dreher (2008) analyzed in his study that the dependent variable of school enrollment rate could lead to biased results that aid can have little effect on enrollment of the recipients it reaches as close to 100 percent of rates recently. Therefore, in this study the dependent variable is replaced to the educational condition instead of only enrollment rate indicator in order to give more comprehensive explanation of the need of recipient countries.

[29] MDG report 2013

IV-1.3. Data and Variables

This analysis uses data on bilateral aid from OECD's Creditor Reporting System (CRS) from 2001 to 2011. It provides aid disbursement for about 200 purposes for all donors and recipients annually (Data Appendix A lists member countries of the OECD's Development Assistance Committee).

Aid disbursement is extracted in constant 2011 USD from OECD's CRS and GDP per capita and population are from the World Bank's World Development Indicators. To measure recipient's need for education sector, this study uses indicators from the World Bank's World Development Indicators (WDI) and UNESCO. The basis of the indicators is from WDI and the missing data is supplemented by UNESCO's. Selected indicators are closely corresponds to the Millennium Development Goal 2, Achieving Universal Primary Education, and Education for All (EFA) initiative and they are actually used in both monitoring progress of MDGs and EFA.

The Government effectiveness is collected from the source of Worldwide Governance Indicators created by the World Bank. Even though there were more indices besides the government effectiveness such as transparency, elements of democracy, and degree of corruption, only the effectiveness is extracted because this study focuses on the implementation of policy. However, the data of 2001 is

absent due to the numeral of standard year.

Table 3. Variables and data sources

Variables	**Definition**	**Data Source**
Aid disbursement[30]	ODA disbursement flows in constant 2011 USD millions	CRS, OECD stats
Educational Condition	Educational level and environment of the recipient: Average of five indicators (a. to e.)	World Development Index (the World Bank) & UIS.Stat (UNESCO)
a. Net enrollment rate, primary	The ratio of children of the official primary school age who are enrolled in primary school to the total population of the official primary school age.	
b. Completion rate, primary	The gross intake rate to the last grade of primary.	
c. Literacy rate, youth	The ratio of people age 15 to 24 years who can read, write and do simple arithmetic calculation.	
d. Literacy rate, adult	The number of literates aged 15 years and over divided by the corresponding age group population.	

[30] Note Data Appendix C

e. Ratio of Girls to boys, primary	The percentage of girls to boys enrolled at primary level in public and private schools.	
Aid per capita	Total aid disbursement divided by population.	World Development Index (the World Bank)
GDP per capita	The gross domestic product divided by midyear population.	World Development Index (the World Bank)
Population	The total population of a nation.	World Development Index (the World Bank)
Government effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	World Governance Indicator (the World Bank)

IV-2. Outcome and Interpretation

IV-2.1. Correlation Results

When all indicators of educational condition take significant values for recipients with much need for aid, the correlations with aid disbursement should be negative if donors effectively allocate their aid according to the relevant indicators. I

specified the variable of educational condition into five indicators and aid disbursement into total, education, and basic education according to the five-digit CRS purpose codes of aid. Note the Data appendix C.

Table 4. Correlation Results

	Aid Categories (obs.)		
Variable/ Indicators	**Total aid**	**Basic Education**	**112 Sector aid**
a. net enrollment rate, primary	-0.166** (1267)	-0.136** (1267)	-0.227** (1186)
b. completion rate, primary	-0.265** (1245)	-0.260** (1245)	-0.317** (1177)
c. literacy, youth	-0.328** (1179)	-0.408** (1179)	-0.468** (1139)
d. literacy, adult	-0.328** (1170)	-0.391** (1170)	-0.456** (1130)
e. ratio of girls to boys, primary	-0.152** (1362)	-0.129** (1362)	-0.166** (1281)
Edu Condition(a+b+c+d+e)	-0.316** (1421)	-0.334** (1421)	-0.419** (1333)

Spearman rank correlation; ** significant at 5 percent level,
Number of observations in parentheses.

The correlation results turn out to be negative which indicates that aid is more likely to be allocated to those where educational indicators are lower or vice versa. However, most of the correlations are relatively low with attendance rate and the highest shows less than 0.5 correlations with the aid. Basic Education aid refers to both unspecified education aid including training, administrative, and facilities and 112 Sector only indicates purpose of primary, early childhood education and basic life skills for youth and adult.

Since those five indicators show high covariance relation with each other, the correlations were calculated separately with aid. In addition, to show the overall educational need of recipients, I made a variable of overall educational condition which indicates the average of five indications. There was considerable missing data to run the regression, thus I collected data from other source to complete the data as much as possible. Where there was missing data between years, average figures of available data are calculated to be filled.

The correlation between educational condition and aid shows negative and relatively moderate results. It is quite lower than that of other sectors like health such as HIV/Aid prevalence and mortality rate compare to other studies[31]. Literacy indicators have higher correlation than that of enrollment or gender equity indicators; however, still the correlation coefficient is quite low that the average coefficient is lower than 0.3. Additionally, correlation is higher as the aid has more specific purpose.

According to the table 5, surprisingly, the six major basic education donors show lower correlation with educational need of recipients compared to total OECD DAC members which was above -0.3. Sweden and UK has the lowest correlation results, -0.125 and -0.134 respectively, but even the highest correlation among

[31] Thiel et al. (2006)

them, -0.248 of Canada, is quite low. Therefore, even though countries are more likely to give aid to those which educational conditional is poorer, its correlation is not critical.

Table 5. Correlation results of major donors

	Basic Education ODA (2007-2011)					
	CAN	**NLD**	**NOR**	**SWE**	**GRB**	**USA**
Educational condition (1421)	-0.258***	-0.212***	-0.215***	-0.133***	-0.154***	-0.189***

Spearman rank correlation; *** significant at 1 percent level,
Number of observations in parentheses

This can be partially explained by the earlier chapter which indicates the fluctuation of aid of basic education sector as well as inconstant aid volume to the recipient. Because more than half of the total basic education consists of project type intervention, it lacks long-term strategies or policy consistency in this sector. It is well reflected that the largest beneficiaries of basic education aid differs across years as well as donor countries and the gap of the fluctuation is substantial.

IV-2.2. Regression Results

First regression result of equation (1) shows in table 6 that the result of fixed effects of both countries and period shows positive coefficient with educational condition of the recipient countries that when a country has better educational

records, it draws more aid. On the contrary, when only period fixed effects estimated in regression, the result shows the negative coefficient of educational condition that aid goes more where the educational level is lower.

When both country and period fixed-effects is estimated, the result shows the positive coefficient of educational condition of recipient countries to aid allocation that better educational achievements attracts more aid. In this case, it contains the effects of changes of educational condition that can effect to the aid allocation. Thus, I excluded the country fixed effect and surprisingly the result revealed the negative coefficient.

Table 6. Regression outcome of aid allocation

	Country fixed + Period Fixed	**Period fixed**
Ed_Con	0.549*	-0.258**
	(2.052)	(-2.735)
Ln_GDPpc	-2.322	-7.382***
	(-0.544)	(-5.386)
Ln_Pop	8.026	6.891***
	(0.335)	(13.013)
Gov-eff	-138.7	9.845**
	(-0.372)	(4.968)
Obs. Number	1206	1206
R-squared	0.683	0.219

Numbers in parentheses are t-stasistics. The dependent variable is the total disbursement of basic education sector in the period of 2001 to 2011.
*significant at the 10 percent level, ** at 5 percent and *** at 1 percent level.

Therefore, to ensure the reliability of this statistical analysis, I borrowed the method which Dreher (2008) used. It excludes both fixed effects and analyzes the result by each year. Table 7 shows the result of ordinary least square outcome. According to the result, only the year 2007 shows the significant result that educational condition of recipient countries gives negative effect on aid allocation. Therefore, in most of years educational condition has not been a determinant of donor countries allocating education ODA. Population shows the most determinant factor for every years and GDP per capital and government effectiveness shows inconsistent result.

Since the results of table 6 and table 7 are different, it seems harder to consider the educational condition as the determinant factor of basic education aid. There could be several reasons for this result. Because the education data is not complete, there may be possible distortion for running regression. The other is the problem of inconsistent flow of basic education aid. Since the volume of basic education aid and its flow is not constant over a decade, the result could possibly less robust. Therefore, in order to have more potent explanation, accurate and more complete data is necessary for the future studies.

Table 7. Regression outcome of aid allocation (Ordinary Least Squares)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Ed_Con	0.007	-0.091	-0.264	-0.289	-0.395	-0.60*	-0.373	-0.407	-0.315	-0.207
	(0.053)	(-0.48)	(-1.04)	(-0.70)	(-1.05)	(-2.40)	(-1.34)	(-0.79)	(-1.41)	(-1.02)
Ln_GDPpc	-7.04**	-6.58*	-7.063	-6.305	-6.829	-7.98*	-8.37*	-10.06	-5.06*	-6.14*
	(-2.710)	(-1.93)	(-1.64)	(-0.95)	(-1.30)	(-2.43)	(-2.40)	(-1.51)	(-1.82)	(-2.45)
Ln_Pop	4.1***	4.5***	6.3***	9.2***	9.3***	6.3***	7.5***	10***	4.3***	4.5***
	(4.041)	(3.662)	(3.980)	(3.686)	(4.455)	(4.986)	(5.391)	(4.45)	(4.12)	(4.37)
Gov-eff	8.93*	8.90*	10.20	11.32	16.76*	14.5**	11.6*	16.4*	3.040	2.02
	(2.546)	(-0.08)	(1.565)	(-0.80)	(-0.66)	(1.102)	(0.116)	(-0.39)	(0.76)	(0.28)
Obs.	112	116	117	121	122	124	123	124	126	121
Rsquared	0.243	0.221	0.237	0.147	0.221	0.367	0.335	0.217	0.245	0.274

Numbers in parentheses are t-stasistics. The dependent variable is the total disbursement of basic education sector in the period of 2001 to 2011. *significant at the 10 percent level, ** at 5 percent and *** at 1 percent level.

According to the table 8, except Norway and UK, other major donors show negative coefficient results. It indicates that major basic education donor consider more of recipients' educational condition when allocating their basic education aid. However, future study is required to analyze each of country separately by yearly basis and the educational condition variable could be more specified.

Table 8. Regression outcome of aid allocation by major donors

Variable	DAC	CAN	NLD	NOR	SWE	GRB	USA
Ed_con	-0.258**	-0.082***	-0.055***	0.003	-0.013*	-0.035	-0.100***
Ln_GDPpc	-7.382***	-0.447*	-0.839***	-0.447***	-0.315***	-2.488***	0.590
Ln_Pop	6.891***	0.279***	0.539***	0.139***	0.088**	1.918***	1.055***
Gov_eff	9.845***	0.815**	1.632***	-0.016	0.038	4.436***	-1.443*
R-squar	0.219	0.128	0.127	0.102	0.073	0.113	0.079
Obs.	1206	1254	1254	1254	1254	1254	1254

*significant at the 10 percent level, ** at 5 percent and *** at 1 percent level

V. Conclusion

The focus of this study is on the allocation of Official Development Assistance (ODA) with particular reference of basic education sector. Since the year 2000, there were several ambitious attempts to improve educational level of every country as a core indicator of human development such as MDG 2 by UN and EFA by UNESCO and related organizations. And after a decade passed, there is a controversy on assessing the achievements of aid. One argues the useless impact of aid and the other side provides successful case to show the positive effect of it. Regardless of this counter analysis, all agree on the importance of aid effectiveness and it becomes one of the key issues in the field of development.

Besides glamorous rhetoric over the aid effectiveness, many empirical analyses suggest aim-driven aid i.e. targeting of aid to maximize the effect of the aid to reduce poverty and development. This study also examines how well do donors allocate their aid in accordance with aim-driven, especially the Official Development Assistance (ODA) of OECD DAC countries. By running empirical analysis, it shows the correlation of aid allocation with the need of recipients, particularly the basic education sector and whether educational condition of recipient countries becomes the determinant for donors to allocate their education ODA.

Unlike other earlier studies on aid allocation by education sector, this study considers more indicators which reflect the educational need of the recipient by including completion rate, literacy rate and ratio of girls to boys besides school enrollment rate. Those indicators all together show the educational need of recipients, and it should be one of the most important variables to be considered for aid allocation.

Before analyzing the empirical results, overall picture of ODA allocation in chapter III shows important tendency of OECD DAC donors and of major basic education donors. By ranking the top donor countries of eight different sectors, it seemed obvious that each country has their focus and preference over ODA and it varies significantly. There were earlier studies on investigating the determinant factors of donor countries and the results also vary across countries. They are economic incentive, political alliance, historical background such as past colonial, and so on. However, many of studies are conducted with aggregated data and more studies on secoral and of case study of few countries are needed in the future.

I could find two important factors through looking at overall ODA flow of education sector. First was the unpredictable and inconsistent ODA share of basic education. There are six major countries including Canada, Netherland, Norway, Sweden, UK and USA consist significant share of total basic education ODA. And

those six countries' share of basic education for last decade is fluctuating quite dramatically. Moreover, the amount of ODA which biggest partner countries receive from those major donors is also waving though years.

Second is the type of basic education ODA. More than half of total basic education aid is project type intervention. It may or may not give explanation for the instability of aid share and volume of basic education across donor and partner countries. Since project type aid is more donor-centered than that of budget support of core contribution and pooled programmes type of aid, donors' commitment and whim may more likely to be reflected into project type of aid. Therefore, in order to have stable aid to basic education sector, more aid to budget support or core contribution and pooled programmes should be considered because they require heavier responsibilities and strong commitment of donor countries and share more ownership with partner countries.

The empirical analysis is conducted for two purposes. One is to fathom out how much correlation exist between educational condition of recipient and allocation of aid. The result shows that there is negative correlation between those two; however, the coefficient is relatively low to say that there is a significant correlation. The other is to know whether educational condition becomes the determinant factor for donors to allocate their education ODA. It is more aligned with the issue of

targeting of aid and aim-driven aid.

Unfortunately, the results of regression analysis were controversial. By fixing the effects of time or countries, the result turned out to be reversed. One was negative and the other was positive. Therefore, I had to apply alternative method of analysis which conducted by Dreher, and it had significant negative coefficient result which means donors allocate more aid to the recipient with poorer educational condition. However, in order to have more reliable result of this analysis, there should be more factors considered both for dummy variables and of educational condition variable.

The issue of aim-driven aid and targeting of aid could not be separately considered with aid effectiveness. The definition and approach of aid effectiveness varies among organizations and donor agencies. However, taking the most generally considered definition of aid effectiveness, whether aid reaches to its target and objective by achieving planned output, aim-driven aid issue could be one of the methods to enhance the effectiveness of aid. Therefore, further studies on how educational aid has influenced over enhancing educational condition of the partner countries along with aid determinant are requested.

Reference

Alesina and Dollar (2000), Who gives foreign aid to whom and why? Journal of Economic Growth 5, pp.33-63

Beynon, J. (2001), "Policy implications for aid allocations of recent research on aid effectiveness and selectivity." *Aid Effectiveness, Selectivity and Poor Performers*, P.38.

Burnside, C. and Dollar, D. (2000), "Aid policies and growth." *The American Economic Review*, vol.90, no.4, pp.862-863.

Clemens, M., Radelet, S., and Bhavnani,R. (2004), *Counting Chickens When They Hatch: The Short-term Effects of Aid on Growth*. Center for Global Development Working Paper 44, Washington D.C.

Collier, P., and D. Dollar (2002), Aid Allocation and Poverty Reduction. *European Economic Review* 46(8): 1475-1500

Dollar, D. and Levin, V. (2006), "The increasing selectivity of foreign aid, 1984-2003.", *World Development*, vol.34, No.12.

Dreher,A., Nunnenkamp, P., and Thiele,R. (2008), Does Aid for Education Educate Children? Evidence from Panel Data, *The World Bank Economic Review*, vol.22, no.2, pp.291-314

Easterly, W. (2006), The White Man's Burden: *Why the West's Efforts to Aid the Rest Have Done Much Ill and so Little Good.* Net York: Penguin Press.

Kasuga, H. (2008), Aid allocation across sectors: Does aid fit well with recipients' development peiorities? RIETI Discussion Paper Series 08-E-039

McGillivray, M. (2003), Modelling Aid Allocation: Issues, Approaches and Results, *Journal of Economic Development vol.28*

McGillivray, M. (2003), Aid Effectiveness and selectivity: Integrating Multiple Objective into Aid Allocations, OECD DAC/Development Centre Experts'

Seminar

Pritchett, L.(2001), “Where has All the Education Gone?” *World Bank Economic Review* 15(3). pp. 367-391

Radelet, S. (2006), A primer on foreign aid, *Economics of Development*, 6th

Sawada, Yamada and Kurosaki (2007), *Is aid allocation consistent with global poverty reduction?* RIETI International Workshop on Economics of Foreign Aid,

Thiele, Nunnenkamp, and Dreher (2006), *Sectoral Aid Priorities: Are donors really doing their best to achieve the Millennium Development Goals?* Kiel Working Paper 1266. Kiel Institute for the World Economy.

The World Bank’s World Development Indicators(WDI): http://data.worldbank.org/indicator/SE.PRM.ENRR

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Data Appendix A. Member countries of the OECD's Development Assistance Committee

AUS	Australia	**DEU**	Germany	**NLD**	Netherland	**SWE**	Sweden
AUT	Austria	**GRC**	Greece	**NZL**	New Zealand	**CHE**	Switzerland
BEL	Belgium	**ISL**	Iceland	**NOR**	Norway	**GBR**	United Kingdom
CAN	Canada	**IRL**	Ireland	**POL**	Poland	**USA**	United States
CZE	Czech Rep.	**ITA**	Italy	**PRT**	Portugal		
DNK	Denmark	**JPN**	Japan	**SVK**	Slovak Rep.		
FRA	France	**KOR**	Korea	**SVN**	Slovenia		
FIN	Finland	**LUX**	Luxembourg	**ESP**	Spain		

Data Appendix B. CRS purpose codes for sectors

1. Education (code 11110-11430)

11110 Education policy and administrative management

11120 Education facilities and training

11130 Teacher training

11182 Educational research

11220 Primary education

11230 Basic life skills for youth and adults

11240 Early childhood education

11320 Secondary education

11330 Vocational training

11420 Higher education

11430 Advanced technical and managerial training

2. Health (code 12110-12281)

12110 Health policy and administrative management

12181 Medical education/training

12182 Medical research

12191 Medical services

12220 Basic health care

12230 Basic health infrastructure

12240 Basic nutrition

12250 Infectious disease control

12261 Health education

12262 Malaria control

12263 Tuberculosis control

12281 Health personnel development

3. Transport and storage (code 21010-21081)

21010 Transport policy and administrative management

21020 Road transport

21030 Rail transport

21040 Water transport

21050 Air transport

21061 Storage

21081 Education and training in transport and storage

4. Energy generation and supply (code 23010-23082)

23010 Energy policy and administrative management

23020 Power generation/non-renewable sources

23030 Power generation/renewable sources

23040 Electrical transmission/ distribution

23050 Gas distribution

23061 Oil-fired power plants

23062 Gas-fired power plants

23063 Coal-fired power plants

23064 Nuclear power plants

23065 Hydro-electric power plants

23066 Geothermal energy

23067 Solar energy

23068 Wind power

23069 Ocean power

23070 Biomass

23081 Energy education/training

23082 Energy research

5. Food aid (code 52010)

52010 Food aid/Food security programmes

6. Debt relief (code 60010-60063)

60010 Action relating to debt

60020 Debt forgiveness

60030 Relief of multilateral debt

60040 Rescheduling and refinancing

60061 Debt for development swap

60062 Other debt swap

60063 Debt buy-back

7. Humanitarian aid (code 72010-74010)

72010 Material relief assistance and services

72040 Emergency food aid

72050 Relief co-ordination; protection and support services

73010 Reconstruction relief and rehabilitation

74010 Disaster prevention and preparedness

Data Appendix C. CRS sector codes for aid disbursement

1. Aid Disbursement Total: total all sectors

2. Basic Education Aid Total

111-I-1.a. Education, Level Unspecified, Total

112-I-1.b. Basic Education, Total

113-I-1.c. Secondary Education, Total

114-I-1.d. Post-secondary Education, Total

3. 112 Sectoral Aid Total:

112-I-1.b. Basic Education, Total

논 문 초 록

본 논문의 목적은 2000 년 새천년개발목표 이후 현 시점까지 진행된 원조의 패턴을 분석함으로써 공여국들이 얼만큼 개발 목표 달성을 위해 적절한 원조를 해왔는지를 알아보는데 있다. 기존의 연구들은 대부분 원조 총량의 배분을 계량 분석함으로써 그 요인을 밝혀왔으나, OECD DAC 에 가입한 선진 공여국들이 원조의 목적과 목표, 그리고 원조의 타입을 자세하게 보고하고 있기 때문에 원조의 배분을 섹터 별로 분석할 수 있게 되었다.

따라서, 본 연구에서는 2001 년부터 2011 년까지의 OECD CRS 데이터를 통해 OECD DAC 멤버 국가들의 기초교육에 대한 원조 배분에 대한 분석을 하였다. 다양한 원조의 분야 중에 교육분야를 선택하였고, 그 중에서도 모든 개발의 선행과제로 여겨지는 기초교육 분야 원조의 행태를 분석하였다. 기초교육분야는 교육 원조 전체의 2/3 를 차지하고 있으며 캐나다, 네덜란드, 노르웨이, 스웨덴, 영국, 미국이 주요 공여국으로서 이들 국가의 원조를 중심으로 살펴보았다.

연구의 목적이 단순히 배분 결정요인을 밝히는 것이 아니라, 원조 효과성 논의에서 강조되고 있는 목적이 이끄는(Aim-driven) 원조를 하고 있는지, 즉 수혜국의 필요가 원조 분배 결정요인에 영향을 미치는지 알아보는 것이기 때문에, 수혜국의 기초교육 필요 정도를 보여주는 '교육 환경' 변수를 형성하였다. 이것은 기존의 연구들이 주로 사용하였던 등록율에 졸업율과 청소년 문해율, 성인 문해율 그리고 남녀학생 비율을 더하여 평균값을 계산하였다. 위의 다섯 가지 지표로 국가의 교육 환경을 평가하는 것에는 분명한 한계가 있지만, 기존의 연구들은 보통 교육지표로 등록율만을 고집하였기 때문에 설명의 폭을 넓혔다는 데 의미가 있으며 많은 저소득 국가들의 교육 데이터 접근의 어려움으로 인해 더 많은 지표를 추가하는 것은 오히려 '교육 환경' 변수의 신뢰성을 떨어뜨릴 수 있다는 우려로 인해 다섯 가지 핵심 지표로 한정하였다.

분석은 두 가지 방법으로 진행되었다. 먼저 공여국의 기초교육 분야 원조와 수혜국의 교육환경간의 상관관계를 분석하였다. 부적상관관계가 높을수록 원조는 수혜국의 필요와 긴밀한 관계가 있다고 해석할 수 있다. 분석 결과 부적 관계를 가지고 있었으나 평균 상관계수가 0.3 미만으로

나타났다. 따라서, 원조와 수혜국의 필요간의 관계가 없지는 않으나 유의미한 수준이라고 할 수 는 없는 결과였다. 그러나 총 교육원조와 기초교육원조로 구분하여 분석하였을 때, 원조의 목적이 분명해질수록 수혜국의 교육원조 필요와 상관관계가 높아짐을 볼 수 있었다.

다음으로는 '교육 환경' 변수가 공여국의 기초교육 분야 원조 배분에 결정요인이 되고 있는지 회기분석을 통해 확인하였다. 그러나, 시간의 영향을 통제 한 것과 국가 영향까지 함께 통제한 것의 결과가 반대로 나타났기 때문에 선행연구에서 주로 사용되었던 OLS 방법으로 2001 년부터 2011 년까지의 데이터를 연도별로 분석하였다. 그 결과, 2007 년에만 수혜국의 필요가 결정요인으로 작용한 것을 확인할 수 있었고, 여섯 개의 주요 공여국 중에서 네 국가만이 영향을 받는 것으로 나타났다.

연구의 한계점으로는 첫 째, 데이터 수집의 어려움이 있었다. 특히 저소득국가나 분쟁지역 국가들은 교육 지표가 많이 결측된 경향이 있었기 때문에 연구 결과의 왜곡 가능성이 언제나 존재했다. 둘 째, 기초교육 원조의 경우 전체 50%이상의 원조가 프로젝트 타입으로

진행되었다는 점과, 실제 공여국의 총 교육원조 대 기초교육 비율이 심한 변동폭을 보였으며 주요 수혜국의 원조 수혜양의 변동 또한 상당한 수준이었음을 감안하였을 때, 원조의 타입이 결정요인에도 영향을 미칠 수 있는 가능성을 확인하였다.

따라서, 추후 연구에서는 기초교육분야 결정요인 분석이 프로젝트 타입 원조의 효과성 분석과 함께 진행된다면 관련 분야 원조의 효과성을 개선할 수 있는 중요한 지표가 될 수 있을 거라 생각한다.