



FOREIGN AID EFFECTIVENESS IN OIC MEMBER COUNTRIES: BEYOND ECONOMIC INDICATORS

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ABSTRACT

This paper examines whether official development assistance (ODA) is an effective tool for human development and progress of recipient OIC (Organization of Islamic Cooperation) member countries. The paper estimates the impact of aid on social indicators rather than on economic growth. It measures the impact of ODA classified by sectors on the components of Human Development Index (HDI): standards of living, life expectancy, and education indices. It controls for the magnitude of civil violence, population growth, foreign direct investment, income, urbanization and regime type; whether a regime is democratic or autocratic. It utilizes annual data between 2002 and 2015 for OIC member countries. Results indicate that ODA is an effective tool for human development, having a greater and a more efficient impact on human development than other development instruments included in the analysis. We also find that civil violence is a powerful deterrent of HDI. Based on these results, the paper suggests increasing ODA, particularly, to health and education sectors, and intensifying efforts to prevent and reduce civil violence as well as monitoring and managing post-conflict states to cope with the risk of relapsing into conflict.

JEL Classification: F35, I31

Key words: Development economics, Human development index, Official development assistance, Human development, Aid effectiveness

1. INTRODUCTION

One of the most controversial issues of the development literature

remains to be the question of whether aid is an effective tool for development of aid recipient countries. This study tries to contribute to a better understanding of the aid-development linkage by taking social indicators of development into account. It tries to answer the following questions: Is aid the proper tool for development in OIC (Organization of Islamic Cooperation) countries? And what forms of aid are the most effective to facilitate socio-economic development in OIC countries?

Implicative microeconomic studies have achieved influential conclusions regarding aid effectiveness. These studies have in common reported a positive association of aid with wellbeing of people by analyzing the impact of certain aid programs to the consumption or spending patterns of a group of beneficiaries.

There is, however, no consensus among macroeconomic researchers on the impact of aid on development. While discussions on aid and development continue to evolve, they have so far generated three streams of evidence: a negative even detrimental relationship (Easterly, 2014; Baland, Moene and Robinson, 2010; Meredith, 2006; Ayittey, 2005), a positive association but only contingent upon certain conditions, most notably amount of aid and policies of recipient countries (Burnside and Dollar, 2000; Collier and Dollar, 2001, 2002;; Svensson, 1999), and a positive association irrespective of the policy regime (Arndt, Jones and Tarp, 2015; Hansen and Tarp, 2000, 2001; Lensink and Morrissey, 2000; Guillaumont and Chauvet, 2001; Ram, 2004).

Such committed contemporary critiques of aid effectiveness as Easterly (2014) maintain that aid prevents recipient countries from developing independently and therefore using their potential in full capacity. Aid, moreover, serving as a source of untaxed and easy money, these critiques stress, promotes corruption and discourages a competitive environment. This view is further pushed by another strand of literature pointing that donor countries typically have strategic benefits for giving foreign aid, which in turn weakens both the donor's and the recipient's incentives for ensuring effectiveness outcomes; McGillivray, 2003; McKinley and Little, 1979).

Against these skeptical views, Sachs (2009) and Stiglitz (2002) asserted that historically aid has been too low to have a sensible positive economic impact. Accordingly, they suggest that increasing aid volumes can bring aid recipient countries up the sustainable development path.

While differing in analytical approach and reporting contradictory results, the macroeconomic research on aid

effectiveness has overtly focused on economic indicators most notably growth (i.e., GDP per capita). Growth, however, can increase even if resources are distributed unevenly as long as the elite and the middle class gain more than the poor lose. As such, economic indicators alone do not tell us whether overall quality of life, including that of the poor, advances along with aid.

Others have recognized this problem and underlined the importance of measuring aid effectiveness through social or welfare indicators, such as infant mortality rate, literacy rate, school enrolment, and access to water (Boone, 1996; Masud and Yontcheva, 2005; McGillivray and Noorbakhsh, 2007). The present paper builds on this growing body of work.

Nevertheless, the paper differentiates itself from this literature by not limiting itself to measuring a singular welfare indicator and studies instead the impact of aid on the unitary Human Development Index (HDI), which combines the social indicators of health, education, and standards of living, which aid addresses at the macroeconomic level (also see Kosack, 2003 and Hassoun, 2010 on HDI and aid).

Moreover, most studies on the aid-development linkage have applied a neoclassical theory, using total aid flows data. This is in part due to the difficulty of gathering information on received funds in detail and conduct macroeconomic research. We maintain an alternative approach and use official development assistance (ODA) classified by sectors. This approach would enable us to understand effectiveness of disbursements to all layers of different sectors in the recipient country. Moreover, as categorized by OECD based on the source and the grant element of aid, ODA has the highest grant element compared to the other types of aid and targets recipient needs rather than donor interest (OECD, 2008).

This paper contributes to the aid effectiveness literature by identifying the indicators directly influenced by ODA inflow so that the sum of these effects robustly can be attributed as a human development effect. At the same time, it allows to proposal of sector-specific policy recommendations. Unlike microeconomic studies, by studying HDI components, the paper can combine these indicators as an economic development indicator.

The paper has a specific focus on OIC member countries, which as a group have been understudied in the development literature although the OIC group is the largest development aid beneficiary. Representing a variety of geographical locations, the OIC group also provides a politically and culturally heterogeneous aid-recipient

sample.

The present paper extends on a previous version (for the first version, see Ishnazarov, 2016). Additionally, while most macroeconomic research focuses on economic institutions, the paper uses polity regime score and the score for magnitude and presence of civil violence as control variables. As such, it brings attention to the large influence of political institutions and context on aid (where aid ends up and how it ends up being used). A growing literature has reported significant differences between autocratic and democratic regimes in terms of aid effectiveness (Kosack, 2003; McGillivray and Noorbakhsh, 2007; Montinola, 2010). On the other hand, in the last decade or so, such influential scholars of development as Collier (1999, 2004), have been pointing out to the ‘conflict trap’ rather than poverty trap becoming the main hindrance to escape from poverty, arguing that civil war typically doubles the risk of further war, creating a vicious cycle of war and decline. This line of work also looked at linkages between conflict and HDI, finding that conflict significantly lowers HDI outcomes (Malapit, Clemente and Yunzal, 2010).

The present model has found that ODA has positive impact on each sub-index of HDI: education and health outcomes and standards of living, and that this impact is larger than the positive impact of government expenditure and GDP increase on HDI. The analysis also demonstrates that civil violence is a powerful deterrent of human development with negative affects across each sub-index of HDI.

Based on these results, we argue that aid is an effective instrument of development in the OIC group context, and we contend that (1) aid amount must be increased, and that (2) greater international effort should be given to not only prevention of civil violence but also to monitoring and management of post-violence contexts.

In the following we first discuss why ODA is a good indicator for aid-HDI analysis and briefly discuss ODA’s general distribution to OIC member states. The subsequent section reviews relevant empirical studies in the field. Section 3 presents data and methodology, and section 4 sets forth estimation results.

1.1 OFFICIAL DEVELOPMENT ASSISTANCE AND ORGANIZATION OF ISLAMIC COOPERATION COUNTRIES

According to the OECD, development resource flows into recipient countries through bilateral ODA, grants, concessional and non-concessional development lending by multilateral financial institutions, and other official flows (OOF), including, most notably,

refinancing loans, that are aimed at development, yet have too low of a grant element to qualify as ODA (OECD, 2008). Private flows, on the other hand, are flows at market terms and they are financed out of private sector resources and private grants.

ODA, an aggregate measurement of aid consisting of multiple types of aid including, among others, humanitarian aid and technical cooperation, is the only resource flow that qualifies as aid source with development assistance purpose only. For a flow to qualify as ODA, the main goal of aid must be promotion of economic development and welfare, and the work must be concessional with a grant element of at least 25% (see OECD, 2008). Furthermore, ODA must be provided by official agencies, namely, state and local governments, or, in the case of an organization, by related executing agencies. Despite existing plausible criticisms, ODA remains as the largest source of development aid allocated by developed states, such as the OECD Development Assistance Committee (DAC) member countries.

ODA constitutes a significant source of finance for and an instrument of development for OIC member countries. Founded in 1969, OIC is composed of 56 Muslim-majority member states, covering a heterogeneous geography including Sub-Saharan Africa (SSA), Middle East and North Africa (MENA), East Asia and Pacific (EAP), Latin America and the Caribbean, South America, Europe and Central Asia (ECA), and South Asia (SA).

Although OIC countries are significantly fewer in number than other aid recipient countries (more than two times less), they have been receiving almost 50% of total ODA between 2002 and 2013. Allocation of ODA differs across OIC by countries and regions in terms of intensity and type. During 2005-2013, SSA countries were the largest recipients of ODA among all OIC members, followed by the MENA countries. These regions were followed by SA and ECA regions (Ishnazarov, 2016).

The separation of ODA to areas of health and education from the total aid demonstrates the differentiated allocation of ODA in terms of the recipient sector and country. This differentiation is expected given that aid recipients are required to have well-established institutions and effective mechanisms already in place to oversee and ensure proper allocation of aid resources. More specifically, donor decisions are affected by the element of good governance, particularly the level of corruption and transparency in a given country. As such, among OIC member countries, the SSA region has not been a favorable destination for education and health aid, whereas SA and EAP countries have been favorable aid destinations (Ishnazarov,

2016). Nonetheless, overall, aid to both education and health sectors have increased substantially over the period observed. Aid for education has grown at a much higher rate than aid for health, and unlike other types of aid, growth in education aid to OIC recipients continued even during and after the global financial crisis in 2008.

2. EMPIRICAL LITERATURE REVIEW

The literature on aid's impact on development, particularly aid's relation to economic indicators and growth, has reported diverse and indeed contradictory results. Three meta-views have emerged since the late 1950s; those that have reported aid to be ineffective, those that have reported a positive relationship, and others that have argued that aid is effective contingent upon certain conditions, most notably recipient countries' policies and amount of aid.

For the skeptics, aid is not only ineffective for but can in fact be detrimental to development. This is because, many argue, aid has been typically used by regimes to consolidate power rather than being spent for productive purposes (Mesquita et al., 2003; Wintrobe, 1990; van de Walle, 2001). Boone (1995) asserts, for example that aid simply increases the size of the governments instead of increasing investment and growth or benefiting the poor. He maintains this finding across different regime types, which distribute resources differently: the elitist regime, which maximizes the welfare of the elite, the egalitarian regime which maximizes the welfare of a fixed group of citizens, and the *laissez-faire* regime, which maximizes the welfare of a minimum fraction of the population.

Studies on donor interest and aid effectiveness further push this line of thought arguing that aid is typically political in nature and therefore is vested in strategic interest. Bearce and Tirone (2010), for example, argue that when there is great interest, the donors cannot credibly enforce its conditions for reform; indeed, they may not even have such incentive because maintaining strategic interest would surpass productive outcomes. Similarly, aid would likely continue to flow even if the recipient fails to deliver development outcomes; in turn reducing the recipient's incentive to enact necessary policies and allowing it to spend the aid elsewhere - consider, armament rather than education. Epitomizing the skeptical view in contemporary literature, Easterly (2014) and Moyo (2010) have reported several negative impacts of aid, emphasizing particularly an increased dependency on aid and increased levels of corruption, in turn impoverishing the welfare of the average citizen.

Another stream of work, however, has found support for the idea that aid is effective albeit conditionally; most notably the relationship is contingent upon the recipient country's policies - given especially donor's weak influence on policy vector of the recipient (for more on this, see Svenson, 1999).

Pioneering this stream of work, Burnside and Dollar (2000) have found that aid flows strengthen economic growth in developing countries with good *fiscal*, *monetary*, and *trade* policies. Since this influential study, the evidence on aid's conditional effectiveness has been growing and also expanding in scope by the inclusion of more thorough indicators of political environment and government behavior, such as regime type as well as presence of violence and conflict.

Kosack (2003), Montinola (2010), and Svensson (1999), for example, have found that aid's effectiveness in promoting well-being is conditional upon the level of democratization in the recipient country. Kosack (2003) argues that aid will be effective in democracies, and not in autocracies and this result, he contends, '... stems from a general tendency of democratic governments to try to treat their people well or, at least, to treat them better (*ceteris paribus*) than do autocracies.' Montinola (2010), similarly, has found that multilateral aid has promoted fiscal reform, but only in more democratic countries, contending that this is in part due to democracies' survival being dependent on popular support:

"Svensson (1999), on the other hand, has measured aid effectiveness and political environment by looking at political and civil liberties and found aid to have a positive impact on growth in democratic countries, which have an institutionalized check on governmental power. When such democratic institutions as political parties, elected representatives, and free speech are absent, however, aid can easily be used to satisfy the government's own non-productive goals."

Paralleling these studies, others have shown civil violence to be a powerful barrier to development and HDI. Presence of civil violence drains resources necessary for human development through a multiplicity of interconnected channels. It disrupts food systems, contributes to infectious disease, disintegrates basic services in education and health and destroys the infrastructure and the labor force. Civil violence also undermines investments while diverting

resources from productive purposes to military and conflict related spending (Collier, 1999). Moreover, violence tends to breed more violence relapsing post-conflict countries into conflict, creating a violence trap.

Overall, the aid and political environment literature has made a strong case for the role that political conditions and contexts (both regime type and civil violence) play on the aid and growth relationship.

In addition to those who associate aid outcomes with political conditions and indicators, another line of research points to amount of aid as being a major condition. Representing this line of thought Stiglitz (2002) and Sachs et al. (2004) argue that it is not that aid is ineffective but that it needs to be much more substantial. Indeed, ODA has been making important contributions to development; however, it has not been substantial enough to put the recipient countries to path of independent growth. Sachs (2005), for example, estimates that developed countries need to commit 0.7% of their GNP to alleviate poverty through the channel of development aid. In his book “The End of Poverty”, he discusses “poverty traps” and prescribes the need for what he calls the ‘big push’. Kraay and Raddatz (2007) could not find proof to support the idea that foreign aid could help the recipient to break poverty traps. Nevertheless, they have found that aid has diminishing returns to scale: as countries get richer, the effect of aid diminishes. Thus, a small volume of aid, for example, to Sub-Saharan Africa may contribute to economic growth; while, in relatively better off recipients aid might not lead to a significant improvement.

The empirical literature on aid and development, while hosting opposing evidence, is challenged by some common setbacks, and the present paper will try to overcome some of these common setbacks.

First, the tangible part of foreign aid comes in the form of consumption goods and other substantial part is used for consumption rather than investment (Hansen and Tarp, 2000); as such, only a limited part of the total aid is used as investment. To address this issue, Arndt, Jones and Tarp (2015) proposed to analyze the impact of aid on such intermediate variables as physical capital investment, health service improvements, and poverty reduction at the micro level. However, it is rather difficult to relate microeconomic impacts, which foreign aid directly addresses, to a macroeconomic indicator such as growth (Mosley, Hudson and Horrel, 1987; Rajan and Subramanian, 2008). Put simply, while the impact of aid to the micro or mesa-level data can be reliably measured, combining these effects and attributing

them as a growth or development effect is at best questionable.

Second, most growth models have problems of endogeneity and omitted variable error. Such indicators commonly included in growth models as foreign direct investment, fixed capital formation, and trade volume are correlated. Either correlated variables should not be included in the same regression, or there should be strong instruments to control for endogeneity (see for example, Frankel and Romer, 1999; on geographical variables). Alternatively, one can apply dynamic panel GMM regressors. In the first-difference GMM estimator, lagged values of endogenous variables are used as instruments (Arellano and Bond, 1991). Blundell and Bond (1998) propose the system-GMM estimator, which includes first differences of lagged values of endogenous variables as instruments when just lagged values are not strong enough to eliminate endogeneity. Rajan and Subramanian (2008) applied different time periods, types of aid, sources of aid, and sample size in order to have robust estimations. They, furthermore, introduced unique instruments to overcome the endogeneity issue and they could not find any significant robust relationship between economic growth and aid inflow into the country.

Third, the literature, despite some exceptions, mainly measures aid effectiveness through analyzing the impact of development aid on economic growth. Following neoclassical growth theories, it constructs a model where aid serves as an additional financial capital to the economy. However, economic indicators alone do not tell us whether overall quality of life increases or poverty diminishes. This is most notably due to distribution: an increase in GDP does not automatically translate into increased welfare of most citizens (there are other issues that make GDP a problematic measure, such as hard to measure prices of goods and services, informal economy, and household spending; for a review see Stiglitz, Sen, and Fitoussi, 2010). Therefore, an alternative measurement of development to economic growth that can represent macroeconomic development level of a country must be identified.

To address this need, a growing stream of empirical work has adopted social indicators, such as infant mortality or water sanitation, and HDI. Masud and Yontcheva (2005), following Boone (1996), for example, tested the impact of aid on education and health; Masud and Yontcheva (2005) used infant mortality as a proxy for health and literacy rate as a proxy for education. Gomanee, Girma and Morissey (2005) used HDI, infant mortality, and public expenditures on social sectors. McGillivray and Noorbakhsh (2007), McGillivray (2003), Tamer (2013), and Kosack (2003) measured HDI and Toh and Kasturi

(2014) measured HDI in fragile state context. Huang and Quibria (2013) measured inequality-adjusted HDI, aid, access to water and sanitation, as well as school enrolment.

The present paper builds on the theoretical framework drawn by the abovementioned studies. Following these studies, we measure aid's effectiveness through social indicators; namely HDI-composed of three sub-indices: education, life expectancy, and standard of living. We argue that HDI can better reflect real improvements in the conditions of the poor than growth and poverty indicators. We also argue that having three key components or dimensions of development (health, education, and standard of living) HDI gives more robust measurements than studies that include a singular component of development or fewer dimensions than HDI provides. For example, Masud and Yontcheva (2005) use infant mortality and literacy rate, but these social indicators alone cannot represent the development level of a country. Moreover, illiteracy rate is not a proper indicator of education level for all countries. While it works for countries and sub-regions where aid is more exclusively allocated for decreasing illiteracy, in countries and sub-regions where literacy is already high and even close to developed country levels, such as Europe and Central Asia (ECA), aid is rather allocated to attain more complex educational goals, such as modernizing the educational system (Ishnazarov, 2016).

The paper, as such, differentiates itself by separating aid into sectors (aid targeted for education or health) and examining the effects of sector-specific aid on separate sub-indices of HDI (e.g, effect of education aid on the education sub-index of HDI).

3. METHODOLOGY AND DATA

The majority of aid-growth models are built on the framework of Solow growth theory. In the Solow growth model, key factors of development are capital and labor. According to this model, aid has a secondary impact on economic growth as an additional unit of capital, which undermines the direct impact of aid on development. We maintain, instead, that primary indicator of aid's effectiveness should be the direct impact of aid on social issues which aid intends to address, such as education and health.

As previously discussed, a growing literature proposes to use HDI when measuring the level of development of a country. According to UNDP Human Development Reports, "The HDI was created to emphasize that people and their capabilities should be the

ultimate criteria for assessing the development of a country, not economic growth alone” (UNDP, 2014). The HDI is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable, and having a decent standard of living.”

As HDI covers three sub-indices, each corresponding to a key dimension of development, it is expected that HDI to not only provide a more comprehensive picture of development when compared to income level only, but also to give relatively more robust measurements when compared to studies that cover a singular dimension of development or cover fewer dimensions than provided by HDI. Most importantly, however, using HDI allows aggregating the impact of aid on separate social indicators onto the overall development impact.

This study uses only ODA data as an indicator of aid because OOF and private flows mainly serve commercial purposes, even when they target development. Alesina and Dollar (2000) showed that during the Cold War the donors gave more aid to those recipients with which they had longer colonial ties. Political goals may also underline ODA; however, ODA’s key purpose always remains to be development assistance.

Through different variants of (1) below, we will investigate the appropriateness of ODA as an instrument to boost development:

$$(1) \quad HDI_{ijt} = \beta_0 + \beta_1 HDI_{ijt-1} + \beta_2 \ln ODA_{ijt} + \beta_3 \ln GDPpc_{it} \\ + \beta_4 gov_{it} + \beta_5 popgrowth_{it} + \beta_6 FDI_{it} \\ + \beta_7 urban_{it} + \beta_8 polity_{it} + \beta_9 civviol_{it} + e_{it}$$

where:

HDI_{ijt} :HDI index j of country i at time t ; j =life expectancy, education, and standards of living

$\ln ODA_{ijt}$:Log of ODA in sector j of country i at time t

$\ln GDPpc_{it}$:Log of GDP per capita of country i at time t

gov_{it} :Government expenditure on health as percentage of GDP of country i at time t

$popgrowth_{it}$:Population growth of country i at time t

FDI_{it} :FDI percentage of GDP of country i at time t

$urban_{it}$:Percentage of urban population of country i at time t

$polity_{it}$:Political regime score of country i at time t ; 10 = full democracy, -10 = full autocracy

$civviol_{it}$:Civil violence score of country i at time t ; magnitude of the episode(s) of civil violence

The level of economic development is represented by GDP per capita in current prices. Economic development level cannot give full information about human development; yet, it plays a key role in that.

FDI and population growth represent physical and human capital as used in most of the growth models. With urbanization, people tend to have better access to education, health and other basic services; however, urbanization also brings with it slums and shanty towns deepening existing socio-economic inequalities – especially for the very poor.

Government efforts to promote human development are measured by the health expenditures share in the GDP. As development goals in this sector can be achieved by governments' independent effort, such independent efforts should be separated from development aid impact. All three above listed indicators are gathered from the World Bank's World Development Indicators.

Presence of armed conflict and violence limits any type of development, particularly, if it is state level violence against civilians. Due to ongoing armed conflicts, many OIC member countries cannot utilize their economic, natural, and human resources to full capacity. The earlier paper (Ishnazarov, 2016) used Upset Conflict Dataset data for determining intensity of the conflict, and classified intensive armed conflict as those that lead to at least 1000 deaths in that year. The current version, however, provides a more comprehensive picture about presence of violence by using the indicator of presence and magnitude of civil violence from the Center for Systemic Peace, Major Episodes of Political Violence, 1946-2015 dataset. The *civviol* indicator is measured in an 11-point scale, where 0 means no violence and 10 represents extreme state level civil violence.

The polity index is from Polity IV data set, which includes constructed annual measures for both democracy (DEMOC) and autocracy (AUTO). Each measure is an eleven-point scale (0–10); a ten in DEMOC refers to a full democracy and similarly a ten in AUTO refers to a full autocracy. A third indicator, *polity*, is then derived simply by subtracting AUTO value from DEMOC value; in this way, a single regime score is achieved, ranging from 10 (full democracy) to negative 10 (full autocracy).

It is now widely acknowledged that political institutions and regime type have a substantial impact on aid spending mechanisms (where aid ends up and how it ends up being used), thereby influencing aid effectiveness. Works on the link between political institutions (and government behavior) and aid have agreed in common that

democracies and autocracies significantly differ from each other when it comes to aid and development outcomes.

In this paper, annual data for the period between 2002 and 2015 for the OIC member countries is used. System-GMM model has been found appropriate as an estimation technique. GMM estimator allows dealing with estimation errors commonly observed in dynamic models including endogeneity and omitted variable error (Arrelano and Bond, 1991). System-GMM allows eliminating estimation errors caused by endogeneity more strongly compared to alternative techniques such as first-difference GMM model (Arrelano and Bover, 1995; Blundell and Bond, 1998). For example, possible correlation between GDP per capita and FDI as well as political regime and civil violence might cause criticism in the robustness of the estimation results if a simpler technique is employed. State level civil violence, for example, is typically witnessed across the autocratic regimes. We further minimize estimation errors by using natural logarithmic values, index values, and growth rates of the indicators in the estimations.

3.1 LIFE EXPECTANCY AND EDUCATION INDICES:

The objective here is to measure the impact of aid on health and education components of the HDI. Data on the HDI and its dimensions are accessible through UNDP Human Development Reports, available on a yearly basis since 2005. In order to have HDI values for the period from 2002 to 2015, we have calculated HDI based on the current methodology the UNDP adopted since 2010.

HDI index is composed of the three indices; life expectancy index, education index, and standards of living index. There are pre-determined minimum and maximum values that transform normal values into a standard index form. Indices can take values from a minimum of 0 and maximum of 1 (for more on information on minimum and maximum values, see UNDP, 2016).

4. RESULTS

Table 1 summarizes the results from system-GMM model estimations and presents relationships between ODA and HDI health index, HDI education index, and HDI income index.

Lagged value of the corresponding HDI indices are presented in the first line. It shows that one period lag of HDI is statistically strong at the 99.9% confidence level. It can predict 92%, 97% and

98% change in the HDI values of this year. It shows that our model is dynamic and the GMM model was chosen correctly as it is proven to be one of the most reliable estimation techniques for dynamic equations. Furthermore, given that HDI is not very volatile or not changing at a radical increase or decrease (see methodology section for details), it may take several years to achieve a one point increase.

Overall, results of the 3 estimations together tell the positive answer to the main question of the paper, whether the ODA is an effective instrument to lead the recipient OIC countries to development.

TABLE 1
System-GMM Estimations on ODA and HDI Indices

	HDI Health Index	HDI Education Index	HDI Income Index
HDI _{t-1}	0.9655*** (352.96)	0.9174*** (33.192)	0.9783*** (63.387)
ln ODA _j (j = health, education, income)	0.0002** (2.01)	0.0043* (1.951)	0.0012* (1.802)
ln GDP per capita	0.0023*** (9.671)	0.0045* (1.916)	
Gov. spending on health	0.0010*** (11.643)		
Population growth	0.0013*** (9.253)	-0.0056*** (-3.161)	-0.0007 (-0.946)
FDI share in GDP	0.0001*** (3.060)	0.0004*** (3.208)	-0.0001 (-0.291)
Urban population		0.0001 (0.452)	0.0002 (1.757)
Polity index	-4.3906 (-0.118)		-0.0002 (-1.066)
Civil violence	-0.0014** (-1.977)	-0.0093** (-1.970)	-0.0103*** (-2.647)
N	533	176	479
Sargan	1257.913	67.381	168.947

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Number in parentheses are t -statistics.

4.1 ODA AND HDI HEALTH INDEX

Aid to the health sector has statistically strong positive impact on the HDI health index in OIC countries. Quantitatively, a one percent increase in the ODA to health sector leads to 0.0002 points increase in the health component of HDI. It is significant as the yearly change in

the index values is around 0.001 points.

On the other hand, one percent change in the GDP per capita and government efforts are associated with 0.002, and 0.001 points change in the HDI health index values. These findings are statistically significant at the 99.9% confidence level. Importantly, however, while quantitatively, one unit change in these indicators has higher impact compared to the ODA to health, this is simply because ODA and government efforts, the share of government expenditure in the total GDP, represent extensively different amounts in financial (dollar) terms. Hence 1% of ODA is significantly less than 1% of expenditures in the health sector (% in GDP) or 1% of GDP. When we consider the ratio (amount to impact), we see that ODA is significantly more efficient in tackling health issues compared to government expenditure.

Population growth and FDI are found to have positive impacts on the HDI health index at the 99.9% and 99% confidence levels. The positive relationship between population growth and HDI health index does not indicate that population growth leads to improved health. Rather, both population growth and improved life expectancy have been results of simple developments in the health sector. An improved health sector leads to higher population growth rate as more lives are saved.

Civil violence has a negative impact on HDI health index in OIC countries. Civil violence can impede the achievement of health through causing a web of interrelated damages that reinforce one another. Violence disrupts the entire social fabric of society, destroys infrastructure (transportation and power, the water and food supply, access to medical care), displaces people, and affects the health care sector and programs. Even more, it drains human, financial, and other resources away from more productive activities leaving health needs unmet in the post-conflict stage as well (see Levy and Sznajder, 2002, for a detailed discussion).

4.2 ODA AND HDI EDUCATION INDEX

ODA to education has strong positive impact on the HDI education index in OIC countries. According to the results a one percent increase in the ODA allocation to the education sector can lead to a 0.004 point rise in the HDI education index. This result is significant at the 90% confidence level.

Higher per capita income also positively affects the education index in OIC countries. This is a typical result that would be expected,

where per capita income increases, for typically with higher income levels, people tend to spend more on education as well as health services. This finding is also significant at the 90% confidence level.

Neither positive nor negative impact of urbanization has been revealed, while population growth has a strong negative relationship with the education index. This can largely be accounted by the fact that both the capacities of educational institutions and the human and financial resources that can provide education services are not growing at the same pace with population growth, creating a gap. Thus, higher number of population means less people are provided with education. Furthermore, as the number of school-aged population increases, the working age population becomes less able to carry the full burden of the non-working population by itself. This pressure might cause a growing number of out of school children being employed in the formal and informal sectors, further preventing their educational enrollment.

Civil violence has a statistically strong negative impact on education at the 95% confidence level. A one percent increase in the magnitude of civil violence can lead to drop of 0.009 points in the HDI education index. Birth cohort studies in country case studies have clearly established this link: exposure to political violence reduces years of education both for boys and girls (for examples, see Diwakar, 2015; Leon, 2012).

4.3 ODA AND HDI INCOME INDEX

It is impossible to extract the part of aid that directly addresses standards of living from total aid. Thus, a theoretical framework for the estimation is based on the neoclassical growth theories can be utilized. Particularly, according to Sachs (2005) with required amount of foreign aid, as additional capital influx to the economy, developing countries can start on the economic development path. Our findings put forward that ODA has a positive economic impact that leads to improvements in standards of living of population. Although population growth and urbanization are generally accepted as import determinants of economic development, these factors are not as efficient as ODA in targeting that layer of the population who are most in need.

Civil violence has quantitatively a very strong negative impact on standards of living. The presence of violence is related with around 0.01 units decrease in standards of living. This is not startling at any rate. Civil violence by causing comprehensive losses across key

sectors of society, from draining of resources and destruction of transportation and infrastructure to creating a constant security threat produces both short- and long-term and direct and indirect negative effects on economic development and standards of living.

5. CONCLUSION AND FINAL REMARKS

Whether contemporary ODA strategies are effective to lead aid recipient countries toward the development path has been a contentious question. While micro level studies could reveal the positive impact of aid toward development of specific targets, it is difficult to refer these impacts as a development impact at the country level.

On the other hand, measuring total aid impact on economy as additional financial capital inflow can assess only secondary impact of aid. Thus even very influential studies could not fully prove positive development effect of aid.

Our results indicate that ODA has significantly contributed to improving the education and health indices as well as the standards of living across the OIC countries.

Together all three estimations demonstrate that aid has been an effective instrument for boosting human development in OIC member countries. We have also found that the positive impact of aid is larger than the positive impact of government expenditures, foreign direct investment and general economic development on HDI.

Another important finding is that civil violence has strong negative relationships with each sub-index of HDI; violence reduces health and education outcomes as well as standards of living.

On the other hand, polity score (autocracy versus democracy) gave statistically insignificant results in our analysis. This may be related to democracies being unable to ignore popular demands for the survival of incumbent depends on popular support (Huntington, 1968). Trying to deliver better living conditions than autocracies, democracies may tend toward instant consumption and greater spending on social programs preventing long-term investment (Brown and Hunter, 1999). In the context of the OIC group, where resources are limited and democracies are fragile, marked by political instability, democracies may not have enough resources to turn investments into noticeable increases in development. In fact, this line of thought would lead us to reinforce the argument that aid is effective but its amount must be substantial enough. Moreover, countries with electoral democracy do not necessarily ensure cultural and institutional

dimensions of democracy, such as free press and civil rights. As such, one future research direction could be inquiring democracy and aid linkage through more sensitive indicators, such as civil liberties.

Overall, based on our results, we support the proponents of aid and suggest that aid is an effective instrument of development. We also contend that, in line with Sachs (2009) and Stiglitz (2002), for aid to have a substantial positive impact its amount should be increased.

The paper contributes to discussions on aid and development by adopting a unique methodology. It identifies indicators directly influenced by ODA inflow and thereby the sum of these effects can be robustly attributed to a human development effect at macroeconomic level. Additionally, it adds to the literature that takes both social indicators and political institutions and context into account, highlighting that a thorough understanding of development requires a comprehensive approach going beyond a mere focus on economic indicators. Finally, by focusing on the OIC group, it sheds lights on an understudied sample, a sample uniquely positioned as the greatest beneficiary of aid.

In terms of policy implications, the paper suggests that greater and more serious international effort should be given to prevention and reduction of civil violence. Such efforts must also include monitoring and managing post-conflict states for civil violence barely settles grievances, but rather increases the risk of relapsing into conflict.

REFERENCES

- Alesina, A. and D. Dollar. "Who Gives Foreign Aid to Whom and Why?" *Journal of Economic Growth* 5, no. 1 (2000): 33-63.
- Arndt, C., S. Jones, and F. Tarp. "Assessing Foreign Aid's Long-Run Contribution to Growth and Development." *World Development* 69 (2015): 6-18.
- Arellano, Manuel, and S. Bond. "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations." *Review of Economic Studies* 58, (1991): 277-98.
- Arellano, Manuel, and Olympia Bover. "Another Look at the Instrumental Variable Estimation of Error-Components Models." *Journal of Econometrics* 68, no. 1 (1995): 29-51.
- Ayittey, G.B.N., *Africa Unchained: The Blueprint for Africa's Future*. London: Palgrave-MacMillan, 2005.

- Bearce, D.H., and Tirone, D.C. "Foreign Aid Effectiveness and the Strategic Goals of Donor Governments." *The Journal of Politics* 72, no. 3 (2010): 837-51.
- Baland, J.M., K.O. Moene, and J.A. Robinson. "Governance and Development." *CRED Working Papers* 7 (2010): 1-90.
- Blundell, R., and S. Bond. "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models." *Journal of Econometrics* 87, no. 1 (1998): 115-43.
- Boone, P. "Politics and the Effectiveness of Foreign Aid." *European Economic Review* 40, no. 2 (1996): 289-329.
- Brown, D.S., and Hunter, W. "Democracy and Social Spending In Latin America, 1980-92." *American Political Science Review* 93, no. 4 (1999): 779-90.
- Burnside, C., and D. Dollar. "Aid, Policies, and Growth." *American Economic Review* 90, no. 4 (2000): 847-68.
- Collier, P. "Development and Conflict." Centre for the Study of African (2004): 1-12.
- . "On The Economic Consequences of Civil War." *Oxford Economic Papers* 51, no. 1 (1999): 168-83.
- , and D. Dollar. "Aid Allocation and Poverty Reduction." *European Economic Review* 46, no. 8 (2002): 1475-500.
- . "Can the World Cut Poverty in Half? How Policy Reform and Effective Aid Can Meet the International Development Goals." *World Development* 29, no. 11 (2001): 1787-802.
- Diwakar, V. "The Effect of Armed Conflict on Education: Evidence from Iraq." *The Journal of Development Studies* 51, no. 12 (2015): 1702-18.
- Easterly, W. *The Tyranny of Experts: Economists, Dictators, and The Forgotten Rights of the Poor*. New York: Basic Books, 2014.
- Frankel, J.A., and D. Romer. "Does Trade Cause Growth?" *American Economic Review* 89, no. 3 (1999): 379-99.
- Gomanee, K., S. Girma, and O. Morrissey. "Aid, Public Spending and Human Welfare: Evidence from Quantile Regressions." *Journal of International Development* 17, no. 3 (2005): 299-309.
- Guillaumont, P., and L. Chauvet. "Aid and Performance: A Reassessment." *Journal of Development Studies* 37, no. 6 (2001): 66-87.
- Hansen, H., and F. Tarp. "Aid Effectiveness Disputed." *Journal of International Development* 12, no. 3 (2000): 375-98.
- . "Aid and Growth Regressions." *Journal of Development Economics* 64, no. 2 (2001): 547-70.

- Hassoun, N. "Empirical Evidence and the Case for Foreign Aid." *Public Affairs Quarterly* 24, no. 1 (2010): 1-20.
- Huang, Yongfu, and M.G. Quibria. "The Global Partnership for Inclusive Growth." *United Nations University – World Institute for Development Economics Research (UNU-WIDER) Working Paper* 2013-059 (2013).
- Huntington, S.P. *Political Order in Changing Societies*. New Haven: Yale University Press, 1968.
- Ishnazarov, D. "Aid Effectiveness in OIC Member Countries." *Journal of Economic Cooperation and Development* 37, no. 4 (2016): 149-76.
- Kraay, A., and C. Raddatz. "Poverty traps, aid, and growth." *Journal of Development Economics* 82, no. 2 (2007): 315-47.
- Kosack, S. "Effective Aid: How Democracy Allows Development Aid to Improve the Quality of Life." *World Development* 31, no. 1 (2003): 1-22.
- Leon, G. "Civil Conflict and Human Capital Accumulation the Long-Term Effects of Political Violence in Perú." *Journal of Human Resources* 47, no. 4 (2012): 991-1022.
- Lensink, R., and O. Morrissey. "Aid Instability as a Measure of Uncertainty and the Positive Impact of Aid on Growth." *Journal of Development Studies* 36, no. 3 (2000): 31-49.
- Levy, Daniel, and Natan Sznaider. "Memory unbound: The Holocaust and the formation of cosmopolitan memory." *European Journal of Social Theory* 5.1 (2002): 87-106.
- Malapit, H.J.L., T.S. Clemente, and C. Yunzal, "Does Violent Conflict Make Chronic Poverty More Likely? The Mindanao Experience." *Philippine Review of Economics* 40, no. 2 (2010): 31-58.
- Masud, N., and B. Yontcheva. "Does Foreign Aid Reduce Poverty? Empirical Evidence from Nongovernmental and Bilateral Aid." *IMF Working Paper* WP/05/100 (2005).
- McGillivray, M., and F. Noorbakhsh. "Aid, Conflict and Human Development." *Working Papers, Business School - Economics, University of Glasgow* (2007).
- McGillivray, M. "Aid Effectiveness and Selectivity: Integrating Multiple Objectives into Aid Allocations." *United Nations University – World Institute for Development Economics Research (UNU-WIDER) Discussion Paper* 2003/71 (2003).
- McKinley, R. D., and R. Little. "The US Aid Relationship: A Test of the Recipient Need and the Donor Interest Models." *Political Studies* 27, no. 2 (1979): 236-50.

- Meredith, M. *The State of Africa. A History of Fifty Years of Independence*. New York: The Free Press, 2006.
- Mesquita, B.B., A. Smith, R.M. Siverson, and J.D. Morrow. *The Logic of Political Survival*. London: The MIT Press, 2003.
- Montinola, G.R. "When Does Aid Conditionality Work?" *Studies in Comparative International Development* 45, no. 3 (2010): 358-82.
- Mosley, P., J. Hudson, and S. Horrel. "Aid, the Public Sector and the Market in Less Developed Economies." *The Economic Journal* 97, no. 387 (1987): 616-41.
- Moyo, D. *Dead Aid: Why Aid Makes Things Worse and How There Is Another Way for Africa*. London: Penguin Books, 2010.
- OECD (2008). "Is It ODA." Factsheet. <http://www.oecd.org/dac/stats/34086975.pdf>
- Rajan R.G. and A. Subramanian. "Aid and Growth: What Does the Cross-Country Evidence Really Show?" *The Review of Economics and Statistics* 90, no. 4 (2008): 643-65.
- Ram, R. "Recipient Country's 'Policies' and the Effect of Foreign Aid on Economic Growth in Developing Countries: Additional Evidence." *Journal of International Development* 16, no. 2 (2004): 201-11.
- Sachs, J. *The End of Poverty: Economic Possibilities for Our Time*. New York: Penguin Press, 2005.
- . "Aid Ironies." *Huffington Post*, May 24, 2009.
- , J.W. McArthur, G. Schmidt-Traub, M. Kruk, C. Bahadur, M. Faye, and G. McCord (2004), "Ending Africa's Poverty Trap." *Brookings Papers on Economic Activity* 1, (2004): 117-240.
- Stiglitz, J. *Globalization and Its Discontents*. New York: W.W. Norton, 2002.
- , A. Sen, and J.P. Fitoussi. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Paris: Commission on the Measurement of Economic Performance and Social Progress, 2010.
- Svensson, J. "Aid, Growth and Democracy." *Economics & Politics* 11, no. 3 (1999): 275-97.
- Tamer, Christina R. "The Effects of Foreign Direct Investment and Official Development Assistance on the Human Development Index in Africa." Master's Thesis, University of Massachusetts, 2013.

- Toh, Kiertisak, and Prahlad Kasturi. "Rethinking Foreign Aid for Fragile States." *Journal of Economics and Development Studies* 2, no. 4 (2014): 31-43.
- United Nations Development Programme (UNDP). Human Development Reports, various years.
<http://hdr.undp.org/en/content/human-development-index-hdi>
- . Human Development Report 2014: Sustaining Human Progress Reducing Vulnerabilities and Building Resilience Technical Notes:
http://hdr.undp.org/sites/default/files/hdr14_technical_notes.pdf
- . Human Development Report 2016: Technical notes Calculating the human development indices—graphical presentation
http://hdr.undp.org/sites/default/files/hdr2016_technical_notes.pdf
- van de Walle, N. *African Economies and the Politics of Permanent Crisis, 1979-1999*. Cambridge: Cambridge University Press, 2001.
- Wintrobe, R. "The Tinpot and the Totalitarian: An Economic Theory of Dictatorship." *American Political Science Review* 84, no. 3 (1990): 849-72.