

Official Development Assistance and its Impact on Governance in short term: The Threshold theory

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Resume

This paper is part of a perspective on the Official Development Assistance (ODA) as a means of international cooperation, and its impact on governance in the beneficiary developing countries in short term.

For several years, governance has emerged to the surface of the economic debate as a central concept in the international economy, as it reflects the improvement of the socio-political environment; this environment should help support economic growth rate recorded in developing countries and preserve their human development. Mainly since several authors, such as: Burnside and Dollar¹ (2000), Hansen and Tarp² (2001), emphasize that ODA improves economic growth only in developing countries with a healthy political and economic environment.

This article is based on the work of Stephen Knack³ (1999); the author was able to demonstrate that the aid granted to developing countries is harmful. In fact, the funds allocated by donors deteriorate governance in beneficiary countries. Knack (1999) went further to study samples from the studied basket through arbitrary determination of thresholds, e.g.: countries receiving aid > 5%, African countries, spaces that have a GDP per capita < \$ 2000.... Despite this segmentation of the studied basket Knack reached the same conclusions mentioned above, proving a negative impact of aid on governance in recipient countries, because of opportunities for corruption in the disbursement of funds.

This article is based on a solid econometric methodology for the determination of aid thresholds with respect to its impact on governance in developing countries. In this paper, I selected a basket comprising the Arab and sub-Saharan African countries, and I have distinguished between the short term and long term impacts of aid.

JEL classifications: development economic, governance, foreign aid, growth, threshold.

Introduction

For several years, governance has emerged to the surface of the economic debate as a central concept in the international economy, since it reflects the improvement of the socio-political environment; this environment should support economic growth rates recorded in the developing countries and to preserve their human development. Especially since several authors, such as: Burnside and Dollar⁴ (2000), Hansen and Tarp⁵ (2001), emphasize that ODA improves economic growth only in developing countries with a healthy political and economic environment.

I - The importance of governance in the economy

Governance is a new concept that has emerged in recent years as the key to sustainable human development, in fact its impact to improve the socio-political environment in developing countries, which require international cooperation with aid donors. But given its complexity, pinning down governance to a single definition is a challenge.

¹ Burnside et Dollar (1997), "Aid, Policies and Growth", Policy Research paper 1777, World Bank.

² Hansen Henrik et Finn Tarp (2000), "Aid effectiveness disputed", journal of international development, April, 12:3, pp: 375 – 398.

³ Stephen Knack (1999), "Aid dependence and the quality of governance: A cross country empirical analysis", IRIS University of Maryland.

⁴ Burnside et Dollar (1997), "Aid, Policies and Growth", Policy Research paper 1777, World Bank.

⁵ Hansen Henrik et Finn Tarp (2000), "Aid effectiveness disputed", journal of international development, April, 12:3, pp: 375 – 398.

I - 1 - The definition of governance

According to UNDP, governance is described as complex depending on the interaction between several concepts and economic policies through which civil society contributes to projects' planning. According to this institution, good governance is manifested by participation, transparency, effectiveness and rule of law.

The World Bank, however, has used a definition that is based on the following concepts: "the management of public resources, accounting, legal framework, free information and transparency." So, for this organization, governance can be defined as "the manner in which the management of social and economic resources of a country is exercised, in order to ensure a strong and equitable development and a necessary complement to healthy economic policies"⁶.

Other authors as Smouts⁷ consider governance as based on concepts related to good governance: "Good governance implies a rule of law, good administration, transparency and accountability of political leaders to their people".

I - 2 - Governance and its effect on economic growth

Governance is a concept that can influence economic growth through the creation of a favorable climate for public and private investment. Poor governance is harmful for it creates a risk-prone environment. The effects of bad governance on the economy of the developing countries can be summarized in the following three areas:

1. Poor governance deprives the State of enormous financial resources such as income tax, which deteriorates the well-being of people who are deprived of public services and basic infrastructure, such as health and education.
2. Corruption can affect the judicial system and other public institutions, create a risk-prone environment because of inadequate protection of individuals' rights and businesses. Therefore, the decisions of foreign investors can be seriously affected and they will be reluctant to move in such an environment.
3. Poor governance discourages economic integration with foreign partners, it may constitute a regional threat to countries that maintain economic and trade relations with a partner who is having poor governance; which can take several forms: nepotism, corruption, absenteeism...

II - Official Development Assistance and its impact on governance

The present work is having two parts: the first part will elucidate the impact of aid on the level of governance; the second one will help to investigate the effect of aid on the change in governance. In the present work, I will focus on determining the impact of ODA on governance, while relying on the work of Stephen Knack⁸, concerning the effect of using the variable ICRG (International Country Risk guide).

In this empirical work, I will be adding the study of the effect of aid on governance in the recipient developing countries, using the algorithm developed by Bruce Hansen⁹ to determine from which threshold the impact of aid on governance changes. In this article, I will try to determine the effect of a threshold of ODA on governance in the short and medium term.

II - 1 - The work of Stephen Knack

The author, in his works, draws upon recent results of other researchers interested in the relationship between aid and economic growth, as in the case of Burnside and Dollar who concluded that aid can only be beneficial in countries that show good institutional reform and sound economic policies.

In his article, Stephen Knack has developed an econometric model using a panel to try to determine the impact of aid on governance of recipient countries, with the expectation that there is a negative relationship between these two variables. The Empirical work developed by Knack is based on the following ideas in favor of negative impact of received aid on governance:

⁶ Ana Isabel Barrau Calvo (2003), "Conditionnalités de l'aide publique au développement: Analyse comparative à trois échelons de gouvernance (Lleida, Catalogne, Espagne)", Série "Master of Science" n°54.

⁷ Ana Isabel Barrau Calvo (2003), "Conditionnalités de l'aide publique au développement: Analyse comparative à trois échelons de gouvernance (Lleida, Catalogne, Espagne)", Série "Master of Science" n°54.

⁸ Stephen Knack (1999), "Aid dependence and the quality of governance: A cross country empirical analysis", IRIS University of Maryland.

⁹ Bruce Hansen (2000), "Sample splitting and threshold estimation", *Econometrica* 68 (3).

- Massive flows of aid can have negative effects on economic growth in recipient countries, affecting the competence of institutions and increasing corruption and application of inappropriate economic policies.
- The flow of aid can have a positive impact on economic growth in recipient countries, if they already have a good level of governance in their institutions, allowing them to rapid and sustained economic growth.
- Massive flows of aid may weaken government accountability in the recipient country ("accountability" the duty of giving an account of something), through delaying the development of civil society that should be based on the principles of democracy and the rule of law. Especially since this government accountability may be the key to continued growth of democratic governance in all countries.
- With significant levels of aid, recipient countries will be forced to be accountable to donors, while they do not give the right to their taxpayers, which affects the credibility of the government.
- The allocation of aid may weaken the quality of public services, especially as donors call upon experts who receive them in their countries after being hired at very important wages.

$$ICRG = Cste + \alpha ICRG_0 + \beta \frac{\Delta PIB_{part\acute{e}te}}{PIB_{part\acute{e}te\ initial}} + \delta \frac{\Delta population}{population\ initial} + \lambda A\ ide + \varepsilon_t$$

In his study, Knack evaluated two econometric models: the first focuses on the impact of aid on governance, the second focuses on the effect of the financial support of donors on the change in governance. The first model assessed by Stephen Knack, can be presented in the following equation:

II - 2 - Results found by Stephen Knack:

After the estimation of the first above-mentioned model, Stephen Knack found very interesting results, which agree with his reasoning and intuition on the impact of aid on governance. The author used two different methodologies to elucidate the impact of aid on governance, namely: ordinary least squares "OLS" and the instrumental variables (IV) method and Knack led to the same conclusions.

i) - The impact of aid on governance:

The results of the author with OLS are presented in the following table:

Equation	1	2
The method used	OLS	
The dependent variable	ICRG index	
The aid variable	aid/GNP	aid/dep.gov
Constant	8.475 (0.984)	8.535 (1.051)
initial ICRG	-0.77 (0.083)	0.74 (0.087)
Change in population/ initial population	-0.64 (1.837)	0.027 (1.933)
Change in GDP per capita	2.027 (0.748)	1.231 (0.801)
Aid	-0.067 (0.021)	-0.027 (0.01)
N	80	68
R ² adjusted	55%	54%

Table n°1¹⁰: The impact of aid on governance according to the works of Stephen Knack.

Interpretation:

From the results presented above, we can deduce the following conclusions:

- A country whose initial ICRG is one point higher compared to another place has decreased approximately equal to ¼ in its governance.

¹⁰ The figures in brackets are student errors and not t-statistics

- A change in the population has no statistically significant impact on governance.
- An increase in GDP per capita has the effect of improving the level of governance; this variable has a positive and statistically significant impact on this indicator, especially considering the variable aid / GDP as an explanatory variable.
- Aid has an adverse effect on the level of governance in the recipient country, this variable has a negative and highly significant coefficient, and this is proved in the two studied equations.
- According to the coefficient of aid in Equation 1, an increase of 15 points in financial aid leads to a deterioration of a point in the governance represented by the ICRG variable.
- According to the results of equation 2, an increase in aid of 35 points over government spending implies a decrease of one point in the ICRG variable. Despite the weakness of the coefficient on aid, this cannot be denied that it is negative and statistically significant.

ii) - The impact of aid on the change in governance: a study of sub-samples:

This part of the work will present the results found by Knack on the impact of aid on the change in governance, taking into account only the sub-samples of the studied basket. It seems that the author wanted to determine a threshold of underdevelopment which shows that aid would be harmful to the developing countries.

Among the constraints imposed arbitrarily by the author, we note that it has opted for the following variables and thresholds:

- The population > 1 million inhabitants
- GDP <\$ 4000
- GDP <\$ 2000
- Aid / GNP > 5%
- Aid/ government spending > 15%
- The non-socialist countries
- African countries

In this model, the author used two estimation methods are OLS and IV. Despite the use of these two estimation methods, this did not influence the results. Instead, the author came to the same conclusions about the impact of aid on the change of governance in developing countries receiving financial aid.

The results for this model are presented in the following table; they do not express the impact of aid on the change of governance:

Aid variable used	Aid / PNB	Aid / GVT expenses
Method used	MCO	MCO
Without sampling	-0.079 (0.021)	-0.029 (0.009)
Population > 1 million	-0.077 (0.025)	-0,039 (0,011)
GDP < 4000\$	-0.063 (0.021)	-0,026 (0,01)
GDP < 2000\$	-0.064 (0.021)	-0,023 (0,01)
aid/GNP > 5 aid/dep.gov > 15	-0.06 (0.03)	-0,024 (0,015)
Non-socialists	-0.057 (0.02)	-0,021 (0,009)
African countries	-0,074 (0,03)	-0,017 (0,022)

Table ¹¹n°2: The Impact of Aid on the variation of Governance with the help of subsamples of countries

¹¹The figures in brackets are student errors and not t-statistics

Interpretation:

We note that in all models developed by Knack, aid has a negative impact on the change in governance in recipient developing countries; this condition is true in all the studied samples.

More negative coefficients assistance represent its effect on the change in governance; they were statistically significant in almost all models studied by Knack. This adds to the reasoning of the author considers that the aid received contributes to the deterioration of governance in developing countries.

Samples were determined in order to isolate the poorest countries, and therefore try to determine whether aid has a positive impact on the change in governance. This is not the case according to the results; we can then deduce that even in the poorest countries, aid contributes to the deterioration of governance.

One problem is that the thresholds chosen to determine the sub-samples are arbitrarily set by the author, and therefore do not follow any scientific methodology and econometric framework to highlight the significance of selected samples.

In the next part of our work, we will overcome this deficiency and determine the threshold of the impact of aid on governance, while following a complete econometric methodology developed by Bruce Hansen¹².

III - The impact of development assistance on governance and the theory of threshold

In this paper, we will try to prove whether the threshold theory to be followed will help recover the harmful image of aid in the works of Knack who considered the aid as a detrimental factor for the governance of the countries that receive it.

To calculate the threshold of ODA effectiveness in improving the governance of recipient countries of aid, we use the algorithm developed by Bruce Hansen that will be very useful to determine the threshold aid from which two possible cases may exist:

- ✓ There is a threshold at which the aid has a negative impact on governance.
- ✓ There is a threshold at which the aid has a positive impact on governance.

III - 1 - The model studied:

The econometric model to be studied is the one developed by Stephen Knack¹³, assuming there is a single threshold, and if we do not find support in the variable threshold, we will look if there is one variable in the "GDP growth per capita."

- Case of a threshold in the variable 'aid'

We will assume that the calculated threshold is equal to γ . In this case, the estimated model is as follows:

- If $Aide \leq \gamma$

$$ICRG = C + \alpha 1 ICRG_0 + \alpha 2 \frac{\Delta PIB_{part\acute{e}te}}{PIB_{part\acute{e}teinitial}} + \alpha 3 \frac{\Delta population}{population_{initial}} + \alpha 4 (Aide \leq \gamma) + \varepsilon$$

- If $Aide > \gamma$

$$ICRG = C + \alpha 5 ICRG_0 + \alpha 6 \frac{\Delta PIB_{part\acute{e}te}}{PIB_{part\acute{e}teinitial}} + \alpha 7 \frac{\Delta population}{population_{initial}} + \alpha 8 (Aide > \gamma) + \varepsilon$$

III - 2 - The short term impact threshold of the Official Development Assistance on governance:

We have achieved the following results after implementing the program developed by Hansen:

¹² Bruce Hansen (2000), "Sample splitting and threshold estimation", *Econometrica* 68 (3).

¹³ Stephen Knack (1999), "Aid dependence and the quality of governance: A cross country empirical analysis", IRIS University of Maryland.

The estimated model	A threshold model		A model without threshold
The threshold	Aid \leq 1.875	Aid > 1.875	No threshold
Constant	57.94** (2.56)	30.07*** (4.44)	31.4*** (3.96)
ICRG initial	0.27 (1.03)	0.19* (1.82)	0.335*** (3.01)
Change in the population	-811.08* (-1.71)	588.54*** (3.59)	304.02* (1.79)
Change in the GDP per capita	-28.93 (-0.15)	183.03*** (4.25)	231.24*** (4.93)
Aid	9.98*** (3.03)	-0.18 (-1.43)	-0.26* (-1.95)
R ²	94.4%	62.1%	58.9%
Threshold	1.8745472		No threshold
Confidence interval	[1.874547 , 2.867266]		No threshold
Heteroscedasticity test	0.18		0.34

Tableau n°3: the aid threshold and its short term impact on governance.

Interpretation:

We note that we have reached the same results that concord with those obtained by Stephen Knack in our "no-threshold model":

- ✓ The aid has a negative impact on the governance of recipient countries; the coefficient on this variable is statistically significant for a confidence level of 10%. Thereby aid contributes to the deterioration of governance in the country receiving foreign financial assistance.
- ✓ Increased GDP per capita has a positive impact on governance, therefore it improves governance, and the coefficient of this variable is large and statistically significant at 1%.
- ✓ Other findings, however, are not consistent with the work of Knack, as in the case of the initial ICRG variable whose impact is positive and has statistically significant impact on governance in the aid - recipient countries.

Among the results obtained by our estimation that takes into account the existence of a threshold of efficiency, we found that:

- ✓ The initial level of the ICRG has the same impact on the governance of the country, whether with or without a model threshold. This variable has a positive impact on governance statistically significant when aid goes beyond 1.875% compared to the GDP of the recipient country.
- ✓ Therefore, countries with a greater level of ICRG compared to others at the beginning of the period under consideration showed a greater improvement in their governance.
- ✓ The increase of GDP per capita plays an important role, and it helps to improve the governance of countries benefiting from the support of donors in case they receive assistance higher than 1.875%. We note that despite the existence of a threshold, the impact of the increase in GDP per capita has remained the same, that is to say it is positive and statistically significant.
- ✓ So the change in GDP per capita is an indicator of national wealth, helping to improve governance in developing countries, because it represents the country's financial capacity to make up for the adjustment costs associated with its institutional reforms.

- ✓ In the threshold model, the variable aid has a negative coefficient in our estimated model if the recipient country receives an amount superior to 1.87% of its GDP; only this coefficient is not statistically significant.
- ✓ On the contrary, the received aid helps to improve governance in the countries that have received amounts less than 1.87% of their GDP. Especially since the coefficient on this variable is statistically significant at a confidence level of 1%.

According to the results, we can say that aid contributes to the promotion of governance in the country that receives an amount less than 1.87% of the GDP of the beneficiary developing countries. Beyond this level, we cannot conclude a negative impact of aid on governance, since the coefficient of aid is not statistically significant.

Thus, the existence of a threshold may be a possible explanation for the negative impact of aid on governance found by Knack, and in our short-term study (no-threshold model).

Therefore, the deleterious effect of donor assistance on the ICRG does concern only few countries of our studied basket. For other countries, aid is beneficial and its has positive impact on their governance.

We also note that the level of aid received is quite low; this may be a sign of the limited absorptive capacity of the developing countries considered in our basket. Thus, a considerable amount necessarily leads to a waste of funds and the creation of opportunities for corruption. In the short term, the impact of aid on governance, by using a threshold, seems very interesting. The weakness of the coefficient, however, fuelled our curiosity to elucidate the impact of aid on governance in the medium term.

IV - The impact of ODA on the change in governance and the threshold theory

At this stage, I will focus on highlighting the impact of the granted aid on the change of governance through testing the existence of a threshold for aid in the countries of our basket. So, we will use the same variables as those used in continuation of the work developed by Stephen Knack, that is to say, the same aggregates and data that are previously used to emphasize the impact of aid on governance while testing the existence of a threshold.

The only difference between the two studies is that we will try to determine whether there is a threshold aid on the change of governance, while distinguishing between the short term and the medium term.

IV - 1 - The adopted model:

This part of our work will present an estimate of the impact of each explanatory variable in our model in case there is no threshold in the relationship between the aid and the change in governance:

Threshold Model	No threshold Model ¹⁴
The threshold level	No threshold
Constante	0.19*** (4.49)
Initial ICRG	-0.003*** (-5.18)
Changement in population	0.32 (0.46)
Changement in GDP per capita	0.005 (0.03)
Assistance	-0.002** (-2.2)
R2	49.4%
Heterscedastic test	0.83

Table 6: The short term impact of aid on the change in governance.

¹⁴ * significant at a confidence level of 10%, ** significant at a confidence level of 5%, *** significant at a confidence level of 1%.

IV - 2 - Interpretation of the results:

We note that the estimation of the model, without taking into account the existence of a threshold, has given us results in favor of Stephen Knack's reasoning which assumes that the aid granted to the developing countries has a negative impact on the change of their governance.

So, we can say that in the short term, ODA has a detrimental effect on the change in the governance of the developing countries in our basket. Therefore, the aid given to these countries has an adverse effect on governance, despite its relatively low coefficient (equal to -0.002). So, in the short term, aid has the effect of slowing the rate of improvement of the governance of the countries in our basket, because of the creation of opportunities for corruption with the disbursement of aid.

The results found in our estimation allow us to draw the following conclusions:

- The initial ICRG negatively influence the change of governance, this shows that countries that had high scores (good performance), have experienced a significant decline in their governance. So the comparative advantage in governance level between developing countries, hasn't contribute to improve the governance of recipient countries. This yield to emphasize that the relatively advanced countries in the field of governance for countries studied in this paper, must make much more effort to keep the improvements in their governance which are threatened by the assistance received from donors.
- In the short term, aid could represent a problem for the developing countries, because of its harmful impact on governance. In this study, we could not identify threshold that would distinguish at least a level that would have a positive impact on the change in governance. It seems that assistance promises tend to arise the corruption opportunities in developing countries. Barr (2012)¹⁵ emphasize that "the main finding of this paper is that aid, when measured as net ODA per capita, is associated with a corruption".
- In short term, the negative impact of aid on governance remains very low (in fact it's (near zero = -0.002), therefore, the developing countries should focus on the optimal allocation of financial resources in the short term, because the aid slows down the progression of their governance.

Conclusion:

At the end of this article, it seems that aid contributes to the improvement of the socio-political environment in the beneficiary developing countries up to a certain level beyond which the disbursed funds begin to have a negative impact on governance in those countries.

Thanks to the program developed by Hansen (2000), it appears that the theory that reinforces the presence of a threshold in the relationship linking aid to governance seems plausible. All the more because we can notice that the R^2 values of the models with threshold are more important than no-threshold models, this reflects that the econometric modeling developed by Hansen (2000) explains the reality better. So, we can say that there is a certain level of absorption of funds beyond which the aid is beginning to have a negative impact on governance in the beneficiary developing countries.

Without holding into account the presence of a threshold in the models developed in this article, we reached the same conclusions found by Knack, which proves that the negative impact of aid on governance in short term found by the author depended actually on the adopted models (without threshold).

When the author studied the effect of assistance on governance of countries in the sub-samples, the levels were set arbitrarily, without following any approach. This is not the case in results developed in this article that are based on a new econometric methodology, which remains both scientific and solid.

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