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DO INSTITUTIONS AND SOCIAL COHESION ENHANCE THE EFFECTIVENESS OF AID? NEW EVIDENCE FROM AFRICA

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Do institutions and social cohesion enhance the effectiveness of aid? New Evidence from Africa

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Abstract

Using the Arellano-Bond dynamic panel GMM estimator, this paper explores the effects of aid, institutions, and social cohesion on per-capita income growth in 34 African countries, focusing in particular on the interplay of aid and institutions and the interplay of aid and social cohesion. The empirical results indicate that social cohesion enhances the growth effects of aid but there is a threshold effect, suggesting that aid becomes effective in enhancing growth in countries with higher social cohesion. Surprisingly, the results show that beyond a certain level of improvements in institutional quality, institutions (political rights and civil liberties) reduce the effectiveness of aid. We discuss the implications of these results.

Keywords: Growth; aid effectiveness; institutions; social cohesion; Africa

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1. Introduction

Initially, developing countries (especially in Africa) appeared to be somewhat immune to the global financial crisis of 2007-09 given their low levels of integration into world financial markets. However, as levels of foreign direct investment (FDI), receipts from tourism, and remittances started to decline, it became clear that ultimately many developing countries will also experience the adverse effects from the crisis. These effects may be especially significant in the case of aid recipient countries, as a large amount of foreign aid has been traditionally provided by the US, the EU, Japan, and the Arab Gulf countries (oil producers). Many of these major aid donors have suffered some of the most significant negative effects from the recent global financial and economic crises.

African countries, for the most part, have continued to receive significant grants from the International Development Association (IDA) and official development aid (ODA) from bilateral and multilateral donors. About 40 sub-Saharan African countries constitute (as they did for many years) at least half the number of IDA borrowing (eligible) countries. It is currently feared that African countries in particular may experience a setback as a result of diminished foreign capital inflow, including aid. Indeed, Kasekendi et al. (2010, 6) argue that "[s]ome countries, especially the fragile and post-conflict states [in Africa], still lack the policy space for counter-cyclical measures that could ease recovery, which makes them particularly vulnerable to any shortfalls in aid and remittance inflows."

In fact, both the financial crisis (and slower or negative economic growth) in major aid providing countries, and calls to reduce or eliminate development aid—given the mixed evidence on its

effectiveness—are causes for concern. In addition, any (new) *post-financial crisis* international financial architecture that may affect IMF resource availability for both developed and emerging economies (see Eichengreen, 2010) may have significant ramifications for developing countries, including aid-recipient countries. While many studies have reported that aid promotes growth either directly or through interaction with other factors (Papanek, 1972; Burnside and Dollar, 2000; Dalgaard and Hansen, 2001; Baliamoune-Lutz, 2009a; Baliamoune-Lutz and Mavrotas, 2009), a number of studies (e.g., Mosley et al., 1987; Boone 1994, 1996; Easterly, 2003; and Easterly et al., 2004) have maintained that aid has no effect (or even has negative effects) on growth and development in aid recipient countries.

The argument advanced in the seminal paper by Burnside and Dollar (2000)[1]—that aid is only effective in countries with good fiscal, monetary, and trade policies—has proven to be highly controversial. Beyond the fact that many studies have shown that the result in Burnside and Dollar (2000) are not robust, there is the more important question of 'why is aid still not effective in many parts of Africa in spite of significant improvements in macroeconomic polices in a good number of those countries.'

We believe that the controversy surrounding aid effectiveness in Africa can be, at least partially, resolved by undertaking a study of why aid has not been so effective in causing growth and development in Africa by focusing on the roles of institutions and social cohesion. Our premise is that conditions in many countries would significantly worsen if aid were reduced or eliminated

[1] An earlier version of Burnside and Dollar (2000) paper was published as a World Bank Policy Research paper (Burnside and Dollar, 1997). The paper constituted for many years a sort of operational policy document for the World Bank/IDA aid allocation.

and, with the realistic assumption that for a host of reasons aid will continue to be disbursed, we hope to contribute useful insight into the role of some factors in enhancing or preventing aid effectiveness. Such insight would be useful to policymakers in international organizations and donor countries and their constituencies. We also hope that this would help policymakers in aid-recipient countries to emphasize the role of such factors. The ultimate goal of this paper is to contribute new insight that could be useful in the debate on the role of aid in Africa and the major factors affecting aid effectiveness in the post-crisis era.

More specifically, this paper explores the effects of aid, institutions, and social cohesion on growth in Africa using panel data covering over three decades (in most estimations) and focusing in particular on the interplay between institutions and aid, and between social cohesion and aid. To the best of our knowledge, this is the first study that empirically examines these issues — especially the interplay between social cohesion and aid—using Arellano-Bond dynamic panel generalized method of moments (GMM) estimator on data from Africa. The closest work to the present study is Baliamoune-Lutz (2009a) and Baliamoune-Lutz and Mavrotas (2009)[2]. However, there are at least three notable differences between the present paper and these two studies. First, we use a different indicator (proxy) for social cohesion (ethnic tension)[3] while the other studies use ethnic fractionalization. Second, while both studies use OLS and *two-stage least squares* estimations—as did Burnside and Dollar (2000), and Easterly et al. (2004)—the present paper uses dynamic panel GMM estimation (*Arellano-Bond GMM* estimator). Third, we have extended the dataset to include data available in the 2000s (up to 2008), which allows the

[2] To our knowledge, Baliamoune-Lutz and Mavrotas (2009) is the first study, and (with the exception of Baliamoune-Lutz, 2009a) remains the only published work, that explicitly explores the role social cohesion/social capital in aid effectiveness.

[3] It is important to note that while the variable 'ethnic tension' was used in Baliamoune-Lutz (2009b), that study did not focus on aid effectiveness (did not use aid as a right-hand side variable).

inclusion of data on relevant variables from two years under the *global financial crisis* (2007 and 2008). In addition, (as in Baliamoune-Lutz, 2009a) we focus exclusively on African countries while Baliamoune-Lutz and Mavrotas (2009) cover aid-recipient countries from all around the world. This should reduce (though it would not eliminate) heterogeneity across countries and eliminate differences in region effects. The remainder of the paper is laid out as follows. In Section 2, we briefly review the empirical literature on aid and growth. Section 3 provides an overview of Africa's experience with aid in 1970-2008. Section 4 presents the empirical analysis and discusses the data and methodology and the estimation results. In Section 5, we summarize and provide concluding comments.

2. Aid and growth in the empirical literature

There is a large body of empirical work on aid effectiveness but the reported findings are remarkably mixed. A number of studies examined aid effectiveness by looking specifically at the impact of aid on economic growth. For example, Papanek (1972) reports a positive effect of aid on growth. On the other hand, Mosley et al. (1987) could not find evidence of a significant relationship between aid and the growth rate in developing countries. Similarly, Boone (1996) finds that aid has no effect on growth or investment. More recent studies focused on examining the conditions under which aid could be growth enhancing. This line of research began mainly with the work of Burnside and Dollar (1997 and 2000) who included the interaction term between aid and a policy variable (representing fiscal, monetary, and trade policies) and found that aid is effective but only if the country has *good monetary, fiscal and trade policies*. This was followed by a series of studies by other scholars evaluating the impact of the interplay of policy and aid on growth. Hansen and Tarp (2001) refute the 'aid effectiveness conditional on good

policy' proposition. Their empirical study shows that aid can have a positive effect on growth even in countries that lack a good policy environment, although aid is shown to have diminishing returns. Other studies (e.g., Hansen and Tarp, 2000; Dalgaard and Hansen, 2001; Lensink and White, 2001; Easterly, 2003; Easterly et al., 2004; Antipin and Mavrotas, 2006; and Baliamoune-Lutz and Mavrotas, 2009) also show that changing the sample, the control variables and/or the econometric specification causes the relationship between the interaction of policy with aid and growth to become insignificant and the impact on growth to vanish. In a recent paper, Baliamoune-Lutz and Mavrotas (2009) find robust evidence that social capital (social cohesion) and institutions enhance the effectiveness of aid.

The growth effects of aid can be direct and indirect. The empirical evidence on direct effects is not unambiguous but many of the studies that find a positive effect also document the presence of *diminishing returns* to aid. In fact, the empirical evidence supporting the presence of a non-linear relationship—diminishing returns to aid—is growing and is remarkably robust. This literature includes Hansen and Tarp (2000, 2001), Lensink and White (2001), Dalgaard and Hansen (2001), Collier and Dollar (2002), Hudson and Mosley (2001), Dalgaard et al. (2004), and Baliamoune-Lutz and Mavrotas (2009).

Possible channels for indirect effects of aid include the interaction between aid and economic policy (Burnside and Dollar, 2000), the interplay of aid and institutions (Burnside and Dollar, 2004; Baliamoune-Lutz and Mavrotas, 2009), and the interplay of aid and social cohesion (Baliamoune-Lutz and Mavrotas, 2009). Interestingly, while the empirical literature contains a large number of studies examining the interplay of aid and policy and its impact on growth, work on the interplay between institutions and aid is very limited, and studies of the interplay of aid

and social cohesion, with the exception of Baliamoune-Lutz (2009a) and Baliamoune-Lutz and Mavrotas (2009) appear to be nonexistent.

Institutions have a direct effect on the allocation of aid to fragile states (which are major aid recipients), for example. Institutions are accounted for in the *public sector management and institutions* cluster of the IDA Country Policy and Institutional Assessment (CPIA) index. This implies that aid donors or at least the World Bank/IDA believe that there is a positive link between institutions and aid effectiveness. As argued in Baliamoune-Lutz (2009b, p. 879), "Political institutional arrangements could lead to the creation and strengthening of a small elite that, in the case of many fragile states, has proved to serve the interests of its own ethnic group rather than national interests, and promote rent seeking activities." This situation could also apply to non-fragile developing countries with weak institutions. Thus, at least in theory, weak political and economic institutions that promote rent seeking would adversely affect aid effectiveness.

Baliamoune-Lutz (2009b) points out that we should emphasize the role of political institutions in aid effectiveness. The author finds a U relationship (threshold effect) between political institutions and growth in fragile states, suggesting that initial improvement in political institutions (when institutional quality is still low) can have a negative effect in fragile states in Africa. To the extent that political institutions affect economic institutions and policy (included in CPIA), we may see a negative link between political institutions and aid allocation. In a study that examined 220 structural adjustment programs, Svensson (2000) finds that aid increases corruption in non-democratic states, and argues that donors should place political liberalization

(democratization) high in their policy agenda. Dollar and Svensson (2000) found that the success or failure of aid is dependent on the political-economy forces that are present in the country.

However, aid can also affect institutions through various channels. Previous studies have examined the impact aid has on corruption, the extent of regulation, and accountability. For example, Knack (2001) argues that aid may promote rent seeking and corruption. However, Tavares (2003) finds that aid decreases corruption. Moss et al. (2006) report negative relationship between aid and accountability in sub-Saharan Africa. Bräutigam and Knack (2004) find that aid may delay institutional reforms (see also Djankov et al., 2008, and Knack, 2004).

Finally, Baliamoune-Lutz and Mavrotas (2009) show that social cohesion (social capital) enhances the growth effectiveness of aid. The authors employ the dataset and methodology used in Easterly et al. (2004) and add an indicator of social cohesion; namely, ethnic fractionalization. Baliamoune-Lutz and Mavrotas find strong statistical evidence that aid is more effective in countries with lower ethnic fractionalization.

3. Overview of Africa's experience with aid: 1970-2008

Figure 1 shows the behavior of aid flows to Africa (all countries) over the period 1970-2008. We note that net ODA from all donors, as percent of recipient country's gross national income or GNI (to simplify we will use GDP to refer to gross national income), had in general an increasing trend until the early 1990s. But in 1993, it started a period of significant decline. It increased slightly in the first half of the 2000s and fell again in 2007 and 2008. Development aid (from all donors) per capita seems to follow this trend and reached the highest level (in current

US dollars) in 2006. Indeed, in 2006 Africa received the highest amount of aid per capita (in current US dollars), $43 per person. Perhaps largely due to the global financial crisis, in 2007 aid per capita fell 15% relative to 2006 and it was still about 8% lower in 2008 relative to 2006. Figure 2 shows that multilateral ODA seems to have the same behavior with one major exception: multilateral aid per capita continued to grow even in 2006-2008. However, the amounts of multilateral aid are smaller than total aid (from all donors). On a per capita basis, multilateral ODA was highest in 2008 but, with $15.43 per capita, remains significantly lower than aid from all donors in 2008 ($39.79) or the highest amount which was $43.19 (in 2006).

[Figures 1 and 2 About Here]

Figure 3 portrays the relationship between net ODA (% of GDP) and real GDP growth and growth in real GDP per capita, whereas Figure 4 shows the relationship between per-capita ODA and growth (of real GDP and real GDP per capita). It is interesting to note that the linear (contemporaneous) correlation between ODA and growth in Africa seems to be statistically insignificant (and negative) at best and negative and statistically significant at worst. In fact, the linear correlation between growth and ODA (% of GDP), and ODA and growth in per-capita GDP (over the period 1970-2008) turned out to be strong and statistically significant; -0.58 and -0.59, respectively. The correlation between net ODA per capita, and GDP growth and growth in per capita income (over the same period) is much weaker but also negative; -0.24 and -0.18, respectively.

[Figures 3 and 4 About Here]

4. Empirical analysis

4.1 Variable description and sources

We use data from the World Bank's *World Development Indicators* Database for the variables growth in real GDP (income) per capita, net official development aid as percent of GNI (labeled as 'aid'), and openness to trade (labeled as 'open')—defined as the ratio of the sum of exports and imports to GDP. The data on ethnic tensions, the proxy for social cohesion, are from the *International Country Risk Guide* (ICRG) database. The indicator of institutions is represented by civil liberties, political rights, and the rule of law. Data on civil liberties and political rights are from Freedom House *Freedom in the World* database, while data on the rule of law are from the World Bank *governance indicators* database. Data for growth in real per-capita GDP, openness to trade and aid are generally available from 1970 to 2008. Data on civil liberties and political rights are available for most countries for the period 1973-2008. Data for the rule of law are available for the period 1996-2008 (see below).

The variable 'ethnic tensions' is used as an indicator of social cohesion and is labeled in the estimation as 'cohesion'. This variable is measured on a 0–6 scale, with higher values indicating lower ethnic tension. Some studies, such as Mauro (1995) and Easterly and Levine (1997), show that ethno-linguistic fractionalization (as an indicator of social conflict or social cohesion) has a negative impact on growth. However, more recent studies find that the negative effect is conditional on the quality of institutions (Easterly, 2001), occurs at particular levels of fractionalization—the polarization effect—(Posner, 2004; Montalvo and Reynal-Querol, 2005), occurs at low levels of democracy (Bluedorn, 2001; Alesina et al., 2003), or operates through the interaction between ethnic fractionalization and other factors, such as foreign aid (Baliamoune-

Lutz and Mavrotas, 2009). We believe ethnic tensions is a better indicator of social cohesion as ethno-linguistic fractionalization may not necessarily create ethnic tensions and lower social cohesion, although ethnic fractionalization and ethnic tensions may be correlated. Thus, we follow Baliamoune-Lutz (2009b) in measuring social cohesion by the degree of ethnic tensions.

We use three measures of institutional quality. Two indicators are from Freedom in the World database: political rights (labeled 'polit') and civil liberties (labeled 'civil'). According to Freedom House, political rights "enable people to participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public office, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate." Freedom House views civil liberties as allowing for "the freedoms of expression and belief, associational and organizational rights, rule of law, and personal autonomy without interference from the state." Political rights and civil liberties are measured on a 1-to-7 scale with lower values indicating higher degrees of freedom (a value of 1 implies the highest degree of freedom). However, due to the inclusion of the interaction between institutions and other variables and to ensure consistency, we modified the scale by generating a value equal to 7 *minus* the value assigned by Freedom House and we obtained a new scale from 0 to 6, with 6 indicating the highest degree of freedom. The third indicator of institutions is the rule of law (labeled 'rule' in the estimation) from the World Bank *governance indicators* database. The rule of law captures "perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence" (Kaufman et al. 2009, 6). This variable is measured on a scale

from -2.5 to 2.5, with higher values indicating better outcome. The data are available from 1996 to 2008, with 1997, 1999 and 2001 missing. We used the value from the previous year as value for the missing data. Including only data over the period 2002-2008 does not change the empirical results.

4.2 Methodology

As noted earlier, Burnside and Dollar (2000), Easterly and al. (2004), and Baliamoune-Lutz and Mavrotas (2009) all use OLS and *two-stage least squares* estimations to examine aid effectiveness. We decided instead to use *Arellano-Bond GMM* estimation which allows for dynamic panel data estimation and takes into account the possible endogeneity of the right hand-side variables (this estimation has been used more recently in the literature on aid and growth). Aid, trade, and institutions can be endogenous to growth and development (see, for example, Baliamoune-Lutz and Ndikumana, 2007). We use panel data from 34 African countries, including North Africa. The selection of the countries is dictated by data availability; we include all countries for which we have data on all relevant variables for at least 10 years (at least 5 years when we control for the rule of law) covering the period 1973-2008 (or 1996-2008 when we use the variable rule of law).

The model to be estimated is as follows:

$$y_{it} = \alpha y_{it-1} + \beta x_{it} + v_i + \varepsilon_{it} \qquad (1)$$

Where y_{it} is the growth rate of per-capita income (real GDP) in country i at time t, α, and β are parameters to be estimated, and x_{it} is a vector of explanatory (endogenous and exogenous) variables. The term v_i represents country-specific random effects which are independent and

identically distributed over the countries. The term ε_{it} is independent and identically distributed, and v_i and ε_{it} are assumed to be independent over all time periods and for each country *i.* The variables 'open', 'cohesion' and the indicators of institutional quality ('civil', 'polit', and 'rule') are all treated as endogenous. Finally, the model is estimated using the Arellano-Bond Generalized Method of Moments (GMM) estimator (Arellano and Bond, 1991).[4] We conduct tests for second-order autocorrelation and the Sargan test of overidentifying restrictions (Sargan, 1958) and report the test results along with the coefficient estimates and relevant statistics in Tables 2-4.

[Table 1 About Here]

4.3 Estimation results

Table 1 shows the partial correlations among relevant variables. We note that the correlations of growth in per-capita income with the other variables are in general weak. Growth has a positive and significant (but low) association with social cohesion (0.18), civil liberties (0.12), political rights (0.10) and openness (0.06), and has statistically insignificant correlation with the other variables (aid and rule of law). The variable aid (% of GDP) is negatively correlated with the rule of law (-0.21). This may suggest that countries with poor institutional quality receive more aid, perhaps because they also have lower per-capita income and more need for aid. In fact, the association between aid and all the other variables is either negative or statistically insignificant.

[4] To eliminate unobserved individual specific effects, we first-difference equation (1), which gives the following:

$$y_{it} - y_{it-1} = \alpha(y_{it-1} - y_{it-2}) + (x_{it} - x_{it-1})'\beta + (\varepsilon_{it} - \varepsilon_{it-1})$$

We can see that the term $(y_{it-1} - y_{it-2})$ in this equation is correlated with the error term $(\varepsilon_{it} - \varepsilon_{it-1})$ and, as noted earlier, the vector *x* may contain endogenous variables. Thus, we need to use instruments to deal with this endogeneity problem. The Arellano-Bond dynamic estimator tackles the endogeneity problem by instrumenting the differenced right-hand-side variables with their appropriately lagged levels.

[Table 2 About Here]

Table 2 reports the estimation results using the methodology described above and civil liberties as the indicator of institutional quality. The results shown in column (1) indicate that there is a statistically significant (at the 5-percentlevel or better) positive effect from social cohesion, institutions, and openness to trade on growth. On the other hand, aid has a negative and statistically significant (at the 1-percent level) impact on growth. In column (2), we augment the specification by including the interplay of aid and openness, as openness to trade was shown to affect some other growth determinants (Baliamoune-Lutz and Ndikumana, 2007). We also include the interplay of aid with institutional quality, the interplay of aid with social cohesion, the square of the variable aid to test the presence of diminishing returns (see discussion in Section 2), and a dummy variable for globalization. This last variable takes the value of zero in all the years preceding 1995 and the value of 1 from 1995 onward. The inclusion of this variable is motivated by the observation that many African countries increased their participation in the global economy beginning in the mid-1990s. The results in column (2) indicate that 'aid squared' has a negative coefficient while the level of aid has a positive coefficient, suggesting diminishing returns to aid. The direct effect of institutions and social cohesion is positive.

On the other hand, we find that the interaction between aid and institutions has a negative impact, suggesting that aid produces a negative effect as institutional quality improves. The coefficient on the interplay of aid and social cohesion is statistically insignificant. The interaction between aid an openness to trade has a positive coefficient (significant at the 1-percent level), suggesting that aid has a positive impact in more open economies. The coefficient on the dummy variable 'globalization' is positive and significant at the (10-percent level), suggesting that the

countries in our sample, showed on average higher growth as globalization intensified. The negative interactions between aid and social cohesion (although statistically insignificant) and between aid and institutional quality are intriguing. To explore this further, we investigate the presence of non-linearity. In column (3) the results show that the growth effectiveness of aid is enhanced only at high levels of social cohesion. In other words, there is a threshold effect to social cohesion above which aid has a positive contribution. Column (4) confirms this result and also shows that the interplay of institutional quality with aid is still negative when institutional quality is high (using the square of institutions). We note that the independent effect of institutions and social cohesion on growth is robustly positive and statistically significant. We also note that the interplay of aid and openness has a robust positive and significant impact on growth, suggesting that openness to trade enhances the effectiveness of aid.

[Table 3 About Here]

In Table 3, we use political rights (instead of civil liberties) as our indicator of institutional quality. The results are qualitatively similar to those reported in Table 2. The estimates shown in column (4) indicate that social cohesion has a direct positive effect on aid and an additional positive effect (at high levels of social cohesion) when interacted with aid. The results for the effect of political rights are similar to those obtained in the case of civil liberties. Beyond a certain level, institutional quality improvements seem to have a negative effect on the growth effectiveness of aid.

4.4 Robustness checks

We perform robustness checks by excluding from the sample Egypt (following Burnside and Dollar, 2000)—Egypt receives much more significant amounts of aid from the United States compared with African countries— and including an additional indicator of institutional quality, the rule of law. The rule of law has been used in the literature as a measure of economic institutions (see, for example, Rodrik et al., 2004). Table 4 reports the new estimates. In columns (1) and (2) we replicate the estimations from column (4) in Tables 2 and 3 but without Egypt. We find that the results have not changed (qualitatively) in any significant way. However, the variable 'rule' and its interaction with aid are generally statistically insignificant (columns 3-5).

[Table 4 About Here]

In the case of the interplay between social cohesion and aid, it turned out that the turning point (the point at which the interaction between social cohesion and aid began to have positive effects) for a country receiving aid equal to the mean of ODA (% GDP)—which is 11.4%—occurs when the indicator of social cohesion is about 2.4, using column (1) and column (2) in Table 4 (i.e., whether we use civil liberties or political rights as the indicator of institutions, the critical point is roughly the same). Since the data change by 0.5 increments, the critical range then is the one around 2.5. This is reassuring since in about 73% of the cases in our sample the data for cohesion (ethnic tensions) have a value of 3 or higher. We have 14 cases (about 1.7% of the data in the sample) where the value of the indicator for social cohesion is 2.5; Algeria in 2005, Ethiopia in 2004-08, Ghana in 2005, Kenya in 2004, and Madagascar 2003-2008. About 25% of the cases have a value for social cohesion below 2.5. Thus, the majority of African

countries (especially in the last decade) have values for social cohesion (based on ethnic tensions) that are higher than the values around the turning point and should have positive interaction between social cohesion and aid, if they were to received aid of about 11.4% of their GDP. In other words, in recent years, social cohesion seems to enhance the growth effects of aid in most African countries. In fact, in 2008 only seven (7) countries had values lower than 2.5: Côte d'Ivoire, the Democratic Republic of Congo, Guinea, Nigeria, Somalia and Sudan, and Togo. The value for social cohesion in Madagascar and Ethiopia in 2008 was 2.5.

Regarding institutions, we find that there is an inverted-U relationship between the interplay of civil liberties (using the transformed value of civil liberties) with aid and growth. Using the results in Table 4, columns (1) and (2), we find that the turning point for a country at the mean value of ODA, is 3.5 for civil liberties and 4.2 for political rights (based on Freedom House values). In 2008, only 18 countries had a value for civil liberties of 3 or less, implying an 'almost good-to-good' (partially free to free) quality of civil liberties (Cape Verde, Benin, Botswana, Mauritius, Ghana, Namibia, South Africa, Burkina Faso, Kenya, Lesotho, Madagascar, Mali, Mozambique, Senegal, Seychelles, Sierra Leone, Tanzania and Zambia). Nine (9) countries (Gabon, Gambia, Guinea Bissau, Liberia, Malawi, Morocco, Niger, Nigeria and Uganda) had a value for civil liberties equal to 4, while 23 countries had a value of 5 or higher (mostly not free). Thus, almost half the countries in our sample (23 out of 49 in 2008) have a value for civil liberties that is higher than the critical point (bad quality) and thus these countries would still see a positive effect from the interplay between the quality of civil liberties and aid.

With respect to political rights, 22 countries have values for political rights equal to or less than 4. 17 of these countries also have values for civil liberties less than the critical point for civil liberties. They are Cape Verde, Benin, Botswana, Mauritius, Ghana, Namibia, South Africa, Kenya, Lesotho, Madagascar, Mali, Mozambique, Senegal, Seychelles, Sierra Leone, Tanzania and Zambia. 27 countries in 2008 had a value for political rights greater than 4.2 (5 or higher) and would still experience a positive impact from the interplay between the quality of political rights and aid.

5. Summary and conclusion

This paper examines the effects of aid, institutions, and social cohesion on per-capita income growth in 34 African countries (including North Africa), focusing in particular on the interplay of aid and institutions and the interplay of aid and social cohesion. We primarily try to answer the following two questions. (1) Do institutions enhance the effectiveness of aid in promoting growth? (2) Does social cohesion enhance the impact aid has on growth? Overall, the empirical results provide robust evidence that social cohesion does enhance the growth effects of aid. However, there is a threshold effect, suggesting that aid becomes more effective in enhancing growth in countries with higher social cohesion (or as social cohesion increases beyond a certain point). It turned out that the value of social cohesion at the turning point (the point at which the interaction between social cohesion and aid starts to have positive effects), and assuming aid is at its mean (11.4 % of the recipient's GNI), is about 2.4. This seems a good outcome as most African countries have values for social cohesion (index of ethnic tensions) higher than 2.4.

However, it is clear that these results are conditional upon the level of aid received. In our sample most countries (63%) received aid equal to or less than the mean of 11.4%, while the remaining countries (37%) received aid greater than 11.4%. What happens to the critical point of social cohesion when aid is much higher or much lower than the mean? It turns out that if a country receives half the average aid (i.e., aid equals 5.7% of GNI), the critical point of social cohesion is 1.4 (much lower level of social cohesion). This would be the case of Botswana, for example, in 2008. Note that the actual value for social cohesion in Botswana in 2008 was 4.5, suggesting the country has positive effects from the (small) amount of aid it has received. On the other hand, a country that receives double the average amount of aid (i.e., 22.8% of GNI) will have the turning point for social cohesion occur at 2.9, which is a higher value. For example, this would be the case of Malawi in 2008, where the country had a value for social cohesion equal to 3.5, also suggesting that Malawi was able to generate positive growth effects from the interaction between social cohesion and aid. Now, suppose the country is Liberia, which received the highest amount of ODA (% GNI) in our sample, 186% in 2008, and thus has a turning point for social cohesion equal to 3.3. However, the actual value for social cohesion (ethnic tensions) in Liberia in 2008 was 3, suggesting that the country does not yet have the level of social cohesion that would allow a positive contribution of aid to growth. In sum, social cohesion affects the effectiveness of aid but is conditional on both the levels of social cohesion and the amount of aid received. The results derived in this paper point to the possibility of identifying and deciding optimal levels of aid based on levels of social cohesion as the former variable can be changed more rapidly and in a more discretionary fashion than can the latter.

We also show that aid becomes less effective at higher levels of civil rights and political liberties (an inverted-U relationship). While this result may seem puzzling, one may speculate that it could reflect the fact that in the group of countries included in this study there may be a disconnect between civil liberties and political rights—as measured by Freedom House—and the reality of these rights and liberties in practice. In addition, it is possible that in many countries there is a divergence between institutional quality, as measured by civil liberties and political rights, and economic institutions (property rights, regulation, and so on). Unfortunately, the quality of the data on economic institutions for the countries in our sample does not allow for meaningful estimations. We did, however, use the rule of law as an additional indicator of institutional quality but this variable is generally statistically insignificant. We also used corruption and voice and accountability. These results are not shown but they are qualitatively similar to those derived using the rule of law.

Similar to many other studies (e.g., Hansen and Tarp, 2000; Lensink and White, 2001; Dalgaard and Hansen, 2001; Dalgaard et al., 2004; and Baliamoune-Lutz and Mavrotas, 2009), this paper finds strong evidence that aid has diminishing returns. Using the estimates reported in Tables 2-4, where the coefficients on both 'aid' and 'aid squared' are statistically significant (at the 5-perecent level or better), we find that the critical range is when aid is between 23% and 30% of GDP (or GNI)—which is within the range of 15% to 45% noted in McGillivray (2004). This is good news since most countries receive aid equal to or less than 20% of their GDP; recall that the average value of ODA in our sample is 11.4% of GDP. In 2008, only three countries had aid greater than 23% of their respective GNI: Guinea Bissau (29.5%), Burundi (43.7 %), and Liberia (186%).

The main aim of this paper is to make a novel contribution to the empirical literature on aid effectiveness in Africa by focusing on the roles of institution and social cohesion. Baliamoune-Lutz and Mavrotas (2009) note that it is surprising that many accept that socio-cultural factors may have important interactions with the effectiveness of aid, yet there is no empirical work that investigated the impact of social capital on aid effectiveness at the macrolevel. In addition, Rodrik (1999, 386) maintains that "the effect of external socks on growth is larger the greater the *latent social conflicts* [emphasis added] in an economy and the weaker its institutions of conflict management." Thus, it is important to recognize the particular roles of social cohesion (as a determinant of social conflict) and institutions in influencing the effectiveness of aid in Africa, a region that could possibly be facing external shocks in the *post-global crisis* decade.

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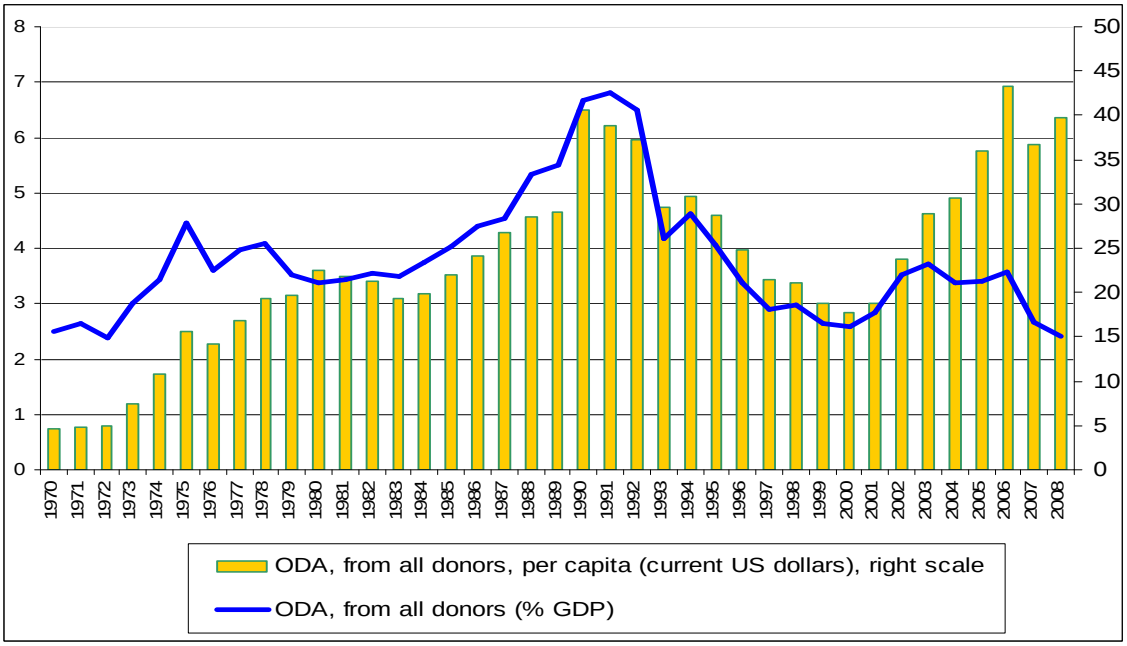
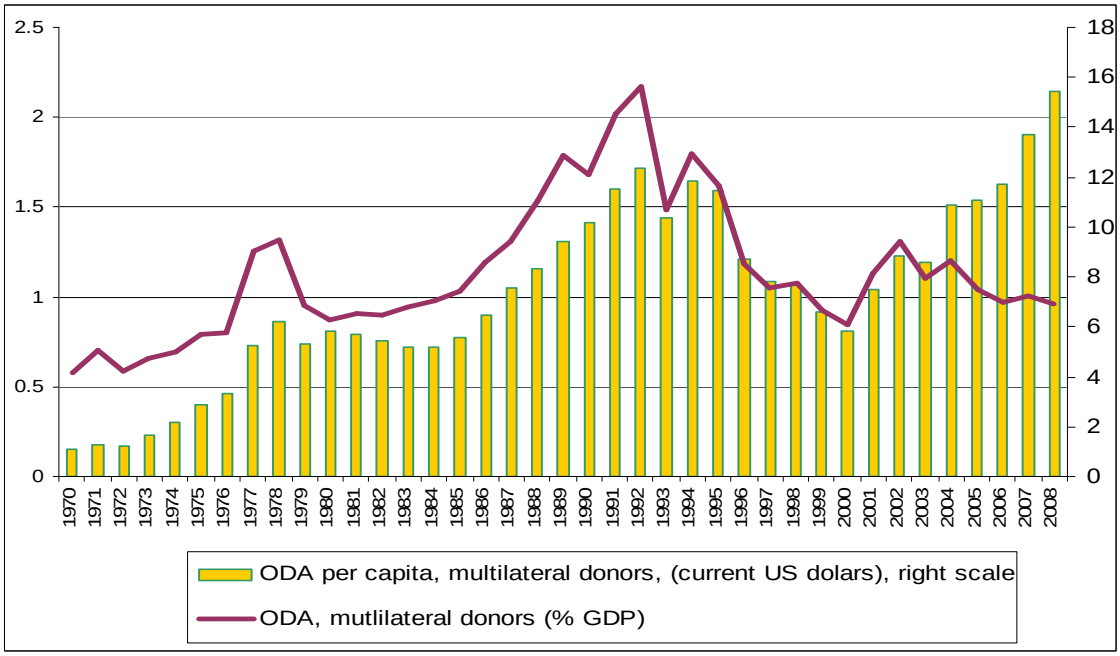
Figure 1
Net ODA from all donors: 1970-2008



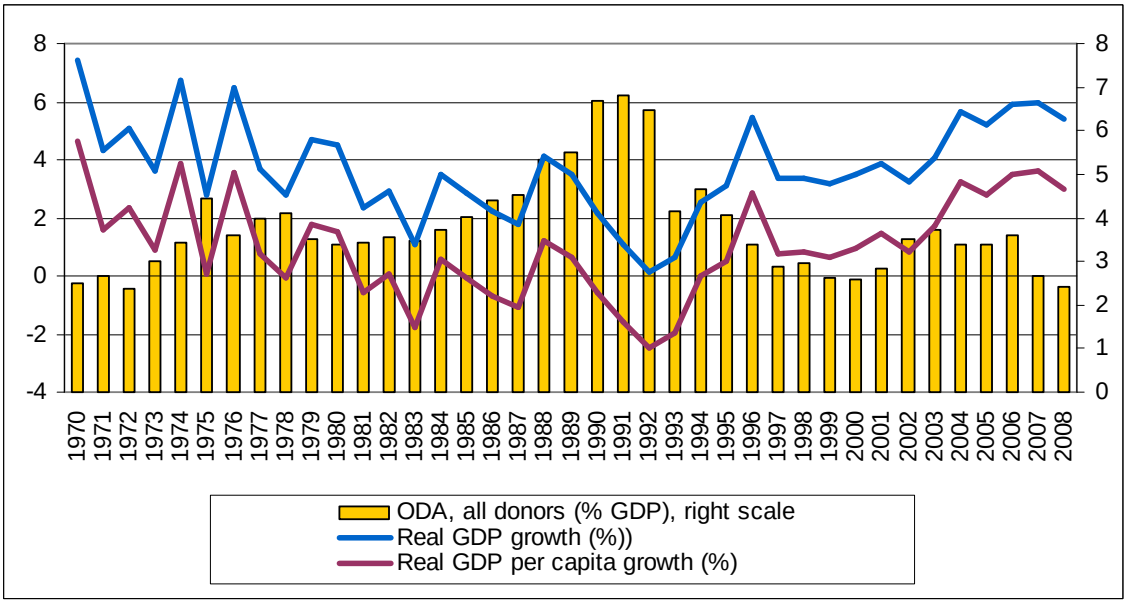
Source of data: *World Development Indicators* Database, World Bank.

Figure 2
Net ODA from multilateral donors: 1970-2008



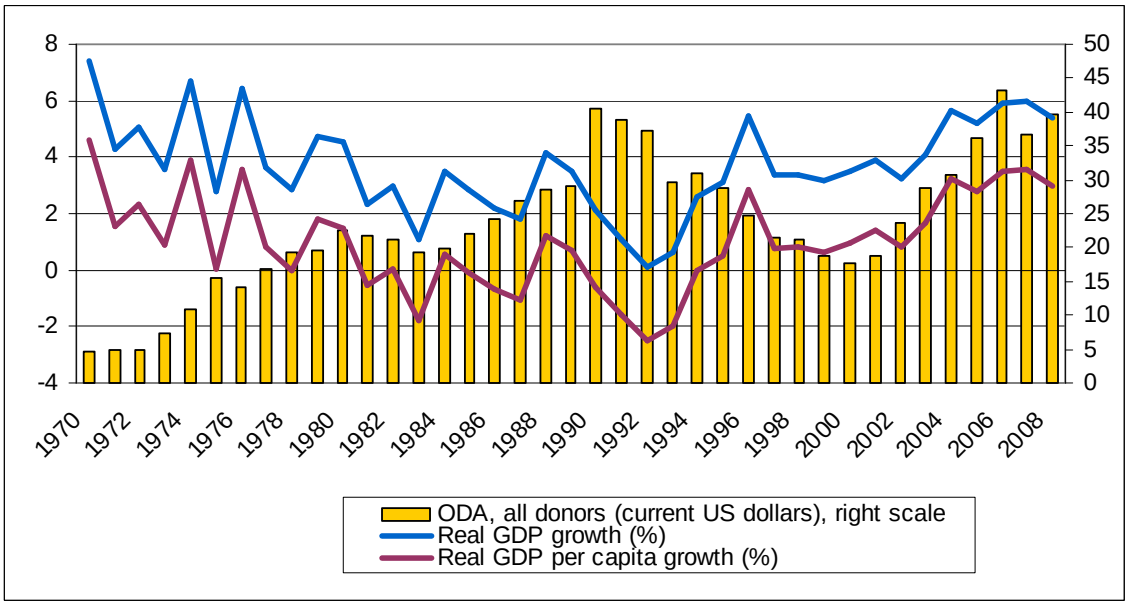
Source of data: *World Development Indicators* Database, World Bank.

Figure 3
GDP growth and net ODA (% of recipient's GDP: 1970-2008



Source of data: *World Development Indicators* Database, World Bank.

Figure 4
GDP growth and net ODA per capita: 1970-2008



Source of data: *World Development Indicators* Database, World Bank.

Table 1
Correlations

	growth	*aid*	*civil liberties*	*political rights*	*social cohesion*	*openness to trade*
aid	-0.034 [0.15]					
civil liberties	0.119 [0.00]	-0.081 [0.00]				
political rights	0.101 [0.00]	0.010 [0.69]	0.855 [0.00]			
social cohesion	0.180 [0.00]	-0.022 [0.52]	0.362 [0.00]	0.266 [0.00]		
openness to trade	0.056 [0.02]	-0.019 [0.44]	0.102 [0.00]	0.071 [0.00]	-0.037 [0.29]	
rule of law	0.064 [0.16]	-0.211 [0.00]	0.707 [0.00]	0.616 [0.00]	0.611 [0.00]	-0.026 [0.57]

P-values are in brackets.

Data on ethnic tensions (our measure of social cohesion) are from the ICRG. Data on the rule of law (rule) are from the Worldwide Governance Indicators (World Bank) database on line. Data on aid, growth in per-capita GDP and openness (trade as a share of GDP) are from the World Development Indicators (World Bank) database on line. Data on political rights and civil liberties are from Freedom in the World (Freedom House) Database online.

Table 2

Institutions = civil liberties

GMM estimates

Dependent variable = (growth in per capita income: *growth)*

	(1)	(2)	(3)	(4)
lagged growth	-0.143***	-0.0392	-0.0347	-0.0345
	(0.030)	(0.033)	(0.033)	(0.033)
aid	-0.121***	0.252***	-0.023	-0.027
	(0.018)	(0.073)	(0.133)	(0.135)
civil	0.535**	0.865***	0.818**	0.972***
	(0.21)	(0.32)	(0.32)	(0.32)
open	0.307***	0.019	0.019	0.022
	(0.00)	(0.019)	(0.019)	(0.019)
cohesion	0.616***	0.631**	0.664**	0.637**
	(0.21)	(0.30)	(0.30)	(0.30)
aid X open		0.012***	0.012***	0.011***
		(0.00)	(0.00)	(0.00)
aid X cohesion		-0.011	-0.203**	-0.188**
		(0.019)	(0.008)	(0.081)
aid^2		-0.005***	-0.005***	-0.005***
		(0.00)	(0.00)	(0.00)
aid X civil		-0.048***	-0.046***	0.012
		(0.013)	(0.01)	(0.02)
globalization		0.212*	0.251**	0.283**
		(0.11)	(0.11)	(0.11)
aid X $cohesion^2$			0.029**	0.027**
			(0.01)	(0.01)
aid X $civil^2$				-0.014**
				(0.005)
Obs	754	754	754	754
Sargan test [P-value]	1632[0.27]	1078 [0.97]	1071 [0.99]	1068 [0.99]
AR(2) test [P-value]	-1.71 [0.7]	-1.86 [0.07]	-1.86 [0.06]	-1.82 [0.07]

Equations are estimated with a constant (not shown).
Standard errors are in parentheses.
Note: The AR (2) test indicates that we can reject the hypothesis that there is second-autocorrelation at the 5% level of significance.

Table 3

Institutions = political rights

GMM estimates

Dependent variable = (growth in per capita income: *growth)*

	(1)	(2)	(3)	(4)
lagged growth	-0.142***	-0.033	-0.029	-0.033
	(0.030)	(0.033)	(0.033)	(0.033)
aid	-0.124***	0.298***	0.018	0.144
	(0.018)	(0.072)	(0.13)	(0.13)
polit	0.567***	0.592**	0.567**	0.513**
	(0.16)	(0.26)	(0.26)	(0.25)
open	0.304***	0.021	0.022	0.029
	(0.00)	(0.019)	(0.019)	(0.019)
cohesion	0.615***	0.556*	0.593**	0.552*
	(0.21)	(0.30)	(0.30)	(0.30)
aid X open		0.012***	0.012***	0.012***
		(0.00)	(0.00)	(0.00)
aid X cohesion		-0.002	-0.197**	-0.168**
		(0.019)	(0.019)	(0.080)
aid^2		-0.005***	-0.005***	-0.005***
		(0.00)	(0.00)	(0.00)
aid X polit		-0.044***	-0.042***	0.069*
		(0.011)	(0.011)	(0.035)
globalization		0.200*	0.239*	0.194*
		(0.11)	(0.11)	(0.11)
aid X $cohesion^2$			0.030**	0.025**
			(0.01)	(0.01)
aid X $polit^2$				-0.021***
				(0.00)
Obs	754	754	754	754
Sargan test [P-value]	1618[0.35]	1087 [0.95]	1080 [0.99]	1075 [0.99]
AR(2) test [P-value]	-1.65 [0.08]	-1.82 [0.07]	-1.81 [0.07]	-1.65 [0.10]

Equations are estimated with a constant (not shown).
Standard errors are in parentheses.
Note: The AR (2) test indicates that we can reject the hypothesis that there is second-autocorrelation at the 5% level of significance.

Table 4

Robustness checks

GMM estimates

Dependent variable = (growth in per capita income: *growth)*

	(1)	(2)	(3)	(4)	(5)
lagged growth	-0.037	-0.035	-0.091	-0.024	-0.128
	(0.034)	(0.033)	(0.071)	(0.065)	(0.070)
aid	0.232***	0.261***	0.224	0.052	0.098
	(0.039)	(0.142)	(0.586)	(0.139)	(0.221)
open	0.027	0.022*	-0.029	-0.004	0.015
	(0.20)	(0.020)	(0.039)	(0.20)	(0.83)
cohesion	0.622*	0.536*	-0.622	-0.065	-0.327
	(0.325)	(0.32)	(0.81)	(0.67)	(0.74)
aid X open	0.012***	0.011***	0.002**	0.002*	-0.0014
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
aid X cohesion	-0.185**	-0.167**	-0.317	-0.073**	-0.064*
	(0.083)	(0.08)	(0.35)	(0.033)	(0.036)
aid^2	-0.005***	-0.0046***	-0.0014**	-0.0013**	-0.0006
	(0.000)	(0.000)	(0.0005)	(0.0005)	(0.0007)
globalization	0.303***	0.204*			
	(0.116)	(0.11)			
aid X $cohesion^2$	0.027**	0.025**	-0.060		
	(0.012)	(0.012)	(0.05)		
civil	1.048***			1.003	
	(0.345)			(1.01)	
aid X civil	0.013			0.821***	
	(0.028)			(0.028)	
aid X $civil^2$	-0.015**			-0.136***	
	(0.005)			(0.02)	
polit		0.527**			-0.233
		(0.26)			(0.83)
aid X polit		0.069*			0.243**
		(0.036)			(0.104)
aid X $politl^2$		-0.021***			-0.028
		(0.006)			(0.020)
rule			-0.838	-1.495	1.141
			(2.63)	(2.35)	(2.66)
Aid x rule			-0.49*	-0.116	-0.102
			(0.09)	(0.087)	(0.125)
Obs	730	730	194	194	194
Sargan test [P-value]	1036[0.77]	1042 [0.73]	196 [0.99]	205 [0.99]	199 [0.99]
AR(2) test [P-value]	-0.34 [0.73]	-0.30 [0.76]	-1.32 [0.11]	-1.64 [0.10]	-1.25 [0.11]

Equations are estimated with a constant (not shown).
Standard errors are in parentheses.
Note: The AR (2) test indicates that we can reject the hypothesis that there is second-autocorrelation at the 5% level of significance.