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Research Paper No. 2008/75

Aid Effectiveness

Looking at the Aid-Social Capital-Growth Nexus

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and George Mavrotas²

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Abstract

We examine the impact of institutional quality and social capital on aid effectiveness. We find strong evidence that social capital and institutions enhance aid effectiveness. Moreover, once we account for the role of social capital and institutions, the impact of policies tend to disappear. These findings have important policy implications as they indicate that conditioning aid allocation on ‘good policies’ may not lead to an optimal (or fair) allocation of aid, as countries with high social capital at the macro level could actually make good use of aid regardless of the quality of policy. This casts doubt on the conclusions in Burnside and Dollar (2000) and the policy lessons derived from their findings.

Keywords: aid effectiveness, social capital, institutions, growth

JEL classification: F35

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Acronyms

DAC	Development Action Committee (of the OECD)
GDP	gross domestic product
MDGs	Millennium Development Goals
NGOs	nongovernment organizations
ODA	official development assistance
OECD	Organization for Economic Cooperation and Development
OLS	ordinary least squares method

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1 Introduction

For many years the empirical literature on the effectiveness of aid remained inconclusive partly due to lack of good data on aid but also partly due to inappropriate econometrics and simplistic empirical specifications employed in most of the empirical studies.¹ However, important changes in the aid arena in recent years,² revived *inter alia* the interest in aid effectiveness issues. Needless to say, current discussion (and debate) on how further progress with the Millennium Development Goals (MDGs) can be made has generated additional interest in aid effectiveness issues.

Aid allocation tends to assume that if aid were allocated to specific (or assumed) purposes that would normally affect the determinants of growth then aid would cause growth. It follows that assessing the effectiveness of aid may be equivalent to assessing whether aid is used for the purpose it is intended for. This could be tested, at the micro level, by examining specific outcomes in aid-funded projects. Indeed, the bulk of empirical evidence at the micro level shows that aid works. The issue, however, is more complex at the macro level. The failure of the empirical literature (at least up to the late 1990s) to converge to one consistent conclusion has given rise to what Mosley (1987) refers to as the *micro-macro paradox*.

In 1997, Craig Burnside and David Dollar published a World Bank Policy Research Working Paper entitled 'Aid, Policies and Growth'. The paper was published in the *American Economic Review* in 2000 and has become since the late 1990s a seminal contribution to the debate on aid effectiveness. The main findings are that the positive impact of aid on economic growth depends on the presence of good policies (good fiscal, monetary and trade policies). However, linking aid to policy can be controversial, to say the least. Several studies show that such link is empirically inexistent or is very weak once the sample, the control variables, or the specifications change (see for example, Lensink and White 2001; Dalgaard and Hansen 2001; Hansen and Tarp 2000, 2001; Easterly, Levin and Roodman 2004; Antipin and Mavrotas 2006).

There are at least two problems with making aid dependent on policy (as defined in most of the literature). First, other macroeconomic policy variables may be as important (if not more important) as the three variables included in the policy index. For example, interest rate or credit policy would be quite relevant if aid complements private investment. Second, the budget surplus enters with a positive coefficient, i.e., the higher the surplus, the higher (better) the policy index. At least in cross-sectional studies, this seems to be paradoxical. A country may need significant amounts of aid when (because) it has a large budget deficit so that its policy index would be lower (worse) than a country that has a lower budget deficit (and may need less aid). In this case, aid could still contribute to growth in spite of 'poor policies'. Also, one has to keep in mind that in developing countries (which are on the recipient side of aid) governments still do a

¹ It is clearly beyond the scope of the present paper to review the vast literature of the aid-growth empirics. Tarp (2000), Beynon (2002, 2003), Dalgaard, Hansen and Tarp (2004), Collier and Dollar (2004), Addison, Mavrotas and McGillivray (2005a, 2005b), Radelet (2006), Riddell (2007), Lahiri (2007), Bourguignon and Sundberg (2007) and Addison and Mavrotas (2008) provide recent assessments of the aid effectiveness literature; see also Mosley (1987), White (1992) and Cassen (1994) on earlier reviews of the literature.

² See Burnell (2004), Mavrotas (2007) and Riddell (2007).

large share of investment (for example, infrastructure) and expenditures associated with some of these investments may contribute to increasing the budget deficit. Thus, the policy index needs to be grounded in solid theories about how its components may affect the effectiveness of aid.

More importantly, the roles of institutions and social capital need to be examined more closely than it has been done in the empirical literature. Almost all studies report a positive and statistically significant effect of institutions (institutional quality) on growth but do not investigate whether institutional quality enhances the effectiveness of aid.³ Why should good policy matter and good institutions not matter? If the channel through which aid promotes growth is investment, then institutions should play a crucial role. It is enough to consider the effect of high corruption and lack of transparency (both tend to be common in countries with weak institutions) on the use of aid to see that institutions play an important role. Addison and Balamoune-Luz (2006) argue that one explanation of the frequent breakdown in donor-initiated reform programmes is weak institutions. Similarly, several studies use measures of social structure (such as ethnic fractionalization) and study its effect on growth and development but do not explore its impact on aid effectiveness (see for example, Easterly and Levine 1997, Alesina et al. 2003; Easterly, Ritzen and Woolcock 2005; Balamoune-Lutz 2005).

It is rather surprising that while many agree that sociocultural factors may affect the effectiveness of aid and may in turn be affected by aid, there is not a single empirical study that has explored the effect of social capital on aid effectiveness at the macro level. The only existing work that tries to relate social capital to aid is Knowles (2002). However, Knowles examines the effect of social capital on foreign aid allocation not effectiveness. The author uses three indicators of social capital: trust, civic norms and membership in voluntary organizations, and four types of foreign aid total ODA (official development aid), multilateral, bilateral, and aid by nongovernment organizations (NGOs). His study is based on cross-sectional data from 19 OECD Development Action Committee (DAC) member countries, a rather small sample. Knowles (2002) finds that countries with higher trust allocate more foreign aid (all types of aid). Civic norms are positively correlated with aid only when aid is given by NGOs, whereas memberships in voluntary organizations have no association with aid. To the extent that trust may be a more accurate measure of social capital, as argued by Knowles, social capital would have a positive effect on (or at least a positive link with) aid allocation. If trust (which constitutes a major indicator of social capital) matters for allocation, one could make a strong case that it may also matter for effectiveness. The use of aid for the 'purpose it is meant for' implies a relationship of trust. Such trust may, to a large extent, depend on the level of social capital.

In this paper, we try to shed light on the interactions between aid and institutional quality and social capital. More specifically, we explore whether institutions and social capital could enhance the effectiveness of aid independently of good policies. The empirical results indicate that both institutions and social capital could have an impact on the effectiveness of aid. Moreover, once we account for the effect of social capital or institutions on aid effectiveness, the impact of policy becomes statistically insignificant. These results have important policy implications as they indicate that conditioning aid allocation on 'good policies' may not lead to an optimal allocation of aid, as countries

³ The exception being Burnside and Dollar 2004 (originally published in 2000).

with high social capital at the macro level could actually make good use of aid independently of good policies. However, we must keep in mind that economic policies still have a robust positive effect on growth, independently of the level of aid.

The remainder of the paper is laid out as follows. In the next section we summarize major findings on the impact of policy on aid effectiveness. In section 3, we present some insights on the role of institutions, social capital and aid. In section 4, we report and comment on the empirical results. In section 5, we discuss the policy implications of our findings. We provide concluding comments in section 6.

2 Aid effectiveness and economic policy

There is a qualitatively and quantitatively significant body of literature on aid effectiveness. In the present paper we would like to focus on three relatively recent studies that have derived strikingly different conclusions on aid effectiveness and the impact of policy. The first is the paper by Burnside and Dollar (2000)—based on a paper that appeared first in 1997 as a World Bank Policy Research Working Paper—which was hailed by many policymakers, economists, the World Bank, the UK Department of International Development and the media for its main conclusion, that ‘aid has a positive impact on growth in developing countries with good fiscal, monetary and trade policies but has little effect in the presence of poor policies’ (Burnside and Dollar 2000: 847). Indeed, the above study has been very influential among donor agencies since it provided the donor community with a policy criterion for allocating aid, namely that aid should be allocated on a *selective* basis to those countries that have adopted good policies in view of the central finding of the study that aid works only in a good policy environment.⁴

Burnside and Dollar estimate growth equations and include, in addition to several other potential determinants of growth, the variable aid and interaction terms of aid and a policy index. In four OLS estimations and two IV (2SLS) estimations, they find the coefficient on ‘aid times policy’ to be positive and significant at the 5 per cent level (at the 10 per cent level in one estimation) and the coefficient on ‘aid squared times policy’ to be negative and statistically significant (at the 5 per cent level). The coefficient on aid as a ratio of GDP was not significant in any of the equations. This implies that aid is only effective in a good-policy environment, and suggests that for aid to work its allocation should be conditional on good policy. These results also imply that there are diminishing returns to aid, as the coefficient on the interaction between policy and the square of the variable ‘aid/GDP’ is negative.

Another important work in this area is by Hansen and Tarp (2000) who first use an analytic framework that evaluates the existing empirical literature and draw a conclusion that they subsequently support with empirical evidence from their more elaborate estimations of the effect of aid on growth using panel data and GMM estimation in Hansen and Tarp (2001). Hansen and Tarp’s conclusion states that aid

⁴ See Collier and Dollar (2001, 2002); Beynon (2003); Munro (2005) and more recently Amprou, Guillaumont and Guillaumont (2006) and Radelet (2008) on the ‘selectivity’ issue. Isopi and Mavrotas (2008) test the selectivity hypothesis by linking together aid allocation and aid effectiveness in an empirical study using data for all major donors spanning the period 1990-2003.

promotes growth and this effect is not conditional on good policy. The results in Hansen and Tarp (2001) also confirm the presence of diminishing returns to aid. Moreover, the authors find that when investment and human capital are controlled for, the positive effect of aid disappears. These findings clearly contrast with the conclusion in Burnside and Dollar (2000) that good policies are crucial to the positive effect from aid on growth.

The third influential contribution—a more recent one—is by Easterly, Levine and Roodman (2004).⁵ The authors use a new dataset and perform estimations using the sample in Burnside-Dollar but obtain different results. Interacting aid with policy did not have any effect on growth. Moreover, instead of the coefficient on the term ‘aid squared times policy’ being negative (diminishing returns to aid) as in Burnside-Dollar, Easterly, Levine and Roodman find a positive and statistically significant coefficient. The authors conclude that:

adding additional data to the Burnside-Dollar study of aid effectiveness raises new doubts about the effectiveness of aid and suggests that economists and policymakers should be less sanguine about concluding that foreign aid will boost growth in countries with good policies (ibid. 2004: 779-89).

Thus, these three influential studies yield three different conclusions: Aid promotes growth only in countries with good policies; aid promotes growth regardless of policies; and aid does not necessarily promote growth in good policy environments. Obviously, there is scope for more empirical research on the question of what really determines aid effectiveness.

The policy implications of the findings in Burnside-Dollar are extremely crucial when aid allocation is contingent upon expected aid effectiveness. These policy implications also may raise some serious questions. First, if the links between aid effectiveness and policies are reliable, donors may try to direct more aid (at least the type of aid directed primarily at enhancing growth) to countries with sound policies and less aid to countries with poor policies. This poses the first problem. What do we do in the case of countries (that need aid) where policies are poor in the short run (1-3 years)? For example, when the country has short-term high inflation or high budget deficit—two components of the policy index used in Burnside-Dollar and other studies. In addition, several studies have shown that policy reforms are endogenous; higher income causes policy to improve. In this case, reducing or delaying aid because of poor policies may deprive a country from having access to funds that may help bring economic growth that would, in turn, lead to policy reforms. Second, policy reforms tend to be highly influenced by institutional quality (Addison and Balamoune-Lutz 2006), which in turn tends to be influenced by social factors such as the level of social capital (Balamoune-Lutz and Lutz 2004; Addison and Balamoune-Lutz 2004; Easterly, Ritzen and Woolcock 2005; Balamoune-Lutz 2005, 2007) that are often viewed as deep determinants of long-term growth and income. For example, using 3SLS estimations, Easterly, Ritzen and Woolcock (2005) show that social cohesion (which we view in this paper as social capital) has a positive impact on institutions and that both social cohesion and good institutions have positive effects on growth. Thus, we would expect these deep

⁵ Major elements of the empirical analysis and the underlying assumptions in Easterly, Levine and Roodman (2004) are laid out in Easterly (2003).

determinants of growth to have an influence on aid effectiveness. This, however, may pose a dilemma for donors, not only because it is not easy for donors to influence institutional quality in the short run (hence the appeal of focusing on economic policies since they are easier to influence) but more importantly because aid may actually retard institutional reform or even cause institutional quality to deteriorate (Remmer 2004; Bräutigam and Knack 2004).

3 Social capital, institutions and aid

The roles of institutions and social capital in economic growth and development have been widely discussed in the economic and political science literature. There is a large body of literature on the important role of institutions in economic growth and development, see for example, Acemoglu, Johnson and Robinson (2001, 2003, 2005), Rodrik (2004) and Rodrik, Subramanian and Trebbi (2004). Recent empirical literature on the role of social capital includes Whiteley (2000), Zak and Knack (2001) and Balamoune-Lutz (2005, 2008). A recent and insightful discussion of social capital and its use as a deep determinant of development is provided in Knowles (2007). In the remainder of this section, however, we focus our discussion on the relationship between aid, social capital and institutions.

As explained in the introductory section, social capital may have a significant impact on aid effectiveness. However, aid may influence social capital and, thus, may have additional effects on growth through this interaction with social capital. Mosley, Hudson and Verschoor (2004) claim that:

it is now widely believed that aid money invested in conflict prevention, promoting democracy and equal citizenship and fighting corruption will help build social capital and thus and otherwise, further the economic objectives of growth and poverty reduction (Whiteley 2000; Knack 1999; Knack and Keefer 1997), through a more long-term and indirect route (Mosley, Hudson and Verschoor 2004: F219).

The empirical literature on aid effectiveness in general has ignored the potential effects of institutions on aid effectiveness. But aid could also have significant effects on institutional reform. High levels of aid may have a negative effect on institutions and/or policy reforms (Younger 1992; Moss, Pettersson and van de Walle 2006; Bräutigam and Knack 2004; Remmer 2004). Examining the aid experience of Sub-Saharan Africa, Moss, Pettersson and van de Walle (2006) argue that:

states which can raise a substantial proportion of their revenues from the international community are less accountable to their citizens and under less pressure to maintain popular legitimacy. They are therefore, less likely to cultivate and invest in effective public institutions (ibid. 2006: 1).

Also, focusing on Sub-Saharan Africa, Bräutigam and Knack (2004) find a robust statistical link between high aid levels and deteriorations in governance.

Indeed, political economy issues are of growing importance in recent years in view of the new focus on aid following the Monterrey consensus in 2002 and the need to increase substantial aid flows so progress can be made with the MDGs. Work in this

area is mostly related to governance issues in the aid apparatus both in terms of donors and recipients. It is fair to argue, however, that a rigorous analysis of donor incentives and of the overall interaction of interest based donor and recipient policies has been largely neglected in the voluminous aid literature.⁶

In theory, social capital and institutions may complement each other as well as complement aid (positive relationship). But they may also act as substitutes to aid. If social capital and good institutional quality enhance growth and if higher growth leads to less need for aid, the relationship between social capital (or institutions) and aid would be negative. It is also possible that at a certain levels of institutional quality, social capital and institutions may be substitutes (see Balamoune-Lutz and Lutz 2004). Micro-based studies such as Gabre-Madhin (2001) and Fafchamps and Minten (2002) report that among agricultural traders, social capital seems to substitute for institutions in environments where institutions are weak.

4 Empirical analysis

We use the dataset put together by Easterly-Levin-Roodman. These data, along with the variable description may be accessed at www.cgdev.org. The empirical analysis follows Easterly-Levin-Roodman methodology for deriving the policy index and treatment of outliers, and we are able to replicate all of their results. We focus on social capital as a major indicator of social capital and use fractionalization as our proxy for social capital, primarily because this variable has been included in most of the literature on aid effectiveness and, more importantly for our purpose, it is included in the Burnside-Dollar and Easterly-Levin-Roodman studies.⁷ Ethno-linguistic fractionalization is measured by the probability that two randomly selected individuals will not belong to the same ethno-linguistic group (Easterly, Ritzen and Woolcock 2005: 8). Easterly, Ritzen and Woolcock (2005) use ethno-linguistic fractionalization as an indirect measure of social cohesion (the authors also use income distribution as another indirect measure of social cohesion).⁸

We first estimate equations using data from Easterly-Levin-Roodman and the sample of countries in Burnside-Dollar. These are the equations estimated in Easterly-Levin-Roodman (2004). However, these authors report, for the most part, only the coefficient on the variable ‘policy x aid’ and ‘policy x aid’.² Estimation results are shown in Table A1 (Appendix A). As reported in Easterly-Levin-Roodman and indicated by the results in Table A1, the impact of policy on aid effectiveness is not robust. Next,

⁶ On the important issue of the political economy of aid see a recent special issue edited by Sajal Lahiri and Katharina Michaelowa in the *Review of Development Economics* in 2006 and the papers therein, in particular regarding the role of institutions within aid agencies and the conflicting objectives adopted in many cases, the delivery mechanisms involved and the incentives that may affect the overall assessment of the various aid modalities adopted by donors.

⁷ Perhaps other measures of social capital such as trust or membership in voluntary associations would have been equally suitable. However, the *World Values Survey*, which is the primary source of data on trust in a large group of countries (mostly from Europe), covers very few developing countries.

⁸ Easterly and Levine (1997) provide a more detailed description of ethno-linguistic fractionalization as a measure of social capital (social cohesion).

Table 1a
The role of institutions, data from 1970-93 (period used in Burnside and Dollar 2000)

Dependent variable: Growth of GDP per capita

	BD original (low- & middle-income outliers excl., no aid ² *policy)		ELR data, BD countries (low- & middle- income, outliers excl.) 5/SLS	ELR data, BD countries (low-income, incl. aid ² *policy) 7/OLS		ELR data, BD countries (low-income) 8/OLS		ELR data, BD countries (low-income) 8/2SLS		ELR data and sample of countries (low-income) 8/2SLS	
	5/OLS	5/2SLS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Aid	-0.50	-1.83	-1.33	-0.77 *	-0.78	-0.72	-2.30**	-1.65	-0.24	0.34	-1.57*
Aid*policy	0.16 *	0.06	0.53**	0.20	-0.09	-0.09		-0.16		-0.02	
Aid ² *policy				-0.05 *					-0.89		
Initial GDP per capita (log)	-0.61	-0.60	-0.67	-0.51	-0.42	-0.42	-0.56	-0.56	-0.89	-0.47	-0.80
Ethnf (Ethnic fractionalization)	-0.46	-0.91	-0.91	-0.67	-0.75	-0.74	-0.82	-0.72	-1.72	-0.59	-0.64
Assassinations	-0.41	-0.30	-0.42	-0.91 *	-0.88	-0.89	-0.78	-0.79	-0.81	-0.95*	-0.73
EF*Assassinations	0.70	0.41	0.61	1.13	1.24	1.25	0.93	1.06	1.17	1.37	0.85
SSA	-2.00**	-1.52 *	-1.12	-1.44**	-1.36**	-1.35**	-1.51**	-1.47*	-0.65	-1.38**	-1.41**
Fast-growing East Asia	1.33**	1.14 *	1.16 *	0.87	0.48	0.49	0.62	0.31	0.27	1.09	1.17*
Inst. Quality	0.54***	0.23	0.29	0.26	0.18	0.19	0.10	-0.79	0.54	0.43**	0.25
M2/GDP (lagged)	0.01	0.02	0.03**	0.05***	0.05**	0.05**	0.05***	0.05***	0.04**	0.01	0.01
Policy	0.74***	0.83***	0.58***	1.11***	1.37***	1.38***	1.20***	1.49***	1.27***	1.18***	1.08***
ICRG*Aid	0.11	0.34	0.10	0.19 *	0.21**	0.20**	0.47**	0.42	-0.34	-0.08	0.32**
ICRG *Aid ²							-0.06*		0.06	0.01	-0.06***
Aid ²					0.01		0.32*				0.27***
R ²	0.40	0.47	0.38	0.50	0.49	0.49	0.49	0.48	0.27	0.42	0.44
No. of observations	270	270	268	183	183	183	183	183	183	205	205

Notes: * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level. *t*-statistics are omitted.

BD = Burnside-Dollar; ELR = Easterly-Levin-Roodman;

Eq. 5 (/OLS and /2SLS) corresponds to equation 5 in Burnside-Dollar (2000), to which we add the interaction between institutional quality and aid (the variable ICRG*Aid). The first equations (first 2 columns) use Burnside-Dollar data and sample of countries, while the third equation uses ELR data and Burnside-Dollar sample of countries. Equations 7 and 8 (/OLS and /2SLS) use the same variables used in equations 7 and 8, respectively (Burnside-Dollar) and the interaction between institutional quality and aid (ICRG*Aid). We also include aid² in the equations in columns 4 and 6).

following the discussion in section 3, we re-estimate the equations including the interaction between aid and institutional quality (ICRG) and report the results in Table 1a (using data from the period 1970-93) and Table 1b (using data from 1970-97). Finally, we introduce the interaction between aid and our proxy of social capital as measured by ethnic fractionalization (higher fractionalization implies lower social capital) and show the results in Tables 2a and 2b.

Table 1b
The role of institutions, data from 1970-97
(period used in Easterly, Levine and Roodman 2004)

Dependent variable: Growth of DGP per capita

	ELR data, BD countries (low- & middle-income) 5/2SLS		ELR data, BD countries (low-income, with outliers) 8/2SLS	ELR data, BD countries (low-income, outliers excl.) 8/2SLS	ELR data and sample of countries (low-income) 8/OLS	ELR data and sample of countries (low-income) 8/2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Aid*policy	-1.29	-1.24	-0.43 (-0.39)	-0.01 (-0.01)	-1.18* (-1.76)	-0.68 (-0.44)
Aid ² *policy	0.05 (0.54)	0.05 (0.55)	-0.03 (-0.31)	0.89* (1.74)		
Initial GDP per capita (log)	0.13	0.09	-0.46 (0.45)	-1.56* (-1.75)	-0.78 (-1.59)	-1.13* (-1.91)
Ethnf (Ethnic fractionalization)	-0.15	-0.23	-0.49 (-0.76)	-2.04 (-1.60)	-0.39 (-0.48)	-0.86 (-0.97)
Assassinations	-0.32	-0.33	-0.84* (-1.86)	-1.06 (-1.57)	-0.87** (-2.19)	-0.77* (-1.72)
EF*Assassinations	0.27	0.30	0.86 (0.86)	1.02 (0.74)	0.89 (1.02)	0.67 (0.49)
SSA	-1.42	-1.33	-1.57* (-1.86)	-0.45 (-0.46)	-1.61*** (-2.75)	-1.27** (-1.98)
Fast-growing East Asia	1.27*	1.23**	1.04* (1.78)	1.59* (1.81)	1.49*** (2.79)	1.24** (2.17)
Inst. Quality	-0.01	0.01	0.25 (0.61)	1.13** (2.10)	0.28 (1.59)	0.43 (0.83)
M2/GDP (lagged)	0.03**	0.03**	0.05*** (3.10)	0.04** (2.31)	0.01 (0.87)	0.02 (1.06)
Policy	0.86***	0.88***	1.23*** (3.81)	0.34 (0.51)	1.12*** (6.50)	1.18 (6.01)
ICRG*Aid	0.30 (1.10)	0.25 (0.66)	0.12 (0.41)	-0.80* (-1.69)	0.24* (1.82)	-0.5 (-0.18)
ICRG *Aid ²		0.01 (0.16)		0.07 (1.07)	-0.05*** (-3.00)	
Aid ²					0.24*** (3.12)	0.10 (1.02)
R ²	0.34	0.34	0.46	0.26	0.41	0.37
No. of observations	322	322	216	207	244	244

Notes: BD = Burnside and Dollar; ELR = Easterly, Levine and Roodman;

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level. *t*-statistics in parentheses.

Table 2a
The role of social capital, data from 1970-93
(period used in Burnside and Dollar 2000)

Dependent variable: Growth of GDP per capita

	BD original (low- & middle- income, outliers excl.)		ELR data, BD countries (low- & middle- income, outliers excl.)	ELR data, BD countries (low- & middle- income, with outliers)	ELR data , BD countries (low- income)	ELR data , BD countries (low- income)	ELR data, BD countries (low income)
	5/OLS	5/2SLS	5 /2SLS	5 /2SLS	7/OLS	8/OLS	8/2SLS
			(1)	(2)	(3)	(4)	(5)
Aid	-0.02	-0.04	0.02	0.94*	0.25	0.45	0.52
Aid*policy	0.19**	0.15	0.48**	0.22**	0.28*	-0.10	0.03
Aid ² *policy					-0.05**		
Initial GDP per capita (log)	-0.60	-0.61	-0.67	-0.06	-0.36	-0.26	-1.03
Ethnf (Ethnic fractionalization)	-0.43	-0.55	0.47	1.42	0.25	-0.16	1.76
Assassinations	-0.45*	-0.45*	-0.47	-0.54*	-1.04**	-1.06**	-0.67*
EF*Assassinations	0.79 *	0.81*	0.68	0.76	1.31**	1.46	
SSA	-1.87**	-1.81**	-0.77	-0.25	-1.33*	-1.23*	-0.82
Fast-growing East Asia	1.31**	1.22*	1.04*	1.01	1.08	0.72	0.47
Inst. Quality	0.69**	0.68**	0.45***	0.39**	0.50***	0.44***	0.43**
M2/GDP (lagged)	0.01	0.01	0.02	0.13	0.05**	0.042**	0.03*
Policy	0.71**	0.78**	0.60**	0.71***	0.99***	1.25***	1.27***
ICRG*aid	0.004	0.07	-1.80	-2.65**	-0.40	-0.53	-3.95*
ICRG *aid ²							0.43
Aid ²							
R ²	0.39	0.39	0.34	0.30	0.49	0.48	0.24
No. of observations	270	270	268	274	183	183	183

Notes: BD = Burnside and Dollar; ELR = Easterly, Levine and Roodman;

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.
t- statistics are omitted;

Eq. 5 (/OLS and /2SLS) corresponds to equation 5 in BD (2000), to which we add the interaction between institutional quality and aid (the variable Ethnf*Aid). The first equations (first 2 columns) use BD data and BD sample of countries, while the third equation uses ELR data and BD sample of countries. Equations 7 and 8 (/OLS and /2SLS) use the same variables used in equations 7 and 8, respectively in BD (2000), and the interaction between our proxy for social capital and aid (Ethnf*Aid).

Table 2b
The role of social capital, data from 1970-97
(period used in Easterly, Levine and Roodman 2004)

Dependent variable: Growth of GDP per capita

	ELR data, BD countries (low- & middle- income) 5/2SLS		ELR data, BD countries (low-income, outliers excl.) 8/2SLS			ELR data, BD countries (low-income) 8/2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Aid	-0.21 (-0.77)	0.64 (1.20)	-0.71 (-1.40)	2.36* (1.91)	0.38 (0.33)	1.47 (1.62)	0.82* (1.79)	0.59 (1.09)
Aid*policy	0.08 (0.95)	0.17* (1.78)	0.47 (1.52)	-0.13 (-0.31)			0.06 (0.60)	0.02 (0.14)
Initial GDP per capita (log)	-0.12 (-0.02)	-0.02 (-0.03)	-0.89 (-1.30)	0.21 (0.24)	-0.30 (-0.31)	-0.30 (-0.33)	-0.30 (-0.47)	-0.72 (-1.20)
Ethnf (Ethnic fractionalization)	0.50 (-0.70)	1.30 (1.00)	-0.74 (-0.83)	2.93* (1.80)	1.83 (1.09)	2.61 (1.05)	1.02 (0.81)	2.02 (1.30)
Assassinations	-0.48** (-2.21)	-0.62** (-2.25)	-0.84** (-2.04)	-1.89*** (-2.70)	-1.74** (-2.36)	-1.53*** (-2.71)	-1.32*** (-3.19)	-0.81*** (-2.63)
Ethnf*Assassinations	0.68* (1.74)	0.85* (1.75)	0.63 (0.72)	2.67* (1.85)	2.36 (1.62)	1.88* (1.66)	1.60* (1.87)	
SSA	-0.83 (-1.19)	-0.33 (-0.41)	-1.56** (-2.24)	-1.01 (-1.19)	-0.69 (-0.83)	-0.86 (-1.08)	-1.08 (-1.54)	-0.97 (-1.25)
Fast-growing East Asia	1.21** (2.36)	1.11** (1.98)	1.68** (2.50)	0.86 (1.02)	0.50 (0.71)	0.73 (1.13)	1.19** (2.04)	0.81 (1.09)
ICRG	0.28** (1.99)	0.37** (2.44)	0.53*** (3.49)	0.44** (2.55)	0.37** (2.12)	0.42** (2.47)	0.43*** (2.76)	0.42** (2.43)
M2/GDP (lagged)	0.03** (2.12)	0.02 (1.43)	0.04*** (2.79)	0.04** (2.15)	0.04** (2.35)	0.04** (2.26)	0.05*** (3.07)	0.05*** (2.71)
Policy	0.87*** (4.61)	0.78*** (3.94)	0.64 (1.34)	1.45** (2.36)	1.44*** (5.18)	1.38*** (5.31)	1.12*** (3.69)	1.29*** (3.29)
Ethnf*Aid		-2.09* (-1.70)		-3.32** (-2.52)	-2.95** (-2.27)	-4.15** (-2.08)	-1.56* (-1.75)	
Ethnf*aid ²						0.30 (1.05)		-3.41* (-1.84)
Aid ²					0.25 (1.13)			0.34 (1.17)
R ²	0.36	0.30	0.47	0.36	0.23	0.27	0.44	0.27
No. of observations	322	322	207	207	207	207	216	216

Notes: BD = Burnside and Dollar; ELR = Easterly, Levine and Roodman;

* Significant at the 10% level; ** significant at the 5% level; *** significant at the 1%.
t- statistics are in parentheses.

The results shown under column (2) in Table 1a indicate that, when we use ‘aid x policy’, ‘aid² x policy’, and ‘aid x ICRG’, the first term is statistically insignificant while the other two terms (as well as aid) are significant at the 10 per cent level. However, aid has a negative coefficient that seems to be quite robust (although its statistical significance is not robust). Similar to the findings in Burnside-Dollar, we find that the coefficient on ‘aid² x policy’ is negative. The interaction between institutional

quality and aid seems to have a positive impact on growth, suggesting that good institutions help make aid work.

Once we drop the term ‘aid² x policy’ and include the square of the variable aid, the statistical significance of the term ‘aid x ICRG’ improves and becomes significant at the 5 per cent level. Dropping aid² from the equation (column (4)) does not change this result. The results in column (5) suggest that the effect of institutional quality is positive at low levels of aid (the coefficient on aid x ICRG is positive and significant at the 5 per cent level) and diminishes as aid increases (the coefficient on ‘aid² x policy’ is negative). This may suggest that institutions and aid could be substitutes. Moreover, the impact of aid is negative and statistically significant (at the 10 per cent level) while the coefficient on aid² is positive, implying a U relationship between aid and growth. While this may seem to contrast with the findings that aid has diminishing returns, it is important to bear in mind that the interaction between aid² and institutions also reflects diminishing returns to aid. The results from IV estimation under column (9) confirm these findings.

The estimates reported in Table 1b use data from 1970-97. The results from OLS estimations are consistent with the findings that institutions have an impact on aid effectiveness. Moreover, re-estimating the 2SLS equation in column (9) of Table 1a and extending the data to 1997 (results shown in column 5 of Table 1b), produces similar results to those obtained in Table 1a (column 9). Thus, the evidence on the role of institutions seems to be strong.

Tables 2a and 2b display the results from estimating equations including the interaction of our proxy of social capital (fractionalization; higher fractionalization implies lower social capital). The results indicate that there is overwhelming statistical evidence (based on 2SLS estimations) that social capital has a positive impact on aid effectiveness. The interaction between fractionalization (poor level of social capital) and aid appears to have a negative effect on growth in all seven IV estimations. The results also indicate that, for the most part, the variable ‘aid’ is not significant. Moreover, when we focus on low-income countries, ‘aid x policy’ is statistically insignificant in all specifications except one OLS estimation (7/OLS, in column (3) of Table 2a). Thus, it seems that once we account for the role of social capital, there is no effect from policy on aid effectiveness.

5 Concluding comments

In this paper, we examine the impact of institutional quality and social capital on aid effectiveness. We find that in general social capital and institutions enhance aid effectiveness. Moreover, once we account for the role of social capital (or institutions), the impact of policies disappears. This casts doubt on the conclusions in Burnside and Dollar (2000) and the policy lessons derived from their findings. Our results have important policy implications as they indicate that conditioning aid allocation on ‘good policies’ may not lead to an optimal (or fair) allocation of aid, as countries with high social capital at the macro level could actually make good use of aid independently of good policies. However, we must keep in mind that both good policies and institutions have direct positive effects on growth, independently of the level of aid.

Our results do not dismiss the importance of policies. They merely provide additional evidence that the impact of policies, as defined in the literature, on aid effectiveness does not exist or is weak at best and not robust to changes in specification and sample. To shed more light on the potential role of policies, we may, as suggested by Hudson and Mosley (2001), need to broaden our definition of ‘good policies’. We also need to stress that if aid is directed at poverty reduction, then the focus should be on the impact of aid on poverty reduction not growth. Furthermore, poverty should be clearly defined so that we can properly identify the relationships between aid, growth and poverty.

From a policymaking standpoint, the findings also give rise to an important question: If social capital enhances aid effectiveness, what can we do to foster social capital? One obvious way is to try to strengthen social capital through education. Easterly, Ritzen and Woolcock (2005) suggest that education could be an ‘important policy lever for enhancing social cohesion’. Citing Heyneman (2000), the authors explain how education can help achieve this goal.

First, it helps provide public knowledge about the very idea of social contracts among individuals and between individuals and the state. Second, schools help provide the context within which students learn the appropriate behaviour for upholding social contracts, by providing students with a range of experiences in which they learn how to negotiate with people, problems, and opportunities they might not otherwise encounter... Third, education helps provide an understanding of the expected consequences of breaking social contracts; indeed, it helps citizens understand and appreciate the very idea of a social contract (Easterly, Ritzen and Woolcock 2005: 15).

Recently, Asiedu and Nandwa (2007) focus on aid for education and assess its effect on economic growth in the recipient countries. The authors further disaggregate aid by considering different levels of education. At the same time, they account for the heterogeneity of aid recipients, by running separate regressions for low-income and middle-income countries. In both respects, they find that the growth impact of aid varies considerably. In low-income countries, aid for primary education enhances growth, while aid for higher levels of education is ineffective. By contrast, growth in middle-income countries may be promoted by aid for higher levels of education, while aid for lower levels of education even appears to be counterproductive (possibly because aid in the form of loans is costly, while ending up in projects with small returns).

Collier and Dollar (2004) suggest that ‘the “poverty-efficiency” aid allocation is merely a benchmark guide if a donor lacks other information about the country and also the power to change or prevail over government preferences’. Perhaps this suggestion summarizes the way aid allocation is being done and why having a variable such as ‘good policy’ be an important determinant of aid effectiveness is an attractive proposition. First, measuring policy (in a meaningful quantitative way) is easier than measuring institutions. Second, donors (and their advisors) may prefer to look at variables they have (or believe they have) the power to change. Policy is much easier to change than are institutions and social structures. In addition, this all can be assessed before aid is allocated. On the other hand, if the focus is on how aid can improve the determinants of aid effectiveness, donors (or the international community) may have more success making aid more effective in reducing poverty and improving the welfare of individuals in the recipient countries. This should have a more significant impact on long-term growth. Increasing the availability of resources to fulfil basic needs (food,

health, education), along with the strengthening of institutional quality and social capital will most likely lead to good policies, not the other way around.

Summing up, the current preoccupation with scaling up aid should not divert attention from ensuring a productive use of aid. Both donors and recipients bear major responsibility in this respect (see Mavrotas and Nunnenkamp 2007 for a detailed discussion). In this regard, we very much hope that the present paper will help to re-orientate the research agenda on aid effectiveness to new fruitful directions by looking at an important factor in the overall aid-growth relationship, namely social capital, which has been neglected so far.

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Appendix Table A1
Testing the robustness of Burnside-Dollar results (see Easterly, Levine and Roodman 2004)

Dependent variable: Growth of GDP per capita

	BD original Low- & middle-income, outliers excl. (5/OLS)		BD original. Low- and middle-income, outliers excl. (5/2SLS)		BD original. Low- income group, outliers excl. (8/OLS)		BD original. Low- income group, outliers excl. (8/2SLS)		BD original. Low- income group. (7/OLS) ^a		ELR full sample. Low- income group, outliers excl. (8/2SLS)
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)	(6)
Aid	-0.02	-0.21	-0.32	0.55	-0.18	-0.85*	-0.24	-0.89	-0.01	-0.83**	-0.16
Aid ²		0.03		0.07		0.08 *		0.09		0.10**	
Aid*policy	0.19***	0.25***	0.18	0.15	0.26***	0.31***	0.25**	0.25**	0.27**	0.53***	-0.20
Aid ² *policy									-0.02**	-0.06***	
Initial GDP per capita (log)	-0.60	-0.65	-0.91	-0.79	-0.72	-0.90	-0.83	-0.92	-0.60	-0.77	-1.21**
EF	-0.42	-0.50	-0.73	-0.70	-0.58	-0.86	-0.67	-0.94	-0.56	-0.85	-0.74
Assassinations	-0.45	-0.44	-0.41	-0.43	-0.79 *	-0.67	-0.76	-0.65	-0.84 *	-0.73	-0.69
EF*Assassinations	0.79	0.77	0.71	0.75	0.69	0.43	0.63	0.48	0.88	0.51	0.69
SSA	-1.87**	-1.77**	-1.29	-1.43	-2.24***	-1.98***	-2.11***	-1.85**	-2.20***	-1.95***	-1.20
Fast-growing East Asia	1.31**	1.28**	1.15**	1.07*	1.53**	1.43**	1.46*	1.18	1.33*	1.54**	1.01
Inst. Quality	0.69***	0.66***	0.66***	0.62***	0.84***	0.81***	0.84***	0.80***	0.8***	0.80***	0.38**
M ² /GDP (lagged)	0.01	0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.03*	0.33**	0.01
Policy	0.71***	0.71**	0.74***	0.80***	0.56 *	0.47	0.59	0.62	0.74*	0.39	1.61***
R ²	0.39	0.40	0.38	0.39	0.47	0.48	0.47	0.48	0.47	0.49	0.35
No. of observations	270	270	270	270	184	184	184	184	189	189	236

Note: * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

BD = Burnside-Dollar; ELR = Easterly-Levin-Roodman;

^a This equation is not in the original Burnside-Dollar equations. We add the term aid² to explore whether this specification shows that aid has diminishing returns.

The aid²*policy was also used by Burnside and Dollar (2000) in Equation 4 but this term was significant only in OLS. It was insignificant in all the IV (2SLS) estimations.