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## Abstract

The empirical evidence of low effectiveness for growth of investment in physical and human capital policies based on international aid is analyzed and discussed (§ 1 and 2). Reasons are linked both to limits of analytical and econometric methods (§ 4) and the existence of strong complementarities between different dimensions of macroeconomic, social and institutional context (§ 3). We critically discuss the new strategies proposed to gain effectiveness in development projects and policies.

## Keywords

Aid Effectiveness      Growth Policies      Institutions      Development

## **Introduction**

The evidence of different long-period growth paths in different regions of the world (Maddison 2001) has generated much debate. The focus has been on verification of the determinants of growth and the effectiveness of the aid granted to the less developed countries, whilst the problem of the relationship between economic growth and development has been pushed into the background. It has long been commonplace to regard economic growth as the most obvious form in which the development of a society is manifest: strong economic growth is symptomatic of ongoing cultural and behavioural changes which enable that growth to become permanent. Nevertheless, it has often been argued, reversing the causal connection, that if quantitative growth processes are to begin, it is necessary to involve the underlying dimensions of development and set them in motion. For many years, therefore, the attention has concentrated on various ‘recipes’ with which to start up growth.

In the early post-war years (see e.g. Nurkse 1953), the lack of growth was blamed on scant investments due to low saving capacity (gap financing theory). The action of the International Financial Institutions (IFI) was for long influenced

by the idea that the problem of economic growth could be solved by off-setting a lack of resources for investments with international aid. King and Levine (1994) stressed that “few economic ideas are as intuitive as the notion that increasing investment is the best way to raise future outputs, either for an individual or a nation” (p. 1). Over time, however the gap financing approach proved inadequate both theoretically and empirically. From the theoretical point of view, the importance became apparent of other factors, such as human capital and technological knowledge, and attention increasingly shifted to the quality of the macroeconomic and socio-institutional context of countries as a necessary condition for the start-up of substantial growth processes, and therefore for the effectiveness of aid itself. From the empirical point of view, the results of a large body of literature which had analysed the relationship between aid, investments and growth, were controversial and yielded ambiguous information. In a recent paper, Rajan and Subramanian (2005) have summarized the debate on the effectiveness of growth aid thus: “one of the most important and intriguing puzzles in economics [is] why is it so hard to find a robust effect of aid on the long-term growth of poor countries, even those with good policies?” (p. 1).

In this paper we analyse the effectiveness of aid and policies for growth based on investment in the basic production factors (physical and human capital). These are policies more frequently implemented in the second half of the last century and connected with generally adopted theoretical models. It was believed that industrialization and investment in capital were decisive steps towards sustained growth. The national import substitution strategies adopted during the 1950s in Latin America required high investments financed by agricultural surpluses. Also models of export-led growth presupposed a good endowment of physical capital and human capital, because the accumulation of knowledge is at the basis of the export sector’s competitiveness (Grossman and Helpman, 1989 and 1990; Romer, 1990).

In 1971, John Holsen, an economist at the World Bank, developed a model which estimated a country’s investment requirements, and he furnished information on the necessary level of aid by using the sectoral interdependences approach of Chenery and Strout (1966). This was an instrument intended to be temporary while waiting the development of specific models. However, it continued to be used to forecast investment needs after it was realized that the model did not yield correct estimates and that the mere accumulation of physical capital was not a sufficient condition for development (Meier, 1995; Todaro, 2000). The success of this model exemplifies the belief that aid is a sufficient condition to generate growth. However empirical studies are far from giving robust evidence to support this belief. The general question that arises from examination of the results in the literature is whether it is advisable to reverse the causal nexus by considering economic growth as the result of a broader process of development.

It should be pointed out that the relation between the endowment of production factors and economic performance depends on other characteristics, like trade openness. For this reason, the empirical studies analysed below often consider variables that estimate the degree of openness of economies. In this paper we shall not be concerned with the specific impact of policies for commercial and financial liberalization on the growth capacities of countries (as regards the former, see the surveys by Berg and Krueger (2003), Winters (2004) and Wacziarg and Welch (2008); as regards the latter, see Demirgüç-Kunt and Levine (2008)).

The paper is organized as follows. The first section analyses gap financing policies aimed in particular at the formation of physical capital (infrastructures, instrumental capital, technology) and the main empirical results on the relation among aid, investments and growth. Section 2 examines policies targeted on the formation of human capital. Section 3 analyses the main factors reducing the positive impact of aid and investments in physical and human capital on growth, with particular regard to the issue of conditionality. Finally, section 4 emphasises some methodological problems concerning empirical analysis of the relation between aid and growth. Section 5 concludes.

## **1 The link between aid, physical capital investment and growth**

There is a huge body of literature on the effectiveness of aid for investment in physical capital, and various classifications have been proposed (Hansen and Tarp 2000, Roodman 2007). Here we use a classification devised by Doucouliagos and Paldam (2005, 2006, 2008), who distinguish among three groups of empirical analyses:

- studies on the relationship between aid and savings and between aid and investments;
- studies on the relationship between aid and growth;
- studies on the relationship between aid and growth which consider a set of variables conditioning that relationship.

### **1.1. The relationship between aid and investments**

Analysis of the empirical linkage among aid, savings and investments dominated the first phase of study on aid effectiveness (Griffin and Enos, 1970, Papanek, 1972). The econometric approach was based on a model in which investment depends on saving, the flows of aid, and private or institutional flows of capital from abroad. The theoretical references were Rostow's model of the stages of growth, according to which "take-off into sustained growth" implies a raise in the share of saving and investment in GDP (Rostow 1960) and a 'neoclassical' interpretation of the Harrod-Domar model according to which saving is the basis of investment. The equation connecting investments, savings and aid can be written as follows:

$$[1] \quad i_t = s_t + a_t + f_{pt} + f_{ot}$$

where the variables respectively represent investments, savings, aid, flows of private capital and other financial flows as proportions of GDP. Since aid and savings are correlated, aid increases investments only if it does not entirely 'crowd out' national savings. There fore, earlier studies have been concerned with the effect of aid on savings.

Harms and Lutz (2004) report the results of several surveys on studies examining the aid/savings relation (Table 1) and the aid/investments relation (Table 2) conducted in the period 1996-2001. It appears that, in more than half of cases, aid entirely or more than entirely crowded out savings (counter-productive effect), although a number of studies showed only partial crowding-out, and in some cases a positive effect of aid on savings. Estimates of the effect of aid on investments furnish an even more varied picture. Hansen and Tarp (2000) find that the effectiveness of aid for investment is the norm; other studies like those of Easterly (1999) and Harms and Lutz (2004) are more uncertain and report a substantial number of cases in which the estimated coefficient is not significant or even negative.

In a study resuming his work of 1999, Easterly (2001) found that the regression coefficient of the share of investments in GDP on the share of ODA<sup>1</sup> in GDP was positive, significant and greater than 1 in only six countries out of 88. Eleven other countries exhibited a positive and significant correlation between aid and investments with a coefficient less than 1. In 36 cases, the coefficient was negative and significant. In the remaining cases the regression coefficient was not significant.

Also the meta-analyses by Doucouliagos and Paldam (2006, 2008 and 2009) report inconclusive results. The authors consider a series of studies on the relation between aid and saving (90 observations) and aid and investment (122 observations). As regards the former relation, they show that aid crowds out savings to a considerable but not total extent (the average crowding-out coefficient is 53%), although there are cases in which the crowding-out is equal to 100% or greater. The results are less satisfactory if the aid/investments relation is analysed. On average, aid translates into investments in a proportion equal to 25%; for the remaining part aid leads to a substantial increase in current public spending (Doucouliagos and Paldam, 2009; see also Boone, 1996).

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<sup>1</sup> Official Development Assistance (ODA) is aid by DAC member-countries, or by multilateral institutions to developing countries. Such funds comprise a grant of at least 25%.

**Table 1** – Results of regressions between aid (share of GDP) and saving (share of GDP)

	Number of estimates obtaining:						
	Number of observations	Counter – productive effect	total crowding-out	partial crowding-out	negative significant coeff.	non significant coeff.	positive significant coeff.
Hansen & Tarp (2000) <sup>1</sup>	24 (22)	1	13	8	14	10	0
Boone (1996) <sup>2</sup>	8	0	7	1	8	0	0
Harms & Lutz (2004) <sup>3</sup>	94	11	38	45	41	40	13

Notes: <sup>1</sup> taken from 6 studies had published between 1973 and 1992; <sup>2</sup> panels of estimated data, 96 countries, 5-year average 1971-90;

<sup>3</sup> 94 countries, annual data, 1960-2001, aid lagged by one period.

Source: Harms and Lutz (2004)

**Table 2** – Results of regressions between aid (share of GDP) and saving (share of GDP)

	Number of observations	significant negative coeff.	non-significant coeff.	positive significant coeff.
Hansen & Tarp (2000) <sup>1</sup>	16	0	1	15
Boone (1996) <sup>2</sup>	8	0	7	1
Easterly (1999) <sup>3</sup>	88	36	35	17
Harms & Lutz (2004) <sup>4</sup>	94	22	41	31

Notes: <sup>1</sup> (drawn from 7 studies published between 1972 and 1998); <sup>2</sup> (panel data, 10- year average, 96 countries, 1971-90);

<sup>3</sup> (annual data, 1965-95); <sup>4</sup> (annual data, 1960-2001, aid lagged by one period).

Source: Harms and Lutz (2004).

This concerns the fungibility of aid: the resources furnished through aid go to projects which would have anyway been undertaken by the receiving countries, and the resources thus freed up translate into greater public consumption; therefore, the effective marginal activity made possible by aid is in many cases not activity aimed at accumulation. Moreover, according to Barder (2006), large flows of aid discourage private investment because they may produce inflation, cause the domestic currency to appreciate, and create forms of Dutch disease.

## **1.2. The relationship between investments and growth**

We have seen that in some cases aid does not crowd out savings and actually increases investment, at least in a small proportion, but does this enhance growth? Empirical studies of the relationship between savings, investments and growth present once again controversial results. The relationship between savings and investments is sufficiently strong (for the developed countries), and also appears positive and significant in highly open economies, where one would expect a country's savings to be translated into investments in other countries (see on this Feldstein and Horioka, 1980, and Holmes 2005, for the positive hypothesis of co-integration between savings and investments; Vamvakidis and Wacziarg 1998 for the opposite hypothesis; some studies conclude that the relationship is strong in developed countries, doubtful in backward countries). More debatable is the relationship between investments and growth. A well-known article by Blömstrom et al. (1996) tested the relationship between the growth rate (five-year averages) and an indicator of accumulation in the periods prior to, current with, and following the period to which the growth referred (the data concerned 101 countries for the period 1965-1985). The authors found that, when controlling for the heterogeneity of countries with country dummies, the relationship between investment in the previous period and growth was negative and significant, that between accumulation and current growth was nil, while the coefficient was positive and significant between accumulation in period  $t+1$  and growth in period  $t$ . The Granger causality test showed a positive relationship between growth and subsequent accumulation (probably due to increased saving), while the other direction of causality did not pass the test. Blömstrom et al. concluded that "there is no evidence that fixed investment is the key to growth". The true factors for growth, according to the authors, lie elsewhere: in the quality of human capital, technological externalities, and institutional characteristics. This is synthesized in the pithy title of Easterly and Levine's (2001) article: "It's not Factor Accumulation, It's TFP" that is the fundamental determinant of growth. Other studies have obtained similar results. Attanasio et al. (2000) analysed the relationship among savings, investments and growth using World Bank data for 123 countries (period 1961-1994), and their results were similar to those of Blömstrom et al. (see also Podrecca and Carmeci 2001).

Opposite conclusions have been reached by Bond et al.'s (2004) study on 90 countries for the period 1960-1998. According to these authors, the theoretical hypothesis of a close relationship between accumulation and growth is confirmed: "an increase in the share of investments predicts a higher growth of output per worker both in the short run and in the steady state" (p. 32; see also Li 2002). Romero-Avila (2008) obtained similar results and underlined that the negative results of previous studies contrast with a large body of literature (see, as early as the 1960s, Hill, 1964). He suggested that the use of data on longer periods tends to confirm the hypothesis. Nevertheless, the analyses of Chandra and Sandilands (2003 and 2005) on India showed that in the long run it is growth that drives investments. To complicate matters further, a recent study by Crowder and de Jong (2009) shows that, in the African and developing countries, the significant causal relation is from growth to accumulation, not vice versa.

The hypothesis that the simplest way to foster growth is to increase investments in physical capital does not have sufficiently robust empirical support. It is not the case that international aid turns into investments, nor that the latter favour growth. Hence, given the uncertainty concerning the channel through which aid can foster growth, some studies discussed in the next section have estimated reduced forms by directly examining the relation between aid and growth.

### **1.3. The relationship between aid and growth**

Aid-growth models have been specified in various ways (see e.g. Papanek, 1972; Massell et al., 1972; Voivodas, 1973; Bornschier et al., 1978; Mosley, Hudson and Horrel, 1987). In many studies, the specification is the typical growth accounting approach where a term relative to aid effectiveness replaces the term relative to convergence. Doucouliagos and Paldam (2008 and 2009) consider 543 regressions of growth on aid. Only 38% of these regressions find a positive and significant aid/growth elasticity. If instead the 68 best regressions in the literature are considered, the percentage rises to 46%. Moreover, in the meta-regression on such studies the coefficient associated with aid is slightly positive but not significant. Another group of studies (Hansen and Tarp, 2001; Dalgaard, Hansen and Tarp, 2004) show the existence of a positive relationship between aid and growth, with decreasing returns (medicine models). The underlying hypothesis is that of the decreasing marginal productivity of the factors, as in the Solow model, applied to aid considered as a production factor (see also Hadjimichael et al., 1995; Durbarry et al., 1998; McGillivray, 2005).

On examining the variance among the coefficients in empirical studies, Doucouliagos and Paldam (2008 and 2009) report that it is greater than expected in the case of a random distribution of the results around a single average. This suggests the presence of 'subgroups' of regressions with different averages, which supports the conditionality hypothesis (aid is favourable to growth in a context



with specific features: see Section 3). Also Radelet, Clemens and Bhavnani (2004) stress the conditionality connected with features internal or external to the country receiving the aid. A large part of the literature concentrates on the internal characteristics: the quality of policies (Burnside and Dollar, 1997), of the institutions (Burnside and Dollar, 2004), the presence of totalitarian governments (Isham, Kaufmann and Pritchett 1995, Islam, 2003), geographical location in the tropics (Dalgaard et al., 2004). The external characteristics instead concern the modes in which the aid is granted and the practices of the donors: for instance, bureaucratized agencies with complex procedures cause aid effectiveness to diminish, and multilateral aid is considered more effective than bilateral aid.

An alternative approach examines the aid/growth relation by distinguishing among different types of aid. Clemens, Radelet and Bhavnani (2004) emphasise that the approach used in many studies (based on five-year averages of growth rates and aid flows, lagged if necessary) is appropriate only for verifying the effect of what they call “short-term aid”, that is, aid for infrastructures and for direct support to production sectors (around 53% of all aid). On isolating aid of this kind, Clemens, Radelet and Bhavnani find an aid/growth relationship which is positive and much stronger than that estimated by studies that use aggregate aid.

The factors that seem to influence aid effectiveness are therefore numerous, and they range from the aid-granting practices themselves to policies and the quality of the institutions of the receiving countries. This suggests not only the non-existence of general recipes for growth valid in all contexts, but also that strong complementarities may exist among a country’s economic, social and institutional dimensions. Before this strand in the literature is examined in more detail, the next section considers the effectiveness of the other grand policy proposed in the post-war period to favour growth: investment in human capital.

## **2. Education, human capital and growth**

The second grand policy proposed in the post-war period to favour the growth of the undeveloped countries was that of increasing human capital by means of large-scale educational programmes. “People with more education have higher wages. This is probably the second (after Engel's law) most well-established fact in economics” (Pritchett 2001, p. 368). The conviction that education – the fundamental dimension of human capital – increases labour productivity and fosters growth made schooling one of the main struts of the public anti-poverty growth policies (Easterly, 2001): “effective educational policies are a first-best poverty reduction strategy” (Gundlach et al. 2002, p. 92).

The period between 1960 and the early 2000s saw an explosion of schooling. In 1990, the rate of enrolment at primary schools reached 100% in most countries of the world apart from those of sub-Saharan Africa. Rates of enrolment at the other levels of schooling also significantly improved. In general, the rate of enrolment at secondary school more than quadrupled between 1960 and 2002

(from 16% to 67%); the African countries recorded an eightfold increase, although they still remained well below the average (with 28% of enrolments). In the same period, the rate of enrolment in further or university education in the developing countries rose from 2% in 1960 to 13% in 2002 (Figure 2). The data are taken from Szirmai (2005) and they are slightly different from those cited by other authors (see Easterly 2001). Nevertheless, the direction and the intensity of the change have been substantially the same.

Yet increased schooling has not had the strong impact in terms of growth which was expected. This difference between expectations and the reality has generated a large number of empirical studies on the relationship between education and growth, and identification of the problems still unresolved in the correct measurement of that relationship.

## **2.1. Human capital and growth: the theoretical hypotheses**

From the theoretical point of view there are three main mechanisms through which human capital directly affects growth. The first is that of formal education (considered as a crucial dimension of human capital) and learning on the job, which enhance individual skills and therefore increase productivity (Arrow, 1962; Mankiw, Romer and Weil, 1992). The second is the mechanism whereby education increases a economy's innovative capacity and thus fosters growth (Lucas, 1988; Romer, 1989; Aghion and Howitt, 1998). Thirdly, education facilitates the diffusion and transmission of the knowledge necessary to understand new processes and new technologies (Nelson and Phelps, 1966; Benhabib and Spiegel, 2005).

The model developed by Mankiw, Romer and Weil (1992) – an extension of Solow's model – embodied the first hypothesis and added human capital as a further factor in the production function (augmented Solow model). A proportion of saving is allocated, not to the accumulation of physical capital, but to the accumulation of human capital and, given a certain propensity to save, the steady state level of income will be greater than in a model which does not include human capital.

In Lucas's endogenous growth model (1988), the accumulation of human capital increased knowledge via learning through schooling and learning through training, and, as stated by the second hypothesis, the investment in knowledge produced an increase in labour productivity and led to positive growth rates in the long period. Lucas replaced the technological change in Solow's model with human capital accumulation as the engine of growth. Finally, the interaction between physical capital and human capital was assumed as the key hypothesis in models of endogenous growth. Arrow (1962) had already proposed a model of endogenous growth in which human capital grows through learning by doing. Such learning is a function of the investment accumulated in physical capital, in particular that employed in the production of capital goods, and in its turn it

produces improvements in the new capital goods produced. As Barro and Sala-i-Martin (2003) put it: “A firm that increases physical capital learns simultaneously how to produce more efficiently” (p. 213).

Alongside these direct effects, the literature has emphasised other channels through which human capital may affect growth. Already in Lucas’s model (1988), human capital not only affected individual productivity (“internal effect of human capital”), but also had a “external effect” whereby the average aggregate level of human capital influences the productivity of all the production factors: “human capital accumulation is a social activity, involving groups of people in a way that has no counterpart in the accumulation of physical capital” (Lucas 1988, p. 19). The accumulation of human capital produces externalities: individual productivity depends on the local stock of human capital in the environment where it operates. Other externalities concern the fact that schooling and increased knowledge create social capital and trust relations, and they indirectly affect economic performance. Education is generally associated with a decrease in crime, with more aware and better informed political and social participation (Sen, 1999), with greater social cohesion, and with closer concern for the environment (see OECD 1998 for a survey). Finally, the accumulation of human capital affects important choices such as health and fertility decisions.

## **2.2. Human capital and growth: the empirical results**

The empirical results of aggregate studies on the relationship between the education level and growth are conflicting. Many studies conducted in the 1980s and early 1990s enthusiastically stressed the importance of human capital in explaining the Solow residual in the economic growth of the Western countries.<sup>2</sup> Psacharopoulos (1985), in a survey of 29 studies of growth accounting type, emphasised education’s positive contribution to growth (from a low 1% for Mexico to a high 23% in Ghana). Human capital also seems to be associated with an increase in levels of investment in physical capital (Barro, 1991; Gemmell, 1996; Benhabib and Spiegel, 1994).

A second group of studies are more critical. Lau, Jamison and Louat (1991), in a cross-country model based on a Cobb-Douglas production function (58 countries), found that education had negative effects on growth in Africa and the Middle East, insignificant ones in southern Asia and Latin America, and positive

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<sup>2</sup> The first studies used indexes of adult literacy (Azariadis and Drazen, 1990; Romer, 1990) or school enrolment rates (Barro 1991; Mankiw, Romer and Weil, 1992; Levine and Renelt, 1992) as proxies for human capital. Further attempts were based on estimates of average years of schooling in the population made using perpetual inventory methods or similar (Lau, Jamison and Louat, 1991; Nehru, Swanson and Dubey, 1995; see for a survey Wössmann, 2003). Barro and Lee (2001) have extended the analysis proposing an internationally comparable database on average years of schooling.

ones only in East Asia. Jovanovic, Lach and Lavy (1992) obtained similar results on a sample of developing countries. A first factor that may explain this difference among findings is that the impact of education on growth is not homogeneous among countries, but instead depends on a country's level of development. Sianesi and Van Reenen (2003) showed that, in the advanced countries, it is mainly tertiary education which favours growth, owing to collateral investment in new technologies. Krueger and Lindahl (2001) instead showed that, in the developing countries, investing in basic education is more effective.

A second factor to be considered is the difference between the effects due to the initial stock of human capital and those due to its variation over time. Krueger and Lindahl (2001) reported that the literature based on the 'levels' of human capital (as initial stock) generally obtained positive results. Nevertheless, if changes in the stock were considered (the 'differences approach') non-significant or even negative results were obtained. Benhabib and Spiegel (1994), for example, found a positive effect of the initial level of human capital on growth and a negative effect on growth of variations in the years of schooling. Nor did Barro and Sala-i-Martin (1995) obtain a significant result when they adopted a specification based on the differences in the stock of human capital.

Sianesi and Van Reenen (2003) underlined that it is necessary to distinguish between the effects of education on productivity (with specifications that recall those of the extended Solow model) and those on the growth rate of output (endogenous growth theories). They stated that "the evidence that human capital increases productivity is compelling" (p. 157), while the results of the second branch in the literature may be seriously distorted by problems with data and specification of the model, although they believed that the relationship existed and was positive.

The problems of measuring human capital and data quality are indeed enormous. The concept of human capital is broad and comprises, besides the education 'embodied' in the individual, also experiences and acquired or innate aptitudes, or ones which may affect the individual's labour productivity and determine his/her remuneration. The concept of human capital is multi-faceted and powerful, which entails that its measurement is neither immediate nor easy. In effect, if human capital has several dimensions and comprises individual, familial and relational characteristics and country-effects, reducing its measurement to the mere amount of formal education is restrictive. Recent empirical studies have sought to respond to this criticism by controlling for the characteristics of the familial and social context. Natural experiments (for instance using data on twins) have been attempted in order to control for latent variables, such as innate qualities or the education received in the family. Nevertheless, owing to a lack of data (on the 'quality' of the education or on the abilities resulting from causes other than education) and of methodologies with which to analyse unobserved variables, the problems are far from being solved.

Nor do the problems of data goodness and comparability diminish if the focus is solely on formal education (Psacharopoulos and Patrinos, 2002). Already at the level of micro analysis, difficulties are caused by the poor quality of questionnaires or the absence of information on repeat school years. The problems increase considerably when attempts are made to estimate the stock of human capital at the level of economies as a whole. De la Fuente and Domenech (2002) highlight the unreliability of the data available on OECD countries. Krueger and Lindhal (2001) criticise the data used in the growth regressions by Benhabib and Spiegel (1994) and by Pritchett (2001) on the grounds that they are devoid of real information. Cohen and Soto (2007), using OECD and UNESCO data, report a marked and positive contribution of education to growth. Other authors emphasise that quantitative data on education are not sufficient; it is instead necessary to introduce quality indicators in order to avoid distortions in the estimates. Hanushek and Wössmann (2007), in a study on the quality of education, point out serious estimation errors in the study by Cohen and Soto.

As regards estimation of the externalities associated with education, a strand in the empirical literature seeks to evaluate the externalities on individual wages by isolating the impact on them of the average level of education in the individual's city or state of residence. Rauch (1993) identified the presence of externalities on wages in a study on conurbations in North America. Acemoglu and Angrist (1999) found positive but non-significant coefficients for the regressor relative to variation in the average stock of education in the area (American census data for the period 1960-80). The results were instead significant if the stock data were used, although the coefficient was rather low (Acemoglu and Angrist, 2001). Again using American data, Ciccone and Peri (2006) did not find evidence of positive externalities of education on wages at city or state level. Sianesi and Van Reenen (2003) analysed both externalities with effects on productivity and on wages and those affecting the lives and behaviour of individuals. As regards the former, they compared macro approaches that seek to identify the 'social returns' on education with micro results on private returns. They concluded that the returns measured at macro level may be greater or smaller than those estimated at private level because possible positive externalities of the average level of human capital may be partially or wholly off-set by the public costs of education, which are higher than private ones. There is substantial agreement in literature on the existence of indirect externalities. Various studies show that, in the developing countries, education – in particular of females – is negatively correlated with the birth rate (Schultz, 1989; Behrman, 1990) and with the infant mortality rate (Barro, 1991; Barro and Lee, 1994; Glewwe, 2000). In Africa, a 10% increase in the rate of female literacy reduces the infant mortality rate by 10%. By contrast, change in the level of male literacy does not have effects of this kind. Similar studies in Thailand, Indonesia, Kenya, Morocco and Peru have reached the same conclusions (World Bank, 1993). Helliwell and Putnam (1999) concluded that the effect of the level of education on social relationships is very general and has major weight.

### **2.3. The quality of education**

The contrasting empirical results on the relationship between education and growth at macro level raise the question of what factors may block the effects of education on the evolution of aggregate output. Pritchett (2001) underlines three specific conditions in developing countries: the labour market, the education system, and institutions (for the latter see section 3.2).

As regards the labour market, if a higher education makes it possible to acquire rent positions which favour redistributive phenomena for the educated class, there will be little consequences on production. For example, in many developing countries, the public sector absorbs the increasing supply of educated labour in response to political pressures (Gelb, Knight and Sabot, 1991). More generally, the demand for skilled labour depends on the economy's sectoral composition, on its degree of openness, and on the production system's rate of technological change. Schultz (1988), for instance, noted that the benefits of education are almost nil in the agricultural sector. As a consequence, demand for educated labour may be stagnant in developing countries.

As regards the education system, criticism is directed at its quality, which may be so low that it does not increase the individual's abilities and productivity. The problem of the quality of education is serious: in a recent review of studies on the relationship between education and growth, Hanushek and Wössmann (2007) conclude that "educational quality, particularly in assessing policies related to developing countries, is THE key issue" (p.1). Many of the studies previously cited were aware that the quality of the education system affects work performance and growth. However, the variables used to estimate the level of education were quantitative (for instance years of schooling). The reason of this is mainly the difficulty in finding suitable indicators for the quality of education. A first approach, which was used especially by studies in the 1990s, measures the latter on the basis of the quantity of investments in schools: teaching materials, facilities, number of students per teacher, or the share of GDP spent on education (Psacharopoulos, 1994; Hanushek, 1996). These input indicators are rather rough approximations of the 'quality' of the school system. A more recent approach uses the average performances of students in ability tests as a proxy for the quality of the school system. The diffusion of data on the quality of educational performances has made it possible to use this method for a large group of countries, not only in the OECD area, but also for developing countries. As regards the effects of the quality of education on growth, Hanushek and Kimko (2000) found that adding qualitative indexes to quantitative ones increased the variance explained in the per capita GDP of countries from 33% to 73%. Moreover, the coefficient associated with quantitative indicators of human capital became low, and in numerous specifications not significant. Lee and Lee (1995) and Barro and Lee (2001) examined the relation between indexes of cognitive

ability and growth, obtaining similar results. This is the finding of many other studies evidencing that the quality aspect is dominant (Bosworth and Collins, 2003; Ciccone and Papaioannou, 2005).

The importance of cognitive skills has been stressed also by numerous micro studies relative to the developed countries, from which a strong correlation emerges between educational performance and performance on the labour market; the impact of cognitive skills is even greater in the developing countries. Moreover, there is evidence that the skills acquired at school increase in importance during the working life. For a summary of studies which report this effect see Table 3, compiled by Hanushek and Wössmann (2007). This deals with studies based on data panels which follow students after they have entered the labour market. They highlight the marked effect of cognitive skills on individual wages.

**Table 3** - Relative increase in pay due to a growth in cognitive skills (scores on tests) equal to one standard deviation

Country	Study	Estimated effects
Ghana	Glewwe (1996)	0.21**/0.3** (government) 0.14/0.17 (private)
Ghana	Jolliffe (1998)	0,05/0,007
Kenya	Boissiere, Knight, and Sabot (1985); Knight and Sabot (1990)	0.19**/0.22**
Pakistan	Alderman, Behrman, Ross and Sabot (1996)	0.12/0.28*
Pakistan	Behrman, Ross and Sabot (2008)	0.25
South Africa	Moll (1998)	0.34**/0.48**
Tanzania	Boissiere, Knight and Sabot (1985); Knight and Sabot (1990)	0.07/0.13*

Source: Hanushek & Wössmann (2007).

However, indexes of cognitive ability capture the effect of all factors affecting the educational performance and not only of those that are linked to the quality of the educational system. Hanushek and Wössmann (2007), for example, stress that score differences in school tests depend not only on schools' quality but also on other variables such the family context or innate abilities. Furthermore, school learning does not depend solely on individual abilities but also on those of schoolmates (peer effects: Hanushek et al., 2003). Robertson and Symons (2003) find that peer effects may be important, and that indicators of school quality prove to be of little significance if controlled for. So, if we want to summarise the findings, we could say that good educational performances are good for growth but that we still know very little about what is crucial for good educational performances.

### **3. The causes of aid ineffectiveness and conditionality**

The resources made available by development aid have not had the impact expected. The literature has divided the causes of this failure into two classes of phenomena: the first relates to the nature itself of growth problems, namely the presence of complementarities and interdependences; the second relates to inopportune behaviour by agents (bad policies, corruption, rent-seeking). This section briefly analyses the results of this literature.

#### **3.1. Complementarities and externalities**

If technological change is the main determinant of growth, why have poor countries not adopted advanced technologies? Technological backwardness may be an advantage because it enables a country to jump directly to the technological frontier by virtue of imitation and the inflow of direct investments from foreign countries (Borensztein, de Gregorio and Lee, 1998; Blomström, Lipsey and Zejan, 1994). But it may turn into a disadvantage if the ability to use the new technologies depends on homogeneity among the technological levels of the various sectors; in other words, if forms of complementarity and indivisibility exist. People accumulate skills where there are advanced technologies; entrepreneurs invest in new technologies where there are skilled workers. The complementarity between technology and skilled labour creates complementarity among workers: the productivity of a worker depends not only on his/her skills and qualifications but also on those of other workers (matching). According to Mankiw (1995), the absence of flows of capital to countries in which there is no skilled labour is due to low returns on capital. Investments in physical and human capital tend to flow to countries richer in knowledge and offering greater returns (Acemoglu, 1997). As we have already noted, in developing countries, more education is very often associated with unemployment, owing to a lack of demand for skilled labour (Krueger and Lindhal 2001, Al-Samarrai and Bennell 2007). These complementarities may give rise to coordination failures and low-level equilibria (Hoff, 2000).

But there are cases in which coordination among these different dimensions has been successful. For example, the good endowment of human capital in East Asia has enabled those economies to acquire and exploit technological knowledge, and to achieve higher productivity (World Bank, 1991). Benhabib and Spiegel (1994) found that the accumulation of human capital has positive externalities which facilitate the adoption of new technologies (as also reported by Nelson and Phelps, 1966). Nevertheless, coordination failures are common, and they may prevent growth.

There are then the negative collateral effects exerted by aid on the competitiveness of countries. The flow of incoming aid may lead to overvaluation



of the national currency, with consequences on export capacity (Rajan and Subramanian, 2005). Another collateral effect of aid is its influence on the evolution of the institutional system. It is not clear, in fact, whether aid favours better policy-making or whether it encourages corruption and bad governance. It has been found that aid produces forms of graft in ethnically divided societies (Svensson 2000). Bauer raised the problem of such collateral effects as early as the 1970s, and he has returned to it in one of his recent papers (Bauer 1991)<sup>3</sup>.

### **3.2. Governments, policies and the institutional system**

The second class of phenomena blamed for aid ineffectiveness comprises the implementation of bad policies, a mismatch between the interests of the bureaucracy and the common interest (rent seeking), and the poor quality of institutions. Consideration of these phenomena has given rise to the idea of conditional aid (see subsection 3.3).

#### *3.2.1. Bad policies*

Inappropriate government policies may prevent growth. Examples of such policies are the maintenance of high inflation rates, a high black market premium, negative real interest rates, large deficits in public balances, restrictions on free trade, excessive bureaucracy, and inadequate public services.

In Jamaica, the impossibility of purchasing US dollars produced a large black market for the American currency in the 1990s and gave rise to a tax on exports. In Ghana, for almost two decades the black market premium was above 40% and reached levels above 4000% in the early 1980s. In Guyana between 1985 and 1990, the black market premium exceeded 200% (Fardmanesh and Douglas, 2003). There are numerous cases of countries in which the real interest rate has been negative: Bolivia between 1982 to 1984 (-75%); Ghana between 1976 and 1983 (-35%); Poland between 1981 and 1982 (-33%). In all these cases the growth of GDP in the same periods was negative (Easterly, 2001). On the correlation between negative interest rates and negative growth see King and Levine (1992), Gelb (1991), Easterly (1993), Roubini and Sala-i-Martin (1992).

Inadequate public services are also bad policies. In Uganda, in the second half of the 1990s, the water supply was interrupted on 33 days on average per year,

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<sup>3</sup> Ambiguous results about effectiveness may also be affected by endogeneity problems. Aid may depend on growth. Roodman (2007) has shown that the relationship may be negative: countries which grow less receive more aid. This inverse relationship is often recognized but ignored in the specification of models (as in Burnside and Dollar 1997). The problem of endogeneity has raised the question of whether there exist deeper-lying latent variables which determine growth. This concerns the literature on the deep determinants of growth, which is not analysed here.

77% of enterprises had private waste dumps, and only 31% of business correspondence was delivered by the post office (Reinikka and Svensson, 1999). Easterly and Rebelo (1993) estimated that an increase of investments in transport and communications equal to 1% of GDP would increase the growth rate by 0.6%; and spending on the maintenance of infrastructures, roads for example, has high returns (Gyamfi, 1992). Yet public decision-makers often appear insensitive to such incentives. Finally, it may be rational for a country to ‘accept’ being backward (rational underdevelopment: Desmet and Ortín, 2007) in exchange for subsidies and transfers from the more developed economies, especially if the aid is appropriated by the elites.

### *3.2.2. Corruption and “bad institutions”*

Defining corruption is difficult. According to the economic approach of the Public Choice School (Buchanan et al., 1980, Rowley et al., 1989), the greater the intervention by the government (and public spending), the more the inefficiency and the corruption. However, the argument that ‘big spenders’ are more inefficient and corrupt has been disputed (Hopkin, 2002), because the efficiency of public intervention varies greatly independently of the level of public spending. Very corrupt countries may have low levels of public spending precisely because high corruption prevents the state from establishing an efficient tax system (Tanzi, 2000). Finally, temporary factors that increase corruption (an internal conflict, an environmental disaster that involves the nation) may have permanent effects. Once the collective reputation has been compromised, it proves difficult to reconstruct (Bardhan 1997). The factors that influence the level of the corruption are both economic (e.g. the black market premium or restrictions on free trade: Ades and DiTella, 1999) and non-economic (e.g. the quality of the institutions, and ethnic differentiation: see Knack and Keefer, 1995 and Svensson, 2000).

There is consensus in the literature that corruption has direct and indirect negative effects on investments and growth (Boycko, Schleifer and Vishny 1995, Mauro 1995 and 1998, Kaufmann 1997, Tanzi and Davoodi 1997, Gupta, De Mello and Sharan 2001, Jain 2001, Aidt 2003, Pellegrini and Gerlagh 2004) and on the performance of businesses (see Fisman and Svensson 2007 for the Uganda case). Corruption distorts investment decisions and makes trade openness more difficult. But there are empirical studies which conclude that although corruption has negative effects if it is too high, a certain level of corruption may increase growth (Méndez and Sepúlveda 2006). In some countries, bureaucratic corruption is a factor which accelerates procedures conducive to growth (the so-called ‘East Asia paradox’: Rock and Bonnett 2004).

Another aspect linked to corruption that can distort productive decisions is rent-seeking by institutions or individual actors. For instance, the imposition of taxes (formal and informal) on agricultural production destined for the market and

export may induce producers in rural areas to engage solely in subsistence farming, which in itself is less profitable (Murphy, Schleifer and Vishny, 1993).

Dealing with the problem of corruption is not easy. The remedies suggested range among simplification of fiscal and administrative systems, the elimination of government subsidies, competition among different government agencies for supply of the same service, the appropriate application of anti-corruption legislation, and the privatization of public industry (Rose-Ackerman 1999). Many of these actions require credible monitoring and sanctioning mechanisms; yet many suspect that also the institution tasked with such monitoring would be liable to corruption. There is also a huge stream of literature that tries to verify if aid effectiveness depends on some type of institution and its quality (democracy: Svensson, 1999, Kosack, 2003; trade rules: Tebouel and Moustier 2001; quality of the institutions: Collier and Dehn, 2001; Collier and Dollar, 2002).

### *3.2.3. Ethnic-social polarization*

Social polarization and fragmentation negatively affect growth in underdeveloped countries especially because they decrease trust (Montalvo and Reynal-Queyrol, 2005; Keefer and Knack 2002), reduce investments, and increase public consumption. Divided societies have incentives to redistribute income rather than promote development. The consequence is the greater likelihood of internal conflicts, government policies not targeted on growth, and over-exploitation of common resources. The almost total destruction of cocoa production in Ghana – which represented 19% of GDP in the 1950s and only 3% in the 1980s – was due to ethnic conflict (Easterly 2001). Social polarization is associated with marked inequalities among the incomes of social groups (Alesina and Rodrik, 1994, Persson and Tabellini, 1994, Perotti, 1996, Clark, 1995, Deininger and Squire, 1998), with negative consequences on growth. A final aspect to consider is the relationship between ethnic fragmentation and the quality of the institutions. Countries with strong ethnic fragmentation, but with good institutions, more easily avoid violence, poverty, and mere redistributive behaviour. Rupasinga, Goetz and Freshwater (2002) found, in the case of the USA, that if ethnic diversity does not produce inequalities and a social climate of mistrust, it is associated with higher growth rates.

## **3.3. Conditionality**

### *3.3.1 Intervention in governance by the international institutions*

The realization that bad policies and incorrect behaviour hamper growth and render aid ineffective has induced the international aid institutions and donors to impose forms of ‘good government’ on beneficiary countries, and doing so with

interventions that at least partially affect those countries' sovereignty. Intervention by international institutions in state-level policies and governance institutions is the outcome of a process started during the post-war period. At the end of the Second World War, countries – the newly-independent ones especially – were particularly jealous of their sovereignty. Nevertheless, during the 1970s, the international financial institutions began to suggest that countries in difficulties should adopt (short-term) measures of monetary and fiscal discipline and restructure the state's role in the market. There thus began a slow erosion of the sovereignty of states. Interference in state sovereignty also increased in the political sphere. Non-Western countries applied pressure for sanctions to be imposed on white minority governments practising forms of apartheid (South Africa, Rhodesia); but at the same time it was impossible to prevent denunciation of regimes like those of Idi Amin in Uganda, Pol Pot in Cambodia, or Duvalier in Haiti. The United Nations began to monitor elections in countries with suspect political reputations (Huntington 1991). Humanitarian action on the occasion of conflicts further extended intervention by international forces in the domestic affairs of countries. As the then Secretary General of the United Nations, Boutros-Ghali, said, "the time of absolute and exclusive sovereignty, however, has passed" (Boutros-Ghali, 1992).

Increased intervention in the sphere of economic and political action shifted attention from 'good policies' to governance; a process highlighted by the change from the Washington Consensus (Williamson, 1990) to the Augmented Washington Consensus. The Washington Consensus was a set of economic policy recommendations; the Augmented Washington Consensus added recommendations concerning the behaviour of governments and states, the quality of institutions, and the aims of economic-social policies. The term 'governance' denotes the structure and workings of a political and institutional system. In a system of good governance, fundamental rights, for instance property rights, are guaranteed; macro policies ensure stability; there is an absence of corruption; and markets operate efficiently. By contrast, bad governance is defined as the "personalisation of power, lack of human rights, endemic corruption and unelected and unaccountable governments" (Bøås, 1998). The concept is a complex one, and it is often reduced to those base institutions of the West such as multipartyism, parliamentarism, and separation between the judicial and political systems<sup>4</sup>. The list of actions required of states, governments, and civil society for good governance has often been defined in rigid terms without consideration of the specific circumstances of individual countries.

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<sup>4</sup> Numerous variables are used in empirical studies to define good governance, and they are often derive from data mining operations, rather than from clarification of the concept.

### 3.3.2. *Conditional loans*

One device used to steer countries towards good governance is the issuing of conditional loans. The first generation of such loans was connected with the strong foreign indebtedness of certain countries, for which the international institutions decided to link (in this case for debt management) to reforms of economic policy. These took the name of ‘structural adjustment loans’.

Easterly (2001) cites cases in which conditional loans had positive effects on the growth, for instance Ghana (1984-1994) and Thailand (in approximately the same decade). Nevertheless, on average, the results have not been positive. Several studies on conditional loans have shown their negative relationship with economic growth (Przeworski and Vreeland, 2000). Conditional loans have often been granted to countries with difficult initial conditions, high inflation, budget deficits, large black market premiums, negative interest rates, and corruption. Between 1980 and 1994, Zambia received twelve adjustment loans but nevertheless maintained two-digit inflation even though a reduction in inflation was one of the conditions for receiving the loans. The rule not to grant loans to countries with high budget deficits or high negative real interest rates has often not been respected. Structural adjustment loans have often been granted to corrupt governments, which had incentives to remain such once they had obtained the loans; and cases of moral hazard in bargaining on conditional loans have been frequent (Svensson 1997, Gibson et al. 2005). Many governments have chosen to reduce their deficits by means of short-run interventions, by cutting investments in infrastructures or selling off state-owned enterprises, by requiring advanced payments of taxes, or by subsidizing themselves out of pension funds. These were measures which reduced the current deficit, so that the country could comply with the conditions attached to the loans. But they only postponed the problem to subsequent periods. The donors often failed to consider the sustainability of the reforms undertaken by the governments of countries, either because these were former colonies, or because they had a strategic international role which made it convenient to grant loans even when the conditions were not respected (World Bank, 1998).

Criticisms of conditional aid are based on the argument that political problems and moral hazard make it difficult to enforce the conditions and to steer countries towards serious structural reforms. A more radical position states that such policies are not just ineffective, but wrong. Rodrik (2007) maintains that the best performances have been achieved by economies which have not followed the orthodoxy of structural reforms. China and Vietnam, for example, have implemented ‘two-track’ reforms (liberalization in certain sectors, centralized planning in others), without complying with the trade rules proposed first by the GATT and then by the WTO. India has undertaken reforms in slow and gradual manner. On the other hand, many Latin-American countries have adopted the standard agenda of reforms, obtaining less good or negative results. Rodrik

concludes that the ability to suggest ex ante what reforms to adopt is limited, and that giving advice based on a list of ‘correct’ reforms may yield unwanted results.

### *3.3.3. The effectiveness of conditional loans in empirical research*

Various early studies showed that aid had a positive impact on growth in countries with good policies and a negative impact in countries with bad policies; on average, the effect was nil. This result is interesting because besides representing an elegant solution to the micro-macro paradox raised by Mosley (Mosley et al., 1987)<sup>5</sup>, it had immediate political consequences: aid should be given only to countries with good policies (Collier and Dollar, 2001 and 2002). The meta-analysis by Doucouliagos and Paldam considered 22 studies on good policy models, finding that the aggregate coefficient of interaction between the policy indicator and help was positive but very low. Doucouliagos and Paldam concluded that a good policy environment does not significantly increase the effectiveness of aid. However, the size of the sample, the type of estimation method used, and specification of the model affect the coefficient of interaction. Also the affiliation of the authors is important: researchers at the World Bank obtain results more favourable to the effectiveness of aid than do researchers at other institutions.

One of the most influential works in this group of studies is that by Burnside and Dollar (1997, 2000). To test the hypothesis that aid is effective in the presence of good policies, Burnside and Dollar used an aid\*policy interaction variable. The quality of policies was measured by the Sachs-Warner index (a weighted average of indicators of the budget balance, inflation and trade openness), and control was made for a series of characteristics such as the initial level of per capita income, ethnic polarization, regional variables and a measure of “financial depth” (M2/PIL). Their results (see Table 4, taken from Harms and Lutz 2004) showed that the coefficient of the interaction term was positive and significant, while the coefficient relative only to the variable ‘aid’ was negative and non-significant.

Hansen and Tarp (2000) used Burnside and Dollar’s good policies indicator but added a quadratic term for aid. They found that the interaction variable was no longer significant, while the quadratic variable (aid has decreasing returns, and there exists an ‘optimum dose’ of aid). In response to this criticism, Collier and Dollar (2002) reprised Hansen and Tarp’s model with the quadratic term in aid, but a different variable to define the quality of policies, and they obtained opposite results: the quadratic variable was not significant, whereas the interaction variable was.

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<sup>5</sup> It is very difficult, according to Mosley et al. 1987), to establish any significant correlation between aid and growth rate of GNP in developing countries; however, at a micro level, agencies regularly report the success of most of their projects and programs. This is known as the micro-macro paradox.

**Table 4 – Aid, growth and conditionality**

Source	Burnside – Dollar (2000)	Collier – Dollar (2002)	Svensson (1999)	Hansen – Tarp (2001)	Easterly & al. (2003)
Aid (as a share of GDP)	-0.02 (0.13)	-0.54 (1.40)	0.20 (0.26)	0.26 (2.56)	0.20 (0.75)
Aid squared		-0.02 (1.60)		-0.57 (2.02)	
Aid*policy	0.19 (2.61)	0.31 (2.94)	0.29 (3.32)	0.05 (1.26)	-0.15 (1.09)
Policy indicators	Weighted average of inflation. budget deficit and trade openness	Country's policy and institutional quality	Democracy	See Burnside and Dollar (2000)	See Burnside and Dollar (2000)
Estimation method	OLS	OLS	2SLS	2SLS	OLS
Period	1970-93	1974-97	1970-89	1970- 93	1970-97
Frequency	4-yearly	4-yearly	10-yearly	4-yearly	4-yearly
N	270	349	112	270	345
R-sq	0.39	0.37	--	--	0.33

Note: the t-statistic is given under each coefficient in brackets.

Source: Harms and Lutz (2004)

Easterly, Levine and Roodman (2003) used the same specification as Burnside and Dollar, but they extended the data to the period 1970-1997 (Burnside and Dollar had used data for the period 1970-1993) and increased the number of countries in the sample. They found (see last column of Table 4) that the coefficient of the interaction variable was negative and non-significant. Different specifications of the Burnside and Dollar's model, reported in Easterly et al. (2003) and in Roodman (2007) confirm that the relation between the interaction the aid\*policy variable was fragile.

Burnside and Dollar's results depend on the inclusion of a large number of control variables and the reduction of the sample due to limited availability of data; but the most delicate point concerns the facts that different proxies for 'good policies' lead to different results. For instance, using the good policy indicators proposed by Kaufmann et al. (1999), Harms and Lutz (2003) found that aid has no impact in countries with an institutional environment of 'average' quality. Paradoxically, the impact is positive in countries with a high level of bureaucratization, because in this case aid does not crowd out private investments, which are already hindered by bureaucracy. At last, according to Jensen and Paldam (2003), also the "medicine models" are not robust to changes in the size of the sample.

## **4. The need to rethink the methodology**

### **4.1 The criticisms of Bourguignon and Sundberg**

Bourguignon and Sundberg (2007) criticise the methodology used in the literature on aid effectiveness. They argue that the lack of convincing results is due to a failure to carefully consider the causal linkage between the two phenomena. Analysis has not borne in mind that this linkage is the ‘synthesis’ of a complex chain whose individual components should be identified and described. More specifically, the criticisms of Bourguignon and Sundberg are the following.

Forms of aid are generally aggregated into a single category regardless of the purposes for which they have been granted. Often, however, aid is not granted for the purpose of development but following natural disasters or with political objectives. Furthermore empirical studies do not draw a clear distinction between the short and long period; they have problems with endogeneity in the aid/growth relationship; and they do not control for specific characteristics of countries (Bourguignon and Leipziger, 2006). Finally, the multi-dimensionality of development objectives (income, poverty, schooling, health, etc.) further complicates the analysis. At times, used as growth regressors are variables which describe development and therefore express the same phenomenon as documented by growth.

Dealing with these problems requires better understanding of the links between aid and the final outcomes. Bourguignon and Sundberg identify three such links. The first (working backwards) is the one which connects outcomes with policies. Outcomes are determined by policies: for example macro stability affects investments and growth. A certain amount of knowledge about this causal link is yielded by economic research, but it should be analysed in greater detail.

The second link connects government policies with policy-making at local level. This is the problem of governance, whose quality reflects the existing institutions.

The third link is that between international donors and politicians and their actions. The donors influence political action through intervention in the political debate and through technical support. They also try to impose specific policies (conditionality), but they often do so with imperfect information about the local context, and above all imperfect control over the implementation of such policies.

According to Bourguignon and Sundberg, the literature already furnishes sufficient information with which to understand how each link contributes to development outcomes. The effect of a macro climate ‘good’ for investments is sufficiently well known, and it is positive (even though country-specific characteristics prevent generalizing). Knowledge is also becoming more precise at the level of projects due to evaluations that use experimental or quasi-experimental designs. It is important to increase the number of such evaluations,



although, according to Bourguignon and Sundberg it is an illusion to believe that evaluation is enough to direct aid to where it will be effective (as maintained by Banerjee, 2006 and Easterly, 2006). Firstly, not all interventions can be subject to rigorous evaluation; secondly, applying positively evaluated projects or programmes in other countries may have unsatisfactory results because of specificity problems. Finally, many policies have general equilibrium effects which evaluations ignore.

The formulation of good policies depends on the system of governance. There is evidence of a positive linkage between good governance and good policies, but it is not easy to solve the problem of the direction of causality. This link of the chain is rarely considered and analysed separately: indicators of the quality of governance are often directly connected with the outcomes (Acemoglu et al., 2005).

The relationship between donors and politicians in the receiving country is often conditioned by geopolitical factors (post-colonial relations, strategic interests) or ideological ones: liberalization and privatization have often been demanded without taking account of the specific context.

According to Bourguignon and Sundberg, it is important to define a new aid model based on two main features: the development strategy must be established and managed by the country (country ownership); and the donors must align with it, not vice versa. The instrument for this purpose is the Poverty Reduction Strategy Paper (PRSP) to which the aid must conform (and not be instead based on bilaterally negotiated policy conditions). Secondly, aid should be allocated on the basis of performance as measured by monitorable results (intermediate indicators).

The general conceptual framework for the two features is that of the principal-agent model. Donors (countries or international institutions) are already moving in the direction of contracts based on monitorable evidence. However, a problem of time consistency makes it difficult to identify the moment when to evaluate the results: if these are measured in the short term, there is a risk that aspects required by a longer time horizon will not be considered; on the other hand, if too much time elapses, the efforts by actors to achieve the outcomes become less incisive.

Another awkward problem is that the decision to grant aid on the basis of performance may exclude from consideration countries which are in greatest difficulties, those fragile states incapable of 'honouring the contract'.

## **4.2. Methodological problems in the analysis of human capital**

Clarifying the connection between education and growth requires solving diverse and complicated problems. The first of them concerns the quality and comparability of the data in cross-country regressions. The data used for many backward countries are particularly unsatisfactory. Information is lacking on

market and informal sectors (Sianesi and Van Reenen, 2003) and on the variables related to human capital: literacy rates, school enrolment rates, levels of educational attainment, stock of human capital per worker. Wössman (2003) showed that the correlation among the various measures used for the flow or stock of human capital has high variability. In particular, rates of school enrolment (flow variable) have a variability in time that makes them unreliable as proxies for variations in the stock of human capital: there is no correspondence between the enrolment rate and the human capital embodied in the labour force, both because there are educated individuals who are not part of the active population, and because retirements are not considered. Temple (1999) writes: “it is not clear whether school enrolment rates are intended to represent a flow of investment in human capital, or its stock. In practice these rates may be a poor proxy for either” (p. 139).

Moreover, the accumulation of human capital cannot be associated with formal education alone, because it also comprises the transmission of skills and knowledge from parents to children, experience, learning by doing, on-the-job training, as well as aspects more directly connected with the type and quality of education. Consideration of these factors greatly increases the differences in stocks of human capital among countries. Ignoring such factors means homogenizing effects that may be very different because, as the microeconomic evidence shows, the returns to education vary considerably from country to country, and often also among the regions of the same country. The inclusion of country effects or region effects is often significant in estimates, but it combines very different effects together (Hanushek and Wössmann, 2007).

Another phenomenon which is not clearly explained is the causality relationship between growth and education (Sianesi and Van Reenen, 2003). The question is whether technological development is made possible by an exogenous increase in the education level of the labour force (impact of investment in human capital on growth) or whether structural change induces a larger proportion of the population to reach higher standards of education (impact of economic growth on investment in human capital). Various studies have shown that growth entails better education. Foster and Rosenzweig (1996) have underlined that the regions of India which profited from the Green Revolution of the 1970s saw an increase in both the returns to education and in school enrolment rates. Bils and Klenow (2000) argue that growth (driven by technology) generates a higher level of education because it increases the returns on investment in it. Finally, forecasts of strong future growth may provoke increases in education. Probably both relations should be considered.

## **5. Conclusions**

The foregoing review of the literature on the effectiveness of aid for the two most widely applied growth policies (investment in physical and human capital)

has highlighted that research has not yielded clear and robust results. The debate and the lessons learned from historical experience have shifted the dominant concern from intervention projects and policy instruments 'equal for all' to the need to design growth strategies specific to each country (country specificity) and to subject the management of those policies to the countries themselves (country ownership). A 2005 document of the World Bank states that "the central message (...) is that there is no unique universal set of rules (...) we need to get away from formulae and the search for elusive 'best practices' and rely on deeper economic analysis to identify the binding constraints on growth" (World Bank, 2005, p. xiii). Similar priorities have been set by the 2005 Paris Declaration on aid effectiveness, recently reprised at the Accra meeting (September 2008).

It is widely agreed that a country-specific approach managed by local actors is necessary, but opinions differ on how to translate this new approach into practice. Firstly, addressing the problem at the individual country level does not reduce the complexity of the factors at the basis of growth. In all cases, it is necessary to take account of the complementarity between different sectors and dimensions (for instance between productive and infrastructural investments, between investments in human capital and trade openness policies, etc.). According to some authors, this problem can only be tackled through global and comprehensive plans which simultaneously 'control' the different dimensions of growth and development. The Poverty Reduction Strategy Papers (PRSP) are devices of this kind, which not only regulate interdependencies but also consider specificities. Experience has shown that drawing up an integrated plan is not enough if there is no real partnership among the institutions involved, and if people and the community do not feel themselves involved in the definition and implementation of the interventions. In fact, large-scale plans involving numerous agents are susceptible to the risk of moral hazard, because it is difficult to attribute results and merits to specific agents. Moreover, because an enormous number of factors must be taken into account, failure can always be blamed on some oversight. When a list of interventions does not work, it is extended, and as a consequence it is never possible to question the approach in itself. The most critical aspect, however, concerns the motivations of the actors involved. If intervention is not made at this level, any plan will be ineffective even if all the actions envisaged have been accomplished. Stern (2003) has cited a classic example: the construction of new schools is not a sufficient condition to increase the school attendance of girls in Pakistan; if they are to go to school, the preferences of their parents must change.

Other authors advocate almost the reverse approach, which guarantees the fundamental conditions for the operation of markets related to everyday activities (especially secure property rights and international openness) and allows the base actors (individuals and enterprises) to operate. It will be their action that 'designs' the growth path and therefore suggests the further changes necessary in the institutions and in policies. There are different variants of this second approach in the practice of international cooperation: from that of liberal stamp centred on the rational action of the individual to the participative variant which views the

community as the appropriate actor. While this approach is certainly less presumptuous than the first one, it is nevertheless likely to be equally ineffective if it ignores the cultural and social factors that induce individuals to pursue certain objectives (for instance the unwillingness to have systematic tasks or to respect work schedules; the fact that women leave work when they marry, etc.) and therefore react in a certain way to the incentives and opportunities offered. To use Amartya Sen's (1981; 1984) terminology, the same set of capabilities may lead to different outcomes according to people's value-judgements. It is evident, in fact, that the people's goals are strongly influenced by the type of experience and context in which they have lived. As Ray (2006) observes, "individual desires and standards of behavior are often defined by experience and observation; they don't exist in social isolation as consumer preferences are so often assumed to do". Appadurai (2004) stresses that a fundamental determinant of human behaviour is the "capacity to aspire" and the poor may not have "the [aspirational] resources to contest and alter the conditions of their own poverty".

Besides people's motivations, another element decisive in determining the final outcomes of a certain project, or of new opportunities, is trust. The importance of trust was first pointed out in the early 1970s by Arrow (1972): "virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence"; and it recurs in the description of the reasons for the backwardness of a small village in India given by Woolcock at the end of the 1990s: "When asked to explain why such miserable conditions prevail in their village and what they think needs to be done to improve things, the villagers' answers are revealing. The main problems, they say, are that most people simply cannot be trusted, that local landlords exploit every opportunity to impose crushing rates of interest on loans, and pay wages so low that any personal advancement is rendered virtually impossible. There are schools and health clinics in the village, they lament, but teachers and doctors regularly fail to show up for work. Funds allocated to well-intentioned government programs are siphoned off by local elites. Police torture innocent villagers suspected of smuggling. Husbands regularly beat or abandon their wives. You venture that surely everyone would all be better off if they worked together to begin addressing some of these basic concerns. "Perhaps" they respond, "but any such efforts seem always to come to naught. Development workers are no different: just last month, someone who claimed to be from a reputable organization helped us start savings and credit groups, only to vanish, absconding with all our hard-earned money. Why should we trust you? Why should we trust anyone?" (Woolcock, 1998).

People's aspirations and judgements on the likelihood of achieving those aspirations, as well as their trust in those who offer new opportunities, are decisive factors so that people do not remain passive claimants but take initiatives to improve their lives. Engendering development requires more than opportunities (offered by public policies, cooperation projects, or the initiatives of civil society

organizations): these must be taken up by the subjects for whom they are intended. From this point of view, also the liberal position is partial and ineffective if it starts from the assumption that people are already in an ‘active’ position with respect to their circumstances. The liberal recipe, like that of large-scale policies based on all-inclusive plans, must accept the challenge of comparing itself with the way in which people approach reality and the need of change that may emerge.

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