Paper to be presented at the 16th Annual Meeting on Socio-Economics
SASE, George Washington University, Washington DC, USA
July 8-11, 2004 (Session B / D)

WHAT CAN WE LEARN FROM STATE-OF-THE-ART AID-GROWTH ECONOMETRIC STUDIES?

Growth-enhancing (or growth-retarding) factors among poor countries

Sandrina Berthault Moreira*
Escola Superior de Ciências Empresariais
Instituto Politécnico de Setúbal, Portugal

Abstract

The effectiveness of foreign aid in promoting economic growth has been the subject of extensive research conducted over many decades. Since the mid-nineties, the cross-country work linking growth to aid has broken new ground in the field by drawing on a flourishing empirical growth literature that provides a different analytical basis compared to earlier work. In light of this distinguishing feature, together with others, the recent aid-growth econometric studies have been classified as a step forward in the empirical literature on aid effectiveness. The bulk of the work was published after the study by Burnside and Dollar (1997); a paper prepared as a background paper to the World Bank's report *Assessing Aid*.
This paper concentrates on the latest cross-country regression studies of the aid-growth relationship. Aid (as a share of GDP or GNP) and measures of economic policy and the political and institutional environment are among the variables included on the RHS of the regression. The aim of this paper is to assess whether these variables have growth-enhancing effects in developing countries. As this paper will demonstrate, the studies in focus here show much about the relationship between aid and growth, even though they say little about other growth-enhancing factors among poor countries.

Key words

Foreign aid; economic growth; developing countries; neoclassical growth; endogenous growth; cross-country regression studies; aid effectiveness and selectivity; Washington Consensus policies; governance; institutions.

Introduction

A large consensus reached among the economically influential entities in Washington, such as the International Monetary Fund, the World Bank, and the U.S. Treasury, about the "right" policies for developing countries can be traced back to the 1980s. The so-called Washington Consensus policies were originally market-oriented in nature and

* smoreira@esce.ips.pt; sbmoreira@mail.telepac.pt.

later complemented by "institutional reforms". This new generation of reforms is directly related to a change in development thinking from market supremacy to a more balanced perspective. State failures are no longer seen as pervasive and complete, with markets as the only hope. According to the new path in development thinking, both the market and the state have limitations and failures, and the relationship between them is seen as complementary with the two working in partnership.

Since the beginning of the 1980s, the acceptance of a policy package by government officials of Third World countries has become a precondition for assistance. Initial efforts were almost exclusively concentrated on achieving a sound macroeconomic framework. Thus, foreign aid was provided if developing countries engaged in more contractionary economic policies such as cutting deficits, raising taxes, or raising interest rates. After the end of the Cold War, the emphasis was gradually placed on ensuring an appropriate institutional framework. So, issues like the quality of public bureaucracy, the strength of the rule of law, or the non-pervasiveness of corruption became paramount conditions for assistance. Results have not met expectations, however, and today some argue that conditionality should be replaced by selectivity, giving aid to developing countries with a proven track record. The vigorous debate about aid selectivity is on-going.

The "official announcement" for a move towards selectivity in allocating development assistance gave new impetus to the discussion about aid effectiveness. As a result, a number of econometric studies linking economic growth to foreign aid have been published in the last few years. Compared to previous work, they break new ground in the field. They draw on a flourishing empirical growth literature to employ more sophisticated models. Hence, measures of economic policy and the political and institutional environment are included in growth regressions alongside traditional variables.

This paper concentrates on the new empirical work on aid effectiveness, namely on thirty cross-country growth regressions that have been carefully selected from twelve econometric studies of the aid-growth relationship. Do these studies provide empirical evidence to assert that foreign aid promotes the economic growth of developing countries? This paper aims to answer this question based on a summary of the authors' main findings and conclusions. Do they offer empirical evidence on other growth-enhancing factors? This paper seeks the answer by examining the estimated parameters of a common set of control variables.

1. Economic, political, and institutional reforms: a shift in emphasis

1.1. Washington Consensus and the "first-generation" reforms

Since the end of World War II, interventionist approaches to economic management dominated the policymaking scene worldwide. The argument, typical in early development economics, was that development practices such as protection of infant industries, managed interest rates, and selective credit were needed more in the developing world (as opposed to the developed world), due to their more dramatic and frequent market failures. With the rise of Neoliberalism after 1970, the whole picture changed. The market-state dichotomy swung in favor of the market, with state intervention cast as a cure that is worse than the disease (Chang, 2003).

The Washington Consensus emerged in the early 1980s as the neo-liberal counterpart for developing countries to the ideology prescribed for developed countries once conservative political leaders were elected in the US, Germany, and the UK in the late 1970s and early 1980s (Fine, 2003). What made this possible was the 1982 debt crisis. Persistent and increasingly unsustainable macroeconomic disequilibriums experienced in most developing countries, with the exception of some countries in the East and South East Asia, led their governments to turn to "the lenders of last resort" for support. As a result, the World Bank (WB) and the International Monetary Fund (IMF) attached to their funds a set of policies, regarded as the "right" ones for embarking the developing countries on the process of globalization. The neo-liberal policy advice of the Bretton Woods institutions came to exercise enormous influence throughout the aid donor community.

The Washington consensus on economic policy for developing countries, traditionally associated with the one-size-fits-all packaging of economic reforms imposed by Washington-based institutions or, more importantly, with Neoliberalism or market fundamentalism, was indeed neither of the two for the author who coined the term. Williamson (1990) codified the Washington Consensus approach as a set of reforms that many economists and policymakers believed Latin America would have to undertake to recover economically from the debt crisis of the 1980s. Below is a summary of Williamson's ten propositions.

Table 1 - First-generation reforms: Williamson's ten policy instruments for Latin American countries

Reform Name	Description
Fiscal Discipline	Reduction of public expenditures to eliminate large and sustained budget deficits that contribute to inflation and capital flight.
Public Expenditure Switching	Redirection of public spending from (indiscriminate) subsidies toward education and health (especially in a way that will benefit the disadvantaged), and infrastructure investment.
Tax Reform	A tax system with a broadened tax base and lower marginal tax rates.
Interest Rate Liberalization	A narrow concept of financial liberalization. Interest rates determined by market forces and real interest rates both positive and moderate.
Competitive Exchange Rates	An intermediate exchange rate regime to bolster exports.
Trade Liberalization	Free access to imports, especially of intermediate inputs.
Liberalization of FDI inflows	Abolition of barriers to the entry of foreign direct investment.
Privatization	Privatization of state-owned enterprises.
Deregulation	Elimination of economic regulatory mechanisms, especially constraints on entry and exit.
Secure Property Rights	Protection of property rights and in particular provision of property rights to the informal sector.

Source: Summarized from Williamson's writings on the Washington Consensus (those are available at http://www.iie.com).

As mentioned above, Williamson (1990) presented an agenda for a specific part of the world at a particular moment of history, in reviewing Latin American experience of policy reform in the 1980s. He labeled this reform agenda the Washington Consensus, because he believed that the underlying ideas were consensual in Washington among economists and policymakers alike. However, the phrase came to be interpreted as

either, "the set of economic policies advocated for developing countries in general by official Washington, meaning the international financial institutions (the IFIs, primarily the IMF and World Bank) and the US Treasury" or, "critics' beliefs about the set of policies that the IFIs are seeking to impose on their clients (…) the view that the IFIs are agents of Neoliberalism" (Williamson, 2004, p. 1-2).

Similarities do certainly exist between the items of "the" Washington Consensus and the economic conditions attached to the bilateral aid from the developed country governments and to the concessional loans made by the IFIs.[1] Moreover, the interpretation of the Washington Consensus as meaning market fundamentalism (the market must know best) should come as no surprise according to Kanbur (1999). Drawing on his experience in the operational part of the World Bank, Kanbur states that, "the negotiators from Washington always took a more purist stance, a more extreme stance than even their own intellectual framework permitted", because, "in the 1980s, and to a certain extent well into the 1990s, many saw the main task as being storming the citadel of statist development strategies" (Kanbur, 1999, p. 2). Nevertheless, the position of the Bretton Woods institutions and of aid donors in general moved with the times as the next section will demonstrate.

1.2. Good Governance and the "second-generation" reforms

The Washington Consensus faced an important challenge following the debate prompted by UNICEF's two volumes on Adjustment with a Human Face and latter complemented by UNDP's sustainable human development (Gore, 2000). After rejecting Cornia *et al*.'s study (1987) at first, the World Bank acknowledged the new interest in poverty reduction since its 1990 WDR (World Bank, 1990). "Reordering public expenditure priorities" is an instrument that fell under the objective of helping the disadvantaged. Even so, an eleventh component could be added to Williamson's specific formulation of the Washington Consensus, which involves social safety nets or selective state transfers for the needy (Standing, 1999). Another important challenge to the Washington Consensus, which has proved to be more powerful, was the coalition of forces that led to a new focus on the state and institutions.

[1] See, for instance, Tarp's list (1993, p. 2) of policy instruments that have generally entered in the adjustment programmes of the post-1980 period.

There are several reasons for the new interest in promoting good governance or what was once called good government, since the start of the 1990s.[2] The most widely cited reasons are geopolitical factors, such as the end of the Cold War, and the failure of structural adjustment programmes in the 1980s. The collapse of Communism in Eastern Europe and the Soviet Union opened up a vast area of the world that was willing to move towards the western model of liberal democracy and market economy. In addition, it undermined the case for giving aid (especially bilateral aid) to authoritarian regimes with a poor record on human rights, simply to contain the spread of Communism in Third World countries. Regarding the failure of the reforms implemented in the 1980s to turn around the economies of the countries concerned, the growing belief was that poor governance was the leading cause.

The World Bank pioneered the notion of connecting aid with good governance among the international donor community. Indeed, the concept of good governance first entered the aid vocabulary in 1989, when the World Bank's report on Sub-Saharan Africa characterized the crisis in the region as a "crisis of governance" and linked the ineffectiveness of aid with bad governance (World Bank, 1989). Since then, aid donors have given increasing prominence to governance issues. There are many competing views on the meaning of good governance, but owing to the IFIs non-political mandate, these multilateral donors (and others) have adopted a more technocratic approach to governance reform, while bilateral donors have extended it to include political requirements like democratization and respect for human rights.

The World Bank defines governance as, "the manner in which power is exercised in the management of a country's economic and social resources for development" (World Bank, 1992, p.1). As the public sector is the target of the discussion, the concept of good governance, which conveys the qualitative dimension of governance, has been equated with "sound development management" by the public sector (Ishihara, 2001). It involves predictable, open, and enlightened policymaking (i.e. transparent processes); a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law (World Bank, 1994). The idea that sound governance was important for the successful implementation of market-oriented economic reforms

[2] If nothing else, the use of the term good governance instead of good government sounds more diplomatic.

thus paved the way for a new conditionality, in which multilateral donors focused more on the technical issues implied in governance and bilateral donors more on politics.

Building on earlier World Bank's reports (e.g., World Bank, 1991, 1993), the 1997 WDR marks the shift from the ideal of the "minimalist state" to that of the "effective state". It acknowledges that, "the state is central to economic and social development, not as a direct provider of growth but as a partner, catalyst, and facilitator" (World Bank, 1997, p. 1). Thus, an effective state should work as a complement (not a substitute) to markets, undertaking those actions that make markets fulfill their functions better and correcting market imperfections (i.e. addressing externalities, regulating monopolies, and overcoming informational imperfections and asymmetries) (Stiglitz, 1998).

Of prime importance among the areas of state responsibility is the provision of what may be termed the institutional infrastructure of a market economy (Stern and Stiglitz, 1997). The state is essential for establishing a legal and regulatory framework for markets, such as laws regulating contracts, property rights, and bankruptcy, a judicial system capable of impartial and efficient enforcement of the law, and a system of prudential supervision of financial institutions.

A good institutional environment for markets requires both capability and credible commitment to the task. However, the state itself represents a complicated nexus of institutions – the "rules of the game" –, which provide incentives (and disincentives) for policy makers and bureaucrats to carry out their functions (Ahrens, 2000). Thus, the state also requires an institutional foundation that provides political decision makers and public officials with the incentives and the ability to implement and enforce adequate institutional arrangements that make markets work better while restraining arbitrary action and corruption. For instance, competitive wages, merit-based recruitment, and promotion practices are institutional mechanisms that can help build modern professional bureaucracies. Another example is formal checks and balances, effective watchdogs, and independent judiciaries, which can help prevent opportunistic state action.

In brief, good governance (an effective state) is based on key principles including credibility, predictability, consistency, accountability, transparency, participation, and rule of law. The action proposed to achieve these principles has ranged from reforming public institutions to modernizing the institutional infrastructure of a market economy.

Such reforms are known as the second-generation reforms,[3] because they are seen as a necessary complement to the first-generation ones. As this viewpoint endorses and extends the Washington Consensus, some analysts describe it as "Beyond the Washington Consensus" (Burki and Perry, 1998).[4] Others advocate a "Post-Washington Consensus", in that it embraces such institutional reforms while demarcating the Washington Consensus (Stiglitz, 1998).

2. Cross-country regression studies on aid effectiveness

2.1. Overview

Since the late sixties, researchers have tried to assess if aid reaches its main objective, defined as the promotion of economic development and welfare of developing countries. One branch of the empirical literature on aid effectiveness has focused on the traditional purpose of foreign aid – the promotion of economic growth in developing countries – both at the micro and macro level.

Regarding the macro studies on aid effectiveness, Hansen and Tarp (2000) consider three generations of cross-country regression studies. The first-generation studies offered an empirical assessment of how aid influences domestic savings. The second-generation studies evaluated the link between aid and growth, either via investment or directly in reduced form equations. Like the second strand of the second-generation studies, the third-generation ones have explored the direct relationship between aid and growth.

The empirical literature carried out since the mid-nineties is classified as a new generation of aid effectiveness studies, because, "in our view, the third-generation studies represent a distinct step forward in empirical cross-country work on aid effectiveness" (Hansen and Tarp, 2000, p.114). Indeed, as noted by these authors, the third-generation literature has employed panel data econometric tools to allow for non-linear effects of aid on growth and the endogeneity of aid and other variables. Furthermore, these studies have been inspired by the "new growth" literature, which encompasses various modifications to the Solow-Swan neoclassical growth model and endogenous growth models, which in turn provides a different analytical basis compared to earlier work.

[3] Naím (1994) is the author of such expression.
[4] Indeed, one institutional reform that got included in the original version of the Washington Consensus was the protection of property rights.

An overall analysis of cross-country regression studies carried out until the mid-nineties shows inconsistent evidence of a positive and statistically significant effect of aid on growth. The inconclusive macro results are in contrast to the results presented in studies at the micro-level. Mosley (1986) called this contradiction the "micro-macro paradox". Reanalysis of this cross-country work provides evidence to assert the opposite (e.g. Hansen and Tarp, 2000; Moreira, 2003). Even so, the widespread perception that a disparity exists between micro and macro results reported at that time is still very much alive.

The third-generation of cross-country regression studies, with it's advances in theory and method, have achieved the macro results foreseen by those in favor of the effectiveness of foreign aid and, therefore, the micro-macro paradox ceases to exist. Even more importantly, a number of these new empirical studies have gone beyond earlier work to address the necessary conditions for (increased) aid effectiveness.

The origin of the debate about the necessary conditions that must be in place for aid to be (more) effective was the analysis by Burnside and Dollar (1997), which was later published in the American Economic Review (Burnside and Dollar, 2000). Their growth regressions, which appeared in a slightly modified form in the World Bank's report *Assessing Aid* (World Bank, 1998), show that the impact of aid on growth depends on a good policy environment. This is generally translated into good fiscal, monetary, and trade policies. The main conclusion is that aid should be allocated by selecting developing countries according to their policy environment.[5]

The study by Burnside and Dollar has caught researchers' attention, not to mention the plea for the adoption of the principle of selectivity on the disbursement of aid. Some studies have demonstrated that the Burnside and Dollar finding do not stand up to close scrutiny, while others have offered additional evidence to support it. There are even researchers that have suggested other important factors besides policy to aid

[5] The *Assessing Aid* report goes even further, claiming that donors should concentrate the allocation of development assistance on poorer countries that meet the criteria of good policy and good governance. The former is defined in terms of the qualities that were dominant elements of the market-oriented Washington Consensus, such as trade openness and fiscal and monetary discipline. The latter is understood in terms of the quality of institutions, which reflects the technocratic approach to governance in World Bank circles. But more often than not, the good governance concept is not confined to institutions or principles of governance; it also includes a clear preference for certain policies (Hout, 2003). In this case, good policies and/or good institutions would be taken as signs of the existence of good governance in developing countries.

effectiveness and aid allocation (e.g. vulnerability mitigation, political stability, democracy).[6]

It is clear from the discussion above that the latest econometric studies of the aid-growth relationship direct one's attention to the issue of aid effectiveness and selectivity. Thus, the set of studies from which a selection of aid-growth regressions is made for the purposes of this paper, encompasses the study by Burnside and Dollar and the subsequent academic studies that it has spawned. McGillivray (2003) provides guidance concerning the research on aid effectiveness and selectivity (see Appendix I).

2.2. "New growth" framework

The empirical cross-country work on growth that has developed in the last decade or so, and its underlying growth theories – the neoclassical theory and the new theories – have been extremely useful to the most recent cross-country studies on aid effectiveness. The analysis of convergence between economies and the analysis of the determinants of economic growth are two major contributions that are worth looking at in more detail.

The neoclassical production function is the starting point of exogenous growth models, ranging from the original Solow model (1956) to later models based on it.[7] An aggregate production function is known as neoclassical if it is continuous (smooth substitution between physical capital and labor), well behaved (Inada conditions and positive but diminishing marginal returns with respect to each input), and homogeneous of degree one (constant returns to scale).

The neoclassical properties mentioned above, and in particular the law of diminishing returns, allow one to introduce the convergence hypothesis of neoclassical growth models. This refers to a tendency of the initially poorer countries to grow faster than the initially richer ones. The neoclassical models predict that if the initially poorer countries grow faster in per capita terms, then growth differences between countries will reduce in the course of time until a situation of equal per capita growth rates is reached. Depending on the countries being studied, two kinds of convergence are predicted: absolute, towards the same long-run level of per capita output, if countries have similar structural characteristics; conditional, towards different long-run levels of per capita output, in the opposite situation.

[6] This is further discussed in section 3.2.

[7] The Solow model is also known as the Solow-Swan model. Solow and Swan separately but concurrently developed similar models in the mid-fifties. *Vide* Swan T. 1956. Economic Growth and Capital Accumulation. *Economic Record* **32**: 334-361.

The empirical analysis of convergence usually implies an econometric analysis of the convergence hypothesis using either cross section data or panel data. The estimation of a statistically negative relationship between the growth rate and initial level of real per capita GDP gives empirical support to the absolute convergence hypothesis. There is empirical evidence in favor of the conditional convergence hypothesis, when the negative relationship between growth and initial income is found after controlling the differences in structural characteristics among countries that generate cross-country differences in long-run income levels.

If the convergence hypothesis is tested on a group of heterogeneous countries, like the samples used in the econometric studies of the aid-growth relationship, one has to include the variables that explain differences in living standards between countries in the equation that relates growth to initial income. Only in this way, the finding of a statistically negative sign on the initial income variable corroborates the conditional convergence hypothesis, in that it predicts higher growth in response to lower initial income, when the control variables are held constant.

The key point in the empirical study of conditional convergence is to find the determinants of the long-run level of per capita output. According to the original Solow-Swan model, for instance, per capita output depends on parameters such as saving rates and population growth rates. Yet, as noted by Barro (1997, p. x), "one of the lasting contributions of endogenous growth theory is that it stimulated empirical work that demonstrated the explanatory power of the neoclassical growth model". Indeed, since the seminal work of Barro (1991), the empirical literature guided by the neoclassical theory has added numerous factors to the vector of variables that distinguish the countries. These are seen as "the level of technology", that is, as factors that may affect the aggregate amount of output, given the aggregate amount of inputs (Sala-i-Martin, 1997). Moreover, if such efficiency factors have level effects, they will have growth effects as well. Even though the latter is only for a transitional period, the transitions tend to be lengthy, i.e. growth effects persist for a long time (Barro, 1997). The outcome is a renewed interest in the analysis of the determinants of economic growth.

Neoclassical theory says that a number of variables may contribute to transitory differences in growth rates across countries, as they are sources of cross-country differences in living standards. In contrast, new theories say that those same variables may contribute to persistent differences in growth rates among countries. To give a better understanding of how these two classes of growth theories differ, one can think of

variables that reflect the extent of regulation and corruption. In line with the first theory, the reduction in these variables is expected to increase the long-run per capita income. In turn, this effect translates into a (possibly lengthy) transitional increase in the growth rate of per capita income, when its starting level is held constant. Conversely, endogenous growth theory implies that variables reflecting the extent of regulation and corruption are expected to affect the long-run growth rate of per capita income.

Following Barro (1991), a number of studies have analyzed the determinants of economic growth. The tested factors are many and varied, and theory has not always guided the search for such variables. Durlauf and Quah (1998), for example, compile thirty-six broad categories of explanatory variables from a selection of the cross-country growth regressions that have been published. The list includes corruption, democracy, education, health, fertility, financial repression, trade, religion, among others. Section 4.1 takes a close look at this matter.

3. Recent cross-country regression studies on aid effectiveness and selectivity

3.1. Main features

The *Assessing Aid* report (World Bank, 1998) explicitly laid the foundations for a move towards selectivity in allocating development assistance. The arguments put forward for aid selectivity were based on a number of background papers. The one by Burnside and Dollar (1997) provided a new stimulus to the discussion on the effectiveness of aid (in growth terms). As a result, a number of econometric studies linking growth to aid have been published since the World Bank's report *Assessing Aid*. Even though the list made available in Appendix I is by no means exhaustive, it gathers the most cited studies about aid effectiveness and selectivity.

I have identified thirty cross-country growth regressions from twelve state-of-the-art aid-growth econometric studies (see column headings in Appendix II). The selected growth regressions correspond to those that give empirical support to the authors' main findings in relation to aid effectiveness and selectivity.[8] Appendix II shows the following details: key variables included in the estimated growth equations; the magnitude, sign, and statistical significance of critical parameters; data coverage, i.e. the total sample period, the number of sub-period averages or time periods, the number of

[8] I have chosen to concentrate on the empirical estimations referenced in Appendix II. But this should not be taken as implying that the non-selected ones should be disregarded. Indeed, they help not only in the search for the main empirical results, but also in consolidating them.

sample countries, and the number of observations; the explanatory power of the specified models; and the estimation technique.

Overall, the twelve studies in focus here share a common set of characteristics. However, a close inspection of the methods or procedures followed in each of the thirty regressions reveals differences. First of all, these authors work with panel data, i.e. they examine the variation in growth rates between countries within specified time periods. Sub-period averages instead of yearly data are used in the estimates, except for state variables like per capita income, which refer to initial data. Some studies opt for examining the aid-growth relationship using both the total sample of developing countries and the sub-sample of lower income countries.

Second, the overwhelming majority of studies include regional dummies in the regressions. The typical dummies are for Sub-Saharan Africa, Latin America, and East Asia, to point out that, *ceteris paribus*, growth performances in those regions appear to differ from those of other developing countries. Hansen and Tarp (2001) and Chauvet and Guillaumont (2002) prefer to take individual heterogeneity into account by including country specific effects, which partly explains the choice of estimator. Time dummies are included in all regressions to correct for the world business cycle.

Third, as is standard in the empirical "new growth" literature, both the initial level of income per capita and control variables of an economic, political, and institutional nature are included in the regressions. The logarithm of real per capita GDP at the beginning of the sample period captures the conditional convergence effect. Control variables are expected to explain differences in growth rates among countries. One also needs to consider these controls – growth determinants – in order to isolate the impact of aid on growth.

Fourth, a non-linear relationship between aid and growth is taken into account by using quadratic terms and/or interaction terms. The squared aid term allows for diminishing returns to aid. The interaction term between aid and a given variable addresses the hypothesis that aid effectiveness is conditional on that variable. Aid has been interacted with indicators of economic policy, economic vulnerability, negative external shocks, post-conflict scenarios, geography, political instability, democracy, and the World Bank Country Policy and Institutional Assessment (CPIA) index.

Finally, most growth regression studies assume that foreign aid may be an endogenous variable. The general strategy consists of presenting both OLS and 2SLS/GMM estimates to facilitate comparison between results and to avoid discussion

about the use of instrumental variables estimators and the choice of instruments. The endogeneity of aid is dealt with in the Burnside and Dollar's study. But they remark that no significant differences were found in the main results. In light of this, Collier and Dehn (2001), Collier and Dollar (2002), and Collier and Hoeffler (2002b) rely upon OLS to estimate their regressions. Only a few studies consider the possible endogeneity of other explanatory variables.

3.2. Main findings and conclusions

All studies listed in Appendix I contain more than one empirical estimation. Those surveyed here offer empirical results that confirm the authors' main findings related to aid effectiveness and selectivity. Thus, a few words must be said regarding the findings and conclusions drawn from the estimates.[9]

In an influential paper, Burnside and Dollar (2000) attempt to shed new light on the inconsistent evidence of earlier work about aid effectiveness. They hypothesize that the impact of foreign aid on the economic growth of developing countries is conditional on the economic policies that affect growth. A policy index interacted with aid is found statistically positive, implying that the effect of aid on growth positively depends on economic policy. In addition, the finding that aid is more effective in better policy environments is found more important in lower income countries. Burnside and Dollar (BD) then conclude that foreign aid should be more systematically allocated to low income countries with good policies.

Chauvet and Guillaumont (2002) introduce two additional hypotheses to their previous work (Guillaumont and Chauvet, 2001). On the assumption that aid enhances economic policy, they consider that the poorer the past policy is the higher the effectiveness of aid will be. They also believe that political instability, which is a negative factor on growth, is a factor in lowering aid's contribution to growth. Their regression results provide support to both previous and further assumptions.

Collier and Dehn (2001) incorporate terms of trade shocks, defined as changes in export prices, into the BD specification.[10] The main results are twofold: negative shocks adversely affect growth in line with other studies' estimations; the interaction term between changes in aid and negative shocks is found statistically positive, which suggests that the adverse growth effects of shocks may be mitigated by an increase in

[9] It is important to note that findings and conclusions that are not based on estimations of growth regressions are beyond the scope of the present section. Also note that all the findings reported here presume "all things being equal" (i.e. *ceteris paribus*).

[10] They also use a database similar to that of BD and include the "five big outliers" omitted by BD.

aid. Collier and Dehn's work is also consistent with the BD finding, in that the interaction of policy and aid is found positive and statistically significant. The authors then conclude that both economic policies and negative external shocks should influence aid allocations.

Collier and Dollar (2002) aim at calculating the allocation of aid that would maximize poverty reduction. It is worth noting here the first stage towards that end, which consists of estimating the aid-policy-growth link. Collier and Dollar (CD) use a broader measure of policy than the one used by BD: the CPIA index. Yet, their findings have not differed from that of BD.

Collier and Hoeffler (2002b) incorporate post-conflict situations, defined as post-civil war situations, into the CD specification.[11] Based on a range of estimates, they have found faster growth rates during the first full four-year period of peace, which they refer to as "post-conflict 1". Collier and Hoeffler then investigate whether this relatively short post-conflict phase of "supra-normal growth" is largely, or entirely, due to atypically effective aid. Their empirical results have shown that this is likely to be the case, in that an interaction term between the post-conflict 1 variable and the aid-policy interaction variable is found statistically significant. The authors then conclude that if aid is found more effective in post-conflict circumstances – holding policies and institutions (the CPIA index) constant –, then aid allocations to post-conflict countries should gradually rise during the first four years of peace and gradually return to normal levels by the end of the first decade of peace.

Dalgaard and Hansen (2001) conclude that the BD finding depends on the process of deleting "five big outliers", given that aid is shown to raise growth unconditionally when a different set of influential observations is chosen. Dalgaard and Hansen have also demonstrated that the BD data performs well in the presence of an aid-growth relationship specified as a quadratic function. They have also shown the importance of accounting for aid endogeneity by including lags of all aid regressors.

Dalgaard *et al*. (2002) introduce a new interactive term to analyze the influence of geography on the marginal effect of aid on growth. A key geographic variable that negatively affects growth is the fraction of land area in the tropics. Aid is found much more effective in countries outside the tropical areas.

[11] They add data from Collier and Hoeffler (2002a) to the CD database and exclude five missing observations that were originally mis-coded as zeros.

Easterly *et al*. (2003) test the robustness of BD's main result by adding new data to the original BD data set. Their reassessment of the aid-policy-growth nexus only differs from that of BD in terms of data (both time periods and countries). However, a positive and statistically significant aid-policy interaction term is not found. BD's result is thus sensitive to data.

Guillaumont and Chauvet (2001) hypothesize that the external and climatic environment influences aid effectiveness. They construct an index of economic vulnerability to exogenous shocks, which covers indicators of the size of ecological and trade shocks and of the exposure to these shocks. Vulnerability – in addition to being detrimental to growth – is found positively related to aid effectiveness, i.e. aid has a more positive contribution to growth in more vulnerable countries. These authors therefore conclude that aid should be more allocated to countries affected by a poor environment than is already the case.

Hansen and Tarp (2000) re-estimate the growth regression of Burnside and Dollar (1997, table 3) by using a similar data set that contains the "five big outliers". The aid-policy interaction effect is found sensitive to data. In contrast to Burnside and Dollar (1997), they have also found statistical support for a non-linear relationship between aid and growth, in which there are decreasing returns to aid.

In the same vein, Hansen and Tarp (2001) test the robustness of BD's main result to data and model specification. Their findings have not differed from those of Hansen and Tarp (2000). GMM estimates also provide additional support to the notion of diminishing returns to aid.

Svensson (1999) examines the extent to which aid effectiveness is conditional on the degree of political and civil liberties. A democracy index multiplied by aid is found statistically significant. Svensson concludes that if aid is found more effective in more democratic countries, then aid should be allocated towards such environments.

4. Empirical estimation of growth determinants

4.1. Control variables of state-of-the-art aid-growth econometric studies

Macroeconomic stabilization is a key principle of the Washington Consensus approach. It is regarded as an indispensable precondition for sustainable economic growth. A stable macroeconomic framework can be reflected in low and predictable inflation, good fiscal performance, sound financial development, a competitive and predictable exchange rate, and outward-oriented trade strategies. Given the practical

difficulty of measuring macroeconomic stability, researchers have proceeded by identifying indicators of macroeconomic policy correlated with economic growth.

As shown in Appendix II, I have labeled the first set of explanatory variables included in growth regressions as the macroeconomic framework. It comprises indicators of monetary, fiscal, exchange rate, and trade policies. High inflation rates are expected to lower growth rates, as opposed to large (small) budget surpluses (deficits) measured in relation to GDP. A further measure of fiscal policy is the ratio of government consumption as a proportion of GDP, which is expected to have a negative association with economic growth. Financial deepening is traditionally measured by the ratio of M2 to GDP. Svensson (1999) uses the ratio of liquid liabilities of the financial system to GDP as an alternative measure of financial depth. The anticipated sign of both variables is positive. The black market exchange rate premium is a proxy for distorted foreign exchange markets and thus expected to be detrimental to economic growth. To capture the positive link between growth and openness, most studies use a dummy variable for trade openness developed by Sachs and Warner (1995). This binary openness indicator rates countries as closed based on five components. They are as follows: black market premium above 20 percent; average frequency of non-tariff measures on capital goods and intermediates above 40 percent; average tariff on capital goods and intermediates above 40 percent; pervasive government intervention in the tradable goods sector; socialist economy.

Since the beginning of the 1990s, the international donor community has given increasing prominence to the political and institutional environment of developing countries. A number of political and institutional factors have also appeared in empirical growth studies to account for cross-country growth differences. Political instability subsumes many kinds of events like antigovernment demonstrations, assassinations, cabinet changes, constitutional changes, coups, government crises, purges, revolutions, and riots. The studies in focus here mostly use the assassinations variable to capture the instability of the political system. As an alternative, two studies present an index of political instability, which contains the following equally weighted components: coups d'Etat and regime changes (Chauvet and Guillaumont, 2002); assassinations and revolutions (Guillaumont and Chauvet, 2001). Most studies assume that ethnic diversity may negatively influence economic growth, especially through its adverse effects on factors associated with economic growth. The ethnolinguistic fractionalization variable used by Easterly and Levine (1997) is the chosen indicator of potential sociopolitical

fractures. It measures the probability that two randomly selected individuals in a country are from different ethnolinguistic groups. This variable is also interacted with the assassinations variable to capture the anticipated negative effect of political instability on growth as a positive function of ethnic divisions. Svensson (1999) also examines whether civil and political freedoms are a significant determinant of economic growth. He uses a democracy index that ranks political and civil rights on a scale from 0 to 12, where 12 means most free.[12] Finally, the institutional quality variable of Knack and Keefer (1995) is also included in growth regressions to capture the quality of institutions. The index is based on the simple average of the ratings provided by the *International Country Risk Guide* for the following five institutional indicators: rule of law; expropriation risk; repudiation of contracts by government; corruption in government; and quality of the bureaucracy.

From the list of variables mentioned above, Burnside and Dollar (2000) group the budget surplus, the inflation rate, and the Sachs-Warner variable in a single policy variable. The policy index is of the following form:

$$\text{Policy} = 1.28 + 6.85\ \text{Budget Surplus} - 1.4\ \text{Inflation} + 2.16\ \text{Openness},$$

where the weights are given by the corresponding parameters in the growth regression used to determine them.

A good policy environment, in terms of small budget deficit, low inflation, and an open economy, leads to a high value of the index. Hence, the policy index is expected to have a positive effect on growth.

Following the Burnside and Dollar (BD) approach, Guillaumont and Chauvet (2001) and Chauvet and Guillaumont (2002) construct their own composite policy variable, instead of using BD policy data. Collier and Dollar (2002) and Collier and Hoeffler

[12] "Civil liberties index is based on a 14-item checklist: media free of censorship; open public discussion; freedom of assembly and demonstration; freedom of political organization; non-discriminatory rule of law in politically relevant cases; free from unjustified political terror; free trade unions and peasant organizations; free business and cooperatives; free professional and other private organizations; free religious institutions; personal social rights; socioeconomic rights; freedom from gross socioeconomic inequality; freedom from gross government indifference or corruption. Political liberties index is based on an 11-item checklist: chief authority recently elected by a meaningful process; legislature recently elected by a meaningful process; fair election laws; fair reflection of voter preference in distribution of power; multiple political parties; recent shifts in power through elections; significant opposition vote; freedom from domination by military, foreign powers and other powerful groups; no major group or groups denied self-determination; decentralized political power; and informal consensus" (Svensson, 1999, p. 294).

(2002b) opt for a broad measure of the policy environment by introducing the World Bank CPIA index in growth regressions.

I have excluded the CPIA index from the two sets of explanatory variables given in Appendix II, as it measures cross-country differences in both policy and institutions. Indeed, the CPIA measure has twenty equally weighted components covering macroeconomic issues, structural policies, public sector management, and policies for social inclusion.[13] Thus, among other factors, the CPIA index includes macroeconomic policy and institutional measures.

4.2. More consistent results of state-of-the-art aid-growth econometric studies

The studies in focus here have estimated a non-linear relationship between aid and growth, when other explanatory variables derived from the empirical "new growth" literature are included in the regression. This methodology ensures that any statistical inferences about the relationship of aid to growth are robust. Inasmuch as foreign aid affects growth (as it seems to be the case), this methodology will also ensure that any inferences about the relationship between each of the other explanatory variables and growth are robust. In other words, if cross-country differences in a given explanatory variable (say, ethnic diversity) explain part of the cross-country differences in growth rates while holding the aid/GDP ratio constant, one may then conclude that the estimated effect is not "contaminated" by differences in aid among countries.

Overall, the estimated results indicate that the macroeconomic environment as well as the political and institutional environment appear to influence growth. That is, with the exception of government consumption and democracy, the variables listed in Table 2 are both correctly signed and statistically significant at least once. One could therefore conclude that, all things being equal, countries with lower rates of inflation seem to have experienced faster growth rates than countries with higher inflation rates. The same goes for countries showing more outward-oriented policies, lower budget deficit

[13] The CPIA index has twenty items grouped into four categories. First, economic management: management of inflation and macroeconomic imbalances; fiscal policy; management of public debt (external and domestic); management and sustainability of the development programme. Second, structural policies: trade policy and foreign exchange regime; financial stability; financial sector depth, efficiency and resource mobilization; competitive environment for the private sector; factor and product markets; policies and institutions for environmental sustainability. Third, policies for social inclusion/equity: gender; equity of public resource use; building human resources; social protection and labor; monitoring and analysis of poverty outcomes and impacts. Fourth, public sector management and institutions: property rights and rule-based governance; quality of budgetary and financial management; efficiency of revenue mobilization; quality of public administration; transparency, accountability and corruption in the public sector. (Hout, 2003)

ratios, lower black market premiums, greater financial depth, lower ethnic divisions, greater political stability, higher quality of institutions, or better policy environments.

Table 2 - Estimated results of thirty cross-country growth regressions

		Unit of measure: number of regression studies				
Explanatory Variable	Expected sign	Correct sign and significance at:		Statistical insignificance	Total	Fraction of significance
		5% level	10% level			
Policy index	+	13	1	1	15	93%
Openness	+	10	0	0	10	100%
Inflation	-	9	0	1	10	90%
Budget surplus	+	2	5	2	9	78%
Government consumption	-	0	0	4	4	--
Black market premium	-	2	0	0	2	--
Financial deepening	+	1	1	19	21	10%
Ethnic fractionalization	-	3	0	17	20	15%
Assassinations	-	3	6	9	18	50%
Ethnic frac. x Assassinations	+	2	6	10	18	44%
Political instability	-	1	0	2	3	--
Democracy	+	0	0	2	2	--
Institutional quality	+	20	1	2	23	91%
CPIA index	+	2	1	0	3	--

Source: Extracted from Appendix II.

Table 2 shows that the number of variables differs among regressions and to an extent that, for instance, only two regressions report estimates of democracy, while twenty-three regressions present estimates of institutional quality. Thus, one should merely focus on the variables often included in the growth regressions. If one then considers the percentage of the regressions for which a given variable is significant – either at the 5% or 10% significance levels – and of the expected sign, an interesting picture emerges. It appears that only four variables fulfill the requisite in at least 90 percent of the regressions in which they are included. One may then conclude that the more

consistently accurate results belong to the following variables: openness (100%); policy index (93%); institutional quality (91%); and inflation (90%).[14]

To further test the reliability of the results, I have applied the robustness criteria of Levine and Renelt (1992) and that of Sala-i-Martin (1997) to each of the nine variables of interest. Using different methodologies, both researchers investigate the robustness of the results of cross-country growth models by checking how sensitive the estimated parameter of each variable of interest is to the inclusion of additional explanatory variables. The starting point consists of running regressions which have the dependent variable – economic growth – as a function of a vector of "standard" explanatory variables (say, initial per capita income), the variable of interest, a vector of up to three (following Levine and Renelt) or exactly three (following Sala-i-Martin) possible additional explanatory variables, taken from a pool of variables potentially relevant to explain variation in economic growth according to the literature, and an error term. So, for each variable of interest, the authors estimate all possible regressions that can be specified by adding any combination of three or up to three out of a set of possible growth determinants. As the present paper concentrates on recent empirical studies of aid effectiveness that have been carried out and published, my robustness analysis of the estimated results is strictly based on the thirty regressions surveyed here. Therefore, I depart from Levine and Renelt and from Sala-i-Martin when it comes to running regressions. Moreover, although sharing a common set of features, growth regressions presented in Appendix II differ on details like data coverage, or estimation method, or even the specification of the aid-growth relationship.[15] Hence, I follow Levine and Renelt and Sala-i-Martin when it comes to "testing" variables, but the underlying purposes differ. Both authors aim to analyze the consequences of changing the set of conditioning variables for the estimated effect of the variable of interest on the rate of growth. My goal is to analyze the extent to which the sign and the statistical significance of the variable of interest are sensitive to differences in the methodological and econometric procedures found in the studies in focus here.

The procedure of the "extreme bound analysis" (EBA) suggested by Levine and Renelt (1992) amounts to saying that if a single regression renders the estimated parameter of the key variable insignificant or its sign changed, then the variable is said

[14] Note that the assassinations variable and the index of political instability are aimed to proxy for the instability of the political system. However, if one gathers their estimated results, the outcome will not change - the fraction of significance remains equal to 50%.
[15] See both Section 3.1 and Appendix II.

to be non-robust. As such, lack of robustness should not come as a surprise. Table 2 reveals that according to the "extreme bounds test", all but one of the variables of interest should be labeled as fragile (see also Appendix III). The exception is the trade openness variable, which is identified as correlated with growth in all the regressions where the variable is explicitly included among other explanatory variables.

The EBA-condition boils down to all parameter estimates being statistically significant at the 5% level and of the same sign. Sala-i-Martin (1997) argues that such a criterion is too strong for any variable to really pass it, when enough regressions are run. He proposes that instead of analyzing the extreme bounds of the parameter estimates, one should analyze the entire distribution of the parameter estimates. Broadly speaking, if 95 percent of the density function for the parameter estimates lies to one side of zero, the corresponding regressor should be classified as a variable that is strongly correlated with economic growth. If one uses this less strict criterion, the number of variables that passes the test is likely to increase. Appendix III reports the results of the unweighted version of this test, under the assumption of normality in the distribution of the estimates of the coefficients. As can be seen, policy index, openness, inflation, assassinations, and institutional quality are said to have a robust effect on growth according to the "cumulative distribution function analysis".

If one favors the less restrictive (but arguably more reasonable) criterion of Sala-i-Martin and adds the first requisite – "the fraction of significance $\geq$ 90%" (see Table 2) – as an additional criterion, it follows that out of the nine tested variables, the following should be considered as robustly related to economic growth: policy index, openness, inflation, and institutional quality. In other words, the estimated coefficients of the Burnside and Dollar's policy index, of two of its components, and of the Knack and Keefer's institutional quality index do not seem to be sensitive to differences in the methodological and econometric procedures found in the studies in focus here.

Conclusion

A fair conclusion from the recent empirical evidence on aid and growth is that foreign aid appears to promote economic growth, but it's impact differs across countries depending on the conditions they face. There is a controversy as to whether the beneficial impact of aid on growth is entirely dependent on good policies being in place or if it takes place irrespective of policy. Nevertheless, the fact that policies do or at least potentially matter concerning the effectiveness of aid appears undisputed. Aid

appears to be more effective in increasing economic growth in post conflict situations, in structurally vulnerable countries (including those undergoing trade shocks), in countries outside the tropical areas, in politically stable regimes, and in more democratic countries. Aid also seems to be subject to diminishing returns, in that excessively high amounts of aid (measured in relation to GDP) may raise problems of absorption capacity and "Dutch disease" problems.

The new empirical work on aid effectiveness presents empirical evidence on the relationship between foreign aid and economic growth that should make one trust in aid as a growth-enhancing factor. At first sight, the findings of more growth-enhancing effects of aid in specific environments justify adding this new information to the selectivity mechanisms already in use. However, one should be cautious about drawing such strong implications from these estimates. There is only one empirical study for each factor shown relevant to aid effectiveness and allocation!

As to other growth-enhancing factors, the empirical evidence is weak. The policy index and two of its items appear to be consistently correlated with economic growth. The same goes for the institutional quality index. The former emphasizes the importance of growth-enhancing policies of openness to international trade and fiscal and monetary discipline. The latter highlights the importance of growth-enhancing institutions such as property rights and the legal rules that enforce them. However, the policy index is found statistically significant and of the anticipated sign in at least 90% of the cases as opposed to one of its components (the budget surplus). So, one should, at least, be extremely cautious in concluding that the various components of the policy index (or the institutional quality index) are significant determinants of growth (in statistical terms), when the composite variable is found correctly signed and statistically significant. The empirical evidence that the remaining variables included in the estimates affect growth is either inconclusive or insufficient to draw any conclusions from.

It is important to stress this paper's boundaries. This paper does not try to estimate a structural model or reduced form regressions. It seeks to draw conclusions about growth-enhancing (or growth-retarding) factors among poor countries, based on empirical estimations of recent studies on aid effectiveness. The growth regressions in focus here show much about the relationship between aid and growth. The main purpose of the exercise carried out on the control variables is to determine whether these variables follow the pattern. On the assumption that the authors' methodological and

econometric procedures are accurate, the results of this exercise suggest that these regressions show little about the relationship between growth and most of the variables examined.

A final concluding remark relates to the statistical insignificance of control variables included in the equations that link growth to aid. On the assumption that the selecting process of control variables is based on established theoretical and empirical results, the lack of statistical significance of a given variable does not necessarily mean that what the variable is aimed to proxy for is not an important determinant of growth. It can instead reflect upon such problems as measurement errors (including inadequate proxy variables), simultaneity, and multicollinearity. Unless these and other possible reasons for not finding statistically significant results are carefully explored, future cross-country research on aid effectiveness is doomed to say little about growth-enhancing (or growth-retarding) factors among poor countries.

References

Ahrens, J. 2000. Toward a Post-Washington Consensus: The Importance of Governance Structures in Less Developed Countries and Economies in Transition. *Journal of Institutional Innovation, Development and Transition* **4**.

Barro RJ. 1991. Economic Growth in a Cross Section of Countries. *Quarterly Journal of Economics* **106**(2): 407-443.

Barro RJ. 1997. *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge: MIT Press.

Barro RJ, Sala-I-Martin X. 1995. *Economic Growth*. New York: McGraw-Hill, Inc.

Borner S, Bodmer F, Kobler M. 2004. *Institutional Efficiency and its Determinants: The Role of Political Factors in Economic Growth*. Paris: OECD.

Burki SJ, Perry GE. 1998. *Beyond the Washington Consensus: Institutions Matter*. Washington: World Bank.

Burnside C, Dollar D. 1997. *Aid, Policies, and Growth*. Washington: World Bank, Policy Research Working Paper No. 1777.

Burnside C, Dollar D. 2000. Aid, Policies and Growth. *American Economic Review* **90**(4): 847-868.

Chang H-J. 2003. Rethinking Development Economics: An Introduction. In *Rethinking Development Economics*, Chang H-J (ed.). London: Anthem Press.

Chauvet L, Guillaumont P. 2002. *Aid and Growth Revisited: Policy, Economic Vulnerability and Political Instability*. Paper presented at the Annual Bank Conference on Development Economics: Towards Pro-poor Policies, June 24-26, Oslo.

Clift J. 2003. Beyond the Washington Consensus. *Finance and Development* **40**(3): 9.

Collier P, Dehn J. 2001. *Aid, Shocks, and Growth*. Washington: World Bank, Policy Research Working Paper No. 2688.

Collier P, Dollar D. 2002. Aid Allocation and Poverty Reduction. *European Economic Review* **46**: 1475-1500.

Collier P, Hoeffler A. 2002a. *Greed and Grievance in Civil War*. Washington: World Bank, Centre for the Study of African Economies Working Paper.

Collier P, Hoeffler A. 2002b. *Aid, Policy, and Growth in Post-Conflict Societies*. Washington: World Bank, Policy Research Working Paper No. 2902.

Collingwood V. 2002. *Good Governance and the World Bank*. University of Oxford.

Cornia GA, Jolly R, Stewart F. 1987. *Adjustment with a Human Face*. Oxford: Oxford University Press.
Dalgaard C-J, Hansen H. 2001. On Aid, Growth and Good Policies. *Journal of Development Studies* **37**(6): 17-41.
Dalgaard C-J, Hansen H, Tarp F. 2002. *On the Empirics of Foreign Aid and Growth*. Nottingham: Centre for Research in Economic Development and International Trade, CREDIT Research Paper No. 02/08.
Dijkstra G. 1999. *Programme Aid, Policies and Politics: Programme Aid and Conditionality*. Stockholm: Sida, A Sida Evaluation Report.
Durlauf SN, Quah DT. 1998. *The New Empirics of Economic Growth*. …: Centre for Economic Performance, Discussion Paper No. 384.
Easterly W, Levine R. 1997. Africa's Growth Tragedy: Policies and Ethnic Divisions. *Quarterly Journal of Economics* **112**(4): 1203-1250.
Easterly W, Levine R, Roodman D. 2003. *New Data, New Doubts: Revisiting "Aid, Policies, and Growth"*. Washington: Center for Global Development, Working Paper No. 26.
Estêvão, JAR. 1999. *O Estado e o Desenvolvimento Económico: Elementos para uma Orientação de Leitura*. Lisboa: CEsA / ISEG.
Fine B. 2003. Neither the Washington Nor the Post-Washington Consensus: An Introduction. In *Development Policy in the Twenty First Century: Beyond the Post-Washington Consensus*, Fine B, Pincus J, Lapavitsas C (eds.). London: Routledge.
Fischer S. 1993. The Role of Macroeconomic Factors in Growth. *Journal of Monetary Economics* **32**: 485-512.
Gore C. 2000. The Rise and Fall of the Washington Consensus as a Paradigm for Developing Countries. *World Development* **28**(5): 789-804.
Guillaumont P, Chauvet L. 2001. Aid and Performance: A Reassessment. *Journal of Development Studies* **37**(6): 66-92.
Haan J, Sturm J-E. 2003. *Economic Freedom and Economic Growth; A Reassessment of Evidence Based on Cross-Country Growth Regressions*. Munich: CESifo.
Hansen H, Tarp F. 2000. Aid Effectiveness Disputed. In *Foreign Aid and Development: Lessons Learnt and Directions for the Future*, Tarp F, Hjertholm P (eds.). London: Routledge.
Hansen H, Tarp F. 2001. Aid and Growth Regressions. *Journal of Development Economics* **64**: 547-570.
Hout W. 2003. *Good Governance and the Political Economy of Selectivity*. Murdoch: Asia Research Centre, Working Paper No. 100.
Ishihara Y. 2001b. Economic Governance and Economic Performance in Developing Countries. *Forum of International Development Studies* **19**.
Kanbur R. 1999. *The Strange Case of the Washington Consensus: A Brief Note on John Williamson's "What Should the Bank Think about the Washington Consensus?"*.
King RG, Levine R. 1993. Finance, Entrepreneurship, and Growth: Theory and Evidence. *Journal of Monetary Economics* **32**(3): 512-542.
Knack S, Keefer P. 1995. Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures. *Economics and Politics* **7**(3): 207-227.
Kuczynski P-P, Williamson J. 2003. *After the Washington Consensus: Restarting Growth and Reform in Latin America*. Washington: Institute for International Economics.
Lensink R, White R. 2001. Are There Negative Returns to Aid?. *Journal of Development Studies* **37**(6): 42-65.
Levine R, Renelt D. 1992. A Sensitivity Analysis of Cross-Country Growth Regressions. *American Economic Review* **82**(4): 942-963.
Madeley J. 1995. *Can Aid Promote Good Government?*. Brighton: Institute of Development Studies, IDS Policy Briefing 2.
McGillivray M. 2003. *Aid Effectiveness and Selectivity: Integrating Multiple Objectives into Aid Allocations*. Paper presented at Joint OECD DAC / Development Centre Experts' Seminar: Aid Effectiveness and Selectivity - Integrating Multiple Objectives into Aid Allocations, March 10, Paris.

Moreira SB. 2003. *Evaluating the Impact of Foreign Aid on Economic Growth: A Cross-Country Study (1970-1998)*. Paper presented at the Society for the Advancement of Socio-Economics (SASE) 15th Annual Meeting, June 26-28, Aix-en-Provence.

Mosley P. 1986. Aid Effectiveness: The Micro-Macro Paradox. *IDS Bulletin* **17**(2): 22-27.

Naím M. 1994. Latin America: The Second Stage of Reform. *Journal of Democracy* **5**(4): 32-48.

Oppenheimer J, Carvalho LF. 1998. *Desenvolvimento Económico e Democracia Política no Contexto do Ajustamento Estrutural em África*. Lisboa: CEsA / ISEG, Documento de Trabalho No. 48.

Raffer K, Singer HW. 1996. *The Foreign Aid Business: Economic Assistance and Development Co-operation*. Cheltenham and Brookfield: Edward Elgar.

Rogerson A, Hewitt A, Waldenburg, D. 2004. *The International Aid System 2005-2010: Forces For and Against Change*. London: Overseas Development Institute (ODI), Working Paper No. 235.

Sachs JD, Warner A. 1995. Economic Reform and the Process of Global Integration. *Brookings Papers on Economic Activity* **1**: 1-118.

Sala-i-Martin X. 1996. The Classical Approach to Convergence Analysis. *Economic Journal* **106**(437): 1019-1036.

Sala-i-Martin X. 1997. *I Just Run Four Million Regressions*. Cambridge: National Bureau of Economics Research, NBER Working Paper No. 6252.

Simões MC. 1999. *Convergência de Acordo com a Teoria do Crescimento: Estudo de Algumas Hipóteses com Aplicação à União Europeia*. University of Coimbra, Masters Dissertation.

Singh K. 2003. *Aid and Good Governace*. A discussion paper for the Reality of Aid.

Solow R. 1956. A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics* **70**(1): 65-94.

Standing G. 1999. *New Development Paradigm or Third Wayism?: A Critique of a World Bank Rethink*. Mimeo.

Stern N, Stiglitz J. 1997. *A Framework for a Development Strategy in a Market Economy: Objectives, Scope, Institutions and Instruments*. London: European Bank for Reconstruction and Development, Working Paper No. 20.

Stiglitz J. 1998. *More Instruments and Broader Goals: Moving Toward the Post-Washington Consensus*. Paper presented at the 1998 WIDER Annual Lecture, January 7, Helsinki.

Svensson J. 1999. Aid, Growth and Democracy. *Economics and Politics* **11**(3): 275-297.

Tarp F. 1993. *Stabilization and Structural Adjustment: Macroeconomic Frameworks for Analysing the Crisis in sub-Saharan Africa*. London and New York: Routledge

Tsangarides CG. 2000. *Revisiting Growth and Convergence: Is Africa Catching Up?*. Washington: World Bank, Africa Region Working Paper Series No. 10.

Williamson J. 1990. What Washington Means by Policy Reform. In *Latin American Adjustment: How Much Has Happened?*, Williamson J (ed.). Washington: Institute of International Economics.

Williamson J. 1999a. *What Should the Bank Think about the Washington Consensus*. Washington: Institute for International Economics, Paper prepared as a background to the World Bank's World Development Report 2000.

Williamson J. 1999b. *Economic Reform: Content, Progress, Prospects*. Washington: Institute for International Economics, Paper presented at the 50th anniversary celebration of the University of Baroda, November 23.

Williamson J. 2003. From Reform Agenda to Damaged Brand Name. *Finance and Development* **40**(3): 10-13.

Williamson J. 2004. *The Washington Consensus as Policy Prescription for Development*. Washington: Institute for International Economics, A lecture in the series "Practitioners of Development" delivered at the World Bank, January 13.

World Bank. 1989. *Sub-Saharan Africa: From Crisis to Sustainable Development*. Washington: World Bank.

World Bank. 1990. *World Development Report 1990: Poverty*. New York: Oxford University Press.

World Bank. 1991. *World Development Report 1991: The Challenge of Development*. New York: Oxford University Press.
World Bank. 1992. *Governance and Development*. Washington: World Bank.
World Bank. 1993. *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press.
World Bank. 1994. *Governance: The World Bank's Experience*. Washington: World Bank.
World Bank. 1997. *World Development Report 1997: The State in a Changing World*. New York: Oxford University Press.
World Bank. 1998. *Assessing Aid: What Works, What Doesn't, and Why*. New York: Oxford University Press.
World Bank. 2000. *Reforming Public Institutions and Strengthening Governance: A World Bank Strategy*. Washington: World Bank.
World Bank. 2001. *World Development Report 2002: Building Institutions for Markets*.

Appendix I – List of studies on aid effectiveness and selectivity

(1) Burnside C, Dollar D. 2000. Aid, Policies and Growth. *American Economic Review* **90**(4): 847-868.

(2) Chauvet L, Guillaumont P. 2002. *Aid and Growth Revisited: Policy, Economic Vulnerability and Political Instability*. Paper presented at the Annual Bank Conference on Development Economics: Towards Pro-poor Policies, June 24-26, Oslo.

(3) Collier P, Dehn J. 2001. *Aid, Shocks, and Growth*. Washington: World Bank, Policy Research Working Paper No. 2688.

(4) Collier P, Dollar D. 2002. Aid Allocation and Poverty Reduction. *European Economic Review* **46**: 1475-1500.

(5) Collier P, Hoeffler A. 2002b. *Aid, Policy, and Growth in Post-Conflict Societies*. Washington: World Bank, Policy Research Working Paper No. 2902.

(6) Dalgaard C-J, Hansen H. 2001. On Aid, Growth and Good Policies. *Journal of Development Studies* **37**(6): 17-41.

(7) Dalgaard C-J, Hansen H, Tarp F. 2002. *On the Empirics of Foreign Aid and Growth*. Nottingham: Centre for Research in Economic Development and International Trade, CREDIT Research Paper No. 02/08.

(8) Easterly W, Levine R, Roodman D. 2003. *New Data, New Doubts: Revisiting "Aid, Policies, and Growth"*. Washington: Center for Global Development, Working Paper No. 26.

(9) Guillaumont P, Chauvet L. 2001. Aid and Performance: A Reassessment. *Journal of Development Studies* **37**(6): 66-92.

(10) Hansen H, Tarp F. 2000. Aid Effectiveness Disputed. In *Foreign Aid and Development: Lessons Learnt and Directions for the Future*, Tarp F, Hjertholm P (eds.). London: Routledge.

(11) Hansen H, Tarp F. 2001. Aid and Growth Regressions. *Journal of Development Economics* **64**: 547-570.

(12) Svensson J. 1999. Aid, Growth and Democracy. *Economics and Politics* **11**(3): 275-297.

Appendix II - Cross-country growth regressions selected from aid-growth econometric studies listed in Appendix I [a] - Part I

Dependent variable: economic growth, commonly measured by the growth rate of real per capita GDP	**Burnside et Dollar (2000)**				**Chauvet et Guillaumont (2002)**	**Collier et Dehn (2001)**		**Collier et Dollar (2002)**		**Collier et Hoeffler (2002b)**	**Dalgaard et Hansen (2001)**			
	table 4, reg. 5	**table 4, reg. 5**	**table 5, reg. 8**	**table 5, reg. 8**	**table 2, reg. 8**	**table 3, reg. 3**	**table 3, reg. 4**	**table 1, reg. 1**	**table 1, reg. 2**	**table 3, reg. 4**	**table 2, reg. 3**	**table 2, reg. 6**	**table 4, reg. 8**	**table 4, reg. 11**
Macroeconomic framework														
Policy index [b]	0.71**	0.74**	0.56*	0.59	0.61**	0.69**	0.82**				1.04**	1.17**	0.96**	1.13**
Openness														
Inflation														
Budget surplus														
Government consumption														
Black market premium														
Financial deepening	0.012	0.017	0.024	0.025		0.01	0.02				0.004	0.015	0.009	0.026
Political and institutional environment														
Ethnic fractionalization	-0.42	-0.73	-0.58	-0.67		-0.41	-0.38				-0.50	-0.77	0.57	0.30
Assassinations	-0.45*	-0.41	-0.79*	-0.76*		-0.40	-0.37				-0.42	-0.67	-0.45*	-1.02**
Ethnic frac. x Assassinations	0.79*	0.71	0.69	0.63		0.68	0.63				0.82*	1.11	0.88*	1.59
Political instability					-0.003									
Democracy														
Institutional quality	0.69**	0.66**	0.84**	0.84**		0.64**	0.67**	0.28*	0.27	0.17	0.70**	0.89**	0.86**	0.93**
CPIA index								0.46*	0.64**	1.02**				
Other common variables														
Aid (as a share of GDP or GNP)	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes	yes	yes	yes
Aid x X [c]	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no
$(Aid)^2$	no	no	no	no	no	no	no	yes	yes	yes	no	no	yes	yes
Initial per capita income	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample period	1970-93	1970-93	1970-93	1970-93	1975-99	1970-93	1970-93	1974-97	1974-97	1974-97	1970-93	1970-93	1970-93	1970-93
Countries/periods	56/6	56/6	40/6	40/6	49/5	56/6	56/6	59/6	59/6	62/6	56/6	40/6	56/6	40/6
Observations	270	270	184	184	122	275	234	349	349	344	270	184	223	153
R^2 or adjusted R^2	0.36	0.35	0.42	0.42	?	0.42	0.46	0.34	0.33	0.38	0.42	0.51	0.36	0.45
Estimation method	OLS	2SLS	OLS	2SLS	GMM	OLS	OLS	OLS	OLS	OLS	OLS	OLS	2SLS	2SLS

Notes: a) * and ** indicate that the estimated parameter is statistically significant at the 10% and 5% level, respectively. The magnitudes of the estimated parameters are not directly comparable across the table.

b) The policy index comprises the budget surplus, the inflation rate, and the openness dummy developed by Sachs and Warner (1995).

c) X refers to the factors which have been interacted with aid. These are as follows: indicators of economic policy, economic vulnerability, negative external shocks, post-conflict scenarios, geography, political instability, democracy, and the CPIA index.

Source: Summarized from the sources indicated in column headings.

Appendix II - Cross-country growth regressions selected from aid-growth econometric studies listed in Appendix I [a] - Part II

Dependent variable: economic growth, commonly measured by the growth rate of real per capita GDP	**Dalgaard *et al*. (2002)**		**Easterly *et al*. (2003)**		**Guillaumont et Chauvet (2001)**		**Hansen et Tarp (2000)**				**Hansen et Tarp (2001)**				**Svensson (1999)**	
	table 2, reg. 3	**table 2, reg. 4**	**table 1, reg. 3**	**table 1, reg. 5**	**table 2, reg 2.2**	**table 5, reg 5.2**	**table 4.4, reg 2**	**table 4.4, reg 4**	**table A 4.2, reg 2**	**table A 4.2, reg 4**	**table 1, reg 1.2**	**table 1, reg 1.3**	**table 3, reg 3.1**	**table 3, reg 3.2**	**table 3, reg. 3d**	**table 3, reg. 3f**
Macroeconomic framework																
Policy index [b]			1.22**	1.61**	0.75**	0.85**										
Openness	1.75**	1.97**					2.19**	2.07**	2.18**	1.93**	0.017**	0.019**	0.022**	0.028**		
Inflation	-1.12**	-1.14**					-1.32**	-1.22**	-1.37**	-1.17**	-0.011**	-0.013**	-0.012**	-0.002		
Budget surplus	0.072**	0.047					7.34	7.73*	8.30*	7.85*	0.091**	0.077*			0.075*	
Government consumption							-2.09	-3.01	-3.82	-5.04						
Black market premium															-0.023**	-0.027**
Financial deepening			0.002	0.014	0.034*	0.067**	0.016	0.013	0.02	0.015	0.010	0.018			0.014	
Political and institutional environment																
Ethnic fractionalization	0.59	0.021	-0.012	-0.74	-1.04	-2.18**					0.001	-0.002			-0.030**	-0.033**
Assassinations	-0.37	-0.36	-0.37	-0.69*							-0.46**	-0.42*	-0.33	-0.53**		
Ethnic frac. x Assassinations	0.76*	0.72*	0.18	0.69							0.92**	0.77*	0.59	1.00**		
Political instability					-3.15**	-2.14										
Democracy															-0.001	-0.002
Institutional quality	0.76**	0.70**	0.31**	0.37**			0.61**	0.68**	0.62**	0.72**	0.81**	0.68**				
CPIA index																
Other common variables																
Aid (as a share of GDP or GNP)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Aid x X [c]	yes	yes	yes	yes	yes	yes	yes	no	yes	no	no	yes	no	no	yes	yes
$(Aid)^2$	yes	yes	no	no	no	no	no	yes	no	yes	yes	no	yes	yes	no	no
Initial per capita income	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes	yes	yes	no	yes	yes
Sample period	1974-93	1974-93	1970-97	1970-97	1970-93	1970-93	1974-93	1974-93	1974-93	1974-93	1974-93	1974-93	1974-93	1974-93	1970-89	1970-89
Countries/periods	54/5	54/5	62/7	43/7	66/2	66/2	56/5	56/5	56/5	56/5	56/5	56/5	56/5	56/5	58/2	58/2
Observations	231	231	345	236	85	68	243	243	231	231	231	231	270	270	98	110
R^2 or adjusted R^2	?	?	0.33	0.35	0.66	0.58	0.38	0.39	0.39	0.39	?	?	?	?	?	?
Estimation method	GMM	OLS	OLS	2SLS	OLS	2SLS	OLS	OLS	2SLS	2SLS	2SLS	2SLS	OLS	GMM	2SLS	2SLS

Notes: a) * and ** indicate that the estimated parameter is statistically significant at the 10% and 5% level, respectively. The magnitudes of the estimated parameters are not directly comparable across the table.

b) The policy index comprises the budget surplus, the inflation rate, and the openness dummy developed by Sachs and Warner (1995).

c) X refers to the factors which have been interacted with aid. These are as follows: indicators of economic policy, economic vulnerability, negative external shocks, post-conflict scenarios, geography, political instability, democracy, and the CPIA index.

Source: Summarized from the sources indicated in column headings.

Appendix III - Robustness analysis of the empirical results presented in Appendix II

Explanatory variable	"Extreme Bounds Analysis" [a]			"Cumulative Distribution Function Analysis" [b]			
	Lower Bound	Upper Bound	Robust / Fragile	Mean	Standard Deviation	CDF	Robust / Fragile
Policy index	-0.17	2.71	Fragile	0.94	0.27	0.9998	Robust
Openness	0.01	3.34	Robust	1.22	0.40	0.9988	Robust
Inflation	-2.39	0.01	Fragile	-0.74	0.36	0.9808	Robust
Budget surplus	-1.89	17.90	Fragile	3.51	2.93	0.8849	Fragile
Financial deepening	-0.03	0.07	Fragile	0.01	0.02	0.8264	Fragile
Ethnic fractionalization	-2.54	2.51	Fragile	-0.21	0.72	0.6141	Fragile
Assassinations	-1.88	0.29	Fragile	-0.52	0.32	0.9484	Robust
Ethnic fract. x Assassinations	-1.17	3.57	Fragile	0.79	0.62	0.8980	Fragile
Institutional quality	-0.13	1.43	Fragile	0.64	0.18	0.9999	Robust

Notes:

a) For each regression one finds a parameter estimate (β) of variable X and its standard deviation. The extreme bounds test for variable X says that if the lower extreme bound for β - i.e. the lowest value for β minus two standard deviations - is negative, while the upper extreme bound for β - i.e. the highest value for β plus two standard deviations - is positive, the explanatory variable X is not robustly related to the dependent variable Y.

b) For each regression one finds a parameter estimate (β) of variable X and its standard deviation. Thereafter the mean of the distribution of the parameter estimates is calculated as the average of the estimated values for X. The standard deviation of this distribution is produced in the same way, by using the variances of the estimated values for X. The cumulative distribution function (CDF) can then be constructed using the normal tables. Provided that the fraction of the cumulative distribution lying on one side of zero (the right or left-hand side of zero) is sufficiently large, i.e. CDF ≥ 0.95, the explanatory variable X is labeled as robust.

Source: Own calculations from the sources indicated in column headings of Appendix II.