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Foreign aid effectiveness. An investigation of
the role of internal political constraints and
ownership

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Overview

I examine the literature on foreign aid effectiveness on recipient countries' growth. Its contradictive results constitute the basis for the my investigation. I present two main models which differ in the information set available to the agents that describe how the internal political constraints arising in the presence of a special interest group interact with the effects of foreign assistance. The project is developed as follows. The opening of the thesis presents a detailed review of the Aid Effectiveness Literature, with a major focus on the third generation studies and the debate about the role the policy environment might play in increasing the effects of aid on LDCs' economic growth. The shortcomings that commonly affect the different strands of the empirical studies are highlighted and constitute the motivational base for future work to come. In particular I refer to the distinction between the effects due to bilateral and multilateral aid (Ram, 2003; Rajan and Subramanian, 2005) and to kinds of aid programs having different timing impact (Clemens et al., 2004).

A lot of attention has been dedicated to analyse the impact of foreign assistance on the growth of recipient countries, but the evidence of the different studies is in the end ambiguous. Results can be classified in three main strands. Some scholars argue that aid has been effective in spurring growth on average, but with diminishing returns (Hansen and Tarp, 2000; 2001¹). Other researchers assess on the contrary that it is not possible to identify a significant relationship between aid and growth (Rajan and Subramanian, 2005). Finally, and more recently, a third view emerged. Aid has proved to have positive effects on growth conditionally to some specific circumstances, such as a good policy or institutional environment (Burnside and Dollar, 2000; 2004), the non tropical geographic settlement of the country (Dalgaard et al., 2004) or the low vulnerability to shocks (Guillamont and Chauvet, 2002). I

¹The amount of studies is huge. Here I only cite the most recent or influential ones.

do think that before adding results to the empirical side of the research a deeper theoretical investigation of the setting in which aid takes place is needed in order to derive more useful and clarifying insights.

That is why the core of the present work is theoretical and serves as a contribution to the diagnostic side of the aid research. I present a model in which the political authorities interact with a domestic special interest group that has an incentive to influence policy decisions, following the path opened by Grossman and Helpman (1994). This setting is extended to the aid context considering the government of an aid recipient country that interacts also with a donor agency. The interest of the donor in the effects of the policy implementation is direct or indirect, depending whether foreign assistance is conditional or not on the internal policy setting. Mayer and Mourmouras (2002) firstly analyzed these circumstances in order to describe the advantages of conditional assistance strategies by multilateral agencies. Departing from them the aim of the present work is to identify the different equilibria (in terms of the combination of aid and distortion) that arise as the solution of this non cooperative game when the hypothesis about the cross marginal effects of aid and policy distortion on welfare are allowed to change. When an increase in aid induces a lowering of the negative effect of distortion on welfare this results less costly to bear for the government. The space for an incentive to accept aid while implementing a worse policy arises. The presence of internal political constraints such as the activity of a domestic lobby group may dampen the higher effectiveness of foreign aid on the policy environment. When assistance is disbursed conditionally on the level of distortion chosen, the possibility of a deteriorated equilibrium to occur reduces, but in particular circumstances it might still be reached.

The results may contribute to the explanation of the ambiguity of empirical results regarding the sign and significance of the aid-policy interaction term in growth regressions investigating the role of aid in enhancing LDCs' economic performance over time. The aggregate measures of aid commonly used in these studies (Official Development Assistance or Effective Development Assistance) do not distinguish among kinds of assistance programs that potentially have different marginal effects on the policy setting. Hence, the results might simply be biased by the matching of non omogeneous variables.

It is interesting to note that the equilibrium combination of policy implemented and aid disbursed may turn to less distorted values if new strategies are considered. For instance, if the special interest group is somehow able to appropriate some of the foreign assistance entering the country (its utility

function positively depends on aid, along with the degree of distortion) the substitution effect between aid and policy distortion is reduced and this leads to a more favourable equilibrium in terms of distortion. When aid repayment issues are taken into account it can be observed that, even if assistance borrowing is costly for the recipient country, some advantages may come from the reduction of the possibility of worse equilibria to arise.

Finally, the basic framework is extended to a context of asymmetric information. The reforming attitude of the government is not observable by the lobby group before setting its contribution schedule aimed at influencing the policy. The distortion produced in equilibrium is larger than the complete information one and positively depends on the size of the distribution over the "reform consensus parameter". The more volatile the government's preferences are, the more the special interest group has to contribute in order to influence political decisions, thus leading to a more distorted policy. The presence of an additional principal, the donor agency, is then considered. Its objective is opposite to the lobby one in terms of distortion. The donor's assistance enters directly (and linearly) into the government's welfare function. In this framework aid is considered conditional and there is no direct effect of foreign assistance on the public welfare. The burden of the contribution in equilibrium results biased towards the lobby. It represents the weak principal as its ideal distortion lies farther from the government's one which is equal to the donor's desired distortion. The International Financial Institution financing aid in fact is considered as purely benevolent.

The aim of this project is to shed some more light over the proper identification of incentives underlying the foreign aid structure. The analysis of the interaction of all the actors involved: the donor agencies, the recipient countries' governments and the domestic groups protecting some vested interests by actively influencing the government allows to draw some preliminary results.

In presence of an active lobby group the fact that aid is particularly effective in promoting welfare not only directly, but also through its effect on policies, may distort government's incentives towards a higher level of distortion. In this circumstances, non trivially, if the lobby gains a special interest over foreign aid too, the distortion in equilibrium is reduced. The presence of asymmetric information regarding the preferences of the government towards reforms (what I define the "consensus parameter", that can be thought of as well as the quality of institutions) makes distortions larger, the wider is the size of the distribution. The uncertainty over the government's preferences is

identified as a possible cause of the increase of the distortion in equilibrium and though as undermining the role of the conditionality of aid.

The parameter identifying the quality of institution here is exogenous, but the scope of further research is to endogenize it in order to design more accurately the interconnection between institutions and policies, collective action problem solution and finally foreign aid effectiveness.

Chapter 1

Foreign aid effectiveness. A survey of the literature.

1.1 Introduction

Foreign assistance, in the sense we intend it nowadays, has been a post World War II phenomenon. The building up of major developed countries' multilateral institutions aimed at protecting global economic stability (IMF) or at facing the problems of poverty in many countries of the world (World Bank) went step by step with the idea that monetary disbursements established a powerful instrument to overcome underdevelopment stigmata. Official strategic assistance flowing from industrial nations to colonized territories, commercial partners or military allies is an ancient costume. What distinguishes aid is an explicit development purpose that is by now a permanent feature of the modern global economy.

Since the end of the '60s a large amount of attention has been dedicated to the analysis of the effects of aid on LDCs' economic growth. A common classification, firstly introduced by Hansen and Tarp (2000), distinguishes the works in the literature into three generations' studies.

The earlier studies date back to the first '70s. The core idea of the First Generation is that aid is considered only as an exogenous net increment to the capital stock of the recipient country. It is not treated as a component of the national income nor as an alternative source of increase in domestic consumption. The reason can be traced to the theoretical framework underlying the analysis, the Harrod-Domar (1946) growth model. Its assumptions rely

on a Leontief production function and on an excess supply of the labor in the economy. The only engine of an increase in output is the accumulation of capital which is the scarce factor of production. This implies production capacity to be proportional to the capital stock. Savings, both domestic and deriving from foreign aid, can affect growth through investments that translate into accumulation of physical capital. The role of aid therefore consists of filling the gap between required investment for growth and national savings. By the 60s, the Harrod-Domar model was already abandoned as an instrument for growth analysis, but the development strategy implications deriving from the model were so handy that it survived as a development policy implementation instrument for a long time. From an empirical point of view the tests to verify whether aid has a positive impact on growth concern the aid-savings relationship from which consequently derive the core aid-investment relationship. As Hansen and Tarp (2000) show in their survey of the First Generation regressions, the majority of works reported evidence of a positive impact of aid on savings, but less proportional in size compared to the amount of aid received. In the 60s Chenery and Strout (1966) extended the Harrod-Domar model to a two-gap model, considering import capacity as an additional constraint on growth along with the saving constraint. Since foreign aid is supposed to equally lessen the financial and the trade balance gap simultaneously, depending on which is the larger one (and binding one for the economy), the aid-savings interaction can be positive or not. When the trade balance gap is binding foreign assistance does not affect growth via the savings channel. One of the two gap might bind in a country with respect to another or in one period time with respect to another inside the same country. This observation potentially justifies the "undersize" of the saving to aid response.

The general opinion marking that period of research was indeed that aid was effective in spurring growth. A few important drawbacks, anyway, were not taken into account. Firstly, the different empirical specifications of the aid-savings relationship carry with them distinct implications concerning the underlying saving behaviour in the economy and this is not generally recognized and explored. Secondly, and most importantly, no fungibility issues are ever considered. Aid was thought as pouring directly into productive investment channels, but later evidence demonstrated that large amount of foreign assistance leads to an increase in the government's consume expenditures¹.

¹See for example Boone (1996).

The financial gap approach was strongly criticized as being very naive in terms of proper incentives for development². From a practical perspective official foreign assistance reaches the recipient countries by the hands of their governments. Measuring the assistance need of a country as the difference between its required investment and its domestic source of savings implicitly forces a government willing to keep longlasting flows active to divert aid use from saving to consumption in order to maintain the gap open and, accordingly, the foreign source of financing flowing in.

The Second Generation studies focus both on the investigation of the direct relationship between aid and growth and on its indirect link via investment. Papanek (1973) initiated a stream of models in which the different components of investment, including aid, are separated. Aid is no longer considered as a fraction of total savings, but as an isolated component affecting investments. Subsequent studies used reduced form equations on the same line to investigate the aid-growth relationship in cross-country studies. The results of these regressions are consistent both with the Harrod-Domar model and with the Solow growth model. In the latter framework input substitution is allowed while the capital-output ratio, the technology and the labour force rates are constant over time. The growth driving factor in the short run is still capital accumulation via investments.

Generally, these studies find a positive link between aid and investment, in line with the results of the First Generation. Moreover, a positive relationship between aid and growth emerged conditional on savings having a positive effect on growth. This allowed to confirm a causality direction going from aid to savings, following up to investments and finally to growth as standard growth models predict. Anyway, in these kind of analysis, the issue of potential endogeneity of the results is not still explicitly addressed.

For a more accurate accounting of endogeneity we have to wait for the Third Generation studies. This in fact constitutes one of the specific characteristics of this latter series of empirical works. Panel data for a wide range of years and a great number of countries were used, allowing for better data reliability. The underlying theoretical framework relied on the endogenous growth theory. New variables measuring the quality of institutions and economic policies were included as controls in the regressions along with previously used macroeconomic variables. In a series of studies, furthermore,

²The financing gap approach as a base for the determination of aid necessity was widely discussed. See Easterly (1997) for a detailed critique.

aid was entered non-linearly in the growth regressions.

Since foreign assistance is typically distributed to poor countries in order to help them coming out from underdevelopment one could expect a negative link between aid and growth to be driven by the fact that lower growth countries tend to receive more foreign assistance. This issue was already noted in standard growth regressions for other variables measuring the state of the economy. In order to overcome this potential endogeneity problem most of the explanatory variables, including aid, are lagged one year. Some studies address the problem more accurately with an instrumental variable procedure in a two-stage least square.

The use of panel data, in all-but-one case divided in four-year periods³, was completed to take account of country specific effects and intercepts for each year were generally included to remove any world business cycle bias.

The standard controls related to macroeconomic environment are initial income, measured as the logarithm of real GDP per capita, which captures convergence effects and aggregate money supply as a percentage of GDP, measured as M2/GDP and lagged one year M2/GDP, which identifies the degree of financial depth. The measure of ethno-linguistic fractionalization proposed by Easterly and Levine (1997) and the number of assassinations per capita are also generally included to provide specific political environment effects. Different measures of the institutional and the policy set are considered in the different studies. I will come to their description later.

The intuition of non-linear effects of aid on growth is addressed in two ways. The introduction of a squared aid term in growth regressions revealed very forceful. Its significance with a negative sign revealed robust across all the studies. The presence of diminishing returns in aid appears as the most widely accepted result of all the aid effectiveness literature, being robust to sample and controls modifications. The second strategy to identify non linearity is the inclusion of an interaction term between aid and the policy measure which captures the potential effects of aid dependent on the policy setting.

These last generation studies can be split in two strands, according to the significance of this interaction term. I will concentrate the analysis on the debate over the effectiveness of aid tout-court or in the presence of a positive policy environment.

³The only exception is the work by Guillaumont and Chauvet (2001) who divide the sample in 12-year periods.

In general the evidence about the aid-growth link is ambiguous. However, I can say that the majority of works tend to identify a positive and significant relationship, whether direct or conditional on the policy set, between aid and growth on average.

1.2 Aid definition

The traditional measure of aid in the literature is the Official Development Assistance (ODA)⁴. It comprises official financial flows by developed country governments and multilateral organizations. For a lending to be officially considered aid two features must hold. The motive of the financing has to be explicitly aimed at development purposes and funds have to be disbursed in the form of grants or concessional loans. Lending is considered concessional if, at full face value⁵, it has a grant element of at least 25% of the entire disbursement. Even if the rate of interests applied to the lending are the market ones this gives rise to subsidized loans. Often the rates are lower than the predominant market interest rates. Indeed the loans bearing interest rates close to commercial ones are not included in the definition of foreign aid. The ODA measure includes both bilateral assistance, which is managed by agencies of donor governments and multilateral assistance which is funded by contributions from more developed countries and it is administered by international financial institutions, such as the World Bank, the International Monetary Fund or the United Nations Development Programme.

An alternative measure of aid introduced by Chang et al. (1999) has been largely employed: Effective Development Assistance (EDA). It differs from ODA mainly in two aspects. EDA only counts for the disbursements' grant component, but of all development finance. In practice, the net present value of all the loans is considered regardless of their degree of concessionality. In this way EDA captures only the pure transfer of resources to recipient

⁴In 1961, the OECD set up the Development Assistance Committee, which began to publish annual statistics on aid.

⁵The face value is calculated, using a 10 percent discount rate. The calculation of the grant element is done under the assumption that loan interest rates remain constant along the overall duration of the loan. This produces some shortcomings because prevailing market terms are ignored, The role of currency specific market rates is not taken into account as well as maturity differentials.

countries. Additionally, EDA's adjusted grant equivalents are constructed with the use of market interest rates. The ODA measures the gross resource flow, while the EDA considers its net flow.

Futhermore, technical assistance, which is included in ODA, is excluded. Consultants and experts working in developing countries, in the majority of cases, are citizens of the donor countries. The reason underneath its exclusion in the new measure is that donors benefit from payments received in return for the technical assistance supplied. On the one hand, the quid pro quo nature of this form of assistance makes its inclusion in the net assistance questionable. On the other hand, often the employment of foreign thechnical personnel is due to a lack of human capital in the recipient nations. From a theoretical point of view, the effective amount of aid included in technical assistance should be valued by considering the cost the country would bear by hiring such skilled work on the free market. The presence of skilled foreign personnel may play a role in the formation of human capital and transfer of know how inside the countries. In this sense, the exclusion of technical assistance from aid measures seems more reasonable as far as it is tied to disbursements. Following this line of reasoning, anyway, would lead to the exclusion of all tied aid and not only technical assistance.

EDA certainly reveals a more accurate measure when we come to make comparisons of aid flows across donors and recipients, since ODA tend to overestimate the aid flows to countries receiving mostly loans⁶. On the other hand, aid flows of mostly grants giving donors tend to be underestimated⁷. When the focus of the analysis turns to empirical studies addressing the effect of aid on growth using panel data however, since ODA and EDA are highly correlated through time, the difference in the results by the switch from one measure to the other is not so relevant. Whatever the measurement used, the aid value is then generally converted into constant 1985 dollars⁸ and divided into real GDP from Penn World Table 5.5⁹.

Renard and Cassimon (2003) propose a few alternative approaches to aid

⁶The grant elements of concessional loans are overstated especially if they are denominated in the recipient country's currency, because the related interest rates are typically lower than 10 percent considered in the ODA measure.

⁷This occurs especially for donors' currency denominated loans.

⁸The transformation is done using the IMF's world Export Unit Value Index.

⁹From Summers and Heston (1991).

measures. They distinguish the donor's perspective from the recipient's perspective. For the donor, development assistance involves some costs. Three ways of calculating the costs are considered. Firstly, gross budgetary costs which derive from the face value of the loans and include gross salary paid to technical assistance. Secondly, net budgetary costs in which net transfers on loans and net salaries are considered. Basically, reverse financial flows coming from aid, such as taxes on the salaries of the donor country citizens working as technical assistants and debt service paid by recipients on previous loans are excluded. Finally, what they define "economic cost" takes into account the opportunity cost of not using the resources given to development aid in the donor economy. It is the most complete expression, but it is hardly impossible to measure since it requires a comparison between the returns on alternative investments and the benefits donors gain from development assistance. These range from the consolidation of trade partnerships to the management of military threats, from the control of world political stability to the containment of illegal migration and so on. Constructing a measure of these benefits would probably lead to more drawbacks than using the available aid measurements. From the recipient's perspective aid is evaluated in two ways. The acquisition value of aid represents the cost of obtaining the same goods and services provided through foreign assistance on the world market. The final use value of aid aims at calculating the economic net present value of projects funded with concessional loans. Evaluating each aid component on a continuous basis anyway requires huge efforts and it consists of a non speculative procedure only on an ex post basis. Renard and Cassimon's proposals are interesting from a theoretical point of view. They specify "what we should be measuring, and why we don't", but they are difficult to be translated into meaningful data.

1.2.1 Kind of aid

Aid appears as a very generic entity once we go into depth and understand how many different components it encounters. The main distinction is between "project aid" and "program aid".

"Project aid" involves activities over which donors try to exercise a detailed and ongoing control. Aid projects generally refer to funding for specific investments, for instance a road or capacity building for environmental management. On average they last about three years.

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“Program aid” instead comprehends budget support, adjustment loans, debt relief, and sector-wide action programs. Program aid refers to funding given to a government to fund general public expenditures. It is usually provided on the basis of an agreement on how money will be spent or of specific reforms.

A third voice, however, deserves mention: "emergency aid", including food and prime-care commodities.

Distinguishing emergency from non-emergency disbursements is easy since Development Assistance Committee (DAC) statistics provides this information. To distinguish non-emergency aid into project and program flows is less straightforward. From a measurement point of view, project aid is sector-specific while program aid is not allocable to any particular sector.

Different kinds of aid might affect growth in different ways. The only empirical study that attempt at isolating the effect of different kinds of aid is Clemens et al.(2004)¹⁰. The underlying idea is that different kind of aid may have effects on growth at different distance time. They separate aid into three categories: emergency and humanitarian aid (very short-term), aid that affects growth only after a long period of time (long-term) and aid that is directly aimed at affecting growth within a period of four years (short-term). Very short-term aid, like food aid, is likely to be negatively associated with growth, since aid tends to increase fast at the same time growth falls following an economic shock. Long-term aid, such as aid for health, education, the environment, and democracy support may be difficult to identify in a short-run horizon. Finally, short-term aid, such as aid for transports and infrastructure or agriculture should be the most effective in spurring growth. A strong positive relationship between the third type of aid (which is nearly half of the overall aid) and growth emerged and proved very robust to a variety of checks. As expected, the relationship with the other types was less significative. In my opinion, this seems the right direction to

¹⁰There are some previous studies that attempt at disaggregating aid flows, but they consider assistance to a specific country or divide aid in wider categories. Owen and Hodinott (1999) distinguish the effects of development aid and humanitarian aid on household welfare in Zimbabwe. Mavrotas (2002) finds that program aid, project aid and technical assistance all had a negative effect on growth in India, in the period from 1970 to 1992, while in Uganda only technical assistance had a negative impact. Gomane et al.(2002), analyzing the effect of aid on growth in Africa, subtract from ODA food and technical assistance as they have an impact on different time-horizons. Pettersson (2004) tries to divide aid among sectors, depending on whether aid is perceived to be fungible in the specific sectors and finds no difference in the growth effects.

follow to obtain more sensitive and uniform results about the effectiveness of aid.

Another distinction in the overall aid has to be made. ODA includes both multilateral and bilateral aid. Multilateral assistance is provided by international multilateral agencies and bilateral aid is directly financed by the donor countries through government agencies. International Financial Organizations are also financed by developed countries, but the motivations of this indirect assistance and the official bilateral one may be very different. Political, commercial and military interests are often at the basis of bilateral funding. In such cases the promotion of recipient countries' growth is not the core objective. Some bilateral aid is tied. It is disbursed under the condition of being used to purchase goods and services from the donor country. Aid tying has been object of many critics. It seems to reduce the value of assistance by about 25 percent. Because of that there has been an evident decrease in tied aid through time in OECD countries. After a consistent amount of foreign aid in the 70s and in the 80s, the following decade was characterized by a sharp decrease in aid flows. The trend of aid is shown in Figure 1 for ODA/GNI from the 60s. Most of the decline is due to bilateral aid. Fiscal problems in OECD countries led governments to contract expenditures. Even though foreign assistance did not represent a major component of government spending, it was often curtailed. The end of the Cold War made the necessity of a Western driven development less stringent. As a consequence, foreign assistance to "buy" political allies suddenly fell. Additionally, private capital flows directed towards developing countries sharply increased in the early 90s. Foreign investment partly compensated the needs of LDCs, but it was concentrated in some particular countries or regions and, after the asian financial crisis in 1997 it started diminishing. The turndown in aid has been reversed at the beginning of this decade. On 2nd March 2005 Paris Declaration on Aid Effectiveness was held with the specific purpose of pushing the management of aid towards a more effective path in the achievement of the Millenium Development Goals. These goals aim at cutting in half the proportion of people living in absolute poverty within year 2015. Many donor countries renewed their commitment to reach an amount of resources dedicated to development assistance of 0.7% of their GNI. However, the rise in aid flows accelerated after the 9/11 attack against the United States. New resources dedicated to development assistance in recent years have as a background the "war on terrorism".

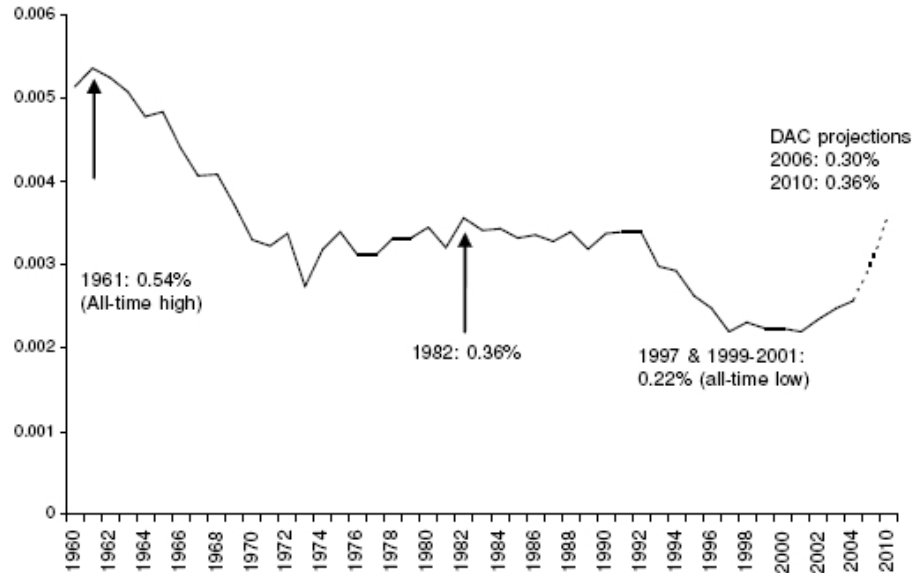


Figure 1. Long-term trend in DAC ODA-GNI ratio (1960-2004)
Source: OECD DAC (DAC projections for the period 2006-2010)

(1.1)

While altruism can be seen as part of the intent of foreign assistance for both multilateral and bilateral aid, the latter kind of aid is more related to the donors' strategic interests¹¹. These interests may also involve positive aspects. Whatever the reasons underneath long-standing relationships between countries (colonial past, commercial partnership, military alliance), they often bring to some similarities in (business) language, technologies (and related labour skills) and the legal and institutional setting which may lead to higher returns of aid flows. The effect of the different components of aid on growth may reveal some differences. Bilateral aid is typically larger than multilateral aid. At least, it should be subject to different controls in the analysis or, as only Ram (2003) does, it should be included in the analysis with a different weight with respect to multilateral aid. In the following section I describe in details the way aid-growth regressions are specified. Here I anticipate that when the total aid variable is included in the growth regression

¹¹See, among others, Berthelemy and Tichit (2002).

implicitly equal weights are attached to its components (bilateral and multilateral aid). Ram shows that if the two components are left unconstrained (by entering them separately in the regression equation¹²) their parameters take values of opposite sign, suggesting that bilateral and multilateral aid play an opposite role on growth. I postpone the discussion over the specific effects to the next section, but I wish to emphasize that further analysis would deserve mention on this issue. Clemens et al.(2004) and Ram (2003) show how disaggregating aid into distinct components, different time-impact aid and multilateral and bilateral elements, respectively, produce meaningful results in terms of significance of the aid variable coefficient. One recent study by Rajan and Subramanian (2005), checks for both kinds of disaggregations and does not find any significant additional information with respect to the use of total aid. Ambiguity comes around again. I do think, anyway, that their line of research is the one to follow in order to obtain a deeper insight into the aid effectiveness topic. The first natural step, which will be the scope of further research, is to jointly address the two different decompositions of aid, by analyzing the effect of different time-horizon multilateral aid on growth and repeating the exercise for bilateral aid.

1.3 Aid and growth

1.3.1 Some general issues

The reason why the relationship between aid and growth has attracted so much attention is due to the recognized effect of economic growth in reducing poverty and improving social indicators. When income of the poor population rises, the opportunity to improve health, education and living standards follows. All foreign assistance is ultimately aimed at achieving these objectives. The effects that aid has produced in time and across countries anyway is far from being omogeneous.

As we briefly mentioned in the introduction, in the earlier times of development assistance, the lack of savings and foreign exchange for investment were considered the the key responsible factors holding back poor countries. The consequent rationale for foreign aid strategy was to lend funds to coun-

¹²The possibility of studying the effects of the two components separately was provided by Chang et al.(1999) database (EDA).

tries in order to overcome a “saving gap” to finance necessary investment and a “trade gap” so that imported machinery could be the engine of that investment. Development agencies worked with a “two gap” model that made imports and investment in physical capital the driving force of growth. The “gap” strategy was largely implemented in the Soviet countries through development planning, but the collapse of the system showed that investment alone does not assure growth. In the 1990s emphasis has shifted from investment to other objectives, such as the improvement of institutions and policies which promote growth, human capital development and technological progress. These strategies were in line with the findings of the new growth theory that attempts to identify the underlying factors of growth, besides the physical capital accumulation. The later strand of the growth literature, moreover, turned the attention to the institutional and policy setting of a country as a major determinant of its economic performance through time. The importance of a stable macroeconomic environment comes to be considered essential for economic growth to take place. High inflation is bad for investment and growth (Fischer 1993). In the same way, large fiscal deficits delay growth (Easterly and Rebelo 1993). The openness of markets is crucial. Most trade liberalizations accelerate growth (Sachs and Warner 1995). Fiscal, monetary, and commercial policies determine the macroeconomic management level of a country and there is wide evidence that a good macroeconomic management provides a growth-prone environment. Good institutions and a solid economic management are important also at the microeconomic level. The strength of private property rights and of the rule of law and the quality of the civil service affect long-term growth (Knack and Keefer 1995). Corruption in the public bureaucracy negatively affects growth (Mauro 1995).

Anyway, observing the simple relationship between aid and per capita growth can be misleading. Some developing countries which received large amounts of aid have grown slowly (Zambia, for instance) while others have grown rapidly (Ghana). Certainly, even when aid has a positive effect on growth it is not the only factor driving growth. Other variables that have an impact on growth must be taken into account. Furthermore, countries which experienced a poor growth are very likely to be among the ones which received assistance. This raises the doubt that the causal relation might run from low growth to an increase in aid, rather than in the opposite sense. It would not be correct to interpret a negative relation, for example, as evidence that aid reduces growth. The endogeneity problem has to be explicitly addressed.

1.3.2 Basic regressions

Before describing the main and conflicting results obtained in the Aid Effectiveness Literature I describe a representative regression of the kind used in almost all the cross-country empirical studies.

The dependent variable is the annual growth rate of per capita GDP (g), averaged over the benchmark period. The sample is a panel of countries which covers an average period of 25 years¹³. Typically data are divided in four-year periods. The growth rate is a function of exogenous conditions (X), the level of policy (P), the level of aid relative to GDP (A), the level of aid squared, and the interaction of the policy variable and aid :

$$g = \beta_0 + \beta_1 X + \beta_2 P + \beta_3 A + \beta_4 A^2 + \beta_5 A \times P + \beta_6 d + u \quad (1.2)$$

The coefficient on the interaction term, β_5 , addresses the hypothesis that the effectiveness of aid depends on the policy environment, while the coefficient on the quadratic term, β_4 picks up any diminishing returns to aid. The coefficient on aid, β_3 , may be positive, negative or zero depending upon the way policy influences aid effectiveness. The coefficient β_3 indicates the direct effect of aid on growth. The constant β_0 is usually entered as a measure of initial GDP per capita in order to capture any country fixed effect. The coefficient β_1 gives us information about the role played by the various controls in determining growth. Controls vary across the regressions or address the same variable with different measures. I below cite the most commonly used. In order to address the problem of endogeneity, the controls are often lagged one period. Further on, regional dummies are entered. Typically, Sub-Saharan Africa and East Asia¹⁴ whose growth rates might be affected by common determinants of the region that, if not isolated, could bias the coefficients of the regression correlated with these same regional features. Finally, the error term (u) is entered. The standard controls most commonly used are

- Private investments

- Government investments

¹³In previous studies covers the period from 1970 to 1993. In later works the sample was expanded.

¹⁴This dummy includes fast-growing East Asian countries.

14 CHAPTER 1. FOREIGN AID EFFECTIVENESS. A SURVEY OF THE LITERATURE.

- Domestic investments
- Government expenditures
- Private net inflows
- Human capital
- Population growth rate
- Terms of trade
- Real exchange rate
- Ethno-linguistic fractionalization
- Assassinations per capita
- Assassinations \times Ethnic fractionalization
- Institutional quality
- Revolution
- Financial depth
- Fraction of land in the tropics

In spite of explicitly addressing endogeneity, Boone (1994) finds no relationship between aid and growth, even after controlling for a range of institutional and political factors. This can be considered the initial paper of the Third Generation of studies about aid effectiveness. It comprises all the typical features of the latter stream of analysis. In addition, its discouraging results generated a renewal of interest for the topic. Boone's stronger result regards the positive effect of aid on government's consumption to the expense of growth-enhancing investments. He develops these results for the 1971-1990 period, suggesting that missing development was due to the fact that poverty is not the direct consequence of the lack of stock capital. Further on, until the beginning of the 90s aid giving was strictly related to poverty conditions of the recipient countries and completely unrelated to changing in internal policies. The resulting distorsive effect on incentives to implement reforms for the national authorities is nowadays well recognized. Boone's analysis

is consistent with a model setting of different political regimes searching to maximize the utility of their supporting group, whether this is an elitarian group, an egalitarian one or a "lassaiz-faire group" oriented to policies aimed at reducing distortionary taxes. His findings are in line with the framework of an elitarian regime exploiting fungible aid to maintain political control. All the systems support the elites at the margin, but, other things equal, considering the basic development indicators, more libertarian governments generate a 30% lower infant mortality rate with respect to other kinds of governments. Boone emphasizes that, although aid does not prove effective in enhancing growth, it may bring other positive effects on development.

The picture changes thanks to a very influential paper by Burnside and Dollar (2000)¹⁵ in which the sample is divided between good management and poor-management countries. The proposition that aid has no effect in the presence of weak incentives is confirmed by the empirical findings. For countries with poor management, whatever the amount of aid, growth was null, or negative. For countries with good management growth was positive, with size differences depending on the associated amount of aid. The group good-management and low-aid countries had an average growth of 2.2 percent per capita, while the group of good-management and high-aid group countries grew more rapidly at 3.7. Excluding middle-income countries, which receive little aid, from the sample makes the effect of aid even stronger. Considering the growth rates in the 90s to be coherent to Burnside and Dollar's sample period, countries with "good policies" that have received a lot of aid and experienced a good performance include Bolivia, Honduras, Ghana and Mali. Case studies provide some specific insights. A comparative one targeting aid effectiveness in Bolivia, Costa Rica, and Nicaragua commissioned by the Colombia's Ministry of Planning supported Burnside and Dollar's conclusions. In Nicaragua, a large fiscal deficit and high inflation rates accompanied a very poor effect of aid on economic growth. In the opposite way, aid was largely effective in Bolivia, which successfully completed a reform program in the 1980s. The following quotation by Minister Lopez (1997) about the three case studies reflects a similar view regarding the role of policies :

Foreign aid in itself is neutral with respect to development, for its positive or negative effects depend on government policies. Ef-

¹⁵The paper was published in 2000, but since 1997 the working paper widely circulated. With no doubt the impact over multilateral development strategies of this study was huge.

fects on economic development will tend to be positive when aid is used to build up capital or to finance public investment that contributes to the profitability of private capital, or for human capital development. Fiscal policy should generate government's current savings, so that both domestic and foreign resources finance public investment. If this does not happen, foreign resources may end up financing the government's current expenses and not investment projects, as happened in Nicaragua. The relationship between aid's positive effects and good domestic policies always holds, even during adjustment (Lopez 1997).

The work by Burnside and Dollar (2000) received severe critiques, but its key role in the debate over the way aid can turn to be effective for growth deserves a deeper understanding. Firstly, we need to define which measure of policy was considered.

1.3.3 Policy measures

What are good policies? For their study of aid and growth, Burnside and Dollar created a policy index based on the Sachs-Warner measure of openness, the inflation rate and the government budget surplus. By running a first regression of the three variables over per capita income growth they obtained coefficients that were used as the weights of the index. Their data set cover 56 aid-receiving developing countries. Growth, aid, and the other variables are averaged over four-year periods (starting with 1970–73 and ending with 1990–93).

The choice of this policy index was strongly criticized. In general it seemed that a sensitive measure of a good policy environment could hardly be obtained by such a limited measure. More in the details, it was observed that these macro focused variables are likely to be endogenous with respect to growth.

Further studies adopt a different broad measure for the quality of policy that partially takes into account the institutional setting of a country: the CPIA. The Country Policy and Institutional Assessment estimates the quality of a country's present policy and institutional framework. "Quality" refers to the extent to which a policy contributes to promote poverty reduction, sustainable growth and the effective use of development assistance. The

rating is built on a 1 to 6 scale. Since 2005 the survey are available to the public, but as before the exact data were not published it was necessary to use a proxy measure for the CPIA. The components of the index are divided in four main areas, as follows:

A. Economic Management:

1. Macroeconomic Management
2. Fiscal Policy
3. Debt Policy

B. Structural Policies

4. Trade
5. Financial Sector
6. Business Regulatory Environment

C. Policies for Social Inclusion/Equity

7. Gender Equality
8. Equity of Public Resource Use
9. Building Human Resources
10. Social Protection and Labor
11. Policies and Institutions for
Environmental Sustainability

D. Public Sector Management and Institutions

12. Property Rights and Rule-based
Governance
13. Quality of Budgetary and
Financial Management
14. Efficiency of Revenue Mobilization
15. Quality of Public Administration
16. Transparency, Accountability and
Corruption in the Public Sector

Collier and Dollar (2002) repeated Burnside and Dollar's exercise using this different measure for the quality of policy (CPIA, 1997) and considering an alternative data set. The idea was to concentrate on the 90s to avoid results driven from the switch in aid amounts due to the end of the Cold War. This allowed anyway to include many more countries in the sample. The main objective of the paper is to identify the difference between an efficient and the current aid allocation, but the findings prove supportive of the significance of the aid×policy interaction term. Among the controls to capture initial conditions along with initial income also a measure of institutional quality is considered: the ICRGE from Knack and Keefer (1995). It is an index based on the evaluations of five different institutional indicators made by the private international investment risk service, International Country Risk Guide. In particular they are the quality of the bureaucracy, corruption in government, rule of law, expropriation risk and repudiation of contracts by the government. The institutional quality variable is included as time constant. Hence, a strong assumption of constancy and exogeneity of institutions is needed. The authors compute a regression adding an aid×institutions term in order to control whether the aid×policy term might be proxying for this variable. The aid-policy interaction term continues to be statistically significant and positive, suggesting a distinct role of policies and institutions in affecting returns to aid.

A different perspective is followed by Burnside and Dollar (2004). They further expand the policy measure to embody the effects of institutions. After evaluating the different measures used in the empirical growth literature to determine the quality of institutions¹⁶ they choose an index of institutional quality which is computed by standardizing and averaging all the different institutional variables used in the literature in the second half of the 90s¹⁷. The index is showed to combine the information of the ICRG rule of law index and the Freedom House democracy index¹⁸. By using an instrumental variable technique in order to address endogeneity problems coming from the

¹⁶See Knack and Keefer (1995), Hall and Jones (1999), Rodrik (1999), Acemoglu et al. (2001), Rodrik et al. (2002) and Dollar and Kray (2003).

¹⁷See Kaufmann, Kraay and Zoido-Lobato (1999) and also Easterly and Levine (2003).

¹⁸The ICRG index ranges from 1 to 6, the higher number indicating better institutions. As I mentioned before, the rule of law is one of its five components. The Freedom House democracy index ranges from 1 to 3, the lower number indicating more democratic institutions.

subjective nature of the institutional quality variables¹⁹, Burnside and Dollar conclude that "*with a new data-set covering a different period (the 1990s) and using a different index of institutions and policies, we find the same basic pattern that we identified in Burnside and Dollar (2000): the combination of good institutions/policies and external aid appears to lead to more rapid growth*".

The latter two mentioned studies somehow contradict each other. The benchmark period of the sample is the same, but the broader measure of policy suggests a key role of institutions in aid effectiveness that was absent in the previous study (the interaction term between institutional quality and aid is only marginally significant and its economic effect is small and negative). Results seem sensitive to the choice of the policy index used. This is one of the main critiques targeted to the "conditional strand" of the aid effectiveness literature. A wider view over the main results needs to be considered.

1.3.4 Main results

Economic and development objectives fostered by foreign aid are very different. Building infrastructure, supporting sectors that prove locally productive, such as agriculture, circulating ideas and new technologies, improving education, health and political systems, providing subsistence consumption, especially food humanitarian crises, helping stabilize the economic systems stricken by economic shocks and so on. Despite these broader objectives for aid, the key idea has always been that more aid is expected to lead to faster growth. At a general level, there is no apparent simple relationship between aid and growth. Some analysts argue that once endogeneity factors are taken into consideration, a positive relationship emerges. Others conclude that aid works well under certain circumstances, but has no effects at all in others. Such circumstances might be related to the policy and institutional environment, to geographical features or the economical and political setting. In this view, while the average trend is important, the variance around the trend and the determinants for that variance are also critical in understanding the core underlying relationships.

¹⁹Countries which are growing faster might be rated to have good institutions.

A lively debate animated the literature and the development strategy circles for a long time. There is general agreement on some broad issues. Even aid "non believers" agree that aid has been successful in some countries (Botswana and Indonesia, for instance). It has helped to improve health by supplying essential medical care and providing emergency relief after natural disasters. Similarly, "aid believers" agree that a gross amount of aid has been wasted, for example in highly corrupt political settings, such as the Marcos regime in the Philippines. It can have adverse incentives on economic activity. The conditions under which aid works or does not work are still a hot topic in the development debate. Empirical evidence brings ambiguous results. Different studies reached different findings, depending on the time frame, the countries involved, and the theoretical assumptions underlying the research. Results can be divided into three main strands.

The optimistic view supports the effectiveness of aid, despite recognizing its limits. Aid has a positive relationship with growth on average across countries, but with diminishing returns as the amount of aid increases. The most commonly reason ascribed to explain the presence of diminishing returns to aid is a limited absorptive capacity by the recipient country. The lack of adequate human capital and weak infrastructures lead to the waste or suboptimal utilization of a part of assistance resources when the amount disbursed increases.

The underlying idea, supported by the First generation studies, is that aid augments saving and spurs investment. It sums up to the capital stock. Poor countries would be unable to generate sufficient amounts of saving to finance the investment required to prompt growth. The poorest countries may even be stuck in a poverty trap in which their income is too low to generate the saving necessary to initiate the process of sustained growth. This is the message officially sustained by Jeffrey Sachs as Un advisor²⁰. Aid is argued not to prove effective in spurring growth essentially because the quantity of assistance has not been sufficient to induce the necessary jump out of the poverty trap. Large amounts of aid given through time may reveal less effective than big volumes of aid properly targeted at right times. There are different channels able to connect aid to a positive economic performance. The endogenous growth theory gives the analytical foundation for an increase in worker productivity driven by investments in health or education. Aid

²⁰See Sachs et al.(2004) in the document "Ending Africa's Poverty Trap" prepared in the context of the Un Millenium Project.

could provide a transfer of technology or knowledge from rich countries to poor countries through technical assistance, or through direct transfer of technologies, for instance the introduction of fertilizers in the agricultural sector. These studies do not conclude that aid has always worked in every country, but that on average and controlling for other factors, higher aid leads to larger growth.

The opposite view reflects results showing that aid has no significant relationship on growth and in case it were significant it may actually undermine growth. This position can be traced back to Peter Bauer who was perhaps the most influential supporter of this idea of development²¹, although he never provided systematic empirical evidence to support his argument. Several empirical studies draw the conclusion of no relationship between aid and growth. Researchers have suggested different reasons to interpret their findings. Aid can distort incentives for private sector activities. It can spur inflation and cause a real appreciation of the domestic currency leading to “Dutch disease” effects²². Hence, to the extent to which tradable activities are a key source of productivity gains, long-term growth may suffer. Aid flows can prompt the augment of factors implied in the services supporting aid projects, drawing workers and investment away from other productive activities. Food aid, in particular, can sometimes induce a fall in prices in the internal food production market. Furthermore, aid simply could be wasted, enlarging government’s consumption or it could augment corruption of the bureaucratic apparatus. Aid might help keeping bad governments in power, thus delaying reform implementation. Some argue that aid provided to countries in conflict times indirectly finances the continuation of the conflict, generating more instability. Hansen and Tarp, in a detailed survey of the Aid Effectiveness Literature, show how the number of published empirical studies that have found no relationship between aid and growth are just a few compared to the total number of studies. Most of them use restrictive models, imposing a linear relationship between aid and growth and ruling out by assumption the possibility of diminishing returns. Most also only examine aggregate aid, implicitly assuming that all aid has a similar impact on growth.

As I mentioned before, in the middle of the 1990s researchers began to

²¹See Bauer (1972).

²²The appreciation of the exchange rate reduces the profitability of the production of all tradable goods.

check whether aid might support growth with diminishing returns. A large group of studies that allow for diminishing returns have found a positive relationship. This is probably the more robust result of all the Aid Effectiveness Literature. The non-linearity of the aid-growth relationship anyway were addressed also in an alternative way, by testing for conditional relationships. This is the last and most recent strand of research about the topic. After controlling for specific variables and allowing for diminishing returns, a positive relationship between aid and growth emerges, albeit with important variance around the trend line. Effectiveness of aid may be conditional to features of the recipient countries. This line of research was anticipated by Isham et al. (1995) whose results showed that World Bank projects had higher rates of returns in countries with stronger civil liberties. Burnside and Dollar (2000) concluded that aid stimulates growth in countries with good policies. As we discussed in the previous section, this work had a major role in prompting many scholars to investigate aid effectiveness with this new approach.

This “conditional” strand of the literature has taken into account different characteristics of the recipient country that might affect the aid-growth relationship. In Table 1 the main results are summarized. The interaction between aid and some policy variable is the most tested. I described more in detail the different policy measures in the previous subsection. Collier and Dehn (2001) analyze the effects of large negative terms of trade shocks. They find that while such shocks strongly damage growth, additional aid reduces the size of growth losses. Chauvet and Guillaumont (2002) consider a wider measure of shocks. They find a positive coefficient of the interactive term between aid and the economic vulnerability to exogenous shocks (defined as environment). In countries stricken by climatic or external shocks aid reduces the growth decline and allows for policy stability to be maintained. The "environment" index includes four components. The instability of agricultural production is the proxy for climatic shocks, the smallness of the population size for the exposure to shocks. The other two measures are the instability of the exports earnings and the trend of the terms of trade. The index is a weighted average of the four variables. Collier and Hoeffler (2002) analyze a sample of 17 countries which experienced a civil war during the first decade of their post-conflict economic recovery. Their results lead to the observation that in the second part of the decade the absorptive capacity for foreign assistance is systematically higher. This does not occur instead in the very short-run (the first three years after the conflict). Finally, Dalgaard et al. (2004) suggest that during their 30 year sample period aid resulted to be

less effective in the tropics. They do not offer any meaningful explanation of the phenomenon. The negative relationship between the tropical area and growth is a robust result in the literature (Easterly and Levine, 2003), but also adding the aid×tropical area fraction in the aid-growth regression draws to a much more robust coefficient than considering the aid×policy interaction term.

Study	Period	Significant interaction term
Burnside&Dollar(2000)	1970-93	aid×B-D policy index
Collier&Dehn(2001)	1974-93	aid×B-D policy index
		Δ aid×negative shock
Guillamont&Chauvet(2002)	1970-93	aid×environment
Collier&Dollar(2002)	1974-97	aid×CPIA
Collier&Hoeffler(2002)	1974-97	aid×CPIA×post-conflict
Dalgaard et al.(2004)	1970-97	aid×tropical area fraction
Burnside&Dollar(2004)	1990-99	aid×institutional quality

Table 1. "Conditional" strand studies

These "conditional" studies, if relieved on, clearly have important development policy implications. The idea that aid works better in countries with good policies and institutions spread among donors, because this line of research reflects the beliefs of the majority of development operators working on the field. This approach can also explain the volatility of the aid effects across countries.

Unfortunately, the findings of this strand of the literature have proved very fragile. Their procedure relies on an interaction term between aid and the variable considered, but many of the interaction terms are not robust to changes in the specification. Easterly et al. (2004) find that the original Burnside and Dollar results are highly data dependent. They are driven by the presence of five outliers and they do not hold up to an enlargement of the sample period and other robustness checks. Ram (2004) disaggregated the aid variable into a bilateral and a multilateral component. Both kinds of assistance revealed significant coefficients, although of opposite sign, but their interaction term with the policy variable did not. These findings suggest that, on average, bilateral aid has been effective in promoting growth, while multilateral aid has had a negative effective. This view is opposite to what it is commonly perceived. Attempting to give an explanation for the results, the author argues that the special link usually present between the donors

and the recipients might have positive spill overs over aid returns. In general, donors have quite a deep knowledge of the recipients' economies due to historical ties. This yields to the adquireance of experience and skills specific to the recipient countries which often come along with linguistic affinities and similarities of the institutional structures. Rajan and Subramanian (2005) repeat the exercise and do not reach the same conclusions. The works addressing the topic in the literature anyway are just a few. It would deserve further investigation and testing.

Since the number of works in the AEL has been huge²³, some economists attempted to build a survey of the literature with the intent of comparing the different studies by deriving omogeneous measures in terms of samples and controls specifications.

The more complete ones are Hansen and Tarp(2001), Roodman(2004), and recently Rajan and Subramanian (2005). Roodman (2004) finds most of the "conditional" studies to be relatively fragile. Sample variations, different specification of the "conditional" variable and the inclusion of different controls in the regressions tend to generate alternative results. Only the conclusions of Dalgaard and Tarp (2004) over the aid-tropic link seem robust. Hansen and Tarp and Rajan Subramanian reach the same conclusion, but with opposite effects. The earlier study supports the idea that aid is effective in any country, despite the quality of its policies, while the more recent study sheds a new shadow over aid effectiveness. No evidence of a direct systematic relationship between aid and growth is found. Furthermore, no indirect link through the geographical or policy environment is verified and even the differences in the forms of aid (bilateral vs multilateral or short-impact vs long-impact) seem to play any role. We are back to the original question: "Does aid really work? If not, why?"

To sum up the aid and growth research, it appears that aid has been successful in some countries but not in others. The overall trend is a subject of debate, the results in the literature are not omogeneous. (although most researchers, as a number, have found a positive relationship). The analysis turned to the investigation of the conditions under which aid has the largest impact on growth and of what types of aid are most effective. The only commonly recognized robust finding up to now seems to be that aid

²³Just to mention a few more: Hadjimichael et al.(1995); Durbarry et al.(1998); Dalgaard and Hansen (2000); Hansen and Tarp (2000); Lensink and White (2001) and Clemens et. al.(2004).

has diminishing returns (the coefficient of the aid^2 term in the regressions is negative).

I do believe that new hints coming from the growth literature could spill over to the AEL. For instance, Rodrik (2006), commenting on the World Bank's document "Economic Growth in the 1990s: Learning from a Decade of Reform" proposes a new strategy for targeting the limits of development: "*Reform efforts need to be selective and focus on the binding constraints on economic growth rather than take a laundry-list approach à la Washington Consensus...In a low-income economy, economic activity must be constrained by at least one of the following two factors: either the cost of finance must be too high, or the private return to investment must be low. If the problem is with low private returns, that in turn it must be due either to low economic (social) returns, or to a large gap between social and private returns (low private appropriability)*". The choice of the policy to be promoted in a country should be targeted to the most binding constraint for that economy, otherwise the positive effect of the policy itself in enhancing growth could be undermined. When investment is constrained by poor property rights, for example, improving financial intermediation will be of little help. When it is constrained by the high cost of capital, improving institutional quality will not be useful. Hence, the first step for a well-targeted development strategy consists of undertaking a diagnostic analysis to identify the most binding constraints on economic growth in a given setting. If policies prove ineffective only because they are directed to the wrong sectors of the economy, consequently even aid given to promote such policies will turn out as ineffective in spurring growth. In different settings anyway, "financing" the same kind of policies could be very helpful. With my analysis, I intend to bring a further contribution to the diagnostic side of the aid literature, but before another feature must be taken into account in order to understand all the potential limits to proper aid effectiveness.

1.4 The Principal-Agent Problem

As I said, multilateral aid is perceived to be more effective than bilateral aid. The same thing occurs for untied aid with respect to tied aid. However, the problems can be analyzed under a more general framework with respect to the programs characteristics and the degree of internal coherence

between their objectives and the instruments effectively implied to realize them. The donors that have large bureaucracies, that do not coordinate with other donors, or that have poor monitoring and evaluation systems are thought to undermine the effectiveness of their aid programs. Recently, there has been a renewed interest for an increasing “country ownership” and a broader participation of the government and the community groups in recipient countries in choosing priorities and designing aid programs. The problems rise both on the donor and on the recipient side.

There is only an indirect relationship between the people who provide the funds (taxpayers in donor countries) and the beneficiaries of aid projects (the poor in recipient countries). In aid programs, there is a long and complex chain of principal-agent relationships, starting with the taxpayers that delegate authority to elected officials, who in turn become principals that delegate authority to a new set of agents, the chiefs of aid agencies, who delegate to agency employees and consultants.

In the recipient countries, there are similar relationships between citizens, their government, those who implement programs and interest groups that might be in favor or against the objectives of foreign assistance. The targets, the incentives and the information of the agents involved in the development strategies are not always in line with the objectives of the taxpayers or the beneficiaries.

The principal-agent problem characterizes all public sector agencies and many private companies, but the international dimension and geographical distance between the original taxpayers and the ultimate recipients amplifies the potential drawbacks. All aspects of aid delivery are affected: program design, implementation, incentives, monitoring, evaluation, and allocation of funding. The instrument to overcome such limits is an adequate design of the institutions. The analysis of the motivations of aid donors becomes crucial for correctly dealing with the problem. In one approach, foreign aid is determined by the economic interests of powerful groups within donors. The idea is extended to multilateral aid by proxying for the quote of participation to multilateral agencies by the single governments. Another view explains aid, both bilateral and multilateral as an effort to maximize benefits to donor states, deriving preferences for them from their situation in the international system. The first approach concentrates more on the profits from trade and the economic gains from the access to natural resources, while the second focuses on geopolitical features. An alternative perspective sees more generally aid as the outcome of bargaining among donor aid bureaucracies, multilateral

aid agencies and recipient government officials.

The Principal-Agent (P-A) problems do not emerge only on the donor-side. Recipient countries' governments are often subject to the influence of domestic special interest groups that act against the consensus of reforms. Partly to overcome the P-A problem, donors often apply conditions on aid programs to push recipients to act in accordance with donors' interests. Donors' conditions on recipient policies have been subject to critiques. Policy conditionality is most often associated with the IMF and World Bank, but all donors use conditions to some extent. The rationale for economic policy conditions is well known: donors believe that certain policies are important determinant for growth and development and that only through their implementation aid can have consistent positive returns. Aid has been used as a lever for policy reforms.

The problems with conditionality can be summed up in three aspects. First, it is difficult sometimes to identify the most appropriate policy conditions to ensure sustained growth. Development theories suggested different approaches through time. In the 1950s and 1960s a state-led development strategy was dominant. In the 1970s it was replaced by basic human needs targets. The following decades the focus turned to a macroeconomic approach centered on trade reforms and privatizations. From the mid-90s on, the importance of governance and institutional setting has become the core in accordance to the new findings of the growth literature. As a result, the list of conditions is constantly changing. The Washington Consensus menu of reforms greatly followed in the 1990s, for example, has been denied or modified.

Second, imposing too many conditions or imposing none may lead to the same results. If a proper monitoring of the policy operational path is not undertaken or if the impositions of a large range of conditions only translates into the implementation of the less stringent ones the effects of conditionality get lost.

Third, conditionality does not seem to work. Governments implement reforms when it is in their interests to do so. Domestic interest groups often influence the government's actions more powerfully than donors do. Many of them keep on disbursing aid even when recipients fail to meet conditions, sometimes in a repetitive fashion. What should be an incentive instrument for recipient is not so for donors. Their own internal incentives drive to keep on disbursing aid to support contractors and recipients that depend on it. Political and economic motivations mix with a "Samaritan's dilemma".

Withdrawing aid would create short-term pain for the poor people it is aimed to help²⁴.

1.4.1 Country Ownership

Many economists argue that aid has been weakened by donor domination in setting priorities, designing programs and implementing projects, and propose a more “country led” approach in which recipient governments take a stronger role, or a “participatory” approach in which various groups in recipient countries play a more active role. These can be considered as different degrees of ownership of the programs. The former implies that recipient countries take the lead in setting priorities and programs by means of their government authorities while for the other a broad participation by the public is required and hence, the preliminary enlargement of the consensus over the necessity and support of reforms has to be reached within the country. The idea is to eliminate some of the problems in the long chain of the principal-agent relationships. Different definitions of country ownership of the programs can be found in the literature. Just to mention a few, we have

"The extent to which a country is interested in pursuing reforms independently of any incentives provided by multilateral lenders."
[Drazen, 2002]

"A willing assumption of responsibility for an agreed program of policies by officials in a borrowing country who have the responsibility to formulate and carry out the policies based on an understanding that the program is achievable and it is in the country's interest" [IMF, 2001]

"The appreciation of the benefits of the policies to be implemented along with the adquireance of responsibility for them"²⁵
[Boughton and Mourmouras, 2001]

²⁴See, for example Svensson (2003) and Easterly (2001).

²⁵The words of the original definition have been slightly modified.

"The identification with a program by a borrowing country's top political leadership, implementing agencies and popular consensus" [Johnson and Wasty, 1991]

Ownership results in a complex issue. The difference between donors' and countries' objectives can derive from domestic divisions over the identification of the core problems for the economy or, even when this is commonly targeted, over the instruments to adopt to address them. The reasons may be traced both to a simple differences in the preferences of the donor agencies and the domestic government or to limits in the information and competence available. Furthermore, political authorities may not agree internally. Powerful political leaders might be able to overrule economic authorities and impose their view over policy implementation. Finally, one of the main limits to the enhancing of country ownership is the presence of vested interest groups acting against country reforms. This last feature is the one I explicitly address in the theoretical analysis. I introduce two models in order to analyze the internal political constraints to foreign aid assistance deriving from the presence of a special interest group.

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Chapter 2

Internal political constraints

2.1 Introduction

The domestic political conditions of less developed countries are closely related to their policy environment. Aid can affect the political setting of countries. The other way round, internal political constraints can modify the effects of aid flows. The present analysis wishes to contribute to the diagnosis side of theoretic aid literature. The understanding of the political conditions under which foreign aid is disbursed acquires relevant importance in the light of the recent debate about development strategies. Renewed importance of the issue of ownership of aid programs emerged¹. Ownership is generally defined as *“the extent to which a country is interested in pursuing reforms independently of any incentive provided by multilateral lenders²”*. One of the problem underneath its achievement involves the internal consensus over reforms and policies to implement. The direct recipient of aid is typically the government³. The presence of domestic lobbies protecting their vested interests (different from the ones of an ideal Social Planner) is widely documented in the literature. Becker (1983) represents the seminal study concerning the political influence exerted by lobbies. Olson (1982,

¹See Johnson and Martin in UNDP Human Development Report 2005.

²See Drazen (2000).

³Foreign assistance can be targeted directly to the population. ONGs' projects constitute an example of this kind of aid. The majority of assistance anyway is channelled through the government.

1985) observed that the formation of interest groups which are favored by the status quo is intrinsic to any process of reform. Cases of lobbying for trade protection (Grossman and Helpman, 1994), consumer and producers' taxes (Dixit, Grossman and Helpman, 1997) and innovation technology delay (Krusell and Rios-Roll, 1996) are present for developed countries. The special interest (and the related rent-seeking) activity exerted for keeping the control of natural resources (including aid) is mainly investigated in relation to developing countries⁴ (Dalmazzo and De Blasio, 2001). Ethnic and linguistic factors play a key function in the constituency of interest groups, although they are often associated somehow to the control of resources.

In my analysis the internal political constraint is given by a Special Interest Group (SIG) that affects the policy decisions of the government by means of monetary payments. Lobbying activity plays a decisive role in the quality of policy implemented. As a benchmark case I refer to Grossman and Helpman (1994)⁵. The problem is typically defined as a principal-agent non cooperative game. The government's objective function depends both on the overall economic welfare and on the contribution received. It accepts payments in exchange for the implementation of a certain degree of policy only if its utility is at least as high as maximizing its payoff in absence of contributions. The number of active lobbies influence the amount of aggregate contribution in equilibrium. When the interest groups have different preferences over their optimal level of distortion, competition allows the government to receive more. The policy outcome instead is not systematically affected by the number of interest groups. For simplicity, I limit the analysis to the presence of a single lobby. The benchmark case, indeed, sees an economy in which a certain degree of distortion is produced in equilibrium. The aim of the work is to extend this political setting to the aid context. I consider a benevolent International Financial Institution (IFI) giving assistance to the country.

It provides aid at a market interest rate and it totally identifies its utility with the economic welfare of the country. Like Mayer and Mourmouras (2002) I assume foreign assistance to have a positive effect on welfare both

⁴See Boone(1996) on the negative effect on growth caused by natural resources and aid in elitist regimes and Tornell and Lane (1999) for an analysis of rent-seeking behavior by powerful groups.

⁵This paper initiated the strand of political economy literature about lobbies' policy influence, following the original common agency framework of Bernheim and Whinston (1986).

directly and indirectly through the policy. Departing from them I do not restrict to a specific assumption. I examine the different marginal effects aid may have and the equilibrium outcomes that derive from the different hypothesis.

The empirical literature concerning the relationship between foreign aid and growth has reached ambiguous results along the last two decades. Scholars divided into different strands depending on their findings. The majority of them argued that aid is effective in spurring growth in Less Developed Countries (LDCs) on average⁶, but with diminishing returns. Others did not identify a significant direct relationship between aid and growth, unless aid is interacted with a policy variable. The most influential results come from Burnside and Dollar (2000) who claim that aid has a positive effect on growth only in a good policy context. Although their work received severe critiques⁷ it had an enormous impact on the aid policies of multilateral donors, driving to a switch from conditional to selective lending strategies. Finally, a few recent works find no robust evidence of a systematic relationship between aid inflows into a country and its economic growth⁸, bringing evidence back to results already obtained in the 90s⁹.

The empirical literature related to the effects of economic policies on growth is instead far more omogeneous.

Considering the level of distortion produced in equilibrium by different marginal effects of aid on policies give us an idea of this indirect effect of aid on growth. I describe a formal model leading both to a positive equilibrium in which the presence of aid plays a role in making the government able to reduce distortions and to a negative one in which the economy ends up in a more distorted economy compared to the case of the absence of aid. My analysis incorporates other findings in the literature, such as Mayer and Mourmouras (2002) as specific cases of a more general framework.

2.2 Basic model

⁶See Hansen and Tarp(2001).

⁷See, among the others, Easterly et al.(2003) and Hansen and Tarp (2001).

⁸See Rajan and Subramanian (2005).

⁹See Boone (1996)

The political setting of the recipient country is characterized by an economy in which the government interacts with a domestic special interest group and an international financial institution (IFI). Multilateral aid typically comes with "strings". Hence I refer to it as I am going to compare the effects of unconditional and conditional aid. However, results can as well be addressed to bilateral assistance. Here I consider the role of a single interest group, but the model can be extended to the presence of more lobbies. Furthermore, special interest groups face serious coordination problems when trying to exert a leverage on political decisions. I also abstract from such issues, assuming underlying collective action problems to have been already overcome¹⁰. The government chooses the level of "distortion" which is implicit in the choice of economic policy (for example, referring to trade protection, any positive tariff level represents a positive degree of distortion, while a 0 distortion would be associated to a free trade regulation). The distortion $\tau \geq 0$ negatively affects general economic welfare at an increasing rate. At the same time, a positive level of distortion has a favorable effect on the utility of the Special Interest Group (SIG). For this reason the group has an incentive to initiate a lobbying activity in order to influence the decisions of the political authorities. The members of the lobby offer a payment schedule that enters directly the government's utility function. I assume that these contributions have an effect only on the welfare of the government but do not affect the overall welfare of the economy. In this sense we are implicitly considering the SIG to be external to the government. A different strand of the literature focuses on the role played by agents who wish to influence political decisions from within the government.¹¹ The government's choice of policy also depends on the amount of financial assistance received by the IFI. This holds whether aid is conditional or unconditional on the policy implemented as aid positively affects the economic welfare function in any case.

Grossman and Helpman (1994) identify the conditions for the existence of truthful equilibria in a common agency game in which domestic lobbies offer contributions to the government to influence its trade policies¹². Mayer and Mourmouras (2002) extend the analysis to the aid context. They also

¹⁰See Olson (1965) for a detailed analysis of the circumstances leading to the solution of collective action problems.

¹¹For example, Drazen(2001), related to the aid context.

¹²The seminal paper about the characterization of truthful equilibria in a common agency game is Bernheim and Whinston (1986). Grossman and Helpman (1994) extended this set to an economic policy environment.

consider the possibility of aid repayment. For the moment I do not take into account repayment issues. Aid disbursement takes the form of a grant and bears no costs for the recipient country. Typically, IFIs give aid both in the form of grants and of subsidized loans. In Appendix 1 I discuss how equilibrium outcome is affected by the presence of aid repayment.

The consumers and the lobby have different preferences. Aggregate welfare ($W(\tau, A)$) depends both on the welfare of the consumers ($W^c(\tau, A)$) and on the utility of the lobby ($W^l(\tau)$). Since I consider the case of a single lobby, its weight is very small with respect to that of the citizens.

$W(\tau, A)$ is defined as follows

$$W(\tau, A) = \sum_c W^c(A, \tau) + \sum_l W^l(\tau) \quad (2.1)$$

where $c \in [1, N]$ is an index for the consumer and $l \in [1, J]$ is an index for the lobby member, since $J = P - N$. P is the total amount of the population that we normalize to 1. Consumers receive an equal proportion of welfare and the citizens who belong to the lobby equally share benefits derived from the distortion¹³. I can write this expression

$$W(\tau, A) = (1 - \alpha)W^c(A, \tau) + \alpha W^l(\tau), \quad 0 < \alpha < 1 \quad (2.2)$$

where α is the share of the population belonging to the lobby, A equals the amount of financial assistance disbursed, $W^c < 0$ and $W^l > 0$.

Note that A only affects the welfare of the consumers. When α is close to 0, the second term disappears and the aggregate welfare coincides with that of the consumers, $W(\tau, A) = W^c(A, \tau)$. Since I assume that only one lobby is active in the economy, I rely on this simplification.

An example of τ is a tariff on some import goods which benefits the industry producing that specific good domestically. Alternatively, it can be seen as a fiscal distortion in favor of certain producers or of a part of the population controlling some kind of resources.

¹³We assume that the members of the lobby group do not participate as consumers or citizens in the aggregate welfare. This simplification does not produce any relevant variation in the results.

For a given flow of assistance A , the economy's welfare is maximized when there is no distortion, $\tau = 0$. The presence of the distortion has a negative effect on welfare, at an increasing rate: $W_\tau < 0$ and $W_{\tau\tau} < 0$.

The government's objective function depends on economic welfare and on the payment schedule offered by the SIG:

$$G(\tau, A; a) = aW(\tau, A) + C(\tau) \quad (2.3)$$

where $a > 0$ is a parameter that identifies the government's interest for the public welfare. The parameter a identifies the implicit weight attached to the welfare of the consumers compared to the contribution. It can also measure the quality of institutions. In this sense a only has to be positive. Its value becomes a measure of the intensity of the government's preferences. In the basic version of the model a is exogenous. The government accepts assistance from the IFI because $W_A \geq 0$, a positive level of aid has a positive effect on economic welfare. I assume that aid enhances aggregate welfare at a decreasing rate, $W_{AA}^A < 0$.

The Special Interest Group's welfare function depends negatively on its contribution schedule to the government ($C(d)$) and positively on the benefits it obtains from the economic distortion.

$$L(\tau) = U(\tau) - C(\tau) \quad (2.4)$$

The lobby's utility function is increasing in the level of distortion at a decreasing rate: $U_\tau > 0$, $U_{\tau\tau} < 0$.

As the distortion rises, its impact on the general welfare may generate negative externalities that reduce the positive returns of the distortion on the utility of the lobby. We also assume that $U(0) = 0$, the utility of the lobby is null if no distortion takes place¹⁴.

Finally, the IFI's objective function is given by

¹⁴In Appendix 2 I introduce the hypothesis that the utility function of the lobby also depends on aid. Departing from the literature I show which changes this different setting may produce on the political equilibrium in order to capture the effects of potential aid appropriability features by the domestic lobby.

$$I(\tau, A) = W(\tau, A) - rA \quad (2.5)$$

The IFI bears a cost $r > 0$ for financing aid. This parameter represents the market interest rate at which the IFI finances its operations.

2.3 Internal political equilibrium with no foreign assistance

I begin the analysis by solving for the internal political equilibrium in the absence of foreign assistance. This will serve as a benchmark that will allow to distinguish the specific effect of aid on the political setting. In these circumstances we only need to understand how the government's decisions about the degree of distortion to adopt is influenced by the presence of the lobby. The problem can be set as follows.

The lobby and the government are the actors of a non cooperative game in two stages. In the first period the SIG offers the government a contribution schedule $C(\tau)$ and commits to its payment. In the second period the government decides the level of distortion that maximizes its own welfare, taking into account its related payment. Solving the game by backward induction this leads to

$$\max_{\tau} aW(\tau) + C(\tau) \quad (2.6)$$

that results in the following f.o.c.

$$aW_{\tau} + C_{\tau} = 0. \quad (2.7)$$

The government will be willing to accept a contribution from the lobby only if its welfare will result at least as large as without receiving the contribution¹⁵. The government participation constraint becomes

$$aW(\tau^*) + C(\tau^*) \geq aW(0) \quad (2.8)$$

For this condition to hold a lower bound level of distortion that maximizes $G(\tau)$ such that $C^*(\tau) = 0$ has to exist. It follows from the previous hypothesis

¹⁵When the lobby is not active the value of the distortion for which the government maximizes its utility is 0.

that this value of τ is equal to 0. In the first stage the lobby determines its contribution schedule that maximizes its welfare function, given the strategy of the government.

$$\max_{\tau} U(\tau) - C(\tau) \quad (2.9)$$

$$\text{s.t. } aW_{\tau} + C_{\tau} = 0 \quad (2.10)$$

$$aW(\tau^*) + C(\tau^*) = aW(0) \quad (\text{p.c.})$$

The participation constraint is limited to the strict equality in the lobby problem, because the SIG has no interest in contributing the government more than the amount that leaves it as well off as if the contribution were not received. A larger contribution schedule would not result in a credible ex post offer.

As the contribution function enters linearly both in the government's welfare function and in the lobby's objective function, solving (2.9) and (2.10) together is equivalent at maximizing the joint utility of the lobby and the government. Following Proposition 1, p.839, in Grossman and Helpman(1994) it can be verified that all the conditions for a subgame-perfect Nash equilibrium (SPNE) of this policy game are satisfied.

The combination (C^*, τ^*) identifies a SPNE of the non cooperative policy game if:

Condition 1: $C^* \in [0, \bar{C}]$, where $\bar{C} > 0$ is the total amount of resources available to the lobby.

When C^* is feasible, the lobby cannot spend more than its total resources in financing the government with a positive contribution.

Condition 2: $\tau^* = \arg \max_{\tau \geq 0} G(\tau)$

Given the contribution set by the SIG, the government chooses the distortion level in order to maximize its own welfare.

Condition 3: $\tau^* = \arg \max_{\tau \geq 0} [G(\tau) + L(\tau)]$

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In equilibrium no resources are wasted. The equilibrium is efficient, as the joint utility of the government and the lobby is maximized.

Condition 4: $\exists \underline{\tau} \geq 0$ that maximizes $aW(\tau) + C^*(\tau)$ such that $C^*(\underline{\tau}) = 0$

There exists a value of policy distortion that requires no contribution from the lobby, at which the government is just as well off as at τ^* . As we discussed above here $\underline{\tau} = 0$.¹⁶

Condition 2 and 3 together imply that the contribution schedule is locally truthful around the equilibrium distortion. The intuition for truthful contribution is that the marginal cost of contributing must be equal to the marginal benefit derived from τ . This guarantees that the payment schedule offered by the lobby reflects its true preferences and it is optimal ex post. If it were not the case, commitment would not be credible.

The solution for the No Aid case (τ_{NA}) is implicitly given by

$$U_{\tau}(\tau_{NA}) = -aW_{\tau}(\tau_{NA}) \quad (2.11)$$

and, from (p.c.), the contribution in equilibrium will be

$$C^{NA}(\tau_{NA}) = a[W(0) - W(\tau_{NA})] > 0 \quad (2.12)$$

Here I restrict the analysis to positive values of the contribution¹⁷. The same result must hold for the maximization problem of the lobby in equation (). The combination $(C^{NA}(\tau_{NA}), \tau_{NA})$ we have derived is the unique solution of the non cooperative game.

We can represent government's indifference curves (G_i) in a (τ, C) plane. They are positively sloped and convex¹⁸ (see Fig.1)

¹⁶This condition is far more important in the case of two or more lobbies. It guarantees that none of the lobby has a space for augmenting the contribution of an ε in order to induce the government to modify the policy in its favor. Until the condition is not respected lobbies keep on competing each other to make the government choose a more favorable policy. That is why with multiple principals the government acquires all the surplus.

¹⁷Explicitly considering the lobby as part of the aggregate welfare also allows to analyze the case in which the SIG is able to extract resources from the government. This ability is proportional to the size of the lobby group.

¹⁸Their slope is $\partial C / \partial \tau |_{dG=0} = -aW_{\tau} > 0$ and, since I assume that policy distortion negatively affects welfare levels at an increasing rate, we have $W_{\tau\tau} < 0$. It follows that $\partial^2 C / \partial \tau^2 |_{dG=0} = -aW_{\tau\tau} > 0$ so that the indifference curves are positively sloped and convex.

The lobby's indifference curves show the combination of the policy distortion and the contribution to the government, for each utility level. Since its marginal utility is positive at a decreasing rate, they are upward-sloping¹⁹ and concave.

In equilibrium the slopes of the two indifference curves must be equal:

$$-aW_\tau = U_\tau \tag{2.13}$$

This is the solution of the game that I have already derived. As expected, the level of the distortion in equilibrium diminishes when the government cares more about the public welfare (political authorities need to obtain a larger consensus), that is when a increases.²⁰ $C^*(\tau_{NA})$ will equal the amount that is enough to compensate the government from the reduction in welfare caused by a positive distortion. As we have already discussed, the lobby has no incentive to contribute more to the government. Thus the equilibrium holds at the tangency point of the a lobby's indifference curve, named L_E , and the lower government's contour, named G_0 ²¹ (L curves correspond to higher utilities the lower they are).

¹⁹Since $\partial C/\partial \tau|_{dL=0} = U_\tau > 0$ and $\partial^2 C/\partial \tau^2|_{dL=0} = U_{\tau\tau} < 0$ the lobby's indifference curves are increasing and concave.

²⁰This follows from $\partial U_\tau/\partial a > 0$.

²¹We do not allow either τ or C to be negative, and we know that when $\tau = 0$, $C(0) = 0$. The lobby has to leave the government as better off as if there were no contribution, otherwise there is no incentive to participate in the game. In absence of contributions the government maximizes its welfare for $\tau = 0$. Hence, the equilibrium indifference curve passes through the origin.

2.4. INTERNAL POLITICAL EQUILIBRIUM IN THE PRESENCE OF UNCONDITIONAL

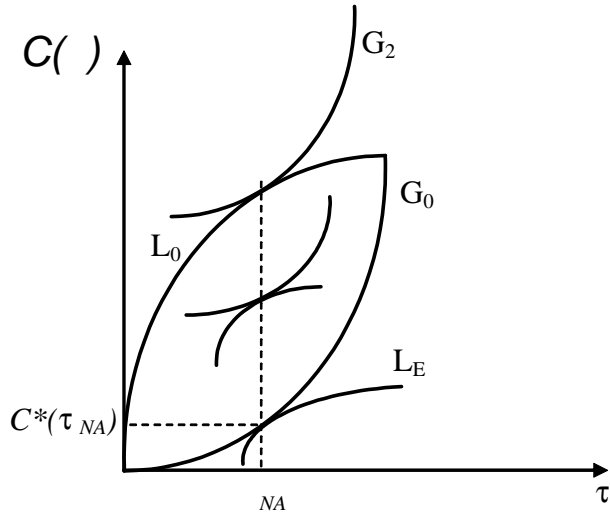


Figure 1. Internal political equilibrium without aid

The equilibrium contribution is derived from G_0 . The government in equilibrium reaches the same utility it would get if no contribution were given, $G(\tau_{NA}) = aW(0)$. The lobby's net utility is $L(\tau_{NA}) = U(\tau_{NA}) - a[W(0) - W(\tau_{NA})]$. Things would be different if more than one lobby were present. As Grossman and Helpman (1994) show, when many special interest groups compete to influence the government, the surplus is entirely appropriated by the government. Because of this competition the aggregate contribution in equilibrium is larger.

2.4 Internal political equilibrium in the presence of unconditional aid

I now consider the case in which a country receives foreign assistance which is not conditional on the implemented policies. Aid has a positive effect on welfare and non zero effects on the policy distortions. I will show that the

way in which aid and policy distortions interact is crucial for equilibrium outcome.

The problem is described by a three period non cooperative game with three actors. The aid donor moves first and decides how much assistance to disburse to the recipient country. After observing the amount of aid given the lobby sets a contribution schedule to influence the political authorities over their policy decisions. In the last period, after aid and contribution schedules have been set, the government chooses the level of distortion. The different agents' objective functions are common knowledge. As in a complete information game à la Stackelberg, the IFI has a first mover advantage. For given aid, the conditions for a sub-game perfect Nash equilibrium analyzed in section 2 must still hold for the second and the third stage of the game. The solution $\tau^*(A)$ will be a function of the policy distortion to changes in the aid level A .

Conditions of the previous section are modified as follows:

Condition 1': C^* has to be feasible: $C^* \subset [0, \bar{C}]$, $\bar{C} > 0$.

As before, the contribution must not exceed the total amount of resources available to the lobby.

Condition 2': for $\tau \geq 0, A > 0$, τ^* maximizes the government's objective function, for given aid:

$$\tau^* = \arg \max aW(\tau, A) + C(\tau) \quad (2.14)$$

Condition 3': for $\tau \geq 0, A \geq 0$, τ^* has to maximize the joint welfare of the government and the SIG, for given aid :

$$\tau^* = \arg \max aW(\tau, A) + C(\tau) + U(\tau) - C(\tau) \quad (2.15)$$

Condition 4': there must exist a level of distortion that maximizes government's objective function and that requires a null contribution.

$$\exists \underline{\tau} = \arg \max aW(\tau, A) + C^*(\tau) : C^*(\underline{\tau}) = 0 \quad (2.16)$$

Solving the maximization in Condition 2' I obtain $aW_\tau(\tau^*, A) + C_\tau(\tau^*) = 0$. Substituting this result into Condition 3' yields the expression for a truth-

2.4. INTERNAL POLITICAL EQUILIBRIUM IN THE PRESENCE OF UNCONDITION

ful contribution²² by the lobby group: $U_\tau(\tau^*) = C_\tau(\tau^*)$. From the two expressions above we can derive the solution of the subgame between the lobby and the government of the aid recipient country.

$$W_\tau(\tau^*, A) = -(1/a)U_\tau(\tau^*) \quad (2.17)$$

which implicitly defines the equilibrium level of the policy distortion as a function of aid, $\tau^*(A)$.

As a consequence, the optimal contribution schedule, for any given A , becomes

$$C^*(\tau^*(A)) = a[[W(0, A) - W(\tau^*, A)]] \quad (2.18)$$

Observe that whether the amount of the contribution is lower or higher in the absence of foreign assistance depends on the marginal effect of aid on the distortion. When an increase in aid lowers the negative effect of distortions ($W_{\tau A} > 0$) the contribution that compensates the government for its lost utility is lower. If aid has diminishing returns also indirectly through the policy ($W_{\tau A} < 0$) the cost of bearing each degree of distortion is larger. Hence a greater contribution is required to compensate the welfare depleament.

To solve the first stage of the game we need to specify the government policy reaction function to changes in aid. From (2.15) we can determine its slope:

$$\frac{d\tau^*(G)}{dA} = -\frac{aW_{\tau A}}{aW_{\tau\tau} + U_{\tau\tau}} \quad (2.19)$$

By assumption the denominator is always negative. The slope of the policy response depends on the sign of the cross derivative $W_{\tau A}$.

A negative $W_{\tau A}^c$ tells us that an increase in aid reduces the marginal effect of the distortion. As the marginal effect of the distortion on welfare is negative, a rise in aid induces a stronger depleament of the economy, for each level of distortion. Since $W(\tau, A)$ is a continuous function, $W_{\tau A} = W_{A\tau}$. A worsening of the distortion reduces the marginal benefit of aid.

²²Following Bernheim and Whinston(1986), we define a truthful contribution schedule as a contribution schedule that everywhere reflects the true preferences of the lobby. The S.I.G. pays to the government the excess (if any) of lobby's gross welfare at τ relative to some base level of welfare. Formally $C(\tau, B) = \max[0, U(\tau) - B]$, for some B .

A positive $W_{\tau A}$ tells us us the opposite story. The negative effect of the policy distortion on aggregate welfare falls, as aid increases. In practice a rise in aid decreases the rate at which policy distortions deteriorate economic welfare. This hypothesis can fit to distortions like high deficit. An increase in aid may relax the government's budget constraint and make the distortion less costly.

Foreign assistance takes many different forms and might produce different kinds of spillovers on the policy environment. One hypothesis could be better applied to certain circumstances and the opposite to others. For the sake of generality we will characterize the equilibria in both cases and we will focus on their differences to describe a possible reason for the ambiguity of results obtained by the empirical literature on the effect of aid on growth.

In order to identify the equilibrium levels of foreign assistance and policy distortion, and consequently of the lobby's contribution, we must describe the IFI's welfare contours. Their slope is given by

$$\frac{d\tau^{(I)}}{dA} = -\frac{W_A - r}{W_\tau} \quad (2.20)$$

where the denominator is always negative and W_A is always positive. When $W_A^c > r$, which occurs for lower values of A , the slope of the IFI's objective function is positive. When $W_A < r$, for higher values of A , it is negative.

As $W(\tau, A)$ is increasing in A , with diminishing returns, the highest welfare contour of the IFI reduces to a point when d equals 0. IFI's utility reduces as its contour curves lie farther from the A axis. The condition $W_A^c = [r/\delta(1 - \alpha)]$ implicitly identifies a function $\tau(A)$ which constitutes the set of points where the indifference curves' slope change.²³ When an increase in foreign assistance has a stronger effect in improving welfare compared to the marginal cost of financing it, the combination of both larger values at τ and aid give rise to the same amount of utility for the IFI (the slope is positive). The slope is negative, instead, (that is, higher values of the distortion are associated to lower values of assistance) when the marginal benefit of aid on economic welfare (W_A) is lower than the marginal cost of financing aid (r). This occurs for lower values of aid as aid has decreasing returns. In

²³This function is defined by the combination of τ and A correspondent to the highest level of distortion for each level of the IFI's welfare. As an increase in τ , for given A , makes the IFI's welfare decline we can draw conclusions about the concavity of the map of the welfare contours without calculating its expression.

2.4. INTERNAL POLITICAL EQUILIBRIUM IN THE PRESENCE OF UNCONDITION

Figure 2 we draw examples of possible equilibria. For a matter of comparison to the the benchmark and the conditional case we invert the axes with respect to expressions (2.17) and (2.18). Policy response function is depicted as line for simplicity. It has to pass through τ_{NA} since, when no aid is given, the political game leads to that amount of distortion. Their concavity might change, but the sign of their slope never is always whether positive or negative, depending on the sign of $W_{\tau A}$. Graphically the equilibrium is reached when the government's reaction function is tangent to an IFI's welfare contour. Their slopes will have the same value in that point, though we can rewrite the equilibrium condition as

$$-\frac{aW_{\tau A}}{aW_{\tau\tau} + U_{\tau\tau}} = -\frac{W_A^c - r}{W_\tau} \quad (2.21)$$

This expression implicitly defines the equilibrium combination $(\tau^*(A^*), A^*)$. The corresponding optimal contribution of the lobby is therefore $C^*(\tau, A^*) = a[W(0, A^*) - W(\tau^*, A^*)]$. The equilibrium is not necessarily unique, but only two kinds may occur. This allows us to characterize the equilibrium as less-distorted or more-distorted with respect to the case of no aid. When $W_{\tau A}$ is negative, the reaction function of the government is decreasing, though the tangency point has to lie on the concave decreasing tract of the IFI's welfare contour. This equilibrium would be characterized by a positive amount of aid and by a small value of distortion τ^* , lower than τ_{NA} . If $W_{\tau A}^c > 0$ instead, the equilibrium point (τ^*, A^*) has to lie on the increasing part of the IFI's map of welfare countours thus leading to an equilibrium in which the level of policy distortion is certainly higher. In order to understand the position of the government I give the expression of its utility slope:

$$\frac{d\tau^{(G)}}{dA} = -\frac{aW_A}{aW_\tau + C_\tau} \quad (2.22)$$

This is negative for lower τ and positive for larger τ . For low levels of the distortion the marginal benefit gained from the contribution is stronger than the marginal depleament of the economic welfare, though the government's utility does not vary as aid increases. When the distortion is larger, the marginal contribution is not sufficient to compensate for the worsening of economic performance and, in order to maintain the same level of utility, the government needs to receive larger amounts of aid. As it can be seen in Figure 2, in each kind of equilibrium the government is better off. It reaches a higher

indifference curve (G_E) with respect to the case of no aid (G_0). Is it possible to draw similar conclusions in terms of aggregate welfare? Economic welfare positively depends on aid and negatively depends on distortions. Hence it can be drawn as an increasing curve²⁴. Certainly, for $W_{\tau A} < 0$ the overall welfare increases, but the result is not obvious if we end up in more distorted equilibrium.

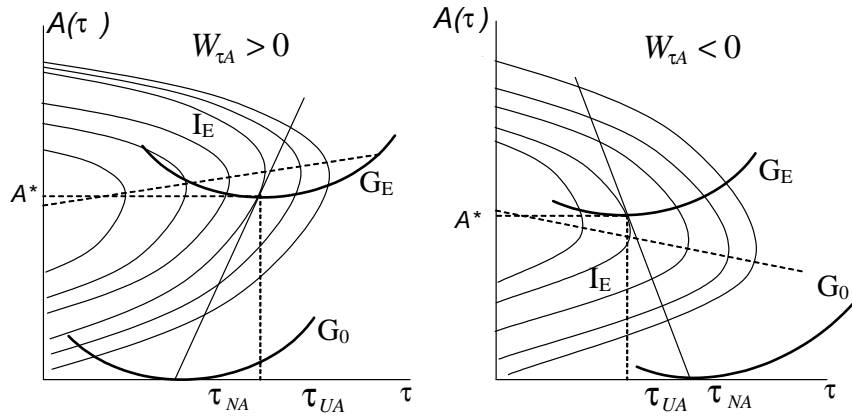


Figure 2. Internal political equilibrium with unconditional aid

When aid is fungible, which is likely when it is not conditional on specific policies, its role in reducing the cost of the distortion on aggregate welfare can lead the economy to a worse policy environment. Furthermore, although the "good equilibrium" is associated to a level of welfare above the equilibrium with no foreign assistance, this is not necessarily the case in the "bad equilibrium" since both aid and distortion have increased. This produces opposite effects on economic welfare. In Appendix 2 we show how the chance of appropriating some aid by the lobby group has a non trivial positive effect on the equilibrium outcome and might drive economy from the more distorted equilibrium to the more favorable one, despite of the positive cross marginal effect of aid. The complementarity effect between aid and distortions is reduced when they become substitutes inside the lobby's utility function.

²⁴Its slope is given by $\frac{d\tau}{dA}^{(W)} = -\frac{W_A}{W_\tau} > 0$. An example is drawn in Figure 2.

2.5 Internal political equilibrium in the presence of conditional aid

Conditionality of foreign assistance has been the topic of an important debate over the aid implementation strategies by all multilateral donor agencies. Since the role of proper economic reforms has been considered a core requisite to enhance economic growth the idea of conditioning aid giving to the implementation of specific policy changes has been pursued.

I now consider the case when aid is conditional on the distortion. The framework comes to a common agency game in which two principals, the IFI and the special interest group wish to condition the government's policy choice. At the beginning of the game the IFI and the lobby simultaneously offer an assistance and a contribution schedule to the political authorities. That reduces the timing of the game to two periods. In the second and final stage the government sets the degree of distortion, after observing both the payment schedules aimed at affecting its decisions in the opposite sense. Their objectives are in fact not allied. While the lobby, exactly as in the previous section, benefits from an increase of the distortion, the IFI offers assistance to obtain a lower level of it. Grossman and Helpman's work we have been referring up to now was specifically targeted to a common agency situation. In order to characterize the equilibrium of the game we have to adapt the aforementioned conditions to the presence of two principals.

The combination of the level of distortion, the assistance schedule and the contribution schedule $(\tau^{CA}, A^{CA}, C^{CA})$ represents a subgame perfect Nash equilibrium of the non cooperative game with conditional aid if the following conditions are respected.

Condition 1'': both C and A are feasible.

Condition 2'': $\tau_{CA} = \arg \max_{\tau} aW(\tau, A^{CA}(\tau)) + C^{CA}(\tau), \tau \geq 0$

$$a[W_{\tau} + W_A A_{\tau}] + C_{\tau} = 0 \quad (2.23)$$

Condition 3'': $\tau_{CA} = \arg \max_{\tau} aW(\tau, A^{CA}(\tau)) + C^{CA}(\tau) + U(\tau) - C^{CA}(\tau), \tau \geq 0$

$$a[W_{\tau} + W_A A_{\tau}] + C_{\tau} + U_{\tau} - C_{\tau} = 0 \quad (2.24)$$

Condition 4'': $\tau_{CA} = \arg \max aW(\tau, A^{CA}(\tau)) + U(\tau) + C^{CA}(\tau) + W(\tau, A^{CA}(\tau)) - rA^{CA}(\tau), \tau \geq 0$

$$a[W_\tau + W_A A_\tau] + C_\tau + [W_\tau + W_A A_\tau] - rA_p = 0 \quad (2.25)$$

Condition 5'': $\exists \tau'$ and τ'' that maximize $aW(\tau, A(\tau)) + C(\tau) : C(\tau') = 0$ and $A(\tau'') = 0$, respectively.

Condition 1'' adds the requirement for the payment schedule not to exceed the available resources also to the aid donor agency. Conditions 2'' and 3'' resemble the ones of the conditional case with the only difference that now A is not given, but a function of the distortion. Condition 4'' requires that also the joint welfare of the government and the "new" principal, the IFI, has to be maximized. If this condition were not satisfied together with 3'' the lobby or the IFI could propose different schedules more beneficial to their welfare. Finally Condition 5'' requires the existence of two levels of distortion for which the government's objective function is maximized, when, alternatively, one of the two payment schedules is null. This implies that the government in such cases has to be as well off as at the equilibrium level, otherwise there would be space to modify its decisions over τ and gain a larger welfare level.

The two principals, when fixing their payment schedule, have now also to consider the other principal's optimal strategy. We have to verify both the contribution schedule and the aid funding to be truthful. When conditions 2'' and 3'' and 2'' and 4'' are satisfied at the same time, we obtain the expressions, respectively, for a truthful contribution and a truthful assistance.

$$C_\tau^{CA} = U_\tau \quad (2.26)$$

$$A_\tau^{CA} = -\frac{W_\tau}{W_A - r} \quad (2.27)$$

Truthful contribution is always positive and rises with the level of distortion at an increasing rate exactly in same fashion as the utility function of the lobby. In practice, as stated in Grossman and Helpman (1994) the shape of the contribution function mirrors the one of the utility function. Truthful assistance instead potentially might both increase or decrease with the level of distortion depending on the size of the marginal benefit of aid on consumers' welfare (that is incorporated in the IFI's objective function). The

2.5. INTERNAL POLITICAL EQUILIBRIUM IN THE PRESENCE OF CONDITIONAL

right side of (2.24) also represents the slope of the IFI's welfare contours in a (τ, A) plane. As the numerator is negative by definition the slope turns from positive to negative from lower to higher values of A . The equation $W_A - r$ implicitly defines the set of (τ, A) combinations where the sign of the slope changes and also, when $\tau = 0$, the value of aid the IFI would disburse to the government in the absence of any lobbying activity. When conditionality issues are considered, the hypothesis of restricting the analysis to the case of negative A_τ seems reasonable, but the scope of the present work is to underline the possible reasons for proper incentives to be dismissed. We investigate what changes might occur in equilibrium if this is the case. Substituting the truthful payments' expressions into (2.20) gives

$$U_\tau = -\frac{arW_\tau}{W_A - r} > 0 \quad (2.28)$$

The equation yielding to the equilibrium expression is satisfied when the IFI's welfare is maximized and when the joint welfare of the government and the lobby group is maximized. Graphically this corresponds to the tangency point of a IFI's welfare contour and a government's welfare contour (obtained considering the truthful contribution of the lobby) in a (d, A) plane. Government's contours' slope is given by

$$\frac{dA^{(G)}}{d\tau} = -\frac{aW_\tau + U_\tau}{aW_A} \quad (2.29)$$

which is negative for smaller values of τ and positive for larger ones. The equilibrium condition becomes

$$-\frac{W_\tau}{W_A - r} = -\frac{aW_\tau + U_\tau}{aW_A} \quad (2.30)$$

which, solved for U_τ , gives the expression in (2.28). If we restrict to the case of donor agencies designing foreign assistance programs such that domestic governments are forced to lower policy distortion (when $[W_A - r < 0$) a subgame perfect Nash equilibrium can only occur on the decreasing part of the government's welfare contour. Furthermore, as Condition 5" has to be respected, the equilibrium point lies on the government's welfare contour passing for the value of distortion that maximizes its welfare when no aid is given (named τ_{NA} in section 1). This allows us to observe that the level of distortion τ_{CA} produced in the equilibrium with conditional aid is lower than the one the internal political setting would reach in the absence of foreign

assistance. This result holds also when the cross marginal effect of aid to policy distortion is positive. In this case the distortion will be smaller with respect to the unconditional case, but we cannot be sure of this benefit to hold if the cross marginal effect of aid is negative. Whether the distortion in equilibrium results weaker will depend on the relative slope (in the neighbourhood of the equilibrium) of the government policy reaction function of the unconditional case and the one of the government's welfare function in the conditional setting. The steeper one produces the more distorted equilibrium, not only in terms of d , but also of aid disbursed. Whatever the point reached, the government will end up in a lower welfare curve with respect to the case of aid disbursed without conditions. In general the government is worse off with respect to the unconditional case.

As before, comparing the IFI's welfare in the two cases leads to a clear result when aid is more effective in reducing the negative impact of distortions ($W_{\tau A} > 0$). By conditioning aid, the IFI reaches a utility curve closer to the A - axis, that generates a larger welfare for her. When aid is less effective on the policy setting ($W_{\tau A} < 0$) we cannot draw an a priori conclusion. The same reasoning applies when we try to compare the aggregate welfare of the economy in the two circumstances.

In my opinion, it is worthy to notice that to obtain such an equilibrium I had to assume the $A(\tau)$ function to be negative in τ , its shape did not result from the equilibrium requirements. Potentially though, by relaxing the hypothesis, another kind of equilibrium is possible. When we allow assistance schedule to be positive ($W_A - r > 0$) the occurrence of an equilibrium along the increasing part of the government's welfare contour is possible. If such an equilibrium exists the economy might still be characterized by a degree of policy distortion superior to the one obtained when no aid is disbursed. (See Figure 3(right)) Observe that when aid financing is more costly for the

IFI the possibility of more distorted equilibria to occur reduces.

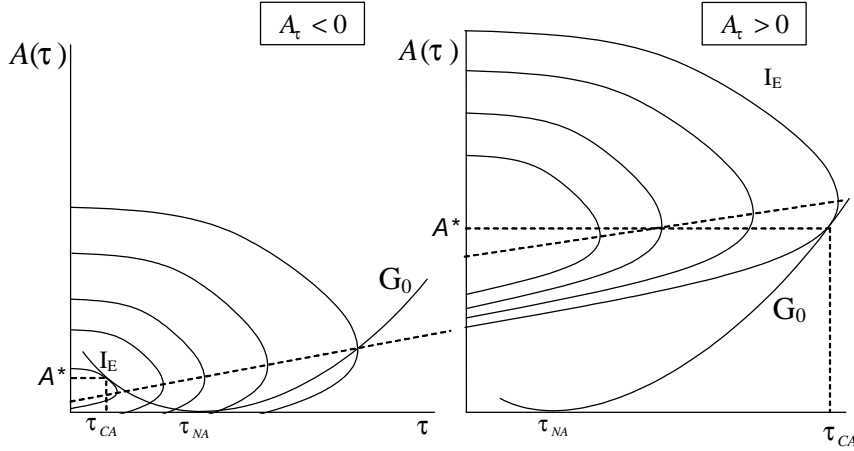


Figure 3. Internal political equilibrium with conditional aid

2.6 Conclusions

I developed a theoretical framework that allows to analyze the effect of foreign aid in a country in which a special interest group actively attempts to influence the government policy decisions. The key assumption lies in aid affecting the welfare of the economy both directly and indirectly through the policy. When aid is disbursed unconditionally with respect to the policy implemented, the equilibrium outcome strictly depends on the way aid interacts with the distortion. Aid literature has typically considered their cross marginal effect on welfare to be negative, especially relying on the results by Burnside and Dollar(2000). In analyzing the aid-growth regression they conclude that the relationship is positive only after including an aid×policy interaction term. The interaction term reveals a positive sign. Since their variable was an index measuring "good policy" it would be associated to a negative cross marginal effect between the level of distortion and foreign aid ($W_{\tau A}^c < 0$) in the light of my analysis. This paper had a big impact on multilateral donors' aid strategies, probably because these findings were

embodied in the 1998 World Bank Report about aid²⁵. Later works demonstrate the fragilities of the results²⁶. My intent is to stress the possibility for the opposite assumption to hold. Think of τ , for example, as a fiscal distortion favouring some specific good producers (or also, as a suboptimally implemented tax collection technology). An increase in the distortion has a negative effect on public welfare, because the citizens suffer from a decrease in redistribution. The government cares about the population, but it is offered a contribution by the group of producers to implement a positive distortion. In these circumstances, if the government also receives foreign assistance, the cost of accepting the reform diminishes, because the resources derived from aid allows the government to relax its budget constraint. Technically this corresponds to having $W_{\tau A} > 0$. The resulting equilibrium distortion is larger than the one obtained in the absence of aid. The economy ends up in a more distorted equilibrium when foreign assistance is present. Larger distortions yield to a decrease in the growth rate. Observe that whenever aid is fungible, that is when the government is free to allocate the additional resources according to its preferences²⁷, the aforementioned situation is very likely to occur. From a slightly different perspective, we can think of the government as shared in two "souls". A benevolent stream pursues collective welfare and addresses redistribution issues and bureaucrats are paid by the rich to set lower taxes. Acemoglu et al.(2007) describe such a patronage political model in order to identify a possible determinant of the emergence and persistence of inefficient states. Fiscal implementation and collection require the presence of bureaucrats. They show how the surge of an inefficient state structure can be pursued by the rich elite in order to reduce redistribution and public good provision in newborn democracies. My analysis is coherent with this kind of framework.

When we turn to conditionality it is possible to achieve a less distorted equilibrium also in the case of positive marginal effect of aid on distortions,

²⁵For further details see "Assessing aid: what works, what doesn't and why", World Bank Report, 1998.

²⁶Easterly et al.(2004), on the American Economic Review, the same journal where "Aid, policies and growth" was published, demonstrated that Burnside and Dollar's findings were not robust to an extension of the sample and were strongly depending on the role of 5 outliers. Other critics came from Hansen and Tarp(2001) and Ram(2004).

²⁷Fungibility does not necessarily implies that aid transfers are not targeted to specific sectors. If the government has the chance to divert resources from the aid assisted sectors to others, anyway foreign assistance simply translates into extra resources available to the government.

but it is not possible to exclude the occurrence of bad equilibria completely. As the International Financial Institution incorporates the welfare of the country in its utility, in presence of very high distortions its commitment to conditionality might reveal weak. Remember that distortions negatively affect economic welfare at an increasing rate ($W_{\tau\tau} < 0$). When the distortion is high and the marginal benefit of aid is larger than the marginal cost of funding it, the IFI may prefer to increase aid as the distortion tends to worsen. This occurs for low levels of aid, since foreign assistance, instead, affects economic welfare at a decreasing rate. When the cost of financing aid increases, the space for "bad" equilibria to occur reduces. In this sense, the market interest rate r could as well be interpreted as an indirect measure of conditionality-enforcement potential. There is widespread evidence that the conditionality of foreign assistance did not ultimately produce the expected results on LDCs growth²⁸. One of the reasons has been attributed to distorted incentives on the donors' side. Often multilateral institutions' aid programs are designed to realize a disbursement, notwithstanding the effective compliance of imposed conditions. This happens because the monitoring/evaluating phase is scarcely implemented or the agencies' staffs' carrier is somehow more attached to the amount of disbursements than to the effective returns on them, This basically prevents coherent strategies to be pursued. Broad and uninformed western public consensus over "something has to be done for the poors" anyway might have strengthen these counterproductive attitudes.

My considerations are also in line with the literature investigating the causes of delay on reforms. Lobbies controlling natural resources buy the government not to implement reforms that possibly undermine their vested interests. Foreign assistance might deteriorate the policy setting when it increases the government's payoff, for any given level of distortion, because it makes the government less sensitive to the costs of not implementing the reforms.

2.7 Appendix 1: Aid repayment

²⁸See Mosley(1985).

Here I briefly show how the results derived above vary when receiving foreign assistance is costly for the recipient country. The rate of repayment on aid disbursement equals β . The market interest rate is $r^* > 0$. Economy's net welfare becomes:

$$W(\tau, A; b) = a[W(\tau, A) - \frac{1+\beta}{1+r^*}A]$$

where $b = [(1 + \beta)/(1 + r^*)]$. Typically international organization make loans at favorable rates of interest. When β equals -1 aid represents a grant and our assumption is that $-1 \leq \beta < r^*$, in this latter case aid becoming a subsidized loan. I define b the rate of repayment and symmetrically $(1 - b)$ the rate of subsidizing by the IFI. The extent of the subsidy depends on the prevailing market interest rate. The government accepts assistance only when the marginal benefit from aid exceeds its marginal cost ($W_A - b > 0$).

The equilibrium conditions of the unconditional and the conditional case become respectively

$$-\frac{aW_{\tau A}}{aW_{\tau\tau} + U_{\tau\tau}} = -\frac{W_A^c - (b + r)}{W_{\tau}} \quad (2.31)$$

$$-\frac{W_{\tau}}{W_A - (b + r)} = -\frac{aW_{\tau} + U_{\tau}}{a(W_A - b)} \quad (2.32)$$

As I briefly discussed before the results do not vary much. An increase in b makes the equilibrium distortion lower for less-distorted equilibria (when $W_{\tau A} < 0$) and higher for more-distorted equilibria (when $W_{\tau A} > 0$) in the unconditional framework. In the conditional case, since b diminishes the slope of the government's welfare contours and increases the slope of the IFI's welfare contours, it has a positive effect on the equilibrium distortion. The rate of repayment in general has the same effect of the market interest rate. Its presence amplifies the effect of r . It can be said that aid being costly, from both the donor's and the recipient's side has a positive affect on the equilibrium distortion.

2.8 Appendix 2: Internal political equilibrium with aid expropriability

Considering the possibility for the special interest group to gain some positive benefit from foreign aid leads to non trivial differences in the results obtained

2.8. APPENDIX 2: INTERNAL POLITICAL EQUILIBRIUM WITH AID EXPROPRIA

before. If we allow for lobby's utility to positively depend on aid directly, as if the S.I.G. would be able to appropriate some of the resources deriving from aid we end up facing an interesting situation.

Considering the variations of the hypothesis the model modifies as follows

$G(\tau, A) = aW(\tau, A) + C(\tau)$ where U now depends also on A . $L(A, \tau) = U(A, \tau) - C(\tau)$ As it was discussed above, marginal utility is increasing in aid, which leads to $U_A > 0$. The assumption is that $U_{\tau A} < 0$. Aid constitutes an additional resource for the lobby, the returns on it will depend on the technological features characterizing its activity function. We consider decreasing return to scale as in the standard literature.

In the conditional case the tangency point between the government's welfare contour and the IFI's utility curve is

$$-\frac{aW_{\tau A} + U_{\tau A}^{(G)}}{aW_{\tau\tau} + U_{\tau\tau}} = -\frac{W_A - r^{(I)}}{W_{\tau}} \quad (2.33)$$

When $U_{\tau A}$ is low enough it can overcome the effect of a positive $W_{\tau A}$. The fact that the lobby is able to appropriate some benefits from aid make aid and distortions substitute within the lobby's utility function. This leads to a lower distortion in equilibrium when aid and distortions are already substitutes in the government's objective function ($W_{\tau A} > 0$).

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Chapter 3

Political constraints under asymmetric information

3.1 Introduction

In order to complete the analysis I will extend the political framework of the second chapter to a setting of asymmetric information. The benchmark case has the same features as before. It is often difficult for an International financial Institution to understand the real commitment of the governments to public welfare enhancing policies and reforms. The same occurs domestically to the interest groups which wish to influence the policy choices. The governments might find it convenient to hyde their preferences in order to extract more resources. If the government is not seen as a unitary actor, but as a "two-soul" entity in which both benevolent politicians and corrupt bureaucrats are present, the relative weight of the two components might be difficult to detect from outside. The uncertainty over the government's preferences is particularly high when we deal with neo-elected governments for example. Initially I consider only the interaction between the government and a special interest group within the country and I allow the government to have private information over the relative weight it attaches to the public welfare with respect to the one associated to the payment received by the lobby (I name this weight as the "consensus parameter"). Considering how the New Regulatory Economics literature deals with the problem of policy influence by special interest groups, informational asymmetries and

the trade-off between allocative inefficiency and information rent extraction are central issues. Monetary transfers can be used to reduce informational conflicts. In this perspective, the political power of a group is related to its ability to gain some informational rent. In general the Incentive Theory states that asymmetric information may produce some distortion towards the ideal point of the informed party. In the single agent model before and in the common agency model, once the international financial institution is introduced, the principal's contribution has a double role. As in a standard principal-agent model it serves as a political influence instrument. In addition, it becomes the screening instrument to induce the government to reveal its private information. Asymmetric information allows the government to extract a positive information rent whatever its preferences are, except at the top of the distribution. When the IFI enters the game the context is one of conflicting principals as the lobby's preferences towards the distortion are opposite. While under complete information the competition between the two principals drives to a less distorted equilibrium that if the lobby was playing alone with the government, under asymmetric information the equilibrium outcome is not always favorable to the international financial institution. The size of the uncertainty (the range of the distribution of the "consensus parameter") plays an important role.

In section 2 I develop the model with a single principal and under complete information. In section 3 the model is extended to asymmetric information. Section 4 presents the common agency case, both under complete and asymmetric information.

3.2 The model

The political setting is characterized by a government which has all the policy decision power. Its reform choice, named τ , assumes 0 value when it is optimally implemented and a positive value when it produces a distortion. The welfare of the political authorities depends negatively on the suboptimal level of reform obtained and positively on a contribution received by a reform adverse lobby group. This positive payment does not produce any effects on

the aggregate economy. It solely induces the government to opt for a distortion. The typical principal-agent game that describes such a situation was developed by Grossman and Helpman (1994)¹ in the context of trade tariffs on import goods. Their results show that in equilibrium a certain distortion is produced in return for a certain contribution. If the economy is marked by only one group interested in trade protection the contribution results in the minimum amount necessary to compensate the government from the decrease in general welfare caused by the distortion. When more lobbies are competing each other to influence the outcome of the policy the aggregate contribution received by the government is larger. In the second chapter I examined this setting in the presence of foreign aid. The aim of the present work is to extend it to an asymmetric information context. The agent's utility is a linear combination of the aggregate economic welfare weighted for a parameter representing the government's preferences for the public welfare and the contribution schedule offered by the Special Interest Group (SIG). The equilibrium distortion negatively depends on this parameter. I assume that the "consensus parameter" is government's private information. The lobby cannot observe a before offering the contribution. Government's welfare is given by

$$G(\tau, a) = aW(\tau) + C(\tau) \quad (3.1)$$

where the aggregate welfare $W(\tau)$ negatively depends on the level of distortion τ at an increasing rate ($W_\tau < 0$ and $W_{\tau\tau} < 0$) and a is the parameter identifying the attention to public consensus (or also the quality of institutions). The SIG does not observe the government's "ideological type". It is drawn from $\Lambda = [0, \bar{a}]^2$, the continuum of values between 0 and a strictly positive upper bound of a (\bar{a}), according to a distribution $\Phi(a)$ and an associated density function $\phi(a) > 0$. Economic welfare is maximized when there is no distortion ($\tau = 0$). In order to identify an explicit solution

¹Grossman and Helpman build their framework on the common agency model developed by Bernheim and Whinston (1986).

²The consensus parameter $a = \frac{b}{1-b}$, can be considered as the relative weight for the public compared to the weight attached at the contribution in the government's utility. We name b the weight associated to the public consensus and $(1 - b)$ the weight of the contribution (where $0 \leq b \leq 1$).

to the problem, I define it with the following function that satisfies the states assumptions.

$$W(\tau) = (\bar{Z} - \tau^2) \quad (3.2)$$

The government's objective function becomes

$$G(\tau, a) = a(\bar{Z} - \tau^2) + C(\tau) \quad (3.3)$$

The lobby's utility, net of the contribution, is given by

$$L(\tau) = U(\tau) - C(\tau) \quad (3.4)$$

where gross utility increases with the amount of distortion at a decreasing rate ($U_\tau > 0$ and $U_{\tau\tau} < 0$). I give an explicit function for $U(\tau)$ too:

$$U(\tau) = -(\tau - \bar{Q})^2 \quad (3.5)$$

Assumptions $U_\tau > 0$ and $U_{\tau\tau} < 0$ hold when we restrict the set of existence of τ to $[0, \bar{Q}]$. Lobby's net utility is

$$L(\tau) = -(\tau - \bar{Q})^2 - C(\tau) \quad (3.6)$$

Before allowing for asymmetric information, I characterize the equilibrium outcome in the case of complete information³. The political authorities and the lobby play a two stage non cooperative game in which the SIG acts first,

³The results mirror the ones obtained in the previous chapter.

offering (and committing to) a contribution schedule that associates a certain amount of payment to each suboptimal level of reform implemented. In the second period, after observing the funding plan, the government chooses the degree of reform to implement in order to maximize its objective function. As in Grossman and Helpman (1994) I limit the analysis to truthful equilibria that guarantee a reliable commitment on the lobby's side. Moreover, as the vested interest group does not face any competition in influencing the authorities, the contribution given exactly equals the difference between the government's utility when the reform is completely implemented (and the lobby is not active) and the amount due to the suboptimal level reached in equilibrium. The contribution is assumed to be feasible, that is it never exceeds the total amount of resources of the lobby. Therefore, the distortion driving to a Subgame Perfect Nash Equilibrium (SPNE) comes from the solution of the simultaneous maximizations of the objective function of the government and of the coalition formed by the joint utility of the government and the lobby⁴. When these conditions are both satisfied the contribution is truthful, because the marginal cost of financing the government equals the marginal benefit derived from an increase in the distortion. Solving the first order conditions gives

$$-2a\tau + C\tau = 0 \quad (3.7)$$

$$-2a\tau + C_\tau - 2(\tau - \bar{Q}) - C\tau = 0 \quad (3.8)$$

from which we can define the suboptimal level of reform occurring in equilibrium as a function of the consensus parameter:

$$\tau^* = \frac{\bar{Q}}{1+a} \quad (3.9)$$

The more benevolent is the government (the larger is a) towards the general public the lower is the distortion. Parameter a is exogenous here.

⁴See Grossman and Helpman (1994) and the previous chapter for a detailed description of the equilibrium conditions.

On the contrary, the larger is the distortion desired by the lobby (\bar{Q}), the greater is the distortion in equilibrium.

The resulting contribution in equilibrium becomes $C(\tau^*) = a(\tau^*)^2 \geq 0$ ⁵. Observe that the contribution is strictly positive except for the cases in which the distortion or the consensus parameter are null. When there is no distortion the lobby has no incentive in giving payments to the government. The same holds when the government has no interest at all in the public welfare. In this latter case, the equilibrium distortion is the highest possible (\bar{Q}), but the result is not driven by the political influence of the lobby. When a "bad" government is in place the SIG potentially acquires its objective at zero cost. Anyway, the equilibrium contribution rises as a increases⁶. The lobby needs to contribute more to convince a more altruistic government to implement a distortion.

3.3 Asymmetric information

Now I consider a situation in which the government knows its ideology parameter, while the vested interest group does not own such an information. The problem can be examined as a Principal-Agent setting with asymmetric information.

The lobby (principal) has to submit a payoff maximizing contract to the political authorities who already possess a private information when contracting takes place. The government's and the lobby's utilities functions are

respectively defined as

$$G(\tau, a) = aW(\tau) + C(a) = a(\bar{Z} - \tau^2) + C(a) \quad (3.10)$$

$$L(\tau) = U(\tau(a)) - C(a) = -(\tau(a) - \bar{Q})^2 - C(a) \quad (3.11)$$

⁵The equilibrium contribution is derived from $aW(\tau^*) + C(\tau^*) = aW(0)$ where $W(0)$ is the government's payoff obtained by the maximization in the absence of lobbying activity.

⁶Substituting the value of a derived from (3.9) in the equation of the equilibrium contribution and calculating the first derivative with respect to a yields $\partial C^* / \partial a = [\bar{Q}^2(1 - a^2)/(1 + a)^4] > 0$, for $a < 1$.

The timing of the game is slightly different. In the first stage the lobby offers a contract, based on the combination of a monetary contribution with respect to each distortion value, to induce the government to reveal its consensus preferences. In the last period the government decides the degree of reform to implement. As the distortion is produced the contribution takes place. The government is required to announce its type before the contract is submitted. Perfect commitment of the lobby is assumed since the focus of the analysis is on truthful equilibria. The SIG has to maximize its welfare by offering a contract $(\tau(a), C_G(a), C_L(a))$. For a Bayesian Nash Equilibrium (BNE) to be reached, it is necessary to implement an incentive efficient choice function $f(a) = (\tau(a), C(a))^7$ that gives the government an expected welfare at least equal to its reservation utility, for each possible value of a . Thanks to the Revelation Principle for BNE, the equilibrium induced by a choice function that maps each possible government's ideology type into the levels of distortion and contribution can be replicated by means of a direct revelation mechanism that induces truth-telling. As a consequence, the principal can limit the search of such choice functions to the set of Bayesian incentive compatible (BIC) ones.

The lobby's original problem is to maximize its expected payoff with respect to the choice function, subject to incentive compatibility and individual rationality constraints. Incentive compatibility guarantees that truth-telling is an optimal strategy for the government and individual rationality represents the participation constraint for the agent. The government has to obtain at least the same utility it would get if it did not receive the contribution $(\bar{G}(a) = a\bar{Z})^8$, otherwise it does not accept to take part in the contract. $\bar{G}(a)$ is the government's reservation utility.

$$\max_{f(a)=(\tau(a), C_G(a), C_L(a))} E[U(\tau(a)) - C_L(a)] \quad (3.12)$$

$$\text{s.t.} \quad f(a) \text{ BIC} \quad (3.13)$$

⁷By assumption here the same contribution function positively enters the government's objective function and negatively enters the lobby's utility function. When linear utility functions are considered, this condition is sufficient for Bayesian incentive compatibility to hold.

⁸The value of the distortion that maximizes the government's objective function when there is no contribution is $\tau = 0$.

$$a(Z - \tau^2) + C(\tau) \geq a\bar{Z}, \text{ for each } a \in [0, \bar{a}] \quad (3.14)$$

Define the government's utility when it reveals its true preference a as $G_1(a) = a(\bar{Z} - \tau(a)^2) + C(\tau(a))$. Moreover, as $C_G(a) = C_L(a)$ the problem can be restated as follows:

$$\max_{d(a), G_1(a)} \int_0^{\bar{a}} [-(\tau(a) - \bar{Q})^2 - G_1(a) + a(\bar{Z} - \tau(a)^2)] \phi(a) da \quad (3.15)$$

$$\text{s.t.} \quad \tau(a) \text{ non increasing}^9 \quad (3.16)$$

$$G_1(a) = G_1(0) + \int_0^a W(\tau(s)) ds \quad (3.17a)$$

$$G_1(a) = \bar{a}Z \quad (3.18)$$

where (3.16) and (3.17) are respectively the necessary and sufficient condition for incentive compatibility to hold. The participation constraint, equation (3.18), binds in correspondence of the highest value of a ¹⁰.

The solution to the constrained maximization gives the optimal value of the distortion under asymmetric information:

$$\tau_{AI}^* = \frac{\bar{Q}}{1 + [a - \frac{1-\Phi(a)}{\phi(a)}]} \quad (3.19)$$

The equilibrium distortion is a function of a and of its distribution. For the IC necessary condition to hold we need to have $\partial[\frac{1-\Phi(a)}{\phi(a)}]/\partial a < 0$ ¹¹. In order to identify an explicit solution I assume a uniform distribution of a for which the above condition is always satisfied. This implies

¹⁰ $G_1(0) = 0\bar{Z} = 0$ is less restrictive. When the binding constraint holds this is always verified.

¹¹In Appendix 1 I derive the above solution.

$$\tau_{AI}^* = \frac{\bar{Q}}{1 + 2a - \bar{a}} \quad a \geq \frac{\bar{a}}{2} > \frac{\bar{a} - 1}{2} \quad (3.20)$$

$$\tau_{AI}^* = 0 \quad otherwise \quad (3.21)$$

Observe that imposing $\tau_{AI}^* < \bar{Q}$ (the necessary condition to have a distortion increasing utility for the lobby) is sufficient to allow for a non negative τ_{AI}^* . The distortion produced in equilibrium with asymmetric information is higher than τ^* except that for the upper bound value of the distribution. When $a = \bar{a}$, the distortion does not change with respect to the complete information solution. The distortion is the same when the government is purely benevolent and an upward distortion is present whenever it is less altruistic. The government derives a positive information rent whatever its preferences over a are. The lobby succeeds in inducing truthtelling only for values of a which are larger than the average size of the distribution. The intuition for that lies in the fact that offering a positive contribution to bad governments may induce a good government to mimic less altruistic preferences. From the government's participation constraint I derive the contribution offered in equilibrium:

$$C^{AI}(\tau_{AI}^*) = (\bar{a} - a)\bar{Z} + a(\tau_{AI}^*)^2 \quad a > \frac{\bar{a}}{2} \quad (3.22)$$

$$C^{AI}(\tau_{AI}^*) = 0 \quad otherwise \quad (3.23)$$

For each level of distortion the lobby has to contribute more to induce the government to choose the same degree of distortion than if complete information were available. For each level of the consensus parameter of the government, the higher is the uncertainty, the larger is the resulting contribution. This explains the reason for which the equilibrium distortion is increasing in \bar{a} . Except for the case in which the government is purely benevolent ($a = \bar{a}$), for any other value of its consensus parameter the government obtains a positive information rent¹² at the optimal contract. The marginal

¹²Information rent is defined as the the amount the agent's utility exceeds its complete information reservation utility. Here it is given by $(\bar{a} - a)\bar{Z}$. For a totally benevolent government it is null, while for less altruistic governments it is always strictly positive.

contribution with respect to a is negative¹³. The SIG has to design its offer in such a way as to induce the government to reveal its true preferences for the public welfare. The only way is to reduce the payment attached to higher values of a . This result is opposite to the one observed under complete information, where the marginal contribution was increasing in the consensus parameter. The government, unless being purely benevolent, obtains benefits from hiding its preferences before taking part in the contract, because it acquires a positive information rent. Anyway the interaction between the government and the special interest group is less welfare eroding under complete information.

3.4 Conflicting principals

Here I reintroduce the presence of an International Financial Institution offering foreign assistance to the country in order to verify whether the results obtained in the second chapter can be maintained when asymmetric information is present. In this setting the government is a single agent who faces two principals, the lobby and the IFI having conflicting interests. The SIG wishes to induce the implementation of a distortion as close as possible to its desired level (\bar{Q} ¹⁴). The IFI's net utility instead is completely aligned to the economic welfare of the country. In order to induce the government to pursue the implementation of reforms it offers an assistance schedule depending on τ . I address the case of conditional aid. The utility function of the lobby is the same as before:

$$L(\tau) = U(\tau) - C(\tau) = -(\tau - \bar{Q})^2 - C(\tau) \quad (3.24)$$

The IFI's objective function here is given by

$$I(\tau) = W(\tau) - A(\tau) = \bar{Z} - \tau^2 - A(\tau) \quad (3.25)$$

¹³From the solution I can derive a as a function of τ_{AI} . Substituting then in the equilibrium contribution equation from (), I calculate $\partial C_{AI}/\partial a < 0$ Note that the marginal contribution is negative for any value of a .

¹⁴Note that, following previous assumptions, \bar{Q} is also the largest possible distortion as $\tau \in [0, \bar{Q}]$.

The government receives two payment schedules to be forced to divert its policy decision in opposite directions.

$$G(a, \tau) = aW(\tau) + A(\tau) + C(\tau) = a(\bar{Z} - \tau^2) + A(\tau) + C(\tau) \quad (3.26)$$

The same assumptions about τ and a are maintained: $\tau \in [0, \bar{Q}]$ and a is uniformly distributed over $a \in [0, \bar{a}]$.

3.4.1 Complete information

In order to identify a benchmark for comparison I firstly derive the equilibrium solution in the case of complete information. The problem reduces to a common agency framework as the one I analyzed in Chapter 2. The only difference here is that both the principals' payments enter linearly in the government's objective function. The reason for that is technical. As this case has to serve as a benchmark I wanted to keep the same functional forms I use in the asymmetric information context. I discuss later the problems related to accomplish this analysis when dealing with the multiprincipal case. A payment function entering nonlinearly in the welfare function would complicate the treatment even more. The original underlying model to address when solving common agency models is Bernheim and Whinston (1984). Following them, I derive the optimal distortion as the one maximizing at the same time the payoff of the government and the joint aggregate utility of the government and the principals' utilities. This yields to the following f.o.c.s:

$$-2a\tau + A_\tau + C_\tau = 0 \quad (3.27)$$

$$-2a\tau - 2\tau - 2(\tau - \bar{Q}) = 0 \quad (3.28)$$

that lead to the following optimal distortion in the presence of an aid financing institution,

$$\tau_A^* = \frac{\bar{Q}}{2 + a} \quad (3.29)$$

Observe that the distortion outcome is lower than in the absence of aid. The fact that the international donor is purely benevolent amplifies the marginal effect of the distortion on the aggregate welfare. The total payment received by the government in equilibrium is higher. The total contribution received by the government, when it accepts payments from both the principals has to be $C(\tau) + A(\tau) \geq a\tau_A^{*2}$ ¹⁵ Each principal's contribution has to compensate the coalition formed by the government and the other principal from what it gains from the equilibrium distortion compared to what it would acquire absent the other principal. Otherwise, the government could decide to accept the contribution only from one principal. The lobby's contribution results in

$$C(\tau_A^*) = \max\{0, (1+a)\tau_A^{*2}\} \quad (3.30)$$

and the IFI's assistance in

$$A(\tau_A^*) = \{0, (1+a)(\tau_A^{*2} - \tau^{*2}) - 2\bar{Q}(\tau_A^* - \tau^*)\} \quad (3.31)$$

since the level of distortion that would be reached in equilibrium in case aid were not accepted would be the one derived in the first section, τ^* . Note that in equilibrium the aid disbursement is always positive¹⁶. The same occurs for the lobby's contribution¹⁷. The lobby contributes more than when

¹⁵The equilibrium contribution is derived from the government's participation constraint $a(\bar{Z} - \tau^2) + A(\tau) + C(\tau) \geq a\bar{Z}$. When only the lobby is present it has to guarantee to the government a payoff at least equal to $a\bar{Z}$. When only the IFI is present in equilibrium no assistance is disbursed since its objective is completely aligned to the government's one. Therefore the payoff obtained, absent the other principal, is still $a\bar{Z}$.

¹⁶If aid is not accepted by the government the equilibrium distortion is the one of the single principal case τ^* . Foreign assistance, in order to be taken by the government, has to leave the government and the lobby jointly as well off as if aid were not given: $A(\tau_A^*) = a(\bar{Z} - \tau_A^{*2}) + C(\tau_A^*) - (\bar{Q} - \tau_A^*)^2 - C(\tau_A^*) - [a(\bar{Z} - \tau_A^{*2}) + C(\tau_A^*) - (\bar{Q} - \tau_A^*)^2 - C(\tau_A^*)]$

Simplifying and substituting the equilibrium values for τ^* and τ_A^* we obtain $A(\tau_A^*) = \bar{Q}^2 / [(1+a)(2+a)^2]$ which is always positive.

¹⁷Similarly, observing that when the lobby is not active the elicited distortion is 0, the equilibrium contribution for the lobby is $C(\tau_A^*) = a\bar{Z} + A(0) + \bar{Z} - A(0) - [a(\bar{Z} - \tau_A^{*2}) + A(\tau_A^*) + (\bar{Z} - \tau_A^{*2}) - A(\tau_A^*)]$.

Simplifying and substituting the equilibrium values for τ_A^* leads to $C(\tau_A^*) = \bar{Q}^2(1+a)/(2+a)^2$.

acting alone only if the government is weakly benevolent. The marginal contribution with respect to the consensus parameter in fact is always negative. It mirrors the way the consensus parameter affects the utility of the lobby. A larger benevolence (high a) is associated to a lower distortion¹⁸ which leads to a decrease in the lobby's utility. The marginal benefit gained from the distortion decreases as the distortion rises. Hence, considering truthful contributions, also the size of the marginal contribution tends to decrease for higher values of τ (and a more benevolent government). The total amount of payments received by the government in any case is higher than when only the lobby is present. The competition between the IFI and the SIG to influence the distortion makes the government better off.

3.4.2 Asymmetric information over the government's benevolence

Let us now assume that the importance given by the government to the public welfare is its private information. Neither the lobby nor the International Financial Institution know the value a takes for the government.

As discussed in the previous section, in agency settings with a single principal, the principal problem can be restricted to the choice of a standard direct mechanism, thanks to the revelation principle. In the case of multiple principals, the agent has simultaneous information about the mechanisms offered by all the principals when he communicates with anyone of them. As a consequence, any principal can design a mechanism in which the allocation he selects can depend on the mechanisms that the other principals propose. This leads to the risk of complicated regress strategies¹⁹. In order to overcome the problem, Martimort and Stole (2002) observe that principals can offer the agent a menu of contracts as an alternative. Moreover, Peters (2001) demonstrates that in a single agent setting, for any set of indirect mechanisms feasible for the mechanism designers and for any equilibrium relative to that set, there is an equilibrium in menus that preserves the corresponding equilibrium allocation. Martimort and Semenov (2006), building up on the aforementioned results, recently treated the problem of asymmetric information in common agency policy models both as horizontal asymmetry,

¹⁸More precisely, larger values of a lead to an equilibrium distortion which is farther from the lobby's desired level \bar{Q} .

¹⁹See McAfee (1993).

regarding the distance between the agent's and the principals' desired policies, and vertical asymmetry, concerning the weight given to social welfare, which is consistent with the problem of my analysis. Following them, I set my conflicting principals's problem in order to analyze the equilibrium outcome.

Denote by $G(a)$ the government's payoff when he accepts the payments by both the lobby and the IFI and $\tau(a)$ the elicited distortion. The rent-distortion profile $\{G(a), \tau(a)\}$ implemented by $\{C(\cdot), A(\cdot)\}$ satisfies

$$G(a) = [a(\bar{Z} - \tau^2) + A(\tau) + C(\tau)] \quad (3.32)$$

$$\tau(a) = \arg \max_{\tau > 0} a(\bar{Z} - \tau^2) + A(\tau) + C(\tau) \quad (3.33)$$

The maximization of the government's objective function²⁰ (from equation (3.32)) leads to the following f.o.c.

$$2a\tau = A_\tau + C_\tau \quad (3.34)$$

In the same way I define $\{G_L(a), \tau_L(a)\}$ and $\{G_I(a), \tau_I(a)\}$ the rent-distortion profiles associated respectively to the government accepting only the lobby's contribution or the IFI's payment²¹:

$$G_L(a) = [(\bar{Z} - \tau^2) + C(\tau)] \quad \tau_L(a) = \arg \max_{\tau > 0} a(\bar{Z} - \tau^2) + C(\tau) \quad (3.35)$$

$$G_I(a) = [(\bar{Z} - \tau^2) + A(\tau)] \quad \tau_I(a) = \arg \max_{\tau > 0} a(\bar{Z} - \tau^2) + A(\tau) \quad (3.36)$$

For a profile $\{G(a), \tau(a)\}$ to be implementable, following Lemma 1, pag. 9 in Martimor and Semenov (2006), it is sufficient to have

²⁰The assumption of strict concavity of $G(a)$ with respect to a will be verified ex-post. Remember that $W_\tau < 0$ and $W_{\tau\tau} < 0$.

²¹The assumptions of strict concavity and $\partial\tau(a)/\partial a < 0$ must hold for these functions too.

$G(a)$ and $\tau(a)$ almost everywhere differentiable, with, at any differentiability point, $\partial G(a)/\partial a = (\bar{Z} - \tau)^2$ and $\partial\tau/\partial a < 0$.

The lobby's reaction function, for a given IFI's assistance $A^*(\tau)$ is such that the lobby maximizes its expected gross utility over the distribution of a , subject to the standard incentive and participation constraints. We have indeed

$$\max_{\{G(a), \tau(a)\}} E[-(\tau - \bar{Q})^2 - C(\tau)] \quad (3.37)$$

$$\text{s.t.} \quad \tau \text{ non increasing} \quad (3.38)$$

$$G(a) - G(0) = \int_0^a (\bar{Z} - s)^2 ds \quad (3.39)$$

$$G(a) \geq a\bar{Z}, \text{ for each } a \quad (3.40)$$

Substituting $C(\tau)$ from equation () into the maximand and calculating the expected value yields to

$$\max_{\{G(a), \tau(a)\}} \int_0^{\bar{a}} [-(\tau - \bar{Q})^2 - G(a) + (\bar{Z} - \tau^2) + A^*(\tau)] \phi(a) da \quad (3.41)$$

Similarly, the reaction function of the IFI is

$$\max_{\{G(a), \tau(a)\}} E[\bar{Z} - \tau^2 - A(\tau)] \quad (3.42)$$

$$\text{s.t.} \quad \tau \text{ non increasing} \quad (3.43)$$

$$G(a) - G(0) = \int_0^a (\bar{Z} - s)^2 ds \quad (3.44)$$

$$G(a) \geq a\bar{Z}, \text{ for each } a \quad (3.45)$$

that can be written as

$$\max_{\{G(a), \tau(a)\}} \int_0^{\bar{a}} [(\bar{Z} - \tau)^2 - G(a) + (\bar{Z} - \tau^2) + C^*(\tau)] \phi(a) da \quad (3.46)$$

A Subgame Perfect Nash Equilibrium of this common agency game under asymmetric information is given by the combination of payments $(C^*(\tau), A^*(\tau))$ which implements a rent-distortion profile $\{G^*(a), \tau^*(a)\}$ by solving the reaction functions of both the principals.

The following f.o.c.s derive from the problem

$$-2(\tau - \bar{Q}) + A_\tau^* - 2\tau(2a - \bar{a}) = 0 \quad (3.47)$$

$$-2\tau + C_\tau^* - 2\tau(2a - \bar{a}) = 0 \quad (3.48)$$

From the government's payoff maximization we know that $A_\tau^* + C_\tau^* = 2a\tau$. Summing up the first order conditions this leads to the equilibrium distortion under asymmetric information, in the presence of aid

$$\tau_{AAI}^* = \frac{\bar{Q}}{2 + 3a - 2\bar{a}} \quad a > \frac{2\bar{a} - 1}{3} > \frac{2}{3}(\bar{a} - 1) \quad (3.49)$$

$$\tau_{AAI}^* = 0 \quad otherwise \quad (3.50)$$

Firstly, note the symmetry with the single principal case. The distortion τ_{AAI}^* is always larger than the one generated under complete information, τ_A^* , except at the top. When the government is purely benevolent ($a = \bar{a}$) the two solutions coincide. If the range of the distribution is very large ($\bar{a} > 1$), the rent profile of the government is associated to a positive distortion only for the upper values of the consensus parameter.

The lobby has little incentive in offering a contribution to a "bad" government. The rent profile is built in such a way as to remunerate only a more reform prone government. This screening device allows to avoid "bad" governments receiving higher contribution to implement the same level of distortion they would have chosen in line with their preferences. From the IFI's perspective instead, observe that, less altruistic governments tend to induce a worse distortion environment. The IFI's objective is totally aligned to the welfare of the country. Its role in a sense results in contrasting the action of the lobby. When the government is not benevolent the utility gained

from giving assistance falls, because, everything else equal, the equilibrium distortion will be larger.

The marginal payments of the two principals are not equal. The marginal contribution (in absolute value) of the lobby is always larger²². This is due to the fact that the difference between its desired distortion²³ and the optimal distortion the government would choose in absence of its contribution is larger than the difference between the IFI's and the government's optimal distortions²⁴.

Secondly, it is interesting to compare the equilibrium distortion under asymmetric information of the single and the multiple principal settings.

When the range of uncertainty over the "consensus parameter" is low enough ($\bar{a} < 1$) the presence of the international financial institution allows for a lower distortion in equilibrium ($\tau_{AAI}^* < \tau_{AI}^*$). The competition between the conflicting principals produces an improvement on the economic welfare. However, if uncertainty increases ($\bar{a} > 1$) this result is maintained only when the government has a great interest in the public welfare ($a > (\bar{a} - 1)$). Otherwise, foreign aid makes things worse. Observe that, while in the single principal case, the value of the consensus parameter represents the relative weight attached to the overall welfare compared to the one associated to the lobby's contribution, in the common agency setting, since the IFI shares the government's objective in terms of welfare, the implicit weight associated to the total payments hides a welfare-prone component. When only the lobby is active an $a = 1$ means that the government gives the same weight to the economic performance of the country and to the contribution received. In the game involving the IFI, the same value of a underestimates the importance attached to the economic welfare. In this sense the case of $a < 1$ is less restrictive in this framework. However, the assumption of a major importance given to public welfare seems more reasonable, in particular since I consider the influence of only one interest group. In Table 3.1 I report the equilibrium outcomes of all the analyzed cases under this hypothesis.

The reservation utility of the government is the same, absent each of the two principals. When there is no aid, the lobby has to compensate the government from the increase in the distortion by making him as well off as without the contribution. When the lobby is not active, the IFI in

²²By expressing the equation of the equilibrium distortion in terms of a and substituting it in the respective f.o.c.s, we can derive the marginal payments in terms of a .

²³The level of distortion that maximizes its utility is (\bar{Q}) .

²⁴The optimal distortion of the IFI and the government coincide.

equilibrium does not give any assistance, because the government already pursues a zero optimal distortion. Each principal, anyway, in order not to be excluded from the game, has to contribute enough to leave the joint utility of the government and the other principal unchanged with respect to the case of its absence. The equilibrium payments in Table 3.1 are obtained in a similar fashion under complete and asymmetric information, but in the latter case the expected values have to be considered. This leads to the contribution depending on the upper bound of the distribution of the consensus parameter, \bar{a} . The results resemble the ones obtained in Chapter 2. Here anyway, I explicitly addressed conditionality, as the assistance schedule $A(\tau)$ depends on the level of distortion implemented. I individuated, though, an additional channel through which aid can potentially induce more distorted equilibria, even in the presence of conditionality. In this case, what drives to the "bad equilibrium" is the wide uncertainty over the government's preferences.

	Complete information	Asymmetric information
1 Pr.	$\tau^* = \frac{\bar{Q}}{1+a}$ (++)	$\tau_{AI}^* = \frac{\bar{Q}}{1+2a-\bar{a}}$, $a > \frac{\bar{a}-1}{2}$ (+++)
	$C(\tau^*) = a(\tau^*)^2$	$C(\tau_{AI}^*) = (\bar{a} - a)\bar{Z} + a(\tau_{AI}^*)^2$
2 Pr.s	$\tau_A^* = \frac{\bar{Q}}{2+a}$ (+)	$\tau_{AAI}^* = \frac{\bar{Q}}{2+3a-2\bar{a}}$, $a > \frac{2}{3}(\bar{a} - 1)$ (++++)
	$C(\tau_A^*) = (1+a)(\tau_A^*)^2$	$C(\tau_{AAI}^*) = E[(1+a)(\tau_{AAI}^*)^2]$
	$A(\tau_A^*) = (1+a)(\tau_A^{*2} - \tau_I^2) - 2\bar{Q}(\tau_A^* - \tau_I)$	$A(\tau_{AAI}^*) = E[(1+a)(\tau_{AAI}^{*2} - \tau_L^2) - 2\bar{Q}(\tau_{AAI}^* - \tau_L)]$

Table 3.1 Equilibrium outcomes in the presence of high uncertainty over the government's preferences ($\bar{a} > 1$)

3.5 Conclusion

It is often the case that government's preferences towards collective welfare are not common knowledge to the other agents of the economy. I analyzed how a political setting characterized by the presence of a special interest group is influenced by this kind of asymmetric information. The lobby tries to "buy" the government in order to affect its policy decisions, but it does not know to what extent the government weights public welfare with respect to the contribution offered. Asymmetric information in the internal political game leads to a larger distortion in equilibrium compared to the complete information setting when the government is highly altruistic. Only in the

extreme case of a completely benevolent government (when the consensus parameter a coincides with the upper value of its distribution, \bar{a}) the level of distortion under complete and asymmetric information is the same. In this framework the lobby constructs a contract that associates to any level of the consensus parameter (a) a given contribution. For not enough altruistic governments ($a < (\bar{a} - 1)/2$), however, the lobby does not succeed in pushing the government to reveal its true preferences. Low levels of the consensus parameter leads to higher degrees of distortion. If positive contributions were "promised" to a "bad" government, this would have the incentive to mimic more altruistic preferences in order to obtain a larger contribution to implement the same degree of distortion it would have chosen anyway. Hence, in order to induce the government to reveal its true preferences, low levels of the consensus parameters have to be associated to a null contribution.

The simple Principal-Agent framework is then complicated by considering the presence of an International Financial Institution which gives aid to the government with a benevolent purpose. The multiple agent setting cannot be analyzed anymore by relying on the revelation principle instrument. Both the lobby and the IFI make payments to the government with opposite objectives over the degree of distortion to implement. They offer a menu of contracts to the government that is designed taking into account both the government objective function and the payoffs obtainable by the alternative decision of playing with only one principal. With complete information aid makes the policy environment better. The distortion produced in equilibrium is lower than the one implemented when only the lobby is active. Aid here is considered conditional on policies since the IFI's payment function depends on the degree of distortion. Under asymmetric information instead the equilibrium distortion is larger²⁵. There is also the risk of ending up to a more distorted equilibrium with respect to the the single-principal case under asymmetric information. In particular this occurs when the uncertainty over the consensus parameter is high ($\bar{a} > 1$) and the government is not very altruistic ($a < (\bar{a} - 1)$). Otherwise the standard results of an improvement in the policy outcome due to the competition of conflicting principals still take place.

There is a variety of situations in which the preferences of the government

²⁵As for the single-principal case only in the extreme case of the consensus parameter being equal to the upper value of its distribution the equilibrium distortions of the complete and asymmetric information cases coincide.

are perceived as highly uncertain. Unstable governments, for instance, are typically less reliable. Their line of conduct is very volatile. This induces difficulties in forecasting their consensus preferences. Recently elected governments, especially in the context of a regime change, might accomplish the objectives declared during their electoral campaign (or rise to the power) or might not. Along the course of the analysis I have taken the consensus parameter a as exogenous. Starting to think on what factors it might depend on, government reputation and previous commitments would certainly lie on top of the list.

Here I extended the setting considered in the second chapter to asymmetric information. The analysis leads to identify an additional channel through

which aid potentially induces more distorted equilibria in the recipient country's economy. Moreover, the kind of assistance I refer to is conditional aid. From an analytical point of view, aid simply sums up to public welfare inside the government's objective function. In practice, the effectiveness of foreign assistance considered in this model is limited to the aid effect on welfare through policies. I isolated the direct impact of assistance on the economic welfare of the country from its indirect effect and I considered only the latter one. The results strongly depend on the volatility of the government's preferences. This specific factor has not yet been considered in the Aid Effectiveness Literature, but it might play a role in explaining why the aid-policy interaction term of growth regressions is not significant in some specifications. These empirical studies use cross-country regressions and policy indexes. Country specific effects are generally taken into account only by means of the initial GDP of the country and regional dummy variables. Further research on the topic deserves proper attention.

3.6 Appendix

Here I derive the solution of the lobby's maximization problem in section 3. From the IC sufficient condition, I substitute $G_1(a)$ into the maximand obtaining

$$\max_{d(a), G_1(a)} \int_0^{\bar{a}} [-(\tau(a) - \bar{Q})^2 - G_1(0) - \int_0^a W(\tau(s)) ds + a(\bar{Z} - \tau(a)^2)] \phi(a) da \quad (3.51)$$

Integrating by parts we get

$$\max_{d(a), G_1(a)} \int_0^{\bar{a}} \{[-(\tau(a) - \bar{Q})^2 - G_1(0) + [a - \frac{1 - \Phi(a)}{\phi(a)}](\bar{Z} - \tau(a)^2)]\} \phi(a) da \quad (3.52)$$

For the uniform distribution the hazard rate property necessary to guarantee that the concavity condition is always satisfied ($\partial[\frac{1 - \Phi(a)}{\phi(a)}] / \partial a < 0$), having $\Phi(a) = a/\bar{a}$ and $\phi(a) = 1/\bar{a}$. Observing that $G_1(0) = 0$, and optimizing pointwise leads to the following f.o.c.²⁶:

$$-2(\tau(a) - \bar{Q}) - 2(2a - \bar{a})\tau(a) = 0 \quad (3.53)$$

that leads to the equilibrium distortion equation τ_{AI} .

²⁶Note that $\partial\tau(a)/\partial a < 0$ guarantees that $\partial W(\tau(a))/\partial a > 0$ (as $W_\tau < 0$) as requested by IC sufficient condition ().

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