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INCENTIVES AND AID DEPENDENCE

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Summary

In section I.1 it is argued that an altruistic donor's goals or objectives are to contribute to the satisfaction of some «needs» identified as important in poor countries. Most of those needs are related to poverty and low economic growth. The donor is aware that giving aid to one country has a cost, in other poor countries and/or in the donor country. The government in a recipient country also wants poverty alleviation and economic growth so to some extent the donor and the recipient government are partners with common objectives. However, also the government is aware that contributing to those goals has a cost. As a result, each of the two partners wants the other to carry as much as possible of the cost.

Section I.2 contains a survey of some of the main results of empirical studies of the effects of aid. Even though the results at the micro-economic (project) level seem to be relatively positive, most macro-economic studies conclude that aid does not seem to have contributed much neither to economic growth nor to improvements of important indicators of poverty. In many countries the dependence of aid seems to have increased over time.

This report is meant as a contribution - based on modern incentive theory - to explaining why aid does not seem to have been too successful and why aid dependence has been the result in many countries.

A survey of the main ideas is given in section I.3. It is distingushed between *direct* and *indirect* incentive effects of aid.

The direct effects are felt by the government and other agents in recipient countries who contribute to the satisfaction of the same type of needs as those identified as important by the donor. Most likely those agents find it advantageous to transfer some of their own efforts and money to activities contributing to the satisfaction of other types of needs. To the extent that the government and/or other agents are *able* to adjust like that aid is said to be *fungible*. To what extent they do adjust and *crowding-out* actually takes place, depends in addition to this ability to do it also on their *preferences* as well as *the nature of the interactions* between them and the donor.

The indirect incentive effects have to do with the fact that price signals, etc., confronting households and firms in a recipient country are affected by a donor's activities. The Dutch disease syndrome is a well-known example.

Both the direct and the indirect incentive effects contain *static* as well as *dynamic* aspects.

This paper is primarily about direct incentive effects, interpreted within a static framework. Such incentive effects of aid have not been much discussed in the literature. However, also some main results from the literature on indirect incentive effects are presented. In addition, the paper contains a few comments on dynamic issues.

Part II, the main part of the paper, is about the direct incentive effects, interpreted in a static perspective. The main ideas are presented (in sections II.1, II.2, and II.3) within a stylized example where the donor wants to contribute to poverty alleviation, interpreted as consumption increase for the poor. However, it is shown how this example may be reinterpreted to account for other types of donor activities, primarily activities meant to contribute to economic growth.

The main point is to show how the results of a donor's activities depend on the recipient government's preferences and administrative capacity and, in particular, on the nature of the interactions between the donor and the government.

Three types of interactions (or interaction patterns) are discussed:

***A.* The passive leader donor**. We first discuss an interaction pattern where the donor makes his decisions before the recipient government makes its decisions of relevance for him. In addition, the donor lets the recipient government adjust according to its own ability and preferences, i.e., he does not intervene in order to influence the government's decisions directly. The donor is in this case characterized as a *passive leader* while the recipient government is a follower.

When the passive leader donor gives aid earmarked for increased consumption among the poor, most likely the recipient government finds it advantageous to cut down on its own activities benefitting the poor. Aid is fungible and there is a crowding-out. The more crowding-out, the more significant the donor's contribution - in reality - to other purposes than consumption for the poor, and the more expensive it is for the donor to help the poor. The more expensive it is to help the poor, the less effective the donor is judged to be. The magnitude of the crowding-out depends on the government's administrative capacity as well as on the government's preferences (assumed to reflect the distribution of political influence among society's different social groups).

B. **The active leader donor**. We then discuss an interaction pattern where the donor makes his decisions before the recipient government but where, in addition, he intervenes directly in order to influence the government's decisions, i.e., he imposes *conditionalities*. Now the donor will be called an *active leader* and the government is still a follower.

The active leader donor is in general more effective than the passive leader; the cost of contributing to increased consumption for the poor is lower. As a result, conditionalities will be of advantage both for the poor and the donor. Actually, the active leader donor will (at least in theory) be able to turn the passive leader's crowding-out into a crowding-in. The consumption of the poor goes up both as a result of the donor's direct activities and also because the government increases its own efforts to help them.

C. **The follower donor**. In addition to interaction patterns where the donor makes his decisions before the recipient government, we also consider a pattern where the government makes its decisions before the donor. Now the donor will be called a *follower* while the recipient government is a (passive) leader.

The follower donor ends up signalling his aid allocation criteria in a way which allows the recipient government to adjust in order to qualify for aid. In reality, in the stylized example discussed in part II he ends up rewarding poverty and taxing domestic activities contributing to increased consumption for the poor. Accordingly, the crowding-out is actually more severe for the follower donor than for the passive leader donor.

It is then argued that the main results obtained in the stylized example concerning the differences in performance between the three types of donors, are relevant no matter what kind of needs the donor chooses to focus on in the recipient countries.

Section II.4 is devoted to the follower donor and the Samaritan's dilemma. The Samaritan's dilemma follows from a fundamental *time inconsistency* confronted by an altruistic donor. An important implication is that conditionalities are of little value in a world where contracts cannot be enforced. *Ex post* it is optimal for the donor to give more aid than specified in the contract if the recipient government has not helped the poor in accordance with the contract. The government knows this and keeps down its own activities ear-marked for the benefit of the poor, thereby breaking the contract. An altruistic donor seems to end up as a follower.

In a more general interpretation an altruistic donor, looking for needs to satisfy, could be said to end up discriminating or taxing many kinds of activities in recipient countries contributing to progress and development.

In section II.5 the focus is on information asymmetries which cause problems even for the active leader donor without enforcement problems. The recipient government may have better information than the donor on characteristics like its own administrative capacity (hidden information) and/or its own actions (hidden action). It may try to exploit this information advantage in order to obtain extra benefits for itself or the better-off segments of the population. Without carefully designed contracts the cost of contributing to increased consumption for the poor may become unnecessarily high for the donor. Rewarding needs in this context may mean rewarding incompetence and wrong actions undertaken by the government.

Problems caused by the fact that there are many donors operating in most recipient countries, without co-operating and co-ordinating their activities, are discussed in section II.6. Donors often have conflicting interests and seem to compete. This fact, in itself, will tend to keep down the aggregate effectiveness of aid.

Hierarchies and possibilities for collusion are introduced in section II.7. If collusion is important it means that malpractices and shirking in the donor's own administration or the recipient country's bureaucracy are not revealed to the donor. As a result, corrective action is not taken.

Problems caused by lack of quantification and lack of good performance measures are sketched in section II.8. Without quantification and good performance measures it is impossible to distinguish between good and bad aid activities and to motivate agents involved to do a good job. In addition, stakeholders' influence may become high.

Part III contains a short survey of some of the most important indirect incentive problems, primarily those associated with the Dutch disease syndrome. Aid tends to cause increased demand for non-tradeables in a recipient country and strengthen the country's currency. As a result, the country's competitiveness is reduced and the production of tradeables goes down. Domestic foreign exchange-generating activities are thus crowded out. In addition, special costs occur as a result of donors' direct activities in the country, related to high demand for skilled labour and overload in the government's administration.

Part IV offers some speculations on likely dynamic results of the fact that domestic agents react and adjust to the incentive effects of aid. Based on learning-by-doing and adjustment cost arguments it is claimed that aid dependence may tend to increase over time and that reversing the process will be difficult and costly (in economic and/or political terms).

I Introduction

1. Goals and budget constraints

Donors

A donor[1] may have many motives for his presence and activities in a poor country, i.e., his perception of needs to be satisfied is often a complex mixture of observed problems. However, most of them are related to poverty and low economic growth. In this paper we focus primarily on *poverty alleviation* (interpreted as increased consumption for the poor) and *economic growth* (interpreted as increased average consumption), the two most fundamental goals or objectives of altruistic donors, at least as long as we concentrate on the macroeconomic level[2]. The main ideas, however, are relevant for donors with other objectives as well, whether altruistic in nature or not. The main part of the analyses in this report is based on the assumption that donors are altruistic. However, a few comments on donors with non-altruistic motives are offered in section II.6.

It is important to bear in mind that when an altruistic donor decides how much money to spend in a specific country, he is conscious that there is a *cost* involved. He knows that the more he gives to the country in question - more or less earmarked for activities meant to contribute to poverty alleviation and/or economic growth - the less aid will be left for other poor countries and/or the lower the consumption in the donor country will have to be[3].

The actual benefits and costs related to a donor's activities in a specific country depend, *ceteris paribus*, on the donor's knowledge and competence (in a wide sense).

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[1] The donor may be the government of a donor country or a specific organization or agency responsible for the administration and implementation of the donor country's aid policy.

[2] At the operative level - concerning program or project activities - the goals are typically more narrow and specific but as a rule they are (or at least should be) derived from those fundamental goals.

[3] A situation where the donor, or rather a decision-maker on his behalf, disregards the cost is considered in section II.8.

Recipients

No matter the donor's own goals, the results of his activities in a recipient country depend critically on the goals of political decision-makers in the recipient country, typically represented by the government.

Most likely the recipient government will share the goals of the altruistic donor to some extent, i.e., *ceteris paribus* the government wants poverty alleviation and economic growth. As a result, the donor and the government may be considered as partners with common objectives. However, in the same way as the donor, the recipient government knows that spending money on activities benefitting the poor and/or contributing to economic growth has a cost. The more spent on such activities, the less will necessarily be left for activities contributing to the satisfaction of other goals. For example, the more spent on activities benefitting the poor, the less will be available for the better-off segments of the population. The more spent on activities contributing to economic growth and, accordingly, future consumption, the lower the aggregate consumption today will tend to be.

The actual benefits and costs of the government's activities depend, *ceteris paribus*, on the government's knowledge and competence (in a wide sense).

It follows that even though the donor and the recipient government to some extent share the same goals, there are conflicting interests when it comes to sharing the burden of realizing those goals.

2. What is there to explain?

As mentioned above altruistic donor's two fundamental goals are poverty alleviation and economic growth. As a result, we would expect such donors' activities - at the *macro-economic* level - to contribute to poverty alleviation and/or economic growth. Similarily, at the *micro-economic* level projects are expected to contribute to income and consumption increase in general and/or help the poor in one way or another.

In this section we give a short sketch of what we know about the consequences of aid, primarily at the macro-economic level.

The consequences of aid: the micro-economic evidence

It seems to be a "stylized fact" in the literature that the rate of return at the project level is relatively high, see Mosley (1986) or Cassen & al. (1994). As a result, at the micro-economic level aid seems to contribute satisfactorily to income and consumption increase in recipient countries[4].

Do aid projects help the poor? According to Mosley (1986) donors do not in general care to find out, i.e., the distributional consequences of projects are usually not investigated. There are exceptions, however, especially concerning projects earmarked for poverty alleviation. According to Mosley such projects seem to help poor people but not the poorest.

Following Cassen and Mosley the overall conclusion from micro-economic studies seems to be that aid works fairly well.

The consequences of aid: the macro-economic evidence

This is not the place to give an exhaustive survey of the empirical research on the relation between the inflow of aid and economic growth or poverty alleviation. However, the general impression from that literature is clearly more negative than the impression given by the literature on the micro-economic consequences of aid. Aid does not seem to contribute much neither to growth nor to poverty alleviation in recipient countries, possibly with the exception of countries where the inflow of aid is very high. The following is a sketch of some of the most important findings in the macro-economic empirical literature.

Economic growth

What are the main determinants of economic growth in a poor country? It is actually difficult to give a precise answer to that question. However, most economists seem to agree that if aid is to contribute positively to growth in a recipient country, the effect must come through a positive impact on the country's productive physical capital (i.e., productive investment), a positive impact on the country's human capital, a positive contribution to improved technology, and/or improved economic policy leading to a more efficient resource utilization. In addition, aid may contribute to institutional reforms (of the political system, of the

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[4] This is not the place to challenge this view but a recent survey of Norwegian evaluation results, Norbye (ed.) (1994), seems to lend support to a more pessimistic view.

administrative system, of the judicial system, etc.) which may also contribute to economic growth.

Aid may contribute to growth directly along those lines or indirectly because the donors impose conditionalities meant to contribute to such improvements.

Most of the relevant empirical literature seems to focus on the relationship between aid and productive investment, in addition to the direct relationship between aid and economic growth. How aid affects human capital, technology, economic policy, reforms, etc, is usually not considered. However, once it is known how aid affects the level of productive investment and economic growth, it is possible - at least to some extent - to draw conclusions on the (aggregate) effect on these other aspects as well. That effect may be calculated as a residual.

Aid and productive investment

Does aid cause aggregate productive investment to increase? The answer obviously depends on what happens to domestic saving and the net inflow of other types of capital than aid. Griffin (1970) and Griffin and Enos (1970) are among the first studies of how aid affects domestic saving in recipient countries. They found that domestic saving depends negatively on the inflow of aid, i.e., that aid crowds out domestic saving. Their studies were followed by a lot of similar studies, confirming this negative relationship. From a methodological point of view these studies were very simple and problematic and the results rather inconclusive as to the magnitude of the crowding out. Papanek's (1983) summary of the results of this early literature is the following: "....for every dollar of foreign inflows, savings would decline somewhere between 11 and 115 cent."

It says something about seriousness of the data problems and the methodological problems that the same author, Holis Chenery, is claimed to be responsible for both extremes. Papanek argues that the average is about 50 cent per dollar inflow of aid.

Later and better (but far from unproblematic) studies are no less pessimistic. Boone (1994a) seems to be a solid study. He finds it necessary to distinguish between two types of countries. In countries where the inflow of aid is less than 15% of GNP all aid seems to be consumed, i.e., domestic saving is reduced by one dollar for every dollar obtained as aid. In countries where aid amounts to more than 15% of GNP the reduction of domestic saving is lower, i.e., not all of the aid is consumed.

Boone also tries to find out whether the consumption increase comes in the private or the public sector. He concludes that 2/3 of the consumption increase is in the public sector while 1/3 is in the private sector. There are, however, considerable differences between countries.

To the extent that the net inflow of other types of capital is independent of the inflow of aid it is clear that the aid's effect on productive investment depends only on how domestic saving is affected. Boone (1994a) finds that there is such independence and concludes, accordingly, that productive investment does not increase in countries where the inlow of aid is lower than 15% of GNP. It does increase, however, where the inflow is higher.

Aid and economic growth

Empirical analyses of the relationship between the inflow of aid and economic growth are also rather negative. That is true both for the early simple studies and for the later more advanced studies. Among the first we find Griffin and Enos (1970), concluding that aid caused growth to be reduced in a sample of 17 Latin-American countries between 1957 and 1964. Many studies were to follow and the conclusions varied dramatically.

Among more recent studies Mosley, Hudson and Horrell (1987) is an important one. Their overall conclusion is that "..aid in the aggregate has no demonstrable effect on economic growth.." in the 1960s and the 1970s. Similar conclusions are reached by Boone (1994a). Boone studies 97 countries in the period 1971 to 1990. He concludes that "aid is not a means to create growth".

If we choose to believe in Boone's results it follows that since aid does not seem to have any positive effect on productive investment and the effect on economic growth is also non-existent, then aid cannot have contributed to growth through improvements in human capital, technology, resource utilization, etc., either: "..aid does not create, nor correlate with, those underlying factors which cause growth"[5].

Poverty alleviation

Studies by Li, Squire and Zou (1995) seem to indicate that the relative income distribution is fairly stable over time in most countries but that it varies considerably between countries. If the relative income distribution is constant over time it follows that poverty reduction will

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[5] Strictly speaking what Boone considers is the consequence of a *permanent* inflow of aid. As a result, he cannot say anything about the effect of a one-shot grant, for example tied to a major policy reform.

depend on economic growth. As we have just seen we cannot conclude that aid contributes much to growth.

The next question is then whether aid contributes to improvements of the relative distribution of income or otherwise contributes to reduced poverty. The determinants of the income distribution in poor countries are even harder to identify than the determinants of economic growth. If donors are to help the poor, however, it seems essential that they contribute to increased transfers (in a wide sense) to the poor and/or to an increase of their productive capacity. The latter may come about through an increase or improvement of their physical and/or their human resources. In addition, policy reforms leading to increased income potentials for the poor's resources are often necessary. Again, aid may contribute directly or indircetly through conditionalities meant to influence the government's decisions to the benefit of the poor.

We do not know of any study trying to assess the relationship between the relative distribution of income and the inflow of aid. The number of studies focusing on how aid affects poverty also seems to be low. Boone (1994b) is, however, a good example. He tries to find out how aid affects a number of human development indicators and finds no significant impact of aid on improvements in mortality, primary schooling ratios or life expectancy. Schooling, health standards, etc., obviously depend critically on government policy. That is true for the income distribution in a more narrow sense as well, determined primarily by taxes and transfers. Government policy, in turn, reflects among other things the distribution of political influence. Boone's conclusion as to who benefits from aid is: "...there is a strong evidence that aid flows primarily benefit a wealthy political elite." He seems to confirm earlier observations, for example in OECD (1989), concerning the micro-macro paradox: "Failure to identify the bases of power which affect the rules affecting distributional outcomes will tend to produce an overstatement of the potentially redistributive effects of many sorts of projects."

It should be mentioned, however, that according to Boone's findings the infant mortality is considerably higher in democratic/liberal political regimes than in countries with other types of regimes. He concludes that "the poor are more empovered in these regimes".

The micro-macro paradox: fungibility and crowding out

Since the established literature seems to judge the micro-economic evidence concerning the effectiveness of aid to be relatively positive and the macro-economic evidence to be much more negative[6], some authors - for example Mosley (1987) - conclude that there is a micro-macro "paradox". There may be different ways of explaining this paradox (if it exists).

The explanation given in this paper is based on the assumption that aid is *fungible* and that aid, in reality, may have quite different consequences than the donor might believe at a first sight. If aid is fungible it simply means that aid (or the benefits thereof) may be transformed or diverted in a way that the donor often finds unexpected and usually undesireable, away from his original targets. Whether this will actually happen, depends, among other things on the recipients' preferences. If it takes place it usually implies some *crowding-out,* in the sense that domestic contributions in the area where the donor is operating are reduced[7].

If we choose to believe Boone's results referred above, for example, it follows that aid earmarked for investment ends up as consumption and that aid earmarked for poverty alleviation ends up as consumption for relatively wealthy people, in the public or the private sector. Aid is, accordingly, fungible and the willingness to transfer the benefits of aid away from the area intended by the donor seems to be present. Crowding-out must, therefore, be an important problem. Only in countries where the inflow of aid is extremely high does there seem to be important limitations on the crowding-out.

More detailed studies of fungibility focus on how aid earmarked for expenditures of a specific type affects aggregate public expenditures of the same type[8]. The general impression is again that aid actually crowds out domestic contributions in countries where the inflow of aid is not too high. The findings are that in such countries one additional unit of aid expenditures (in the period investigated) did not lead to greater public expenditures in the area where the aid was

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[6] It should be mentioned that assessing the consequenses of aid is very difficult and that investigations of the type mentioned are controversial, see for example White (1992) or White and Luttik (1994) for critical surveys.

[7] Studies of fungibility do not distinguish between recipients' ability to divert aid and the willingness to do it. What is called fungibility in those studies reflects actual diversion. Actual diversion requires both ability and willingness.

[8] See Pack and Pack (1990), (1993) and Khilji and Zampelli (1991).

targeted; crowding out was 100 percent. In a similar study Kahn and Hoshino (1992) found that aid crowds out domestic taxation to a considerable extent.

Aid dependence

For a donor it is essential that aid contributes to a reduction of future needs for aid, i.e., the ultimate goal should be that recipients become independent of aid, in the sense that they become both *able and willing* to satisfy the needs identified as important by the donors without external assistance.

Aid dependence is an elusive concept[9]. As a rule dependence is illustrated by means of figures indicating aid as a share of GDP, of public expenditures, of domestic investment, of imports, etc. and their development over time.

In the countries which are (at least apparently) most dependent the share of GDP is very high. For example, the inflow of aid to Mozambique amounted to 79.8% of GDP in 1993. In Tanzania and Guinea Bissau the corresponding figure was approximately 40%[10].

Similarlily, in 1993 aid amounted to 122.7 % of imports in Mozambique, to 162.9% in Guinea-Bissau and 64.2% in Tanzania.

The overall conclusion must be - if one is to interpret the results reported above literally - that aid has not contributed much neither to poverty alleviation nor to economic growth and, accordingly, not much to aid independence. This paper is primarily meant as a contribution - mainly based on modern incentive theory - to explaining why aid does not seem to have been too successfull and why aid dependence has been the result in many countries. However, incentive problems should be taken seriously also by those who believe that the results referred are too negative, as may well be the case. Actually, in the theoretical analyses in part II negative results like those reported by Boone, for example, may be interpreted as worst-case outcomes in situations where the potentials for better results may seem to be great.

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[9] See Sobhan (1995), Riddell (1996), and Edgren (1996) for surveys and interpretations.

[10] These figures are from Riddell (1996).

2. Incentives and dependence - interpretation and survey

The main reason for a specific altruistic donor's presence in a poor country is that he has identified some unsatisfied *needs*. From the perspective of the donor the recipient country seems to *depend* on aid for the satisfaction of those needs. The donor's *goals* or objectives are then to contribute to the satisfaction of them. As mentioned above we focus on needs reflecting poverty and low economic growth.

Whether he likes it or not the donor - with necessity - affects incentives confronting economic agents in the recipient country, domestic agents (firms, households, politicians, bureaucrats,...) as well as foreign agents engaged in economic transactions with the country (other donors, exporters, commercial lenders,...). As a result, those agents' decisions and actions are likely to be altered compared to a situation where the donor in question is not engaged in the country.

It may be convenient to distinguish between two different categories of incentive effects of a donor's activities: *direct* effects and *indirect* effects.

The direct incentive effects

The direct incentive effects are felt by the agents (in this paper primarily the recipient government) who are originally contributing to the satisfaction of the same type of needs as those identified as important by the donor. When the donor turns up, signalling that he wants to contribute to the satisfaction of those needs, these agents most likely find it advantageous to cut down on their own efforts and money spent on activities contributing to the satisfaction of the same type of needs. Efforts and money (money buys resources in this perspective) are thus transferred to activities contributing to the satisfaction of other types of needs. If those needs are not on the donor's priority list in the actual recipient country, then this is a pure waste from the donor's point of view.

To the extent that agents operating in the recipient country - whether of foreign or domestic origin - are able to adjust like this we have said that aid is (directly) *fungible.* To what extent the agents actually do adjust depends, in addition to their ability, also on their preferences. To the extent that money and efforts are actually withdrawn from activities contributing to the satisfaction of the needs identified by the donor, there is a *crowding-out* effect. Our donor's activities crowd out other agents' activities contribution to the satisfaction of the same type of needs.

Consider, for example, a donor who tries to contribute to poverty alleviation and/or economic growth through a project in the educational sector, say a school for poor people. I.e., he has identified some unsatisfied needs for education among the poor. The idea is that higher schooling ratios among the poor will cause reduced poverty and/or economic growth.

From the recipient government's point of view this project means, *ceteris paribus*, that the marginal benefit of domestic money and efforts in similar projects and activities is reduced. Accordingly, the government finds it favourable to try to transfer some of its own money and efforts to other types of projects or activities. If it is able to do that, then the donor's money and efforts are fungible from the recipient government's point of view and the possibility of crowding-out exists. To what extent the donor will actually crowd out domestic money and efforts, as well as to what kind of activities they will be transferred, depends critically on the recipient government's preferences. To the extent that the government really cares much for the poor the crowding out will be small and/or domestic money and efforts will be transferred to other activities benefitting poor people. However, if we accept Boone's results referred above, the recipient government typically cares primarily for wealthy political supporters. If that is the case the crowding-out will be high and domestic money and efforts will be transferretd activities benefitting those groups, causing their consumption to increase, for example public expenditures earmarked for their satisfaction or tax relief.

A donor with a narrow focus on his own activities or projects, i.e., a donor with a micro-economic perspective, may not even discover this crowding-out. He will typically not care to evaluate his contribution to the overall satisfaction of the needs he has identified as important; he only cares about the direct effects of his own activities and projects. From the example just described it follows that even in a situation where the project in which the donor is directly engaged (the school) is a success, the aggregate effects may be negligeable in the sense that the schooling ratio among poor people does not increase.

A donor who tries to evaluate his contribution to the overall satisfaction of the relevant type of needs (i.e., the schooling ratios among the poor) will, unless he is conscious about the incentive effects and the crowding out, end up being surprised, in the sense that his money and efforts do not have the expected results. If Boone's results are correct the donor is usually disappointed: his contribution to the satisfaction of the identified needs proves to be much lower than expected. From the donor's point of view the recipient country's need for aid or dependence on aid is not reduced, at least not as much as expected. As mentioned above the

so-called micro-macro «paradox» may be interpreted as a manifestation of the crowding-out effects in question.

Only when the inflow of aid is so high that most of the recipients' own activities of the relevant type have already been crowded out will the micro-macro paradox disappear: there is nothing left to crowd out. That may be the main reason why aid seems to have more positive effects in countries receiving relatively much aid than in others.

It follows from such an approach that at least some of the needs satisfied by the donor in the recipient country would actually have been satisfied even if the donor had not been engaged in the country. As a result, aid dependence is to some extent only apparent. In a *static* perspective this seems obvious. In a more *dynamic* context, however, there may be extra problems, for example caused by learning-by-doing effects or adjustment costs. If a donor has been contributing to the satisfaction of a specific type of needs for some time so that agents in the recipient country have been able to concentrate on other type of activities, contributing to the satisfaction of other types of needs, then those agents' ability to contribute to the satisfaction of the first type of needs may have been reduced. In addition, specific costs (economic and/or political) may arise if agents in the recipient country have to switch back to activities contributing to the satisfaction of those needs. Such dynamic effects may have the consequence that it becomes very difficult for a donor to withdraw, in the sense that at least the short-term cost in terms of reduced satisfaction of the needs in question may be very high. I.e., *ceteris paribus*, aid dependence may tend to increase over time.

Once a donor takes incentive problems seriously he should at least be able to trace the most important of the actual consequences of his activities; the results of those activities should not come as a surprise. For example, the micro-macro «paradox» would no longer be a paradox. In addition, the donor may also be able to design his activities, taking the incentive problems into account, in such a way that the crowding-out effects are minimized, possibly turned into crowding-in effects - for example by imposing certain conditionalities. Aid effectiveness may thus (at least in theory) be dramatically increased and the need for aid or aid dependence correspondingly reduced. However, conditionalities are not always complied with. In reality, the crowding-out may be even more serious than indicated in the example above.

It is an important point in this paper to show that the actual consequences of a donor's activities in a recipient country depends critically on what will be called the *nature of the interactions* (or interaction pattern) between him and important decision-makers in the recipient country, for example the government. In the discussion of fungibility and crowding-out in the example above it is (implicitely) assumed that the recipient government is free to adjust according to its own ability and preferences, i.e., the donor does not try to restrict the government's freedom to adjust or influence the government's decisions in any other way. In addition, the government considers the donor's decisions as given, i.e., it does not try to influence his decisions. In many ways the story told reflects (a positive interpretation of) a situation where the donor adheres to the principle of non-interference (as Scandinavian aid agencies used to do). Borrowing terms from game theory this type of interaction is characterized by the fact that the donor is the *leader* and the recipient government is the *follower*. Since the donor does not intervene in domestic decision-making in the recipient country he will, in addition, be called a *passive* leader.

In reality a donor often tries to influence the recipient government's decisions, for example by restricing its freedom to adjust or react to the donor's activities, typically by imposing certain conditionalities. In addition, the government may try to influence the donor's decisions, for example by adjusting in order to influence the donor's perception of needs. In other words, strategic thinking and strategic actions may seem to be important. Both actors may think and act strategically in order to influence the other's decisions to their own advantage. In this perspective the need for aid or dependence on aid should be considered the result of decisions made in a "game" between the donor and the recipient government.

If we return to the example sketched above where the donor is directly engaged in a shool project benefitting the poor, the donor may insist that the government must increase its own spending of money and efforts on activities benefitting the poor (and, accordingly, collect more tax income and/or cut down on its expenditures on activities benefitting other social groups). If the donor succeeds and the recipient government respects such conditionalities, the crowding-out is turned into a crowding-in. The poor are better off both as a result of the donor's direct engagement and indirectly because of the conditionalities leading to an increase in the government's activities to their benefit. The donor is still a leader and the recipient government is a follower but this time the donor is an *active* leader. He does not adhere to the principle of non-interference.

In reality conditionalities are not always taken seriously by recipients and they are very difficult to enforce by a donor against the recipient government's will. It may even be the case that the donor is unable to influence the recipient government's decisions while the recipient government is able to influence the donor's decision. In the example the government could, for example, keep down its own contributions to activities in the educational sector benefitting the poor, simply in order to increase the donor's perception of needs for aid. The altruistic donor in turn may react by giving more aid than he would have given if the government had not deliberately kept down its own contributions. This type of interaction is characterized by the fact that the recipient government is the leader. Since it does not intervene directly in the donor's decision-making it is a passive leader. The donor is the follower. If the recipient government behaves in this way the principle of non-interference may be directly counter-productive: the poor may actually end up being worse off in a situation with aid than without.

Indirect incentive effects

The fact that aid affects incentives confronting private households as well as private and public firms in recipient countries has been recognized for a long time. Consider, for example, the well-known Dutch disease syndrome and assume that the country in question does not qualify for commercial credit or other non-concessional capital inflows. Any aid leads to a strengthening of the recipient country's currency and increased domestic demand for non-tradeables. Domestic producers in the tradeables sectors, competing with foreign producers (in the domestic market or abroad) are necessarily discriminated. The profitability in their type of production is reduced through this *appreciation of the real exchange rate* and worsening of their competitiveness. They react by cutting down on their production. As a result, imports increase and exports are reduced, thus creating need for aid or dependence on aid to cover the import surplus.

Fungibility and crowding out may be meaningful terms also when we discuss indirect incentive effects. Aid represents at the outset inflow of foreign exchange and as such it leads to an increase of the country's import potential. That is how a donor often perceives (or at least used to perceive) the situation. According to the Dutch disease story aid is (indirectly) *fungible* in the sense that it *crowds out* domestic production of tradeable goods - both exportables and importables. This leads to a reduction of the inflow of foreign exchange and an increase of the outflow. As a result, aid crowds out other foreign exchange-generating activities.

In a *static* perspective it follows that without the inflow of aid the domestic production of tradeables would have been higher and the import surplus lower. In a *dynamic* context, however, there may be extra problems caused by low productivity growth (when there is learning-by-doing in the tradeables sector) or adjustment costs. Over time the ability to compete with foreign producers is reduced. If, in addition, structural adjustment is costly it becomes very difficult to eliminate such a dependence on aid to finance an import surplus. The costs in question may be both political and economic.

Any type of aid has effects of this type, no matter what kind of needs the donor wants to satisfy at the outset. Aid earmarked for activities benefitting the poor cause appreciation of the real exchange rate and so does aid earmarked for activities contributing to economic growth. Such incentive effects are *indirect* and result from what we would call general equilibrium effects or non-personal and anonymous market forces.

However, the importance of the indirect incentive effects typically depends on the government's macroeconomic policy, for example the choice of exchange rate. As a result, also indirect incentive effects may be taken into account by the donor and the recipient government. The outcome may, therefore, depend critically on the nature of the interaction pattern between the two actors.

This paper is primarily about the first (the direct) type of incentive problems. Our focus is, accordingly, mainly on the nature of the interactions between a donor and the government in a recipient country (Part II). Those kind of incentive problems have not been much discussed in the literature. However, some of the main results from the relatively huge literature on the last type (the indirect) incentive problems are also sketched (Part III). The main focus is on incentives and dependence in a static perspective but the paper also contains a few comments on more dynamic issues (Part IV).

The main point is to contribute to a better understanding of why and how the supply of aid creates need for aid and, accordingly, aid dependence.

II Direct incentive effects

When discussing the direct incentive effects of aid we draw on economic theory in general and the the sub-dicipline game theory in particular. The actors involved are assumed to be rational and goal-oriented. They deliberately do their best to influence (or even manipulate) each other's actions to their own advantage. In addition, we illustrate the main points within the framework of a simple stylized example, stripped of many interesting real-world phenomena. Dramatic simplification is necessary in order to be able to discuss and understand the main points in some depth.

To non-economists (and maybe many economists as well) both the approach and the vocabulary used may seem narrow, cynical and sterile. Our defence is that we are unable to treat the incentive problems in a rigorous way if we choose a wider and less sterile approach. In addition, we are convinced that the core arguments we make will have to be central in any study of incentives and aid dependence.

Donors and recipients - a typology

From the discussion in part I it follows that in addition to the goals and competence of the donor and the goals and competence of the recipient government, the results of a donor's activities tend to depend critically on the *nature of the interactions* between the donor and the government. Drawing on game theory we distiguish between three types of interaction or interaction patterns[11]:

The donor is a passive leader and the recipient government a follower

When the donor is the *leader* it may be wise to say that he makes his decisions on aid before the recipient government, being the *follower*, makes its decisons. When the donor makes these decisions he anticipates the recipient government's reactions to his own decisions on aid and

[11] In our view those three interaction patterns are the most relevant ones in this context. They are all characterized by the fact that decisions are taken in a sequence, the leader first and then the follower. There are, however, many other types of interaction patters that may be of interest as well. Gibbons (1992) is a good introduction to game theory for well-trained economists. For non-economists Dixit and Nalebuff (1991) is a good survey of relevant issues.

incorporates the consequences of those reactions. After the donor has taken his decisions the recipient government can do no better than to make exactly those decisions predicted by the donor. In this way the recipient government is led by the donor. As a result, the donor is to some extent able to influence the recipient government's decisions to his own advantage. This exercise of influence, however, is so far only indirect; there are no direct conditionalities involved. That is why the donor is called a *passive* leader in this case.

The donor is an active leader and the recipient government a follower

The leader donor may, however, in general do better if he tries to influence the recipient government's decisions more directly, i.e., if he deliberately offers aid in return for specific decisions or actions by the government. As a result, some sort of conditionalities should be attached to the aid. It will prove convenient to distinguish between an *active* leader donor, trying to influence the recipient government's decisions *directly* and the *passive* leader above who only *indirectly* does that. When the donor is an active leader he may also be called the *principal* while the recipient government is the *agent* operating more or less on behalf of the donor[12].

The donor is a follower and the recipient government a passive leader

A *follower* donor lets the recipient government be the leader. As a consequence, the recipient government makes its decisions before the donor. When the government makes its decisions it anticipates the donor's reaction and incorporates the consequences of those reactions. After the government has made its decisions the best the donor can do is exactly what the government has predicted. Accordingly, this time it is the recipient government which is in a position where it can influence - at least indirectly - the donor's decisions to its own advantage.

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[12] See Campbell (1995) or Laffont (1989) for surveys of principal-agent models.

1. A stylized example

In this section[13] we assume that the donor wants to contribute to poverty alleviation, interpreted as increased consumption for the poor. As a reference point we first consider the situation in the recipient country before the donor turns up.

What are the main determinants of the relative income distribution and the extent of poverty in poor countries? We shall not try to give a complete answer to that question; we focus mainly on the distribution of political influence and the government's administrative capacity.

We consider a stylized economy consisting of a high-consumption group, called the rich (R) and a low-consumption group, called the poor (P). Both groups engage in productive activities and earn income from those activities. Let YR and YP be the two group's income from such activities in a situation without taxes and transfers.

The value of the two groups' consumption of goods and services, VR and VP, may differ from their income from productive activities because the government may tax one of the groups in order to help the other. In order to simplify we assume that the income from productive activities earned by the rich is considerably higher than the corresponding income earned by the poor. In addition, we assume that the rich are taxed by the government in order to help the poor. Let TR be the amount of taxes collected from the rich and TP be the amount earmarked by the government for activities benefitting the poor, called transfers. It is assumed that collecting taxes and giving transfers to the poor are the only activities of the government. As a result, for the government budget to balance we must have TR=TP in a situation without aid[14]

The cost to the (rich) taxpayers may be higher than the amount of tax income collected by the government. In tax theory the *marginal cost of public funds* is meant to capture the cost to thr taxpayers of providing the government with one (additional) unit of income. It may be considerably higher than unity in economies where the tax systems are badly designed and the tax administration is weak. We let the marginal cost of public funds be constant and symbolize it by CF. The consumption of the rich will now be determined by their income fron productive activities in a situation without taxes, the cost of public funds, and the amount of

[13] The example is based on Pedersen (1995b).

[14] In reality, the poor may be taxed to the benefit of the rich and the tax and transfer system may be much more complicated and less transparent. See the reinterpretations towards the end of this section.

taxes collected by the government, i.e., we have VR=YR-CFxTR. If, for example, the income from productive activities in case of no taxes (YR) is 90, the cost of funds (CF) is 2, and the amount of taxes collected by the government (TR) is 10, it follows that the consumption of the rich (VR) is 70.

The benefits in terms of income and consumption obtained by the poor as a result of one unit given in transfers by the government, may also differ from unity. If the transfers are given through profitable projects (dams, schools, ..) it may be considerably higher than unity. If administrative costs are high it may be lower. We let the *marginal benefit of government transfers* represent the income increase obtained by the poor if one (additional) unit of public transfers is given. It is assumed that the marginal benefit is constant and symbolized by BT[15]. The consumption of the poor will be determined by their income from productive activities in the absence of transfers, by the amount of transfers given and by the benefit of transfers, i.e., VP=YP+BTxTP. If, for example, the income from productive activities (YP) is 10, the benefit of transfers (BT) is 1.5 and the transfers given by the government (TP) is 10 it is clear that the consumption level (VP) is 25.

In our simple economy it follows that if the poor are to obtain one more unit of consumption they need 1/BT more units of transfers from the government. As a result, the government has to collect 1/BT extra units of tax income from the rich. The cost to the rich taxpayers will equal CF/BT. If for example BT is 0.75 the necessary government income is 1/0.75=1.33. If, in addition, CF equals 1.5, the cost in terms of reduced consumption for the rich is CF/BT=1.5/0.75=2, i.e., for the poor to obtain one more unit of consumption the rich will lose 2 units. CF and BT obviously has to do with the government's administrative capacity. A low CF and a high BT means that the government is «clever» from an administrative point of view: the cost of increasing the consumption for the poor in terms of consumption forgone by the rich is low. In figure 1a three different combinations of CF/BT are illustrated. The three curves will be called *transformation curves* because they reflect the government's ability to transform consumption by the rich into consumption for the poor. The lower the

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[15] The public sector's cost of collecting taxes and administering the transfers is assumed to be included in CF and BT. If those costs are high they contribute to keeping CF high and BT low. CF and BT are assumed to be constant. In reality we would expect a positive correlation between CF and TR and a negative correlation between BT and TP.

administrative capacity of the government, the steeper the transformation curve and the more expensive it is to help the poor.

As will be seen below, the cost of public funds and the benefit of transfers are important determinants of the actual amount of transfers given to the poor and, accordingly, of their final consumption. They represent administrative or technical parameters indicating the *terms* on which consumption may be transferred from the rich to the poor, i.e., the government's ability to transfer consumption. The actual transfers will also depend on the government's perception of the *political importance* of transfering consumption from the rich to the poor. We consider a situation where that perception depends on what will be called the distribution of political influence. Each group's political influence will determine that group's weight when the government makes its decisions. If one group's weight is high relative to the other, it means that this group's interests count more than the other group's interests when the government makes its decisions. Let IP be the weight given to the poor and IR be the weight given to the rich (IP+IR=1)[16].

Assume a specific distribution of consumption between the rich and the poor, VR/VP, and ask how much the government is willing to take from the rich in order to increase the poor's consumption by one unit, given that the new situation is judged to be just as good as the old, i.e., given that the government is indifferent between the old and the new distribution of consumption. The amount of consumption the government is willing to take from the rich and give to the poor will equal (IP/IR)(VR/VP). For a given initial distribution of consumption the amount will be high if the political influence of the poor is high relative to the political influence of the rich. For a given distribution of political influence it will be high if the consumption of the poor is low relative to the consumption of the rich. The importance of the distribution of political influence has been illustrated in figure 1b, in a situation where VR=VP. The curves drawn are examples of what will be called *indifference curves*, because the government is indifferent between different points, i.e., combinations of consumption for the rich and for the poor, along such curves.

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[16] In our example it is assumed that the government evaluates the outcome according to the utility or "welfare" function U=IRlnVR+IPlnVP and makes its decisions in view of maximizing utility or "welfare" measured in this way.

When determining the actual amount of transfers given, the government has to pay attention to both the administrative parameters, determining the terms on which consumption may be transferred, and the distribution of political influence, determining the government's perception of the importance of transfers. The resulting distribution of consumption will be VR/VP=(IR/IP)x(CF/BT). The higher the political influence of the rich relative to the political influence of the poor, and the higher the cost of public funds relative to the benefit of transfers, the higher the consumption of the rich will be relative to the consumption of the poor. The resulting distribution of consumption has been illustrated in point a in figure 2a, the tangency point between the transformation curve and the government's indifference curve, symbolized by U^0. For a given level and distribution of income from productive activities in a situation without taxes and transfers, *the consumption of the poor is low because their political influence is low and because it is expensive to help them increase their consumption.*

Only if IP=IR and CF=BT will the consumption of the two groups be identical. That situation is illustrated in point ae in figure 2b. A government giving the rich and the poor the same weight (i.e., perceiving the distribution of political influence to be even) when it makes its decisions will be called an egalitarian government. The opposite extreme is a situation where the political influence of the poor is negligeable. The poor's consumption will tend to zero in the example, see point ai in figure 2b. Such a government is extremely inegalitarian and will be called a dictatorship on behalf of the rich.

Consider the following numerical example. The rich earn YR=90 in productive activities while the poor earn YP=10 when taxes and transfers are zero. Table 1 illustrates the resulting transfers and consumption levels for different combinations of administrative parameters and distributions of political influence. The reference scenario is based on the assumptions that CF=BT=1 and that IP=0.2 and IR=0.8. In that case 10 units of tax income will be collected and transferred to the poor. The resulting consumption of the poor will be 20 while the rich end up consuming 80.

The resulting distribution of consumption depends critically on the administrative parameters. If the cost of public funds, CF, is higher, for example 1.5, it follows that the transfers will be lower. As a result, the consumption of the poor will also be lower while the consumption of the rich will be higher. If the benefit of transfers, BT, is higher, for example 1.5, the transfers will be higher, the poor's consumption higher and the consumption of the rich lower. The relevant transfer and consumption levels are given in table 1.

In addition to the administrative parameters, the distribution of consumption depends critically on the distribution of political influence. In table 1 it is shown, for CF=BT=1, what happens if some political reform to the advantage of the poor causes IP to increase to 0.3 and IR to go down to 0.7. The poor will certainly gain at the expense of the rich. The two rather extreme situations mentioned above, the egalitarian government and the dictatorship on behal of the rich, are also illustrated in table 1. If the poor are totally without political influence, IP=0 and IR=1, their consumption will tend to zero. If the distribution of political influence is even, i.e., IP=IR=0.5 it follows that the consumption will also be evenly distributed. The two extreme situations should not be taken literally. Most likely the government will not be able t realize distributions of consumption of the types calculated. We consider the likely outcome given those two extreme distributions of political influence as interesting special cases below under the headings "constrained dictatorship" and "constrained egalitarian government"[17].

Special cases

Before closing this section on the distribution of consumption in the pre-aid situation we comment on three special cases. They are all of practical relevance and, as will be seen below the consequences of aid are relatively simple and clearcut.

Constrained dictatorship

The extreme situation where the poor has no political influence (IP=0, IR=1) can be interpreted as a situation where the country in question is run by a dictator personifying the rich. The government has no incentive to leave the poor with any income at all. The government's preferred situation is point ai in figure 2b, reproduced in figure 2c.

In this situation we assume that there is a lower limit to the poor's consumption, VPMIN, below which it is not allowed to fall. This minimum consumption level may, for example, be motivated by efficiency considerations or fear of riots. The resulting distribution of consumption is illustrated as point d in figure 2c.

The constrained egalitarian government

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[17] In addition to the arguments used below, the fact that CF may be expected to become very high when TR becomes high and that BT may be very low when TP becomes high are important arguments why the necessary income redistribution may not come about.

The other extreme is the situation where the government insists on giving both groups the same weight when it makes its decisions on transfers (IP=IR=0.5). The government's preferred distribution of consumption has been illustrated in point ae in figure 2b and is reproduced in figure 2c.

Assume now, however, that the rich will not accept such a solution. We illustrate the main point by assuming that there is a lower limit to the consumption of the rich, VRMIN. If their consumption falls below this level they may, for example, riot and throw the government or simply leave the country. The resulting distribution of consumption in this case is illustrated in point e in figure 2c.

The fragmented economy

As a third special case consider a situation where the economy is so fragmented that the government is unable to engage in redistributive activities, i.e., no transformation curve exists. In that situation the consumption of each social group is uniquely determined by the group's income from productive activities, see point f in figure 2c[18].

Aid

Assume now that a foreign donor decides that he wants to help the poor in this stylized economy. The aid, A, may be given to the government so that it will only indirectly benefit the poor, through the government's transfer program. The aid will then enter the government's budget constraint directly and the government's aggregate transfer to the poor will be TP=TR+A. Alternatively, the donor may himself initiate activities benefitting the poor so that the aid reaches the poor more directly. Aid will now supplement domestic transfers to the poor and the aggregate transfers are still TR+A but the aid will not enter the government's budget constraint directly. As long as the value of transfers from the government to the poor (in terms of increased consumption), BT, and the value of transfers given directly from the donor to the poor are the same, it is in general unnecessary to distinguish between the two aid channels in the analyses below. That follows from the fact that aid is perfectly fungible in the stylized example, except in the special case called the fragmented economy.

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[18] The special cases are extreme in many ways but they should be seen as approximations to more realistc situations where the government's possibilities to redistribute income and consumption are constrained by the different social groups' veto or its own weak administration.

Reinterpretations

Poverty alleviation in a wider context

First of all it is, of course, possible to let the government in the stylized example tax the poor in order to help the rich. All our results remain the same. The only difference is that both TR and TP will be negative at the outset and that CF must be interpreted as the benefits of transfers to the rich while BT is the cost of funds collected from the poor.

In the stylized example above the interpretation of taxes and transfers is very narrow. One group pays taxes to the government and the government gives the same amount as transfers to the other group. The aid also work as simple transfers. It is, however, unproblematic to give wider - and perhaps more realistic - interpretations.

Consider first reinterpretations where all taxes and transfers can be identified as items in the government's budget. Transfers may, for example, be given as health services, education, etc. If VR and VP are interpreted as aggregate measures of consumption of different types it is unproblematic to allow for those kinds of transfers. Such transfers may be considered as direc consumption for the recipients but, in addition, they may also indirectly improve their productive capacity, YP or YR, and, therefore, cause increased consumption in a more indirec way. It is, of course, also unproblematic to let the transfer be of a type that directly affects only the recipient agents' productive capacity, for example roads, dams, etc., and thus increas consumption only indirectly.

In reality, government policy affects the distribution between rich and poor in many other ways than those that can be found as items in the government's budget. For example, the policy-makers often rig the markets for distributional purposes. Export taxes, for example, is way of taxing agricultural producers (often among the poor) in a way that gives the government some income but, in addition, it indirectly represents a subsidy of (or transfer to) urban consumers (often among the relatively wealthy) through low food prices[19].

Given such wider interpretations of the domestic distributional game in a recipient country, i is obvious that the donor may engage in many other types of activities benefitting the poor than direct transfers as discussed above. He may engage in the health sector or the education sector, indirectly through the government or directly through his own projects. He may try to

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[19] See for example Herbst (1990) for more examples.

increase the poor's productive capacity through road bulding, irrigation systems, etc., again indirectly through the government or directly through his own projects.

At our level of abstraction, where the focus is on the nature of the interaction between the donor and the recipient government, however, treating such aspects in more detail only complicates and adds no new important insight concerning the incentive problems to be discussed below.

Economic growth

In addition to contributing to increased consumption for the poor, stimulating economic growth is an important goal for altruistic donors. Economic growth means an increase of (average) income per capita over time. If we simplify by dividing time in two, period 1 (to-day or the present) and period 2 (to-morrow or the future), the basic incentive problems confronting a donor eager to contribute to income growth between period 1 and period 2 can be illustrated in basically the same way as the incentive problems confronting the donor trying to increase the consumption of the poor. In the same way as the consumption of the poor in the stylized example depends on transfers from the rich, consumption in period 2 depends on transfers from period 1 to period 2. Those transfers manifest themselves through saving (S), i.e., income not consumed, in period 1. Saving in period 1 gives return or benefits in period 2. We consider a situation where saving ends up as productive investment (I) and where the country is excluded from international credit markets. The central aggregate budget constraint in the absence of aid is then I=S. The more saving, the more productive investment and the higher the economy's productive capacity - and, accordingly, income and consumption - in period 2. In this case aid is meant to supplement domestic saving and thereby contribute positively to productive investment and income growth, i.e, with aid the budget constraint is I=S+A.

It is also in this case convenient to distinguish between the government's *ability* to transform present consumption into future consumption and its perception of *the political importance* of doing so. Interpreting CF as the cost of raising or mobilizing domestic saving (in terms of reduced consumption in period 1) and BT as the benefits or return on investment (in terms of increased consumption in period 2), it follows that CF/BT reflects the cost in period 1 of increasing consumption in period 2 by one unit. Similarily, IR may be interpreted as the weight given to period 1 (the present) and IP the weight given to period 2 (the future).

Interpreting VR as consumption in period 1, VP as consumption in period 2, TR as domestic saving and TP as aggregate investment, all the results from the example above may be interpreted in an intertemporal perspective. It follows that if economic growth is low it is because the present is more important for the political decision-makers than the future and/or because it is expensive to transform present consumption into future consumption.

2. Exogenous inflow of aid

Assume now that a foreign donor decides that he wants to help the poor in the stylized economy introduced above. To what extent will he succeed? In addition to the domestic distribution of political influence and the administrative competence of the recipient government, the answer will depend critically on the nature of the interactions between the donor and the recipient government. The most important issues are whether the inflow of aid can be influenced (or manipulated) by the recipient government and whether the donor intervenes in domestic decision-making, i.e., imposes some form of conditionality.

Assume first that the flow of aid is exogenous, i.e., that the amount given is a pre-determined constant. The donor is assumed to be altruistic; he wants to contribute to extra consumption for the poor. In this section we simply assume that a country qualifies for (an exogenous inflow of) aid as long as the consumption of the poor in a situation without aid does not exceed a certain amount, VPMAX. The country is judged to need aid as long as that is the case. If the consumption of the poor is higher than VPMAX the country is disqualified; poverty is not severe enough.

As perceived by the recipient government the initial effect of an exogenous inflow of aid is that the transformation curve moves to the right, i.e., for a given consumption of the poor the consumption of the rich can be increased, or for a given consumption of the rich the poor's consumption can be increased. Any other distribution of the gains along the new transformation curve is also possible.

When the inflow of aid is exogenous the donor's decision on how much aid to give is pre-determined. The main point in this section is to show how the poor's final consumption level depends on the interaction pattern between the donor and the recipient government. In addition, it is also shown how the result depends on the distribution of political influence and the government's administrative capacity.

The passive leader donor

We first consider what a donor of the *passive leader* type will be able to obtain. He will hand over the aid without imposing any kind of conditionality, i.e., the recipient government is free to adjust in accordance with its administrative capacity and the domestic distribution of political influence. We already know the government's perception of the optimal distribution of consumption, VR/VP=(IR/IP)x(CF/BT). It follows that the government will not let all the benefits of the aid end up as consumption by the poor. As long as the aid is given to the government, only a share IP is actually transferred to the poor. The rest, IR, ends up in the hands of the rich through a tax relief. As a result, the consumption of the poor goes up by IPxBT, while the consumption of the rich increases by IRxCF. If the aid is given directly to the poor the result will be the same. In that case a share of the aid is captured by the government on behalf of the rich through reduced government transfers to the poor and reduced taxation of the rich.

What does it cost in terms of aid to increase the consumption of the poor by one unit in this case? The answer is 1/IPxBT. The cost is higher the lower the political influence of the poor and the lower the consumption increase generated by transfers to the poor.

If we return to the reference scenario of the numerical example above where the consumption of the rich in a situation without aid is 80 and the consumption of the poor is 20, illustrated as point a in figure 3a, 3b and 3c, and assume that the inflow of aid (A) is 10, it is easy to calculate that the resulting consumption of the poor goes up from 20 to 22 while the consumption of the rich goes up from 80 to 88, see point b in figure 3a. The amount paid in taxes by the rich is reduced from 10 to 2, reflected in a movement from point a to point b in figure 3c. An inflow of aid of 10 crowds out and reduces domestic taxation by 8. Since IP=0.2 only 2 units or 20% of the aid ends up as transfers to the poor. Since BT=1 the consumption increase for the poor is 2 units as well. The cost to the donor of increasing the poor's consumption by 1 unit is 1/IPxBT=1/0.2x1=5, i.e., 5 units of aid. This cost, reflecting the terms on which the donor is able to exchange aid for consumption by the poor, is illustrated in figure 3b as the curve A(VP)pl. The donor must accept that the government, on behalf of the rich, takes 8 of the 10 units given in aid. This amount now represents the magnitude of the crowding-out.

Since the passive leader donor, in reality, allows the recipient government to do what it want with the aid received (i.e., he adheres to the principle of non-interference so there are no conditionalities), it is obvious that the government evaluates the situation with aid as better than the situation without aid. The indifference curve labelled U^1 in figure 3a illustrates the government's evaluation of the outcome in a situation with aid in this case.

The active leader donor

The *active* leader donor will not allow the recipient government to do what it wants. He will try to obtain more consumption for the poor than the passive leader for the same amount of aid. As a result, he has to try to influence political decisions, i.e., impose conditionalities. He offers aid to the government in return for government actions benefitting the poor. The dono is a principal and the recipient government an agent operating more or less on his behalf. Whether the aid is given to the government or directly to the poor is still irrelevant, at least a long as the quality of the transfers is the same for the poor.

How much increase of the poor's consumption will the donor be able to obtain in exchange for a *credible promise* to hand over a specific amount of aid (to the government or directly t the poor)? The answer will still depend on the distribution of political influence and administrative parameters but as long as *enforcement problems are disregarded*, the active leader will be able to obtain much more than the passive leader. In reality the donor will "buy" an income redistribution in favour of the poor. The contract offered by the donor will consist of a specific amount of aid and a specific amount of consumption for the poor. The government will accept the contract as long as it perceives the situation with aid and incom redistribution not to be worse than the situation without aid and the original distribution of income and consumption. Any point on the original indifference curve, U^0, satisfies that condition. Returning again to the reference scenario of the numerical example above and st keeping the amount of aid equal to 10, it so happens that the government is actually willing collect at least 10 units extra in taxes from the rich (TR goes up from 10 to 20 in return for inflow of aid of 10 units). This is illustrated as the movement from pont a to point c in figu 3c. As a result, the consumption of the poor will be 40 (up from 20 in a situation without a and the consumption of the rich will be 70 (down from 80). The result is illustrated in poin in figure 3a and 3b. The curve A(VP)al in figure 3b now illustrates the terms om which aid

can be exchanged for consumption by the poor in this case. It is obvious that these terms are much better than those obtained by the passive leader donor.

It is clear that the active leader performs much better than the passive. He obtains much more consumption for the poor for the same amount of aid. Actually, the passive leader's crowding-out is turned into a crowding-in. Conditionalities of the type in question clearly are advantageous for the poor.

The follower donor

What about the *follower* donor? The discussion of the leader donors above is relevant only as long as the consumption of the poor in a situation without aid does not exceed the maximum consumption level qualifying for aid, VPMAX. Countries where the consumption of the poor is higher are simply disqualified by assumption. As long as the country qualifies for aid according to this criterion the follower donor will obtain exactly the same result as the passive leader donor. Since the country is qualified for aid and the inflow is exogenous there is nothing the recipient government can do to influence the contract to its own advantage.

In a situation where the inflow of aid is exogenous the main problem with the follower donor is that the recipient government may find it advantageous to adjust, i.e, to keep down the consumption of the poor, in order to qualify for aid if the consumption of the poor in a situation without aid originally is higher than VPMAX. If we let VPMAX=10 and return to the reference scenario of the numerical example, the initial adjustment of the government will consist of cutting the transfers to the poor by 10 and reducing the poor's consumption from 20 to 10. The taxes collected from the rich go down by the same amount and end up as zero. Now the crowding out is even more severe than for the passive leader donor above. The consumption of the rich will increase from 80 to 90. This adjustment is represented as a movement from a to e in figure 4a, 4b and 4c.

As long as we interpret VPMAX to be the consumption of the poor *before* the aid is given, then all of the aid, still equal to 10, will be transferred to the poor so their final consumption will be VP=VPMAX+BTxA=20, illustrated in point f in figure 4a, 4b, and 4c. If VPMAX is interpreted to mean consumption by the poor *after* the aid has been received, then the consumption of the poor will end up equal to VPMAX and any aid is transferred to the rich. In the example the consumption of the poor will be 10, the consumption of the rich will be 100

and the taxes paid by the rich will be -10, i.e., the rich will actually receive positive transfers. The results are illustrated in point g in figure 4a, 4b, and 4c.

The special cases

Constrained dictatorship

In a situation where the recipient government is the representative of the rich, constrained by fear of riots among the poor, etc., it is clear that neither the follower donor nor the passive leader donor is able to contribute to an increase of the poor's consumption. The results of the activities of the passive leader is illustrated as a movement from point d (reproduced from figure 2c) to point h in figure 5a and 5b. Any aid given ends up in the hands of the rich. This may be interpreted as the result reported by Boone (1994b) mentioned in section I.2[20].

The active leader, however, is able to "buy" a consumption increase for the poor, illustrated a a movement from d to i in the same figures. The entire cost of increasing the poor's consumption must be covered by the donor; the slope of the curve A(VP)al in figure 5b is 1/BT[21].

The constrained egalitarian government

The egalitarian government, constrained by threats from the rich, wants to transfer any additional income (i.e., aid) to the poor; conditionalities are not necessary. As a result, the active and the passive leaders obtain the same result, illustrated as a movement from point e (reproduced from figure 2c) to point j in figure 6a and 6b. The slope of the curve A(VP) in figure 6b, reflecting the cost of increasing the poor's consumption by one unit, is 1/BT also i this case[22].

The follower donor may actually still cause reduced consumption for the poor.

The fragmented economy

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[20] Boone calls the regime in question an "elitist" regime.

[21] If the rich are concerned with the relative distribution of consumption, the government will insist on transferring a share of the inflow of aid to the rich. In that case the cost of increasing the poor's consumption v be higher.

[22] It is assumed that the minimum consumption of the rich, VRMIN, is independent of the inflow of aid.

In the fragmented economy the poor remain outside the reach of the government; neither can they be taxed nor can they obtain favours from the government. As a result, any aid given to them directly by the donor ends up benefitting them in its entirety, illustrated as a movement from point f (reproduced from figure 2c) to point k in figure 7a and 7b. Any aid given to the government is wasted from the donor's point of view; the government is not able to use the aid in a way which benefits the poor. Questions concerning the interaction pattern between the donor and the recipient government are irrelevant. The cost of increasing the poor's consumption is 1/BT, reflected in the slope of the curve A(VP) in figure 7b.

3. Endogenous inflow of aid

The donor wants to contribute to poverty alleviation (interpreted as increased consumption for the poor) in the specific country under consideration but he is also engaged in the battle against poverty in other countries and/or concerned with the consumption level in his own country. The more aid given to the country in question, the less aid will be left over for other recipient countries and/or the lower the consumption in the donor country will be. We simplify by assuming that the donor's decisions are based on a utility function where consumption by the poor living in the country in question counts positively but where aid flows to the country counts negatively[23]. The donor's willingness to trade aid for consumption by the poor in the country can be illustrated as the curves labelled W in figure 8a. The curves are indifference curves because the donor is indifferent between combinations of aid and consumption for the poor along such curves. The lower the consumption of the poor, the more aid the donor is willing to give in order to obtain a one unit increase of the poor's consumption.

The main focus in this section is on how the amount of aid given is determined. It is no longer exogenous (or pre-determined).

[23] For a specific consumption of the poor, the donor is better off the less aid given. For a specific amount of aid, the donor is better off the higher the consumption of the poor. Formally the donor's utility function may be expressed as W=WV(VP)-WA(A).

The passive leader donor

We consider the *passive leader* donor first. We already know the passive leader's cost per unit of consumption increase for the poor. It equals 1/IPxBT, illustrated as A(VP)pl in figure 3b and reproduced in figure 8a. The best combination of aid and consumption for the poor, as perceived by the passive leader donor has been illustrated as point b in figure 8a. It is the tangency point between the curve reflecting the donor's willingness to exchange aid for consumption by the poor, Wpl, and the curve reflecting the terms on which he is able to exchange aid for consumption by the poor A(VP)pl. In that point the benefit of the last unit of aid given to the country in question, causing increased consumption for the poor (in addition to increased consumption for the rich), equals the donor's perception of the cost of the last unit of aid given to the same country, caused by reduced consumption in the donor country and/or reduced consumption for the poor in other recipient countries.

The active leader donor

The *active leader* behaves in a similar way as the passive leader donor when he determines th terms of the contract offered to the recipient government. The main difference is that the tern on which he is able to exchange aid for consumption increase for the poor, is much better tha the terms obtained by the passive leader, see the curve labelled A(VP)al in figure 3b, reproduced in figure 8a. As a result, the consumption of the poor ends up being much higher The terms of the contract is determined in point c in figure 8a. The amount of aid given by th active leader may be higher or lower than the amount given by the passive leader but the active donor is obviously much better off than the passive donor: the consumption of the poo in the country under consideration is higher and if the amount of aid given is lower, there wi be more left for poverty alleviation in other countries and/or consumption for the donor population. If the amount of aid given is higher, it is because spending the extra aid in the relevant country is considered as more valuable than the alternative uses.

The follower donor

What about the *follower* donor? The discussion of the leader donors is based on the assumption that the recipient government takes the inflow of aid as given when it makes its own decisions. It does not try to influence the inflow of aid. The follower donor is characterized by the fact that he announces his aid allocation criteria and allows the recipie

government to adjust in order to qualify for aid. As a result, it is reasonable to say that the inflow can be influenced or even that it is manipulable.

Consider the following set-up. The donor observes the consumption of the poor in a situation without aid as their income from productive activities plus the benefits derived from the tax-financed transfers given by the government, i.e., VP=YP+BTxTR. The lower this income is, the poorer are the poor and the more aid they deserve, as perceived by the altruistic donor. As a result, the inflow of aid ends up being negatively correlated with the poor's pre-aid income and consumption level. The recipient government knows this and observes, in particular, that the higher its tax-financed transfers to the poor, the lower the inflow of aid will be. *The government's own efforts to help the poor are in reality taxed by the donor.* Assume, for example, that if the government increases its own tax-financed transfers to the poor by one unit, a share s is lost through reduced inflow of aid. The net increase of the transfers to the poor is then equal to 1-s. If, for example, s=0.2 it means that only 80 % of extra tax-financed government transfers to the poor ends up benefitting the poor. 20% is taxed away by the donor. As a result of this negative relationship between the government's tax-financed transfers to the poor and aid, such transfers will be deliberately kept down by a rational government in order to qualify for or "harvest" aid. The optimal distribution of income and consumption will now be VR/VP=(IRxCF)/(IPxBT)(1-s). The relative distribution has become more uneven than in a situation without aid. Figure 8b is an attempt at illustrating this worsening of the distribution. Point a reflects the situation without aid. It has been reproduced from figure 2a and figure 3a. We know that the distribution of consumption as long as the donor is a passive leader will be somewhere along the line through point a. The actual point will depend on the quantity of aid given. The distribution of consumption when the donor is of the follower type is illustrated by the line through point a'. Again, the actual consumption level depends on the amount given, point d is an example.

It is clear that the relative distribution is worsened; compared to the poor the consumption of the rich is now higher than in a situation without aid. The consumption of the rich will also be higher in absolute terms than in a situation without aid. In absolute terms the consumption of the poor may be higher or lower than in a situation without aid, depending on the amount of aid given.

A digression on the unconstrained egalitarian government.

What will be the consequences if we assume that the donor respects the recipient government's preferences, i.e., the government's perception of domestic distribution of political influence? The weight given to the rich by the altruistic donor is typically zero while the weight given to them by the government is IR, considerably higher. The weight given to the poor by the donor is unity while the government gives then IP, considerably lower.

If the donor uses the same weights as the government it is clear that the active leader can do no better than the passive leader, i.e., since the decisions taken by the government in a situation without donor intervention is optimal from the donor's point of view, it follows tha imposing conditionalities is unnecessary.

The problem of the follower donor, however, has nothing to do with the fact that the donor does not respect the recipient government's preferences. If the donor uses the same weights those used by the government, the (qualitative) results will remain the same. The group actually being supported by the donor (i.e., the poor) ends up being worse off relative to the other group, compared to a situation without aid.

This discrimination of the poor will be the result even in a situation where the government i egalitarian, where the donor respects the government's preferences and there is no constrain caused by threats from the rich. Point ae in figure 8b illustrates the distribution of consumption in a situation without aid. It has been reproduced from figure 2b. The (active a well as the passive) leaders will obtain distributions along the line through point ae. As lon as the donor supports the group called the poor, however, their consumption ends up being taxed by the follower donor and the resulting distribution is illustrated as the line through piont ae'. The relative distribution has worsened.

The special cases

Constrained dictatorship

We know that the active leader is the only type of donor able to contribute to increased consumption for the poor in a country with a government of the type called constrained dictatorship. Finding the tangency point in figure 8c between one of the donor's indifferen curves and the curve reflecting the terms on which this donor is able to "buy" consumptio

the poor (reproduced from figure 5b), it is easy to determine the terms of the contract designed by the donor and accepted by the recipient government, see point j.

The constrained egalitarian government

In a country run by an egalitarian government constrained by threats from the rich, the results obtained by both the passive and the active leader donors are found combining the indifference curve of the donor with the curve reflecting the terms om which the donor is able to trade aid for consumption by the poor in figure 6b.

The fragmented economy

In the fragmented economy no manipulation is possible and any aid given to the poor ends up being consumed by the poor. The amount of aid is determined in the tangency point between the donor's indifference curve and the curve reflecting the cost of increasing the poor's consumption in figure 7b.

A digression on fungibility, crowding-out and the micro-macro paradox

The term fungibility refers to the recipient government's *ability* to use the grants for other purposes than those originally supported by the donor. Suppose that the donor is directly engaged in projects or activities benefitting the poor in the stylized example used above. Disregarding one of the special cases, the fragmented economy, the aid is highly fungible because the government is able to capture the benefits of the aid and transfer them to the rich if it so wants. However, the fact that it is able to do so, does not necessarily mean that it will actually do it. To what extent it will actually transfer benefits to the rich so that domestic transfers to the poor are crowded out, depends on the distribution of political influence and the administrative capacity, in addition to the nature of the interactions between the donor and the recipient government.

Define a project as one unit of aid spent on activities benefiting the poor. A *micro-economic evaluation* of such a project would calculate the benefits as BT; the project contributes directly to an increase of the poor's consumption by BT units. From the discussion above, however, we know that unless the donor is a successful active leader, aid given to the poor tends to crowd out domestic activities benefitting the poor. A *macro-economic evaluation* would take such crowding out effects into account. If, for example, BT equals 2 and 1 unit of

aid crowds out 0.5 units of domestic transfers, it follows that the project's actual contribution to the aggregate consumption of the poor will be 1. The micro-economic evaluation will necessarily overestimate the real contribution. It is the macro-economic evaluation that gives the true story. The micro-macro paradox is easy to explain as a result of crowding-out.

In the fragmented economy the government is actually unable to capture the benefits of aid given directly to the poor, on behalf of the rich, even if it wants to. Such aid is not fungible from the government's point of view. As a result, there is no difference between a micro-economic and a macro-economic evaluation of a project's contribution to increased consumption for the poor. Accordingly, there is no micro-macro paradox to explain.

Reinterpretations

Poverty alleviation in a wider context

Transfers to the poor may, as mentioned earlier, be interpreted as education, health services, new technology, etc. It is unproblematic to let aid represent contributions to such activities. The main results presented above remain valid. In addition, conditionalities imposed by the donor may focus on any type of policy reform benefitting the poor, for example a reduction export taxes on goods produced by poor farmers.

In the example discussed above, in a situation without aid, the poor are poor because their political influence is low and because it is expensive for the government to increase their consumption. In addition, no matter the nature of the interactions between the donor and th recipient government we know that the donor's performance is better the higher the politica influence of the poor and the better the administrative capacity of the government. It follow that ear-marking aid for activities increasing the political influence of the poor and/or improving the government's administrative capacity will contribute to poverty alleviation. successful it will actually result in a redistribution of domestic income in favour of the poo and may represent a permanent reduction of the «need» for aid to the poor.

Economic growth

In the same way as aid earmarked for the benefit of the poor may crowd out domestic activities favouring the poor unless the donor is an active leader imposing and enforcing conditionalities, aid earmarked for productive investment may crowd out domestic saving

From section II.1 we know that aggregate investment and economic growth depends on the political decision-makers' perception of the importance of the present (period 1) versus the future (period 2) and the cost of transforming present consumption into future consumption. The more myopic the government and the higher the cost, the lower aggregate productive investment and economic growth will tend to be.

The passive leader donor respects the recipient government's preferences and has to accept that aid crowds out domestic saving so that a share of the aid is consumed in period 1. The active leader performs much better; not only is all the aid invested, there is also a crowding-in when domestic saving is increased as a result of conditionalities imposed by the donor. The follower donor performs worse than the passive leader because the recipient government deliberately keeps down domestic saving in order to obtain extra aid[24].

In addition, to the extent that the recipient government may count on aid in the future (period 2) as well it is obvious that present domestic consumption (period 1) will be higher and aggregate saving lower than in the absence of future aid. Expectations about future aid is bound, *ceteris paribus*, to reduce present sacrifices and contributions to future productive capacity and income. That will necessarily be true no matter the interaction pattern between the donor and the recipient government.

4. The follower donor and the Samaritan's dilemma

It follows from the discussion above that the performance of a donor depends critically on the nature of the interactions between himself and the recipient government. Can a donor design the nature of those interactions on his own? In general he cannot because it depends critically on the recipient government's perception of the entire situation.

In the literature on the Samaritan's dilemma[25] it is argued that results similar to those obtained by our follower donor, will actually be the likely results of an altruistic donor's activities. An altruistic donor seems to be bound to end up as our follower. The main reason is a problematic time inconsistency, in our case caused by the fact that *ex ante* (when the contract is signed) it

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[24] The details are spelled out in Pedersen (1996).

[25] The Samaritans dilemma was first discussed by Buchanan (1975) and later developed by Lindbeck and Weibull (1988).

is impossible for the donor to commit to not helping the poor *ex post* (i.e., after the government's action has been observed) if the government has not helped them. In such a situation it is actually optimal for the donor to give extra aid *ex post*. If the donor cannot commit to not helping the poor *ex post* a contract stipulating that the government should help the poor is of very limited value if it cannot be enforced. Enforcement in this context would require some sort of punishment of the recipient government in case the contract is broken. Enforcement of such aid contracts is notoriously extremely difficult, if not impossible.

In order to illustrate the basic point in some detail it is necessary to be more specific about the time structure than we have been so far.

Step 1: The donor proposes a contract and the contract is accepted by the recipient government. If the donor believes that the recipient government will not cheat, the terms of the contract will typically be those designed by the active leader donor. According to the contract a specific amount of aid is exchanged for a specific consumption level among the poor and, accordingly, a specific amount of tax income collected from the rich.

Step 2: The recipient government determines how hard actually to tax the rich and, accordingly, the amount spent on activities benefitting the poor financed domestically. Is it optimal for the recipient government to stick to the contract in a situation where enforcemen is impossible, i.e., where the donor is unable to punish the government for its non-compliance? The answer is no. In our example there are in general two reasons why the recipient government will break the contract.

One reason has to do with the fact that the donor and the recipient government usually have different perceptions on how consumption should be distributed in the recipient country. Th contract negotiated by the active leader donor gives the poor a higher consumption and the rich a lower consumption than the government wants if it can spend the aid in accordance with its own preferences. The government's distributional preferences are reflected in the results obtained by the passive leader donor. What this means is that the best an active lead donor unable to enforce the terms of the contract can hope to obtain, is a distribution of the benefits of its activities similar to those obtained by the passive leader. Conditionalities are no value.

This reason for non-compliance has nothing to do with the Samaritan's dilemma and it disappears in situations where the donor respects the recipient government's preferences,

whether egalitarian or not. In such situations the active and the passive leader donors offer identical contracts.

If this reason for non-compliance was the only one it should be possible for the donor to ensure compliance simply by refusing to hand over the aid money until *after* the recipient has actually done what is specified in the contract[26]. *Ex ante conditionality*, where the aid is handed over *before* the recipient government has done what it is supposed to according to the contract, is replaced by *ex post conditionality*[27].

The *second* and perhaps more fundamental reason for non-compliance is an example of what is usually called the Samaritan's dilemma. It has to do with the fact that the recipient government anticipates that the altruistic donor, who is really concerned with the consumption level of the poor, will give extra aid in a step 3 of the game, when he observes how low the consumption level of the poor actually will be in the absence of extra aid. In such a situation the consumption of the poor will be kept down deliberately by the government in order to "harvest" extra aid. This reflects the fact that domestic activities benefitting the poor are taxed by the follower donor; the higher the consumption of the poor, the lower the inflow of aid.

This reason for non-compliance is present even in a situation where the donor respects the recipient government's preferences so that the first reason for non-compliance does not exist. As shown in section II.3 even an unconstrained egalitarian government will end up distorting the income distribution in favour of the rich.

Step 3: In step 3 of the game the donor makes a final decision on the amount of aid, given that he knows the government's decision in step 2. Whether the amount of aid agreed upon in the contract has been paid out already or not is unimportant, i.e., *ex post* conditionality cannot be relied upon to solve the problem. The best the donor can do now, according to his own

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[26] See Svedberg (1995a), (1995b) and (1995c) and de Vylder (1995) for a discussion of *ex post* conditionality. One should bear in mind, however, that there may be a temporary finance problem for the recipient government (and maybe also a deadweight loss) if it is to collect the amount TR+A from the taxpayers and transfer the same amount to the poor *before* obtaining the aid money, which in turn will be transferred to the taxpayers. If the government can be relied upon to have some reserves, a buffer, that problem may be avoided.

[27] We assume that the donor is able to commit to paying out the aid *ex post*. It may be a problem that once the government has given the poor the specified amount of transfers, it is optimal for the donor not to keep the contract, i.e., to spend the aid on other activities. If the recipient government suspects such a donor behaviour it will certainly not help the poor in accordance with the contract.

preferences, is actually what the government has anticipated him to do. *Ex post* the altruistic donor finds it in his own interest to give more aid than specified in the contract *ex ante*. Whether the aid is given directly to the poor or to the government is of no importance. If it is given directly to the poor it is in the recipient government's interests to let the poor keep it. If it is given to the government, the government can do no better than hand it over to the poor in its entirety.

Is it possible for an altruistic donor to avoid being "exploited" by the recipient government in this way in a situation where the government cannot be punished for breaking the contract? T avoid it the donor has to convince the recipient government *ex ante* that no additional aid wil be given *ex post*; that there will be no "bail-out". If the donor succeeds the government will tax the rich harder (in step 2) and give more tax-financed transfers to the poor.

It is actually difficult to imagine how an altruistic donor could credibly commit *ex ante* not t give extra support *ex post* in a situation where the contract cannot be enforced[28]. Even multilateral institutions like IMF and the World Bank have serious problems in this respect, see for example Mosley, Harrigan and Toye (1991).

It is also important to keep in mind that even if one or more donors succeed in establishing credibility in the eyes of the recipient government, the government knows that most likely there will be other donors looking for needs to satisfy (for example an NGO supported by th donor in question). As a result, what is necessary is a credible commitment on the part of th entire aid system as a whole.

Reinterpretatins

It is straightforward to illustrate the Samaritan's dilemma in a situation where the donor w to help the poor through activities improving their health standard, their education, etc. Similarily, a donor ear-marking his aid for productive investment and economic growth is confronted by the same dilemma. The basic result is always the same: an altruistic donor e up rewarding needs and, therefore, taxing domestic activities contributing to the satisfacti

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[28] No simple «solution» to this problem exists but the literature contains ideas which may reduce its serious see for example Rodrik and Zeckhauser (1988) on the problems of being responsive and the «eightfold patl credibility» in Dixit and Nalebuff (1991). Svensson (1995) contains some implications for aid policy.

of the identified needs. If satisfaction of needs is assumed to be the result of development and progress this means in general that activities contributing to development and progress are taxed[29]. This is, of course, a very severe disincentive leading directly to aid dependence.

The Samaritan's dilemma seems to be of much more general relevance than one might believe from the discussion above. Note, for example, that the poor themselves play no active role; i.e., they only receive (benefits of) transfers and do not act in any way in order to affect the level of transfers. However, as a rule the poor's income from productive activities, YP, depends on some kind of *effort* on the part of the poor. Such an effort (or example hard work, investment, etc) is costly for the poor producers. Once they are in a situation where the flow of transfers, whether from the domestic government or from a foreign donor, depends negatively on the pre-transfer income, YP, their efforts are in reality taxed. The harder they work, the more they save and invest, etc, the smaller transfers they obtain. As long as they perceive the flow of transfers to be manipulable, i.e., as long as the government and/or the donor is a follower and the poor plays the role of the leader, there will typically be an undersupply of effort.

It follows from this discussion that the results obtained by the follower donor do not necessarily depend on the existence of a more or less malevolent government capturing part of the benefits from aid on behalf of the rich. The problems may arise even in the special case called "the fragmented economy" where the aid is given directly to the poor and the government has no active role to play.

5. The active leader donor and information asymmetries

Assume now that the donor is an active leader and enforceability problems of the type discussed in the last section do not exist; a contract between the donor and the recipient government can actually be enforced once it has been accepted and signed by both parties.

In our discussion of the effectiveness of the active leader we have so far disregarded information problems. However, in reality actors are better informed about their own preferences, their own administrative capacity, their own actions, etc., than about other actor's preferences, administrative capacity, actions, etc. The purpose of this section is to indicate

[29] See for example de Vylder (1995) for real-world examples.

how aid effectiveness is affected when the recipient government (the agent) is better informed than the donor (the principal).

Information asymmetries are usually classified as either hidden information or hidden action.

Hidden information

Hidden information (hidden characteristics, adverse selection) in our context means that the recipient government has private information on the political possibility (i.e., distribution of political influence) and/or its own ability (administrative capacity) to help the poor. The donc may have less information on such domestic characteristics. The problem, as perceived by th donor, is that the recipient government may try to signal that it is more difficult or expensive to help the poor than it actually is, simply in order to obtain extra benefits for itself or the better-off segments of the population. The government has an incentive to signal that aid dependence is higher than it actually is. If the donor chooses to believe the recipient government's own reports on the relevant characteristics it is obvious that the cost of contributing to a certain increase of the poor's consumption will be higher than in a situatio where the donor has perfect information. The donor ends up giving too much and demandin too little.

A basic lesson from principal-agent theory is that the donor should try to design contracts convincing the government in the country in question to reveal its true characteristics. If he succeeds, aid effectiveness will increase: both the poor in the country under consideration a the donor (on behalf of the poor in other countries and/or his own tax-payers) will be bette off. The general result from principal-agent theory in situations with hidden information o type in question is that *the most competent agents have to be given some reward* (usually called information rent) in order to be convinced not to pretend to be less competent. Interpreting a «competent» government as a government giving a relatively high weight to poor when decisions are made and/or being able to help the poor at a relatively low cost, i our example this would mean, *ceteris paribus*, that a country with a relatively competent government should be given more aid than in a situation without information asymmetrie while a country with a relatively incompetent government should be given less. The poor

both types of countries are bound to lose when the governments have private information and so is the donor. But a carefully designed contract may reduce this loss considerably[30].

Hidden action

Hidden action (moral hazard) is another type of information asymmetries. In order to obtain increased consumption for the poor the donor will usually depend on specific actions to be undertaken by the recipient government. We already know that if the inflow of aid is positively correlated with the extent of poverty and the actions in question are costly, the government has an incentive to keep down its contributions to activities causing reduced poverty. We have discussed how an active leader donor may solve this problem if he is able to enforce the contract and there are no information asymmetries.

However, often the government's actions or contributions in question are not perfectly observable for the donor. If there are some stochastic elements involved (the consumption of the poor may, for example, depend on weather conditions in addition to the government's actions) the donor cannot infer from the outcome, i.e., the actual consumption of the poor, whether the recipient government has done what is specified in the contract or not. Since the actions to be undertaken by the government are costly, the government will again have incentives to try to shirk and receive aid without actually doing what it has promised. Without a carefully designed contract the cost of increasing the consumption of the poor will also in this case be unnecessarily high for the donor.

When hidden action is the problem the general result in principal-agent theory is that *the decision-maker (the agent) has to be rewarded when good results are observed*. In our example the implication is that compared to a situation without information asymmetries, the recipient government should be rewarded (with relatively much aid) when high income for the poor are observed even if the main reason for the good results is nature (good weather). Similarily, the government should be «punished» (with relatively little aid) when bad results are observed. If the donor behaves like that the recipient government will contribute to an increase of the likelihood that good results will occur; that is how the donor can actually help the poor in this case[31]. That is actually also how poverty and aid dependence may be reduced.

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[30] Details about the design of such a contract are found in Pedersen (1995c).

[31] Again, details are found in Pedersen (1995c).

It follows from the discussion above that rewarding needs (i.e., low consumption for the poor, low investment levels, etc.) means rewarding incompetent governments and/or governments taking the wrong actions; rewarding needs means rewarding failure. In an incentive-theoretic perspective rewarding failure means, *ceteris paribus*, encouraging failure in recipient countries. Encouraging failure means ecouraging aid dependence. Information asymmetries represent, accordingly, another reason why rewarding needs may represent a tax on progress and development. Carefully designed and enforced contracts are necessary if the problem is t be reduced.

However, it is an illusion to believe that it is possible to eliminate the problem completely. We already know (from the last section) that enforcing a contract may be very difficult for ar altruistic donor even in the absence of asymmetric information. In the real world - with asymmetric information - it may be very difficult and expensive to collect the necessary information and design the optimal contracts. This may, in itself, tend to increase the enforeceability problem dramatically.

6. Many donors - with co-ordination problems

So far only one donor has been active in the country under consideration, or if there are mor they have at least been operating as one homogeneous donor. In reality donors find it difficu to co-operate and co-ordinate their activities.

Traditionally the main reason for co-operation problems among *altruistic* donors discussed the literature, has been that aid (or the results in terms of poverty alleviation and economic growth) is a public good. Each donor has an incentive to free-ride on other donors. The resu is that the aggregate aid flow becomes much smaller than in a situation where the donors c operate. This argument cannot explain aid dependence and will not be developed here.

Another reason why altruistic donors do not co-operate and co-ordinate their actions may b that they consider themselves, in isolation, to be so small that the aggregate or macro-economic effects of their own activities are negligeable. Maybe that is why donors usually consider their projects and programs in a micro-economic perspective. Fungibility, crowdi out, and aggregate macro-economic effects are disregarded because they are considered to of minor importance. If one (small) donor behaves like this it may not necessarily be an

important problem but if all donors have this narrow perspective on their activities, the expected aggregate effects may well be those reported in the empirical studies surveyed in secton I.2.

In addition, introducing a macro-economic perspective, i.e., co-ordination of donors, monitoring of the government and other decision-makers in the recipient country, collecting information on the country's economy, etc., requires reforms which may be costly for the donors. The cost may be economic but also political considerations may be important: most likely the recipient government prefers a donor to operate at the micro-economic level and not intervene at the macro-economic level. Reforms of the type in question may be considered a public good by the donors and each donor may choose to free-ride and wait for the others to take the initiative and carry the cost. If all donors thing like that no reforms will take place. This may be one of the reasons why the influence of multilateral institutions like IMF and the World Bank has increased lately[32]. They seem to take macro-economic considerations more seriously than individual bi-lateral donors.

However, most likely lack of co-ordination and co-operation has to do with the fact that donors consider each other as competitors in one sense or another - because they have conflicting interests, primarily derived from *non-altruistic motives* for giving aid[33]. The problems have been well-known for decades; Cassen & al, in the first edition from 1986 for example, argues strongly for co-ordination. However, Papanek (1988), is very critical to this point in his review of Cassen & al. He quotes a spokesman for a donor organization to illustrate the problem: "On some issues we co-operate, but in many cases we are competitors, for the most visible, the commercially and politically most attractive projects and for those most likely to be successfull." Similar arguments can be found, for example, in Karlstrøm (1996). If such motives are considered as more important than the altruistic motives by the agents making decisions on behalf of the donor, then it goes without saying that co-operation and co-ordination is very difficult and that the overall effects on poverty alleviation and/or economic growth become more or less unimportant for the decision-makers. If aid contributes it is more or less an arbitrary side-effect.

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[32] See Rodrik (1995) for other arguments for multilateral institutions' activities.

[33] See for example Maizels and Nissanke (1984) for a survey of donors' motives for giving aid.

One central problem when donors have conflicting interests in situations where they cor themselves as active leaders trying to influence recipient government policy, is that the conditionalities they impose may be conflicting as well. It is well-known from principal theory that an agent confronted by many principals with conflicting interests finds hims very awkward position[34]. The main problem is that if the recipient government makes a decision in the interest of one of the donors, it may lose support from another. An econc would say that the incentive schemes become low-powered. The likely result is inaction lack of initiative on the part of the recipient, a result reported for example in Sobhan (1

So far the reason for the co-operation problems have been found among the donors. Ho closer co-operation would mean that the donor community's aggregate influence would increase. It may be the case, therefore, that also the recipient government is best served donors who do not co-operate too closely. As long as the co-operation is limited it is pc for the government to turn down offers from donors who demand more than other donc either in terms of domestic contributions to altruistic goals considered as important by t donor (for example poverty alleviation) or in terms of contributions to one or more of t donor's non-altruistic goals (like imports from the donor country).

The general conclusion here is that lack of co-operation and co-ordination seems to be important reason for low effectiveness of aid. Since neither the donors nor the recipien government seem to favour co-operation it may be very difficult to improve the system such lines.

7. Hierarchies and collusion

In reality there are many actors between the donor and the final recipient in addition to recipient government. Much insight may be gained from analyzing the chain of actors hierarchy. In a realistic setting there there may be actors (decision-makers) both betwe donor and the recipient government and between the government and the final recipie the benefit of aid.

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[34] See Wilson (1989) for real-world examples and Dixit (1996) for a more formal exposition.

As a simplification we first introduce *one* actor between the donor and the recipient government. Many interpretations are possible:

-Letting the donor be the government in the donor country, the new actor may be interpreted as a donor agency responsible for the design and implementation of donor policy.

-Letting the donor be the donor agency, the new actor may be a firm supplying inputs (goods, services or information) in aid activities, for example a consultant of some type.

-Letting the donor be the leader of the donor agency, the new actor may a department in the agency or an employee.

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In hierarchies there are many more incentive problems than those discussed above. In addition, they are more complicated to analyze.

Let us, for example, return to the idea of asymmetric information discussed in section II.5. The recipient government (the agent) is better informed than the donor (the principal) on its own ability to help the poor (hidden information) and/or its own actions in favour of the poor (hidden action). Assume that the government is primarily interested in the welfare of the rich and wants to obtain as much aid as possible and transfer as much as possible of it to the rich.

Assume now that the donor hires a *monitor* of some kind, an employee or an independent consultant, to collect information and monitor the recipient government. In this way the donor tries to reveal as much as possible of the government's private information that is hidden for him. The more information the donor has, the more consumption increase for the poor per unit of aid he will demand and the tougher the contract will tend to be for the government.

It goes without saying that if the monitor is able to reveal some hidden information, it will be tempting for the recipient government to try to convince him not to transfer this information to the donor. The monitor is open for an offer unless the risk involved is too high. Possibillities of collusion are undoubtedly present.

Collusion may manifest itself in many ways. The recipient may, for example, offer a side payment (a bribe). In most of the analytical literature on collusion, see Tirole (1986), the side payment is a monetary transfer. It may, however, be of a non-monetary kind. Following Wessels (1994), for example, the monitor may want to please the recipient government beacuse it will make his work easier and more pleasant.

The dynamic model of collusion presented in Acemoglu (1994) seems to be of special relevance here. He emphasizes long-term relationships and dynamic concerns as the real threat to the independence of monitors. Assume that the monitor has developed skills that are considered as particularily valuable in the aid business. Those skills are of less value in other sectors. As a result, the monitor will be better off in the future if he can continue to do what he does than if he has to do something else. The monitor knows this himself and so does the recipient government which he is supposed to monitor. The central question now is: How is the monitor selected? If the donor (the principal) selects the monitor on his own and does not allow the recipient government to exercise any influence at all, then there is no problem. If, however, the government (the agent) has the slightest influence on the selection of monitor, it may threaten to do its best to have the monitor fired if he transfers hidden information to the donor. Since the monitor will loose if he is fired, he is tempted not to report all information.

Acemoglu's dynamic model of collusion has great relevance in many other principal-monitor agent relationships in the aid business as well. The story just told is based on the assumption that it is the recipient government which is responsible for helping the poor on behalf of the donor. That task may, however, be delegated to other types of agents, for example a specific department in the aid organization, a specific NGO, a private enterprise, etc. Still it will typically be the case that carrying out the job is costly (in terms of effort and/or money) to th relevant agent. In addition, the agent will typically be better informed than the donor. Let, fo example, the monitor be a consultant of some kind. The likelihood of collusion may be high and the consultant's work of limited value to the donor.

We guess that the closer ties it is between the principal and the agent to be monitored (or evaluated) the more influence the agent to be monitored will have on the selection of monit and the less well the monitor will function.

In our discussion of collusion we have focused on an actor (a monitor) between the donor a the recipient government. However, there may also be one or more actors between the recipient government and the final recipients - each with some private information. The recipient government, for example, has to use its own bureaucracy when spending aid and implementing policy. It goes without saying that the possibilities of collusion are numerous

If collusion of the type discussed here is important, it means that malpractices and shirking are not revealed to the donor. As a result, corrective action is not likely to be taken. This will certainly tend to keep down the effectiveness of aid and contribute to aid dependence.

8. Quantification and performance measures

The analyses have so far been based on the assumption that the donor knows what he wants (i.e., that he has clear goals) and that he is able to calculate (i.e., quantify) aid projects' and activities', as well as involved actors', contribution to the satisfaction of those goals.

The ideas presented are, of course, relevant also when those assumptions are not satisfied to a full extent. However, it is essential for the donor to make his goals clear and quantify as much as possible. Otherwise it may be very difficult to distinguish between good and bad projects and activities. In addition, it may be difficult to determine whether an employee, a consultant, the recipient government, or other involved actors do a good job, i.e., whether they contribute to the satisfaction of the donor's goals in a cost-effective way. Without such quantification it is also very difficult for the donor (the principal) to motivate his agents and monitors to do what he wants them to do[35].

Our impression is that aid agencies do not take such problems seriously. Consider, for example, the perception of cost among agents making decisions on behalf of the donor. In all our analyses of incentive problems above those agents are aware that spending aid in a recipient country has a cost, in another poor country and/or in the donor country. If it is true that the relevant decision-makers disregard this fact and that the main problem seems to be to spend as much money as possible[36], then there is something fundamentally wrong with the motivation structure in the donor's own organization. The incentive problems discussed above

[35] As long as the donor's goal is related to economic growth and distributional issues in a narrow and pure economic sense, quantification of the type in question may not be too difficult. Traditional cost-benefit analysis is tailored for such quantification, see for example Squire and van der Tak (1975). When the donor's goals are more complicated and issues concerning health, pollution, etc. are involved, the quantification problems are more problematic but that is no excuse for not quantifying as much as possible.

[36] See Nolan (1994) or Little and Mirrlees (1990).

may turn out to be of minor importance compared to the problems that arise if that is the case. The donor's fundamental goals easily become unimportant when decisions are made and the cost uninteresting.

When assessing the performance of an employee (or another agent) the donor (i.e., the principal) should always focus on the agent's contribution to the satisfaction of the donor's fundamental goals, like poverty alleviation and economic growth in the recipient country under consideration, given that the cost in other countries is taken into account. I.e., the performance measures should be derived from those goals. If that is done correctly and the agent is rewarded according to performance, the relevant cost is necessarily taken into account. More narrow goals may often have to be used but they should always be derived from (and instrumental in relation to) such fundamental goals.

Again, without operationalizing the goals it seems very difficult to derive performance measures and without quantification of the effects of aid activities, etc., it is extremely difficult to assess agents' performance. Without being able to assess agents' performance it is also difficult to decide how to reward them.

Since a principal normally "gets what he pays for" it follows that if the performance measure is wrong (for example reward for spending), the donor motivates the agents to do the wrong things, i.e., channel their efforts in wrong directions. If there is no reward for performance of any kind then efforts are simply kept down and little is done in support of the donor's goals[37].

To the extent that aid is channelled through the government in the recipient country the effects, of course, also depend on the incentive and motivation systems in the country's bureaucracy, etc. If decision-makers in the bureaucracy, responsible for the implementation o a contract between the donor and the government, are motivated not to act in accordance with the agreement, it goes without saying that the contract may easily end up being worthless. Th empirical fact mentioned in section I.2, that aid seems to contribute to public consumption may reflect the bureaucracy's influence.

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[37] Gibbons (1996a and 1996b) are good and fairly non-technical surveys of modern organization theory, of particular relevance for profit-maximizing organizations. Tirole (1994) and Dixit (1996) contain interesting ide of particular relevance for public agencies.

Stakeholders

A stakeholder in our context is an agent who derives some benefit from the aid system. It may be an agent in the aid system itself, some other agents in the donor country as well as agents in the recipient country, including the recipient government itself. Stakeholders certainly have an incentive to try to influence a donor's activities to their own advantage. The central question is whether they succeed. According to Valdelin and Schill (1996) and Karlstrøm (1996), which contain surveys of the most relevant stakeholders, they do have considerable influence.

There are different ways of interpreting the stakeholder pheneomenon. To the extent that the donor's fundamental goals are *clear and given* (i.e., non-manipuleable), that the operative goals are derived from those fundamental goals, that aid activities have been designed in the light of the goals, that good performance measures are derived from them, etc., then stakeholders will in principle have no influence as long as the donor is a successful active leader and there are no information asymmetries.

-The passive leader donor, not to mention the follower, gives stakeholders free hands to divert the benefits of the aid to their own advantage.

-Information asymmetries may allow stakeholder influence through some form of collusion between stakeholders and agents making decisions on behalf of the donor, see section II.7 above.

-If goals and/or the design or implementation of aid activities are manipuleable it may be relevant to consider stakeholders of different types to be principals and the donor (or representatives making decisions on his behalf) as an agent. Both the goals, the budget constraint and the design of the donor's activities may then end up reflecting stakeholders' interests.

To the extent that the incentive and motivation structures are wrong (in the donor's own administration and/or in the recipient country's bureaucracy) and/or stakeholders are influential it is, of course, easy to explain why aid does not seem to have contributed much to poverty alleviation and economic growth in recipient countries.

III Indirect incentive effects

In addition to the direct incentive effects of aid, causing alterations of the decisions and actions of agents contributing directly to the satisfaction of the same type of needs as the donor, there are ususally many types of indirect incentive effects of aid. These types of incentive effects work primarily through the aid activities' consequences on the signals confronting consumers, producers and other economic agents in markets where they operate.

We start with problems ususally identified as the Dutch disease syndrome[38].

Domestic demand and structural change

Consider first a situation where aid is given as purchasing power (in foreign exchange) directly to the recipient government. The main argument in the Dutch disease literature is that such a grant with necessity (unless it is accumulated as reserves and/or crowds out inflow of other types of foreign capital) will lead to a discrimination of producers in the tradeables sector, producing goods for the world market and/or for the domestic market in competition with foreign producers. The discrimination is caused by an appreciation of the recipient country's real exchange rate, leading to a worsening of those producers' competitiveness.

To illustrate the main point, assume that the nominal exchange rate is constant. When the government starts spending the grant - through an expansion of public consumption, an expansion of public investment, or through a tax reduction causing increased private consumption or private investment - the domestic demand for goods and services goes up. Some of the goods and services in question cannot be imported; they belong to what is usually called non-tradeables. When the production of non-tradeables goes up as a result of the aid-generated demand increase, then most likely resources are withdrawn from the production of tradeables. What usually happens is that when the production of non-tradeables expands the prices of certain resources, for example skilled labour, tend to increase. Producers of tradeables cannot afford to pay the new and higher prices and reduce their production. If, in addition, the nominal exchange rate is allowed to appreciate, the competitiveness of producers

[38] See for example de Vylder (1992) for a survey and Younger (1992) for a practical example.

of tradeables is squeezed not only from the cost side; also the prices they obtain for their products go down. The fact that the production of tradeables is reduced (at the same time as the demand for such goods goes up) means, of course, that the import surplus must increase. This increase of the import surplus is caused by the inflow of aid.

In this way aid aid contributes to a structural change in the recipient economy - away from tradeables. It tends, therefore, to crowd out domestic foreign exchange-generating activities; a reflection of the fact that aid is (indirectly) fungible.

Special costs

In the main parts of the analyses above the aid has been assumed to be given as pure purchasing power in the hands of the the recipient government. The donor himself has not been directly involved in any aid activity in the recipient country (at least not in a way that has affected the consequences). However, very often a donor is heavily involved, at the project level, in monitoring activities, etc. Such direct donor involvement - through what might be called the «aid business» or «aid industry» - may have additional incentive effects than those just described.

-In principle it is possible to imagine a system where a donor's direct activities, for example at the project level, are identically those activities which the recipient government would have initiated itself if the donor had not involved himself directly. In that case the aggregate cost would also be the same. What are the realities: are the donors more efficient than the recipients at the project level? If donors are the most efficient it is wise of them to engage at the project level, in the sense that more aid will be at the disposal for other activities than if the government is responsible for carrying out the project. Sobhan (1995), however, seems to have second thoughts about that.

Several additional types of donor-generated costs in recipient countries are discussed in the literature:

-According to Morss (1984) and Karlstrøm (1996) the cost of co-ordinating a very high number of projects from many donors may be very costly for the recipient government, not to say impossible. Scarce administrative capacity is tied up in such activities[39]. The term

[39] Technical assistance may to some extent counteract this problem.

institutional destruction is often used to illustrate the seriousness of the problem. The government's ability to plan and implement its own policies is undermined; donors themselves may find it necessary to take over some of the government's functions.

-According to Sobhan (1995) and de Vylder (1992) the donors' demand for skilled labour is high and donors pay very high salaries, at least by local standards. As a result, such labour flows from other domestic activities into the aid industry. The cost in terms of reduced value added in other sectors of the economy may be very high.

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Commodity aid

In addition to the aid's incentive effects via increased recipient purchasing power and via the aid business' own direct activities just mentioned, special incentive problems may arise if a donor ties the aid to deliveries of specific commodities, for example food of some kind, intermediates of some type, etc. Consider for example food aid. Food aid may cause many types of problems, see for example Srinivasan (1991), but the main problem seems to be that it may depress food prices in the recipient country. If that happens domestic producers of similar goods will lose and production may go down. Such mechanisms tend to reinforce incentive effects of the Dutch disease type.

In our discussion of the indirect incentive effects we have so far had a decentralized or micro-economic perspective. The agents involved have been assumed not to think and act strategically. However, the importance of the structural change caused by the inflow of aid depends critically on macro-economic policies, concerning for example the exchange rate or export- and import-taxes. Such macro-economic policies will, of course, depend on the nature of the interactions between the donor and the recipient government.

IV Dynamic effects

So far the incentive problems have been discussed mainly within a static framework. The development over time has not been treated explicitely. However, some of the static problems mentioned clearly have dynamic aspects or consequences. This time we start with the indirect incentive problems and return to the direct problems later.

Indirect incentive effects

In a friction-less static framework the structural change caused by the aid inflow (consisting of a transfer of resources from the production of tradeables to non-tradeables and creating a foreign exchange gap closed by the inflow of aid) is no problem. If/when aid is reduced resources will flow the other way, out of the non-tradeables sector and into production of tradeables and the foreign exchange gap will be closed. Structural adjustment is no problem. Such a framework is useful if one wants to illustrate some basic tendencies in a simple way. However, in a dynamic perspective the problems may be more serious. For example, the existence of *learning-by-doing* effects and *adjustment costs* are important arguments.

In the real world structural adjustment is costly and difficult (both from an economic and from a political point of view). In a period with high (and possibly increasing) inflow of aid the problems do not necessarily appear as important. Most likely aid causes the aggregate disposable income to increase. Accordingly, aggregate (public and private) consumption goes up, those who leave the tradeables sector most likely end up in better paid jobs, etc., and those who lose may be compensated.

When aid is reduced or terminated so that the process has to be reversed, the necessary structural adjustment may be more difficult. Recalling that aid represents inflow of foreign exchange as well as disposable income, it is clear that unless the loss of aid is compensated through increased inflow of other types of foreign capital, the aggregate demand must be reduced and foreign exchange has to be saved or earned through reduced imports or increased exports. Some people have to lose compared to a situation with a higher inflow of aid.

It may be wise to distinguish between two different scenarios. If the economy is growing the problems may not be too serious. The underlying income growth may allow structural

adjustment (a reconstruction of the tradeables sector, at least partly at the expense of the non-tradeables sector) to take place in a way which allows most people to improve their living standards. Competitiveness may improve without a reduction of workers' real wage level, etc.

However, if the economy is not growing, the problems are more difficult. Consumption will have to be reduced and people who are fired in the non-tradeables sector may end up as unemployed. If they get a job (most likely in the tradeables sector) they must accept that the real wage level is lower than the wage obtained earlier.

A specific problem discussed in the literature, see Wijnbergen (1984), has to do with a learning-by-doing type of technical progress, especially in the tradeables sector. When domestic production of tradeables goes down as a result of aid, then also the rate of technical progress in the tradeables sector is reduced. This tends, in itself, to increase the foreign exchange gap. The result is that when the inflow of aid is reduced, domestic producers of tradeables are less efficient than they would have been in the absence of aid. Accordingly, *ceteris paribus,* it is more difficult to compete with foreign producers and value added per unit of resources used is lower than if the country had never received aid[40].

It is possible to construct a similar argument in a situation where the structural adjustment costs are important, for example because sector-specific investment is necessary in the expanding sector. High adjustment costs tend to reduce the benefits of aid in periods of high inflow of aid and to increase the hardships in periods where the inflow is reduced.

The fact that there are economic hardships, of course, also implies political difficulties, see for example Herbst (1990) on what he calls the structural adjustment of politics.

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[40] In principle producers in the tradeables sector could have avoided some of these problems. Provided that they were far-sighted enough, that they internalized the efficiency gains and that they had access to capital markets they would choose to produce at a loss in the period with high inflow of aid and cash in the benefits later, when the inflow of aid is reduced. The magnitude of the structural adjustment would, accordingly, have been lower. This solution is not realistic because producers do not have the necessary access to capital, because efficiency gains are to a considerable extent external, and because there does not seem to be any end to the inlow of aid, as perceived by the producers. That is why donors and the recipient government should take such problems seriously and to some extent try to limit the discrimination of the tradeables sector.

Direct incentive effects

The discussion of direct incentive effects in part II is primarily based on a static framework. Aid dependence is to some extent only apparent. Without aid domestic agents would have contributed more to the satisfaction of the relevant type of needs than they actually do.

One sentral and fundamental dynamic issue has to do with the fact that aid inflows appear as permanent and lasting. Recipients can count on (high inflows of) aid in the foreseeable future. This is one of the reasons why Boone (1994a) finds that aid ends up as consumption, not productive investment. He considers what he calls permanent aid. The inflow is, however, not manipulable. If the inlow of aid is permanent over time (and say constant) it may be perfectly rational to consume to-day any aid obtained to-day. The importance of saving and investing to prepare for future consumption is reduced, as perceived by the recipients. Donors will be present to-morrow with aid which can be consumed then anyway. This is a simple application of the permanent-income hypothesis used extensively in text-book macro-economic analysis.

If the donors primarily ear-mark their aid for the poor, permanent aid to the poor means that the recipient government will tend to keep down, on a permanent basis, their own contribution to poverty alleviation.

Both the existence of altruistic donors and the influence of important stakeholders are important reasons why it is perfectly rational for a government receiving aid to-day to expect to receive aid also in the future.

The Samaritans dilemma is relevant in this perspective if the inflow of aid in the future can be influenced (or manipulated) through decisions to-day. It means that recipient governments may find it advantageous to adjust to-day (by keeping domestic saving and contributions to the poor down) in order to "harvest" extra aid to-morrow. As a result, as perceived by altruistic donors, the dependence of aid may tend to increase over time and so will, accordingly, the amount given. As argued in section II. 4 the follower donor announces his aid allocation criteria and allows recipients to adjust in order to obtain extra inflow of aid. As a result, he is bound to discriminate or tax domestic activities supporting progress and development.

The learning-by-doing and adjustment cost arguments used above to discuss some dynamic issues concerning indirect incentive problems seem to be relevant also for the direct incentive problems.

Over time domestic agents' ability to contribute to the satisfaction of the relevant type of needs may be reduced, as they concentrate on other types of activities. As a result, if the inflow of aid is reduced and domestic agents are to step up their own efforts contributing to the satisfaction of the relevant type of needs, then some investment may be necessary and, in addition, the competence will in general be low. It is, accordingly, more expensive to contribute to the satisfaction of the relevant needs than it would have been in the absence of aid.

The following is simply meant as sketches of examples of possible dynamic effects creating increasing aid dependence over time. As far as we know such effects have not been much discussed in the literature.

In the public sector one important general problem may arise from the fact that aid seems to crowd out domestic tax income, or at least: the recipient government's dependence on tax income to finance its expenditures is reduced. Administrating and reforming tax systems are costly activities and the government may, accordingly, find it advantageous to let existing systems erode. Over time the government's ability to collect tax income is then reduced and it becomes more and more dependent on aid to finance its expenditures. Increasing dependence in this context would be reflected in a higher marginal cost of public funds, see Pedersen (1995a), than in the absence of aid and an increasing fiscal gap[41]. This loss of competence in the tax administration may be illustrated as an increase of CF in figure 3a. The result is that the transformation curve becomes steeper. The economy is, accordingly, suffering a loss and that loss is biased against the poor as long as it is the rich who pay the taxes to the government.

We also know that aid tends to cause consumption to increase and to crowd out domestic saving, reflecting the fact that recipent countries become less dependent on domestic saving for productive investment and future consumption. It is the financial system's task to channel savings from households to investors. Taking Lee (1996) as a point of departure - in addition to the general learning-by-doing argument used above - it is possible to argue that aid,

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[41] Similar problems may arise at a more detailed level when donors engage in projects in the educational sector, in the communication sector, etc. The recipient government tends to cut down its own efforts in the same sectors, thereby reducing its own ability to improve and run the same sectors.

therefore, tends to slow down the development of the financial system and also the profitability of productive investment and the return obtained by those who save. If that is true, the domestic financial system is less efficient, *ceteris paribus*, when the inflow of aid is reduced than it would have been in the absence of aid.

An implication of learning-by-doing and adjustment cost arguments is, of course, that reversing the process will be more difficult the more aid the country in question has received and the longer the period in which it has been receiving aid. In that perspective aid dependence in a country tends to be positively correlated with both the volume of aid and the length of the time period as aid recipient.

Certain types of aid, for example *technical co-operation* may in this perspective, at least partly, be seen as donors' way of compensating for the loss of competence and increased aid dependence over time. According to Berg (1993), however, such aid does not work well.

V Concluding comments

The purpose of this paper is to try to throw some light on questions concerning development aid and incentives. Problematic incentive effects may certainly explain the rather negative macro-economic results of aid reported in section I.2.

Aid seems to be fungible and donors tend to crowd out important domestic activities. The magnitude of the crowding-out depends, among other things, on the recipient government's preferences and administrative capacity as well as the nature of the interactions between the donor and the recipient.

Future research on aid and incentives along the lines proposed in this paper should be given high priority. As a first step the rather abstract principles presented should be applied in the study of specific aid activities carried out in specific countries. Actual experiences should be reinterpreted in the light of those principles. In addition, questions concerning implications for desireable reforms of institutions and aid policy should be taken seriously.

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Comments on the terms of reference(s).

Empirical evidence seems to indicate that aid's contribution to poverty alleviation and economic growth has been very modest. According to the original terms of reference the primary aim of the study should be to «explore possible incentive mechanisms that can explain these empirical patterns», primarily concerning incentives confronting policy-makers in recipient countries[42]. A list of specific incentive problems to be discussed are listed in the terms of reference. They are primarily *direct* and *static* in nature.

Furthermore, according to the original terms of reference, in addition to the *positive* task of identifying and exploring existing incentive problems capable of explaining the empirical evidence, the report also was to have a *normative* aim: implications for reforms of institutions and aid policy should be discussed. Finally, a specification of policy-relevant questions to be analysed on case-study level should be formulated.

It was specified that the paper should not exceed 100 pages.

At a meeting in Stockholm in november 1996, where a preliminary version of the paper was discussed, the reference group decided that *indirect* and *dynamic* aspects leading to aid dependence should be given higher priorty and the terms of reference was, accordingly, changed. One of the implications was that some of the static and direct incentive problems listed in the original terms of reference lost much of their relevance. In addition, the reference group decided that implications for aid policy were to be treated in more detail in a follow-up study later.

The reference group now recommended that the paper should be shortened to maximum 60 pages.

As the paper appears now the main focus is still on static and direct incentive problems listed in the original terms of reference. However, short sections on indirect incentive effects and dynamic issues have been included.

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[42] Donor policy and recipient policy are interdependent, and the results of a donor's activities in a recipient country depend critically on what is called «the nature of the interactions between the donor and the recipient government» in the paper.

FIGURES AND TABLES

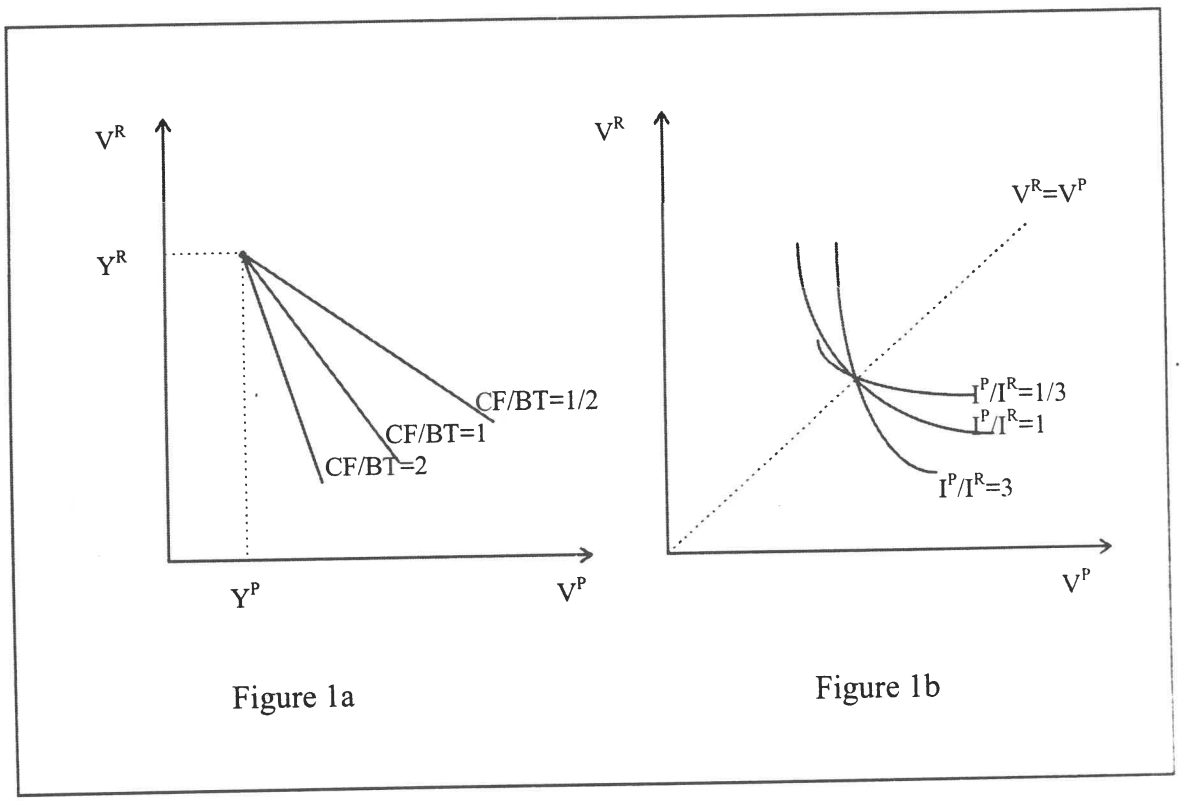
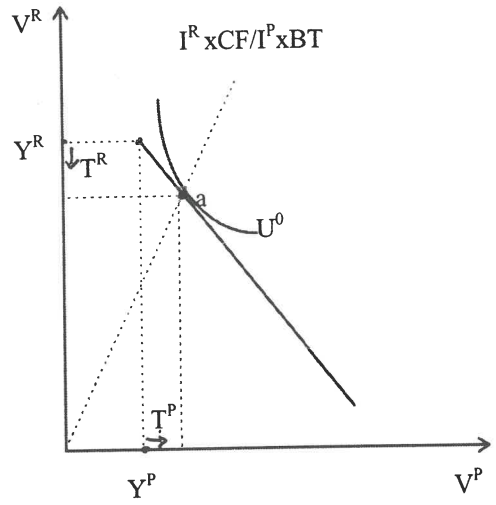


Figure 1a

Figure 1b



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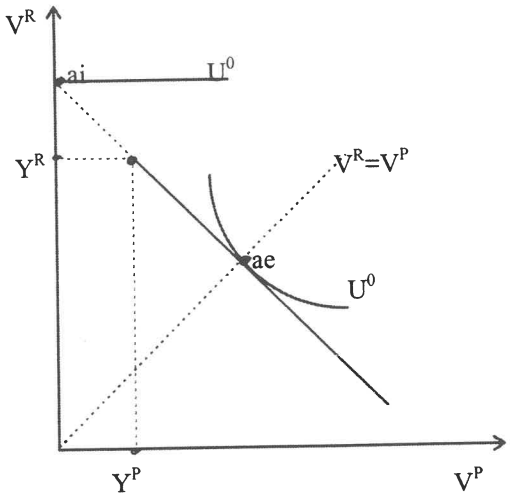

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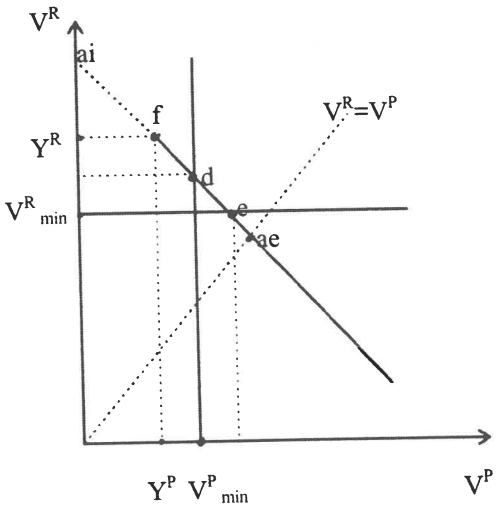

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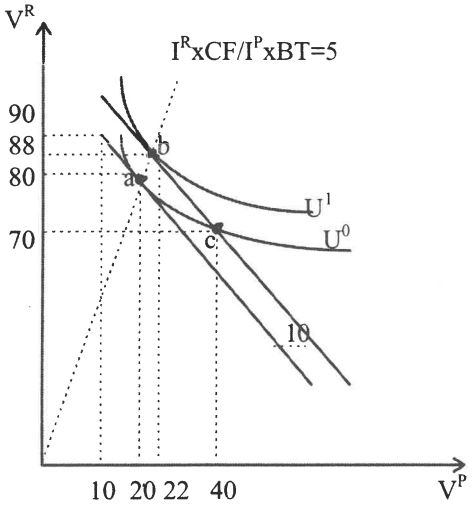

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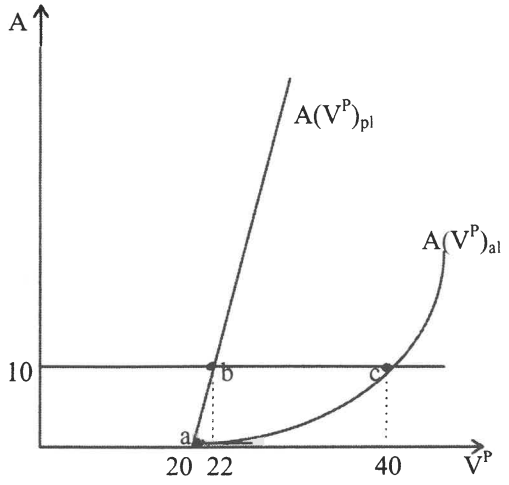

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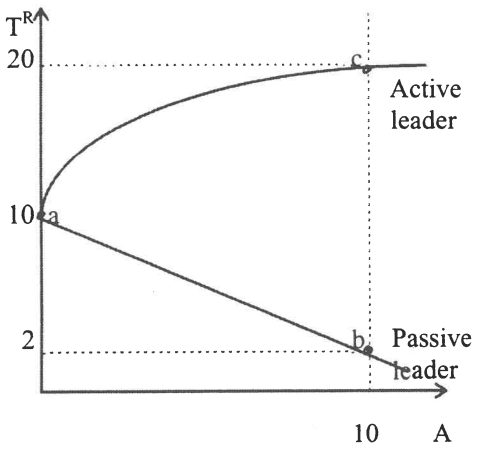

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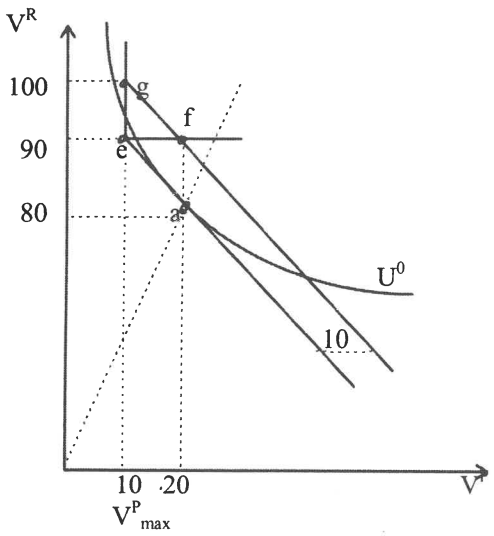

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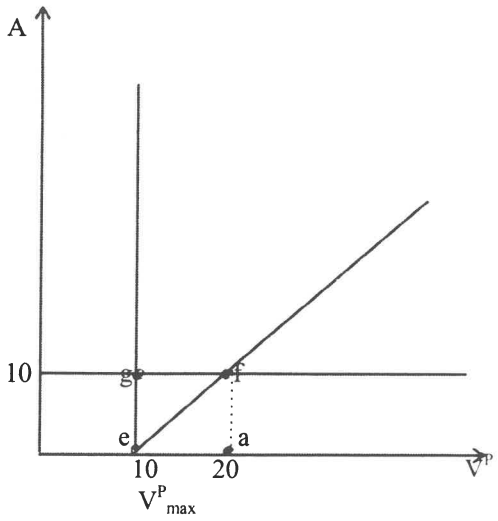

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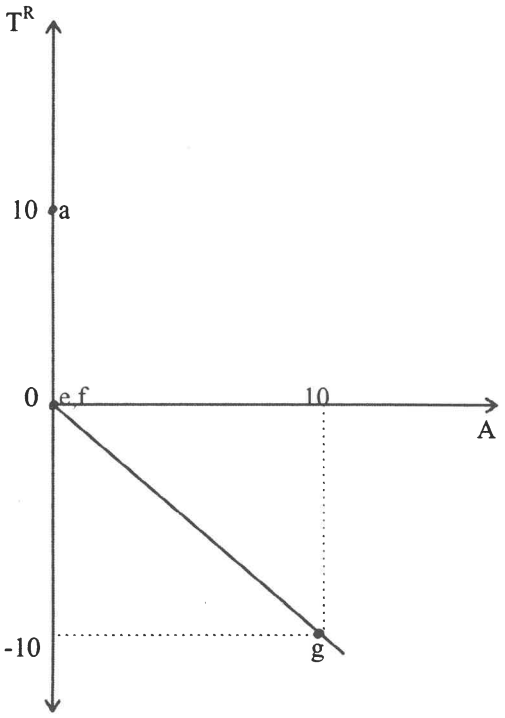

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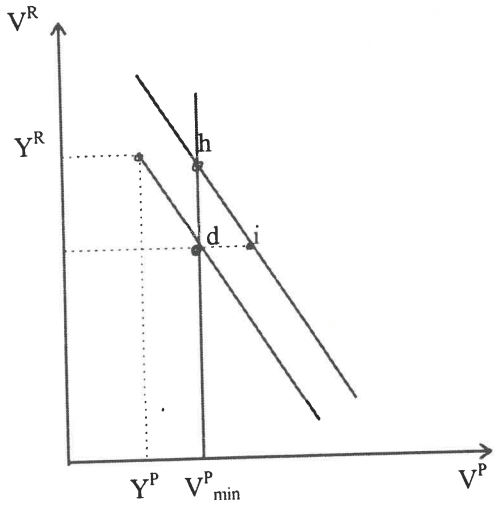

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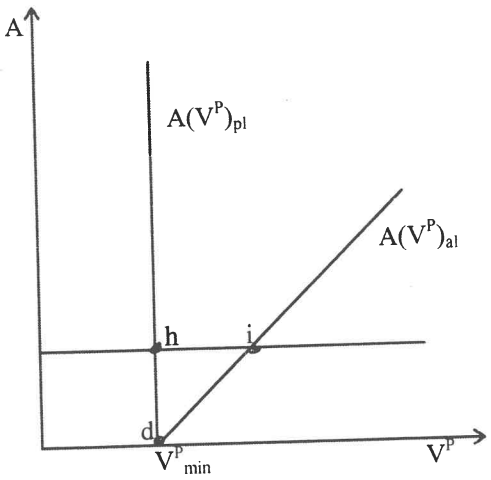

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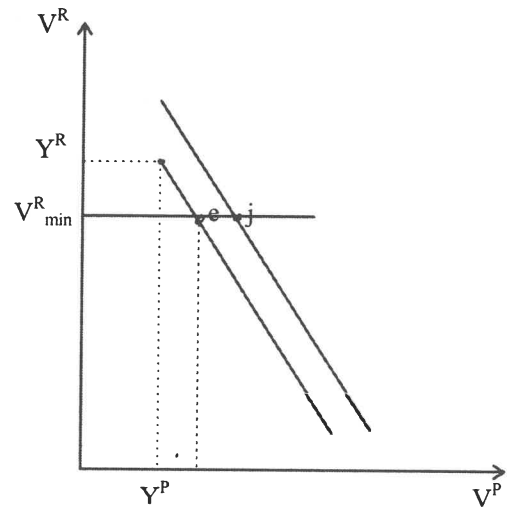

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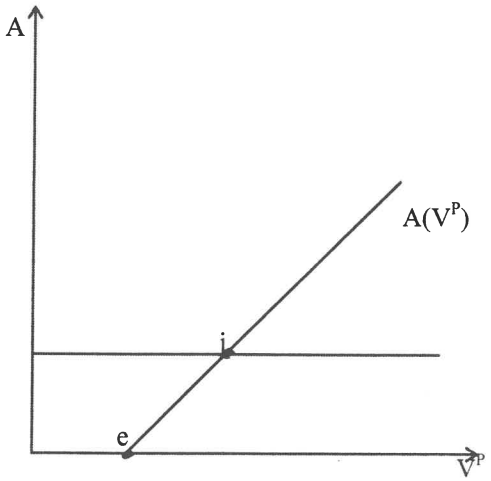

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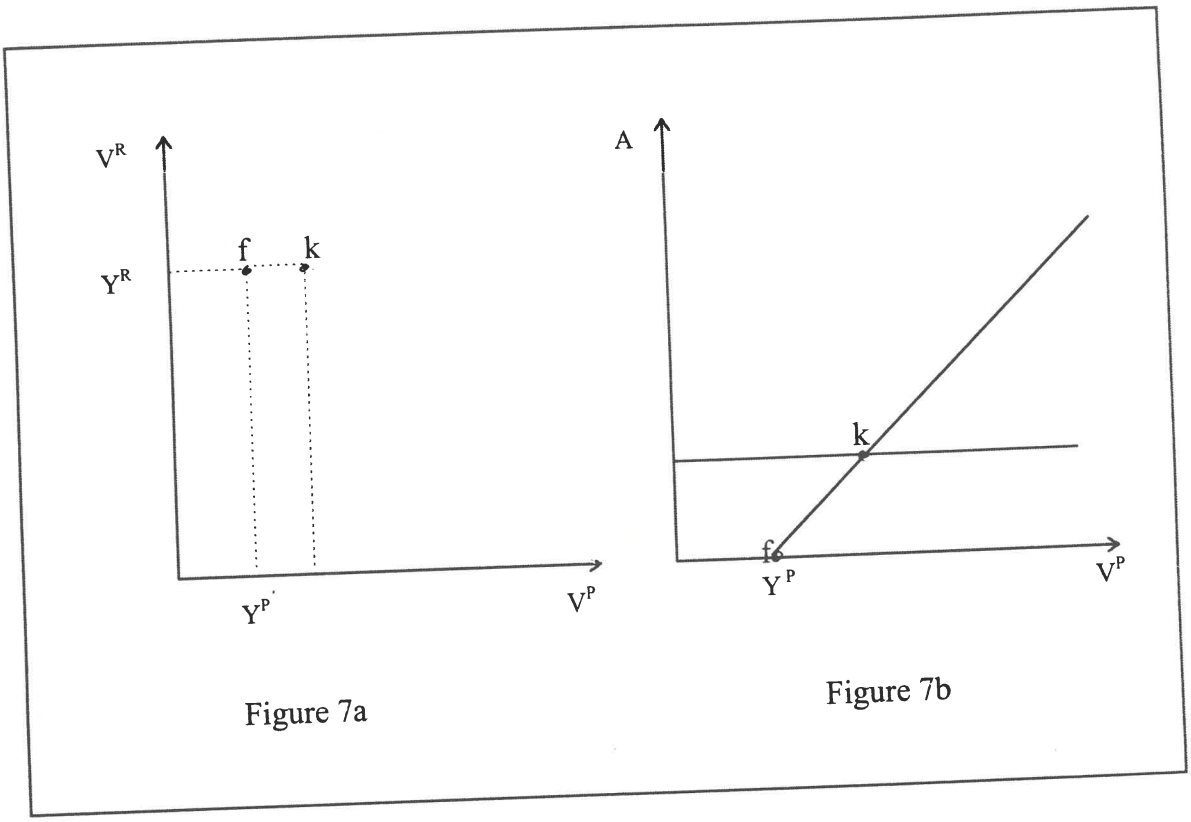
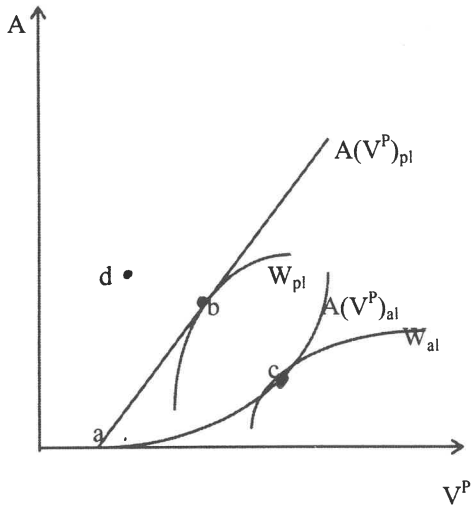


Figure 7a

Figure 7b



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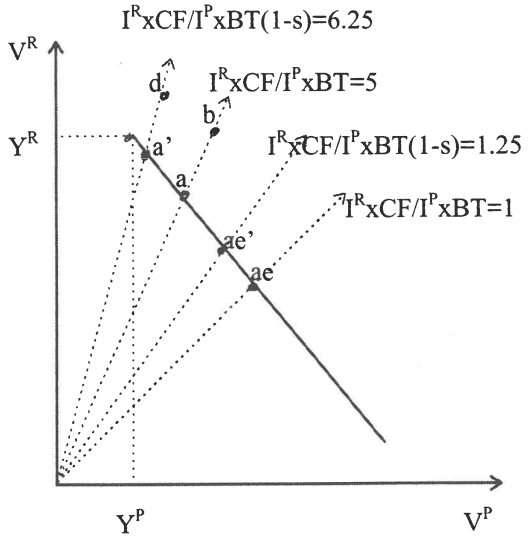

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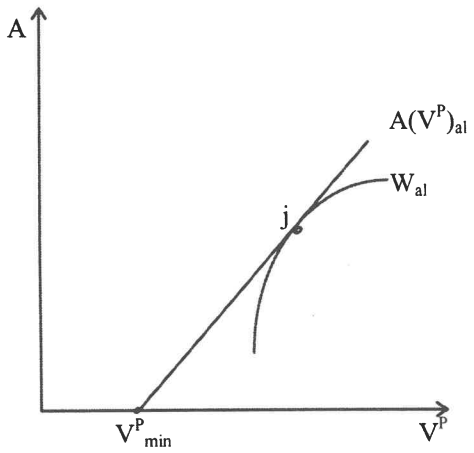

Figure 8c

	$I^P=0.2$ $I^R=0.8$	$I^P=0.3$ $I^R=0.7$	$I^P=0$ $I^R=1$	$I^P=0.5$ $I^R=0.5$
	Ref.			
CF=1 BT=1	$V^P=20$ $V^R=80$ $T^R=10$	$V^P=30$ $V^R=70$ $T^R=20$	$V^P=0$ $V^R=100$ $T^R=-10$	$V^P=50$ $V^R=50$ $T^R=40$
CF=1.5 BT=1	$V^P=14$ $V^R=84$ $T^R=4$			
CF=1 BT=1.5	$V^P=29$ $V^R=77.3$ $T^R=12.7$			

Table 1