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Case Study of Australian Development Aid in Papua New
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by

Euan Fleming, Danielle Heinecke and Brian Dollery

No. 2006-10

Working Paper Series in Economics

ISSN 1442 2980

www.une.edu.au/economics/publications/ecowps.php

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Incorporating Internalities into Benefit-Cost Analysis: A Case Study of Australian Development Aid in Papua New Guinea

Euan Fleming, Danielle Heinecke and Brian Dollery **

Abstract

The government failure paradigm is nowadays an integral part of modern policy analysis. Several taxonomic models of government failure have been advanced, perhaps most notably the theory of 'non-market' failure developed by Charles Wolf (1983; 1989). This model identifies four main sources of socially sub-optimal policy outcomes consequent upon the failure of public agencies, including 'internalities'. Using examples drawn from the Australian foreign aid environment in Papua New Guinea, this paper develops a conceptual framework for incorporating positive and negative internalities into the analysis of the impact of aid on development projects, programs and policies. It is argued inter alia that previous work has neglected the significance of positive internalities.

Key Words: Internalities; foreign aid; Papua New Guinea

** Danielle Heinecke is a post-graduate student at the University of New England. Brian Dollery is Professor of Economics and Director of the Centre for Local Government at the University of New England. Euan Fleming is Associate Professor of Agricultural Economics and Head of School of Economics at the University of New England. Contact information: School of Economics, University of New England, Armidale, NSW 2351, Australia. Email: bdollery@une.edu.au

INTRODUCTION

The importance of externalities in benefit-cost analysis has long been acknowledged. Indeed, the valuation of external benefits and costs is now routinely practised in project, program and policy analysis alike. The existence of externalities has traditionally provided the theoretical basis in the public economics literature for widespread government intervention in the economy in order to increase social welfare. Despite recognition of the need to account for externalities in policy design, intellectual arguments advising caution on government intervention, derived primarily from public choice theory, gathered force from the early 1970s and led to a reappraisal of the role of the government in the economy. This paradigm shift resulted in major changes in the way in which governments viewed their role in the market economy, driven largely by a more balanced appreciation of ‘non-market’ or ‘government failure’. This view was articulated by a number of theorists, including Charles Wolf (1993), who argued that government intervention generates social costs that are an inevitable outcome of non-market failure (Wallis and Dollery, 1999). Wolf referred to these social costs as ‘internalities’, which are imposed on society by government agencies diverging from their stated goals.

The 1980s saw governments across the globe divesting themselves of responsibilities and activities that they considered could be undertaken in a more socially efficient manner by the private sector. The rationale for these decisions rested heavily on the presumed existence of pervasive non-market failure, which could overwhelm the intended removal of negative consumption and production externalities and other forms of market failure. While Wolf (1993) and many others have developed a sophisticated conceptual framework to examine non-market failure, it has not yet been transformed into an accessible analytical framework that offers the same level of scrutiny and valuation of internalities within the benefit-cost analysis framework that occurs for externalities.

The aim of this paper is to attempt to fill this ‘gap’ in the literature by developing an analytical framework for identifying and valuing internalities using examples drawn from the Australian foreign aid program in Papua New Guinea (PNG). We argue that the presence and relative strengths of positive and negative

internalities in developing countries requires the explicit incorporation of their genesis into a coherent theoretical framework.

The paper itself is divided into four main parts. Section 2 provides a concise synoptic description of the literature on government failure generally and internalities in particular. Section 3 develops a conceptual system for specifying the costs and benefits of internalities. Section 4 considers the countervailing effects of aid on internalities in PNG. The paper ends with some brief concluding remarks in section 5.

GOVERNMENT FAILURE AND INTERNALITIES

The application of the public choice approach to the public sector has generated various taxonomic systems of government failure. For example, O'Dowd (1978: 360) developed an early typology of government failure on the argument that all forms of government failure fell into a generic tripartite classification containing 'inherent impossibilities', 'political failures' and 'bureaucratic failures'. Dollery and Wallis (1997) advanced a more recent tripartite taxonomy of government failure encompassing 'legislative failure', 'bureaucratic failure' and 'rent-seeking'. Similarly, Weisbrod (1978) constructed a quadrilateral classification of generic government failure embracing 'legislative failure', 'administrative failure', 'judicial failure' and 'enforcement failure'. However, from the perspective of policy analysis, the theory of non-market failure developed by Charles Wolf (1989), with its fourfold taxonomy of government failure, represents by far the most instructive of these typologies.

In a series of path-breaking publications, Wolf (1978; 1979; 1983; 1987; 1989; 1993) sought to construct a theoretical framework to serve as a conceptual analogue to the established theory of market failure. His model of non-market failure thus mirrors the orthodox methodology followed in the theory of market failure by seeking to attribute various kinds of non-market failure to peculiarities in underlying 'demand' and 'supply' conditions. Wolf (1979: 117-118) stresses these methodological parallels, and argued that 'just as some types of incentive encourage market failure, so too incentives influencing particular non-market organizations may lead to behavior and outcomes that diverge from ones that are socially preferable, according to the same criteria of preferability as those for market efficiency and distributional equity'. Moreover, in response to the question of why certain patterns

of non-market failure manifest themselves, he hypothesized that ‘the answer lies in the distinctive supply and demand characteristics that differentiate non-market outputs from market outputs’ (Wolf, 1979: 118).

Wolf (1989: 51–55) identified four basic attributes of non-market supply: ‘Non-market outputs are often hard to define in principle, ill-defined in practice, and extremely difficult to measure as to quantity or to evaluate as quality’; the lack of competition in the provision of non-market outputs makes any meaningful estimates of economic efficiency difficult; the ‘technology of producing non-market outputs is frequently unknown, or if known, is associated with considerable uncertainty and ambiguity’ (Wolf, 1989: 52); and finally non-market production activity is usually characterized by the lack of any ‘bottom-line’ evaluation mechanism equivalent to profit or loss for appraising success and there is typically no procedure for terminating unsuccessful production (such as bankruptcy in the private sector).

Wolf (1989: 39–50) also identified several attributes of non-market demand. Most of these attributes focused on the political context that surrounds the activities of government bureaus, such as ‘increased public awareness of market shortcomings’ (Wolf, 1987: 55), ‘political organization and enfranchisement’ (Wolf, 1989: 40), the tendency for maximizing politicians and bureaucrats to be rewarded for propagating interventionist ‘solutions’ to perceived social ‘problems’ without reference to the costs of implementation and the ‘high time-discount of political actors’ (Wolf, 1989: 40). However, the ‘condition’ of non-market demand worth emphasizing is ‘the decoupling between those who receive the benefits, and those who pay the costs, of (the organization’s) programs’ (Wolf, 1989: 41). In the foreign aid milieu in developing countries, the greater the proportion of their revenue that development agencies receive from foreign governments, the more they will be subject to this kind of decoupling.

These various ‘peculiarities’ in the nature of non-market demand and supply form the foundation of Wolf’s theory of government failure and the resultant taxonomy of non-market failure. Moreover, the structure of arguments intrinsic to this theory deliberately replicates the logic of the theory of market failure. Wolf (1979: 115) puts the matter thus:

The supply and demand characteristics of the nonmarket sector are fundamental to the theory of nonmarket failure. They provide a basis for formulating a typology of nonmarket failure analogous to that which already exists for market failure. In both cases, the ‘failures’ – whether market or nonmarket – are evaluated against the same criteria of success: allocative efficiency and distributional equity judged according to some explicit social or ethical norm.

Inclusive of distributional inequities, Wolf has developed a quadrilateral taxonomy of non-market failure. In the first place, ‘redundant and rising costs’ represent a primary kind of non-market failure. In essence, Wolf argues that while market processes impose a relationship between production costs and output prices, this relationship is generally absent in non-market activity since at least part of the revenues of nonprofits and public bureaus may derive from non-commercial sources, like donations or government tax income. Consequently, ‘where the revenues that sustain an activity are unrelated to the costs of producing it, more resources may be used than necessary to produce a given output, or more of the non-market activity may be provided than is warranted by the original market-failure reason for undertaking it in the first place’ (Wolf, 1989: 63). As an example, Wolf (1989) cites the case of government agencies trying to provide ‘dignified’ employment for mentally disabled people by attempting to train them to unrealistically high levels.

The second type of non-market failure in the Wolfian taxonomy is termed ‘derived externalities’. Derived externalities ‘are side effects that are not realized by the agency responsible for creating them, and hence do not affect the agency’s calculations or behavior’ (Wolf, 1989: 77) and represent the conceptual analogue of the externalities generated by private firms. For instance, in the developing country context, hydroelectric schemes may realize distinct benefits in the form of power, flood mitigation and the like, but often have derived externalities through social dislocation of small tribal communities with far-reaching unintended effects.

In his classification of market failure Wolf includes ‘distributional equity’ to the conventional categories of externalities and public goods, increasing returns to scale and market imperfections, despite acknowledging the fact that most economists view market failures exclusively in terms of efficiency (Wolf, 1989: 28). Accordingly, in order to maintain the symmetry of his typology of non-market failure with the

orthodox theory of market failure, Wolf incorporates adverse distributional consequences as an additional category of non-market failure. While hypothesizing that ‘there is an identifiable process by which inequities can result from non-market activities similar to inequalities flowing from market outcomes’, Wolf (1989: 84) nevertheless argues that non-market inequities characteristically occur in terms of power and privilege, whereas distributional market failures typically appear in income and wealth differences. In developing societies, with fragile democratic institutions, this type of distributional inequity can obviously have an ominous impact.

Finally, and in the present context by far the most important form of non-market failure (Wolf, 1979: 132) resides in ‘internalities and private goals’. These refer to intra-organizational allocation and evaluation procedures that determine distributional outcomes for agencies and agency personnel alike, and thus constitute part of their respective utility functions. While both market and non-market organizations must perforce employ an ‘internal version of the price system’ for intra-firm resource allocation, market pressures ensure that the ‘internal standards’ of market organizations are strongly linked to the ‘external price system’, whereas non-market organizations may have internalities largely unrelated to optimal performance. Accordingly, just as the problem of externalities in market failure arises from a predominance of private costs in private sector decision-making, so the problem of internalities in non-market failure stems from the ascendancy of private motives in the decision making of public agencies. Examples of internalities are easy to find within the public bureau milieu of the budget-maximizing bureaucrat, and include the ‘more is better’ approach and the ‘more complex is better’ yardstick – both instances of Wolf’s (1989) contention that ‘Cadillac quality’ is encouraged in public agencies.

SPECIFYING INTERNAL COSTS AND BENEFITS

We begin our development of an analytical framework for understanding internalities with a standard depiction of a negative externality, such as pollution, in Figure 1. Following convention, marginal external cost (MEC) represents the vertical distance between the marginal social cost (MSC) and marginal private cost (MPC) curves. In this situation, too much output is being produced at y_1 (assuming some fixed relationship between pollution and output) where the marginal private benefit (MPB)

is equal to the MPC of production. That is, MSC exceeds MSB and output needs to be reduced to y_2 , at a higher price p_2 , where MSC is equal to the marginal social benefit (MSB). MEC is assumed to increase quite steeply with increased output, indicating that there is a relatively low social cost with low levels of pollution, but social costs become much greater as pollution becomes more of a problem. It must be stressed that price in this analysis represents a shadow price since many government services are either public goods (and thus cannot be traded in markets) or must be provided free to the public on legal or political grounds.

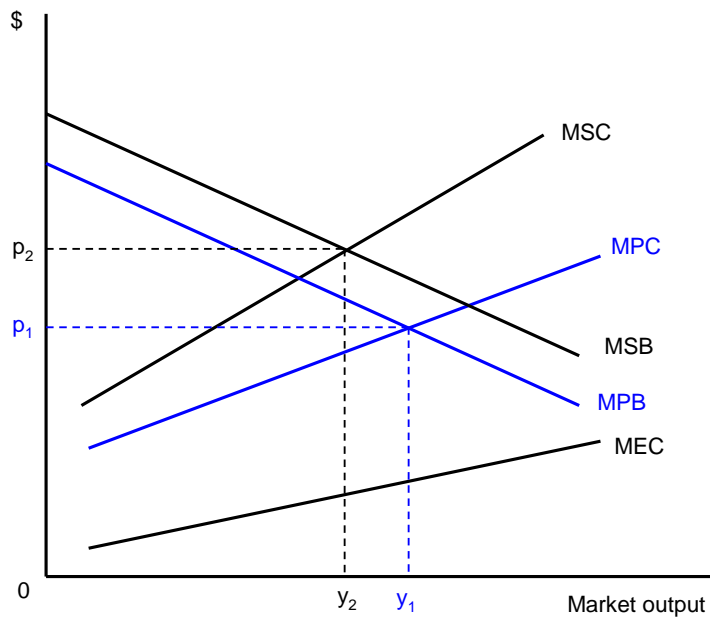


Figure 1. Dominant influence of a negative externality

While this situation may be one where an aid agency, like the Australian Agency for International Development (AusAID), becomes involved in helping the PNG government achieve a socially optimal solution, the more common situation is shown in Figure 2. A typical example of this situation, in the PNG context at least, would be primary health care, with too little being provided at y_1 and price p_1 . At this point, MSB exceeds MSC, suggesting government intervention is needed to provide more primary health care that in turn could boost output (assuming a positive relationship between primary health care and output). Price increases from p_1 to p_2 .

In this instance, it is assumed that MEC is low and increases marginally with increased output.

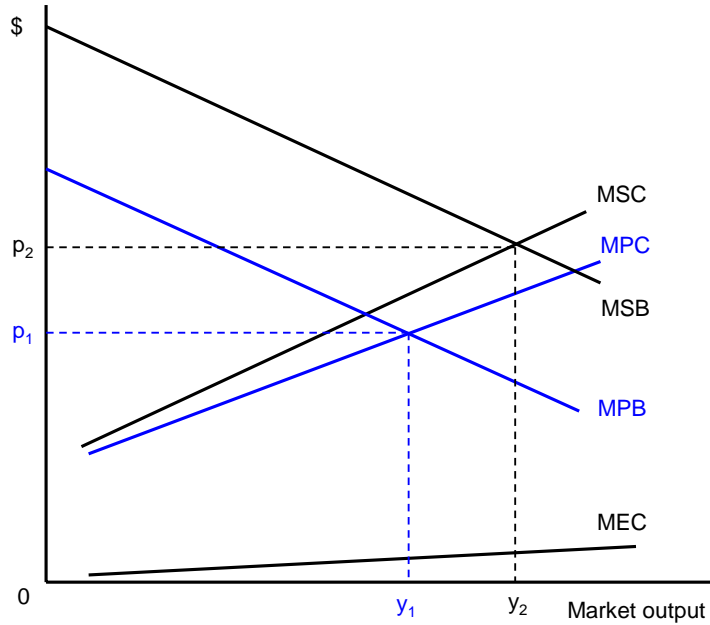


Figure 2. Dominant influence of a positive externality

The situations described in Figure 1 and Figure 2 assume there are no social costs or benefits of government intervention to correct for the existence of external costs and benefits that cause an initial divergence between the socially and privately optimal levels of output. As indicated earlier, social costs at least are likely to be present in various guises, as an outcome of non-market failure (Wolf, 1989). This is demonstrated in Figure 3. The marginal internal cost (MIC) curve in the non-market (government) sector is analogous to the MEC curve in the market sector.

The government uses resources, with their cost measured by the marginal cost of government activity (MGC) curve, to provide goods and services that benefit society, measured by the MGB (marginal benefit of government activity) curve. For instance, state-provided health services generate benefits (illustrated by means of the MGB schedule) and impose costs (computed in terms of the MCG schedule). Positive externalities may exist (as we shall see) in which case the MSB curve lies above the MPB curve as in Figure 3. But governments typically also incur negative externalities that result in an MSC curve that lies above the MGC curve. In Figure 3, the small increase in government services from the privately optimal (from the point of view of government agencies) to the socially optimal level of output (that is, from y_1 to y_2) is accompanied by a large increase in price from p_1 to p_2 .

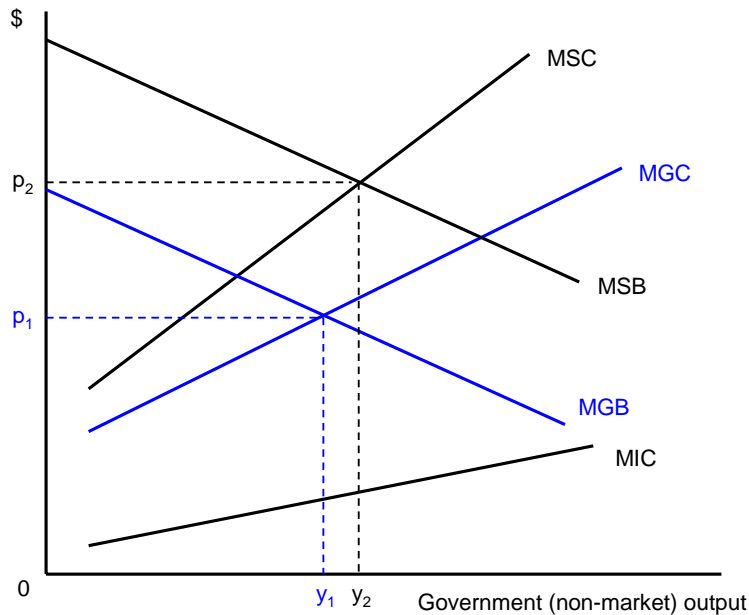


Figure 3. Government sector with negative and positive internalities

Marginal internal benefits (MIB) are represented implicitly in Figure 3 as the vertical distance between the MSB and MGB curves. In Figure 4, they are represented explicitly by MIB curves where positive impacts of government intervention are felt beyond the organisational goals of government agencies as a result of the decisions and actions of employees who over-fulfil on their employment contracts, They do this most commonly by working longer hours than contractually stipulated, or by providing services of value to the public that are not designated in their job description.

Wolf (1989) ignored positive internalities. However, they may be more common than is acknowledged in the literature in general, where the main focus characteristically falls on the negative aspects of non-market failure. Many people working in the development sphere in PNG (and indeed in many public agencies elsewhere) are inspired by their own 'internal goals' that go beyond the need to meet their formal job responsibilities within a government agency.

Two levels of MIB are shown in Figure 4 - for a low level (l) and for a high level (h) respectively. The high level of MIB is similar to the situation prevailing in Figure 3, leading to an expansion of government output to y_{h2} in Figure 4. It is also shown in Figure 4 that the socially optimal level of government output contracts to y_{l2}

when there is a low level of MIB deriving from the decisions and actions of employees in government agencies.

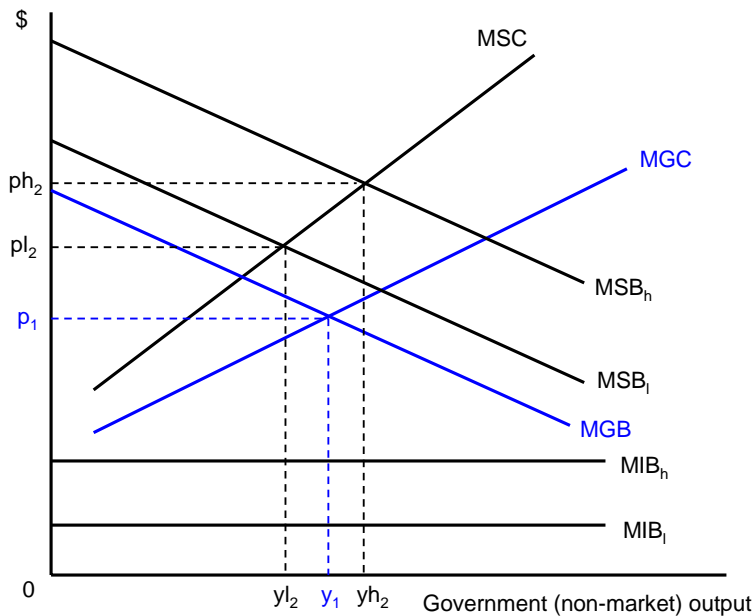


Figure 4. Two different levels of marginal internal benefits

A difference between internal benefits and external benefits is that the latter require government intervention to achieve them by correcting for market failure whereas the latter are apparently generated autonomously without the need for government action. But the willingness of its employees to contribute internal benefits is likely to depend heavily on a government's performance. A key factor in this respect is the expectations of employees in a government agency about the worth of the job they are performing, and the extent to which they think their contributions are valued. *Ceteris paribus*, the level of MIB will be positively correlated to the level of MGB and negatively correlated to the level of MSC. That is, employees in the government agency are more likely to contribute beyond their job requirements if they expect that the agency is generating benefits to society, and less likely to contribute if they have low expectations that the agency is performing a useful function or keeping social costs in check. An implication is that internal benefits are likely to be abundant in well-managed countries and scarce in countries that are poorly governed.

Now consider a situation where an international agency, like AusAID, provides constructive aid to a host developing country government that can make effective use of these aid funds in its activities. Figure 5 shows such a situation where

the MGB and MSB curves shift outwards with aid to a greater extent than the MGC and MSC curves. [It is assumed for simplicity that the aid has not caused an increase in negative externalities with an increase in output.] This is clearly an outcome that is desirable for both the host government and the international agency: Aid has allowed the public agency to increase both its optimal output to individuals and its socially optimal output. The socially optimal level of output is now much closer to the privately optimal level. It should be stressed that ‘socially optimal’ in this context refers to the government’s definition of what constitutes social optimality rather than social optimality *per se*.

But what of a situation where a host government in a ‘failed state’ is unable to make effective use of more aid, as it is often argued in the case of the aid provided by AusAID to PNG (see, for instance, Hughes and Windybank, 2005)? The benefit and cost curves reflecting such a situation are shown in Figure 6. Here the additional government and social benefits of aid are small whereas the extra social costs are high and increasing as the level of government activity increases. The MIC curve is larger with aid, reflected in the greater vertical distance between the MSC and MPC curves with aid than without aid.

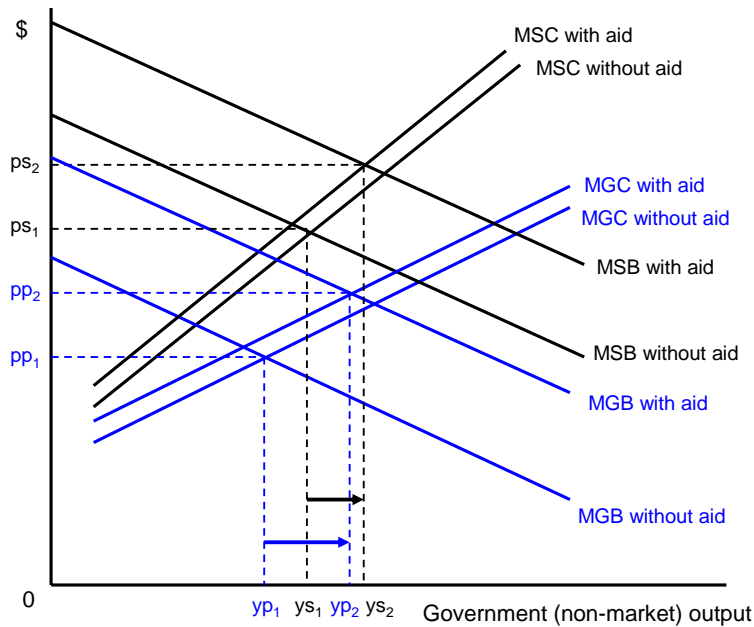


Figure 5. Outward shifts in MGB and MSB curves shift that are greater than shifts in the MGC and MSC curves with aid

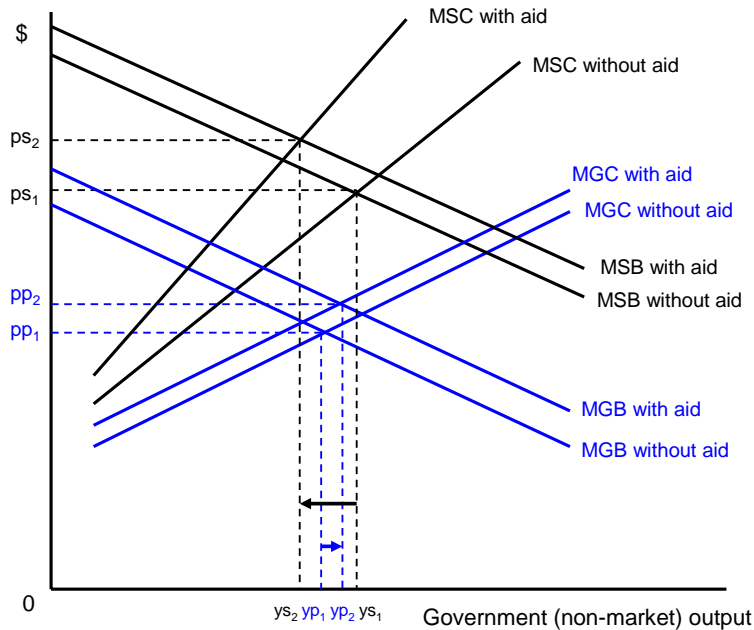


Figure 6. Outward shifts in MGB and MSB curves shift that are less than shifts in the MGC and MSC curves with aid

Individuals may benefit from this aid as shown by the increase in the privately optimal output from y_{p1} to y_{p2} . [It is often the ‘better off’ among the population who capture a disproportionate share of this benefit.] But the socially optimal level of government output has declined from y_{s1} to y_{s2} because of the large increase in MIC (i.e. upward shift of the MSC curve) with aid, and the price has increased substantially from ps_1 to ps_2 . The new privately optimal level of government output (y_{p2}) is now much greater than the socially optimal level (y_{s2}), by $y_{s2}y_{p2}$, whereas the socially optimal level of government output was greater than the privately optimal level prior to the provision of aid.

Aid programs that generate high positive externalities are represented in Figure 7. In common with Figure 6, there are not only large negative externalities associated with aid delivery, but also large positive externalities. The net effect in Figure 7 is for the socially optimal level of government output to increase after aid, by an amount comparable to the increase in the privately optimal level, rather than decrease as it did in Figure 6.

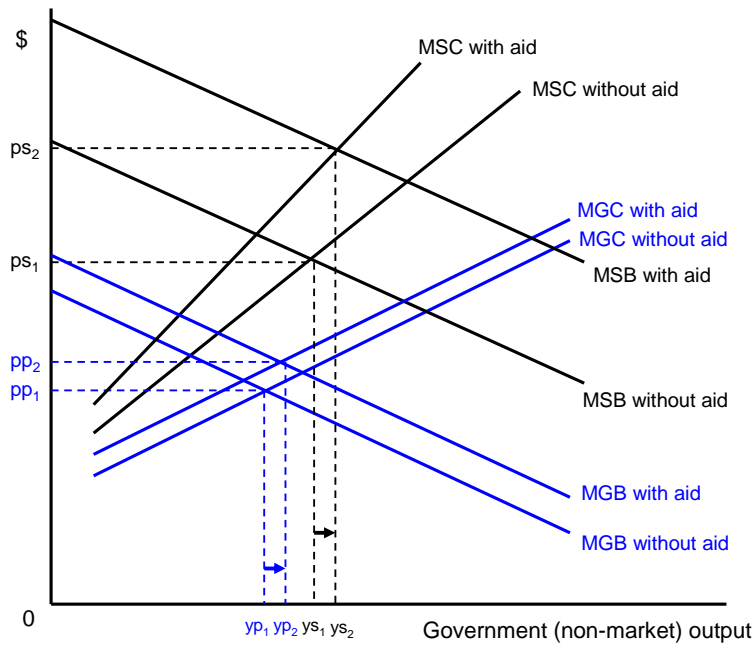


Figure 7. High positive externalities created by aid

CONTRASTING AID EFFECTS ON INTERNALITIES IN PNG

We now return to the standard MSB and MSC diagram, but now assume that the positive and negative externalities of the public sector associated with the provision of aid (as discussed in Figures 5 and 6) are included. Two situations are again presented in Figure 8 and Figure 9 similar to those represented in Figure 5 and Figure 6. In Figure 8, with good governance the socially optimal level of output in the economy has increased from y_1 to y_2 as a result of the effective use made of aid funds (a high level of positive externalities and a low level of negative externalities). On the other hand, with poor governance, the socially optimal level of output in the economy has decreased from y_1 to y_2 in Figure 9 as a result of the ineffective use made of aid funds (a low level of positive externalities and a high level of negative externalities).

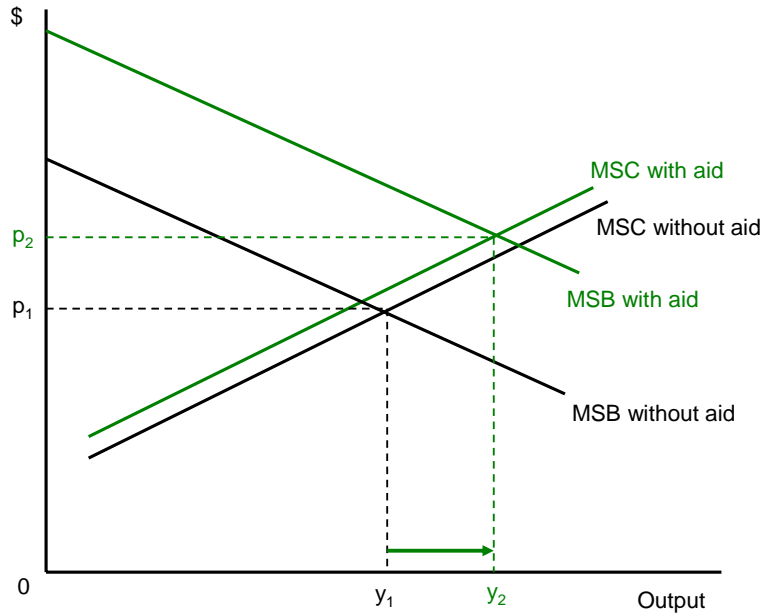


Figure 8. Aid in an environment of good governance

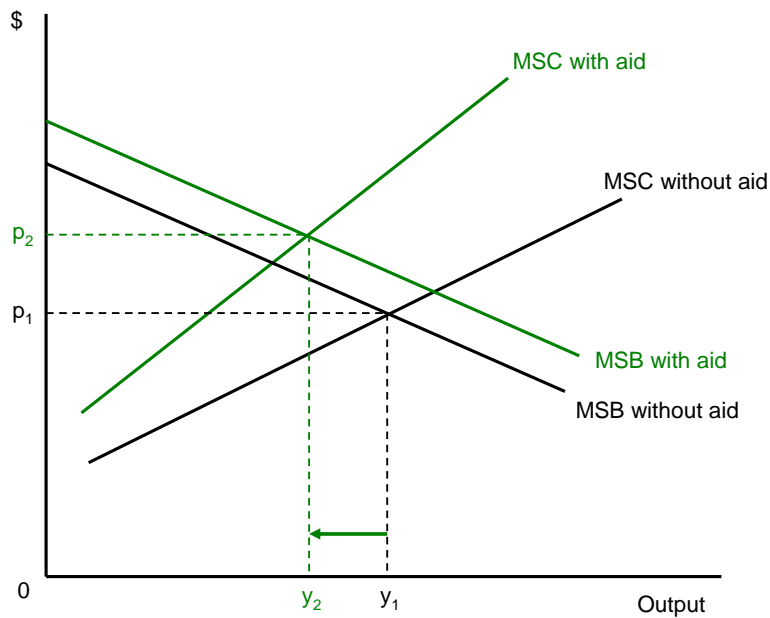


Figure 9. Aid in fragile state environment

Figure 8 and Figure 9 represent only two possible positions on a continuum of potential outcomes. The position occupied by a given developing country depends most crucially on the ability of the host government to make effective use of the aid. But it is also likely to depend on the nature and structure of the aid program, the

attitudes and motives of personnel employed in public agencies, and relations between these personnel and the public they are intended to serve.

The aid program of the Australian government has indeed attempted to increase the kind of behaviour that results in positive internalities that are indicated in Figure 8. The deployment of a detachment of the Australian Federal Police (AFP) in PNG seems to represent a good example, where the social benefits are potentially massive. Concerted efforts by the AFP to support local police in attempts to restore law and order and achieve more efficacious law enforcement seem to have inspired some members of the PNG police force to work more effectively and appear to have changed the relations between them and the public by engendering greater confidence in the latter that the police are working in the interests of law and order.

A second example in East New Britain Province is the AusAID-funded Integrated Agriculture Training Program (IATP), operated for the past three years by the University of Vudal at the Kairak Vudal Resource Training Centre. Activities undertaken as part of the Program seem to have improved relations between farmers, extension officers, staff at the University and other stakeholders in the Province, enhancing the motivation and ability of public agencies to discharge their formal responsibilities when dealing with smallholders (Peter Navus, personal communication, 2005). Positive internalities from aid of this kind are often associated with the assignment of aid staff to work in close conjunction with local staff, where the habits, commitment and initiative of the aid staff favourably influence the approach of the local workers to their tasks.

On the other hand, the health sector in PNG is one in which external benefits exist but which may well be an example of the situation represented in Figure 9. Numerous reviews (see, for example, ADB, 2003: 21; Bolger *et al.*, 2005: vi, AusAID, 2006: 4-5) have all concluded that donor assistance has strengthened the planning, monitoring and policy functions within the health sector, predominantly at the national level. But this assistance has had little impact on the management, leadership and performance of staff (see, for instance, ADB, 2003: 41-42; AusAID, 2006: 2-3). The abundance of technical assistance in the health sector at the national level may explain the 'gap' between policy and implementation, both within the National Department of Health and at service delivery points. Technical assistance has also undermined the internal incentives for management to take responsibility within the

sector. For donors, the policy implications of this assistance seem to mean accepting a much 'slower movement' to a sectoral approach and being prepared to take a 'back-seat' to encourage long-run institutional change. In its review of the sector, ADB (2002: 48) recommended to donors that if it was clear the health system was 'not ready for a change of management culture and effectively organise supportive supervision at all levels, there is little scope for donor partners to support the sector'.

The performance of the health sector has been constrained by the overall health environment in which it operates, with numerous damaging health factors impinging on the population, and it is therefore largely outside the direct control of the health sector. A review of health outcomes in PNG found that only about 20 per cent of health indicators could be ascribed to the health system, with the remaining 80 per cent of outcomes attributable to negative environmental factors (AusAID, 2003: 44). Nevertheless, the National Department of Health has performed poorly in engaging with its external stakeholders critical to its viability. For example, despite annual health sector indicators that show that the health of the population is declining, the National Department of Health has been unsuccessful in its attempts to secure a real increase in the resources of the PNG government and in preventing arbitrary cuts in staffing, whilst other public agencies have simultaneously grown (Bolger *et al.*, 2005: 9).

The mineral resource sector provides an important ongoing source of economic earnings necessary to maintain public finances in PNG. However, due to its 'enclave' nature and the corruption opportunities that resource flows provide in a weak governance environment, further development of this sector is not viewed as a catalyst for economic development. In fact, while poor governance persists, further resource development will likely further stimulate corruption, and possibly civil conflict, because of the high rents it generates. For example, considerable state resources are being diverted to the negotiation of the PNG-Australia Gas Pipeline, in particular to consultations and resolution of disputes with landowners (*The National*, 6 February 2006).

Burnside and Dollar (2004: 4) have argued that, in weak institutional environments, substantial financial aid is unlikely to stimulate reform, and may in fact retard it. Knack (2000) and Dijankov *et al.* (2005) used cross-country regression analysis to provide empirical support for this view. They further argued that, similar

to ‘resource-curse’ effects, high levels of aid delivered to countries, such as PNG, with high levels of institutional failure, can have a negative effect on the quality of political interaction and governance, including bureaucratic quality, corruption and the rule of law.

Easterly (2001) argued that the way in which aid bureaucracies are required to function for domestic purposes (for example, by demonstrating outputs for domestic public consumption) does not allow for aid to be delivered effectively. Some aid agencies, like the Swedish International Development Agency and the World Bank, have publicly accepted that their own internal procedures create perverse incentives to deliver particular programs in certain ways. These perverse aid incentives can weaken development outcomes in recipient countries by providing too much aid that may help to maintain the *status quo* in poorly governed countries. Easterly (2001: 101-120) pointed out that many states have been ‘stuck’ on a ‘merry-go-round’ of loans that have not led to either worthwhile reform or significant economic growth.

CONCLUDING REMARKS

Foreign aid has been a controversial form of international assistance in economics since at least the pioneering work of Peter Bauer (1957). Numerous reasons have been advanced for the mixed record of foreign aid in generating economic development and economic growth, including the perverse incentives of aid programs on both the public sector and citizenry in the recipient nations and the fact that aid is typically delivered through public agencies and non-profit organizations prone to non-market failure.

In this paper we have highlighted the role of internalities in complicating the analysis of aid programs, drawing on the institutional milieu of PNG for salient examples. In order to make the impact of both positive and negative internalities amenable to economic analysis, we have sought develop a conceptual framework using the standard tools of economic analysis. This exercise, together with actual instances in the PNG environment, is intended to demonstrate that greater attention should be paid to the internal benefits and internal costs, as well as external benefits and costs, in the evaluation of specific development projects, programs and policies. While the emphasis throughout the world has thus far fallen more or less exclusively

on internal costs, the potentially substantial values associated with internal benefits suggest that they have been ignored for far too long.

Finally, a general caveat to the approach outlined in this paper is necessary. Conventional economics traditionally distinguishes between normative and positive analysis. A positive perspective would attempt to answer questions of the following type: What incentives spur aid-recipient governments in developing countries to seek optimal outcomes? What are the effects of these incentives on the observed pattern of outcomes? By contrast, the normative approach presented in this paper tries to answer questions of a somewhat different character: What is the impact of positive and negative externalities on outcomes and how does this affect social welfare?

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