DIMENSIONING DEVELOPMENT AID:
SOME LESSONS FROM EVALUATION

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Abstract

Most discussions on the development effectiveness of aid tend to focus on aggregate flows and neglect attention for various categories of aid and different aid delivery mechanisms. We emphasize, however, that the key question is not whether aid works, but which aid works. The potential - positive and adverse - effects of aid appear to be mainly the consequence of how aid is provided. This paper therefore addresses two questions: which aid works and how aid is delivered. These issues are becoming increasingly relevant given the declining societal trust in public aid and against the background of the growing interests in the new aid architecture.

We discuss three basic - albeit usually underestimated - aspects that critically influence development effectiveness: (a) resource complementarities between different program components, (b) substitution effects between different activities, and (c) spillover effects that influence aid effectiveness at aggregate level. We present some empirical examples of these mechanisms and indicate their particular relevance for the new types of institutional arrangements that characterize upcoming reforms of the international aid architecture (public-private partnerships, multi-donor trust funds and civil society support funds).

Keywords: development effectiveness; heterogeneity of aid; aid complementarities; substitution effects; spillover effects; new aid architecture.

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1. **Introduction: Heterogeneity of Aid**

Development aid used to receive for a long time unconditional citizen support in almost all European countries. The latest Eurobarometer report (EC, 2010) registers, however, that the share of people considering aid as ‘very important’ to help people in developing countries has declined from 53% in 2004 to 45% in 2010. At the same time, it remains striking that most citizens largely overestimate the volume of aid provided by their government. People also seem more reluctant to support professional development agencies and prefer to practically engage in small-scale development cooperation activities.

The societal support base for development aid is only partly influenced by information on or conceptions about aid effectiveness. Overestimation of the dimensions of aid easily leads to unrealistic expectations. Moreover, general skepticism about the role of (public and private) institutions in managing socio-economic crises is reflected in a gradual shift from ‘trust me’ and ‘tell me’ to ‘show me’ (and sometimes also ‘involve me’) attitudes. This is further enhanced by the rather unfruitful dialogue amongst development professionals taking extreme views, ranging from overoptimistic ideas that massive aid can eradicate poverty (Sacks) to fully pessimistic views that most aid is spoiled (Easterly) and perpetuates dependency (Moyo).

Few of these perceptions and debates are based on detailed empirical analyses of aid effectiveness. Therefore, these studies usually suffer from two major shortcomings: (a) little attention is given to the ‘framing’ of aid as a – usually minor - component of the overall resource flows dedicated to development; and (b) most aid programs are almost exclusively perceived from the supply side (donor perspective) and tend to disregard demand-side criteria regarding the tailoring of aid to local requirements and preferences. Recognizing these dimensions permits us to consider the real importance of aid and to outline possible pathways for enhancing development effectiveness within a wider framework of a renewed (inter)national aid architecture.

A wide range of studies have been devoted to address the question ‘whether aid works’, focusing on cross-country and panel data evidence derived from the relationship between aid and growth at macro-level. The results from the ongoing debate are rather inconclusive, and lead – given the heterogeneity of aid and the relatively small aid volume compared to other financial flows – to conclusions that effects are rather limited, highly context-dependent and only visible in the medium to long run (Arndt et al., 2010). On the other hand, the empirical literature has devoted much attention to the determinants of the geographical and sector allocation of aid. It is assumed that donors are mainly concerned with two questions: „To whom should we give aid?” and „How much aid should we provide?” Hence, the majority of studies makes the implicit assumption that all donors give similar types of aid and use the same channels. It can be argued, however, that a

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1 Data from the World Opinion Poll indicate that Americans guessed that the US spends 25 percent of the budget on foreign aid, but opined that the figure should be about 10 percent. The actual US number is 0.21 percent of GDP.
donor’s choice set is far more diverse (Raschky and Schwindt, 2011; Lessmann and Markwardt, 2010). Donor countries do not only have to make a decision on the amount and recipients of aid but also on the preferred transfer channel (bilateral, multilateral or civic aid) and the type of delivery modes for aid (cash or kind, conditional transfers, loans or grants, etc.).

In this paper we outline some considerations regarding the effectiveness of different types of development programs against the background of the organization of aid as a component of the funding of multifaceted and often intertwined development efforts. Shifting attention from 'aid effectiveness' to 'development effectiveness' asks us to identify the complex interplay between development aid and local efforts, and to discuss the incentive structures that enable adequately dovetailing different types of foreign aid with local resources. We emphasize therefore that the key question is not whether aid works, but which aid works. The potential - positive and adverse - effects of aid appear to be mainly the consequence of how aid is given (Barker, 2011; Bourguignon and Sundberg, 2007). This implies that different types of aid providers may offer specific incentives to individual clients. The rationale for selectivity can thus be based on particular (dis)advantages of aid delivery procedures for reaching clients in particular settings.

Based on several program evaluations and impact studies conducted, among others, by the Operations and Policy Evaluation Department (IOB) of the Netherlands Ministry of Foreign Affairs, we outline three important - albeit usually underestimated - aspects that critically influence development effectiveness: (a) resource complementarities between different program components, (b) substitution effects between different activities, and (c) spillover effects that influence aid effectiveness at aggregate level. We present some empirical examples of these mechanisms and indicate their particular relevance for the new types of institutional arrangements that characterize the upcoming reforms in the international aid architecture (public-private partnerships, post-conflict reconstruction programs and civil society organizations).
2. Development Cooperation between Trust and Scepticism

Development cooperation suffers from declining public support; in many OECD countries the reduction of ad budgets is mentioned as a device for reducing public spending. In The Netherlands, confidence in charities is declining substantially faster than general consumer confidence (see Figure 1), indicating a more than proportional reduction in donor trust.

Figure 1: Consumer and Donors Confidence (The Netherlands, 2005-2011)

The current literature largely fails to throw significant light on the key drivers of the declining public support for development assistance across the population in many donor countries (a notable exception is van Hudson and Heerde, 2010). It has been suggested that three factors are of key importance: (a) credible evidence of successes and failures, based on systematic evaluation of outcomes and impacts of development programmes, (b) information about the governance and delivery of development aid and local institutional implications, and (c) opportunities for direct citizen involvement in aid programs.

Several interrelated problems may be responsible for the declining trust in international aid. First, at the supply-side, the proliferation of aid agencies leads to fragmentation (i.e. aid spread over many projects, programmes or sectors) and possibly duplication of efforts (Koch, 2009; Schulpen et al., 2011). Second, at the demand-side, the effective use of aid is challenged by risks of undermining local governance and increasing corruption (Frot and Santiso, 2008). Third, at

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2 Results from the tracking surveys undertaken by DfID confirm that there is an established downwards trend in public support for increased action by the UK government towards reducing poverty in developing countries. Thus, only 35 percent of respondents supported increased government action in February 2010, compared to 50 percent in September 2007. While 55 percent of respondents were of the view that the government should spend more on aid to developing countries in September 2007, this support had declined to 40 percent by February 2010.

3 A more detailed analysis (see: Kinsbergen et al., 2011) indicates that volunteers are rather sceptical toward established development organizations, but crowding-out is relatively limited. Corroborating the proximity hypothesis, volunteers perceiving a smaller distance to beneficiaries, spend more volunteering hours in PDIs.
the interface between supply and demand, the wide diversity in modalities for contracting and delivering aid leads to high transaction costs and scarce incentives for focussing on capacity development towards results-based aid management (Gibson et al., 2005).

Funding for international cooperation is nowadays disbursed from a wide diversity of sources, ranging from ODA contributions paid from public budgets (taxes) to money raised from the general public (donations to charities). Alongside the public-private continuum, several new organizations have emerged, both large-scale philanthropic foundations (Gates, Rockefeller, Ford) and numerous small-scale private initiatives. Entrepreneurial co-funding (e.g. PPPs), development operations made possible by equity funds (e.g. UNITUS and Elevar companies that offer market-based solutions to poverty), stock operations (like the emission of vaccine bonds) based on aid pledges (e.g. IFFIm-GAVI), and diaspora bonds (tapping remittances flow from migrants) offer innovative procedures for development funding. Consequently, development finance becomes far more diversified based on the blending of donations, lending and borrowing, bond finance and future-flow securitization (Ketkar and Ratha, 2009).4

There is growing consensus that the current proliferation in the international aid architecture has resulted in structures and institutions for supplying development assistance that are not fit for purpose. New institutions are often created, but old ones are almost never shut down. As a result, there are now more than 1,000 mechanisms for supplying development finance. Similarly, there has been a proliferation of global partnerships and initiatives for multi-donor trust funds (MDTFs) in recent years, generally customised to mobilise finance for a single issue. Only in health there are already more than 100 disease-specific global partnerships active.5 Many global initiatives use a ‘vertical’ programming approach, implementing a standard set of programmes in a specific sub-sector across all countries of operation. Scepticism against MDTFs is increasing and aid financing is sometimes considered as a major impediment to effective poverty alleviation (Barakat, 2009). Funding approaches are sometimes not consistent either with principles of donor harmonisation or alignment with country strategies and systems.

There is a growing recognition among donors that their core business is contributing to broader development effectiveness, not just aid effectiveness (Kindornay, 2011). The current policy challenge is to enhance development effectiveness through (a) greater impact of development programs on achieving human development and improving the lives of the poor, and (b) strengthening policy coherence between aid agencies and across support areas, as well as (c) improving the organization and governance structures of aid (including predictability and timely availability). Development effectiveness thus combines attention for delivering results at

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4 According to a Hudson Institute/Centre for Global Prosperity report, total official development assistance was $120bn in 2009, while global philanthropy amounted to $53bn. Private capital investment ($228bn) forms the largest financial flow from richer to poorer countries, while remittances ($174bn) were the second largest flow.

5 Global partnerships have been quite effective as vehicles for resource mobilisation, accounting for 3% of ODA in 2005. Particularly in the health sector, there are however widespread concerns that global partnerships are diverting resources away from the development of national health systems.
different scale levels ['Better Aid'] embedded within an institutional framework of international partnership relationships ['Better Aid Architecture'].

In this context, the organization of aid has become in itself a key factor for enhancing public trust in reaching development effectiveness. Providing better insights in the underlying mechanisms that influence development effectiveness might be a critical importance for re-establishing societal support to international aid. The role of aid in its specific context deserves therefore far more attention. We therefore discuss three somewhat neglected institutional conditions that are of fundamental importance to understand the development effectiveness of aid programs.

3. Searching for Aid Complementarities

Aid effectiveness is usually related to specific interventions and tries to identify relationships between aid inputs and development outcomes. This analysis is already found complicated due to the fact that international aid is only one of the many components that contribute to the final result. These outcomes should be conceived as resulting from multiple - often heterogeneous - contributions that could potentially reinforce (but also contradict) each other. Optimal sequence and right proportionalities critically influence aid effectiveness.

The concept of complementarities has its origin in contingency theory. Milgrom and Roberts (1995) proposed that some organizational activities and practices are mutually complementary and tend to be adopted together, each enhancing the contribution of the other. Therefore, the impact of a system of complementary practices will be greater than the sum of its parts because of the synergistic effects of bundling practices together. Complementarities thus indicate a condition of increasing returns in which adopting (doing more) of an activity (e.g. implementation of certain aid strategy) has a higher payoff when simultaneously adopting (doing more) of a complementary activity (e.g. implementation of another aid strategy).

Complementarity thinking has its basis in classical growth models (assuming strict complementarity between capital and labour), but is more generally applied in the analysis of options for reinforcing enterprise-level efficiency gains. Sarker et al. (2001) extend the framework to multi-agency alliances where several partners contribute to resource complementarities. Their analysis reveals that partnership characteristics indirectly affect performance through certain mediating behavioural variables (i.e. trust; reciprocity; commun-

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6 Complementarity theory essentially follows contingency theory which considers performance as dependent on “fit”—generally investigated in terms of moderation—between financial and organizational variables.
cation). The socio-psychological aspects embodied in relationship capital are important since they act as coordinating mechanisms and determine the quality of the relationship in the collaboration. Boyer (2005) further outlines some critical conditions for reaching institutional complementarities, related to resource heterogeneity, differences in information and possibilities for overcoming binding constraints.

Recent applications of complementarity thinking to international aid address both the optimal modality mix (e.g. combining multilateral, bilateral and civic funding; mixing loans and grants, combining financial and technical assistance, etc) and the most suitable alignment of the activity mix (e.g. combining international and local resources). While the former issue refers mainly to supply-side motives for reinforcing aid complementarities and reducing fragmentation at aggregate level, the latter also includes attention for demand-side criteria regarding the contribution of aid to improved factor mobilization and productivity (Foster and Leavy, 2001).

Aid complementarities receive major attention in international debates regarding donor coordination (e.g. Paris agenda; Busan HLF-4, etc). Aid harmonization and alignment of donor practices are generally considered key factor for enhancing aid effectiveness. Far less attention is given to complementarities at more concrete levels e.g. the preferred combination of different type of funding (project aid, program aid, sector support, budget support, etc.), the degree of concessionality (mixture of loans and grants) and the selection of most appropriate aid delivery channels (bilateral, multilateral, civic or private). Equally important are complementarities between different kinds of interventions (e.g. in education: teachers and books, classrooms and teaching staff; in health care: health workers and training)

Primary motives for the choice of specific aid modalities by donors ought to be based on criteria of comparative advantage and transaction costs. At a more political level, however, aspects of public administration, public sector accountability and national resource mobilization (tax revenues) also play a role in determining aid management capacities and prospects for national ownership (see: Ohno and Niiya, 2004).

The likelihood of reaching development impacts tends to be related to the right combination of development efforts, both from external donors and local partners. This refers to the possibilities to create synergies between different (public and private) programs that are able to overcome critical poverty thresholds at client, community or regional level. On the other hand, individual clients may receive simultaneously similar services through different providers and there may be considerable overlaps in aid allocation that produce declining marginal results. The multiple and sometimes overlapping support modalities may reinforce each other (usually referred to as ‘complementarities’) but can also compete for the same resources and capacities (‘trade offs’).
Mavrotas (2005) uses disaggregated data on aid modalities (project aid, programme aid, technical assistance and food aid) for Uganda during the 1980-1999 period to test the differentiated impact on fiscal response (e.g. public investment and consumption). Using reduced-form equations the results indicate that project aid and food aid lead to a reduction in public investment, whereas programme aid and technical assistance are positively associated with changes in public investments. A further analysis regarding the sources of each type of aid (most bi/multilateral aid for programmes; NGO aid more oriented towards projects and capacity building) could provide an indication of specific channel choice effects.

Lessmann and Markwardt (2010) consider different aid modalities – together with measures of political and fiscal decentralization – in a classical growth model to identify differences in aid effectiveness. They distinguish five types of public aid (i.e. grants, loans, technical assistance, humanitarian aid en total net ODA) and also differentiate according to the source of aid (bilateral vs. multilateral). Aid effectiveness is considered to depend on the interaction between external aid delivery and internal policy conditions. Results indicate that loans have more impact than grants on public sector decentralization, while decentralization enhances the growth pay-off of technical assistance (but the inverse is the case for humanitarian assistance), and bilateral aid is slightly more growth-enhancing than multilateral aid.

In a similar vein, Raschky and Schwindt (2011) analyse the reasons for selecting bilateral or multilateral channels for allocating disaster assistance by a wide number of donors. Disaster aid is therefore differentiated in cash or in-kind deliveries. Using 7 years of OCHA data, results suggest that donor’s choice on the delivery channel and type of aid is mainly driven by the quality of institutions in the recipient country (multilateral aid is preferred for more remote countries with strong rule of law problems), as well as strategic and natural resource interests (more bilateral aid for relevant trading partners and aligned UN voting pattern).

The fact that aid complementarities matter for development effectiveness can also be illustrated with two typical examples derived from recent program evaluations. IOB conducted a rigorous impact evaluation of rural water supply and sanitation programmes in Benin covering several interventions to which a number of donors have contributed (IOB-BMZ, 2011). The objective of the support to water supply and sanitary facilities goes beyond sustainable access: it aims to reduce the burden of water collection (typically a task for women and girls), improve health, raise school enrolment and attendance, improve livelihoods and, ultimately, reduce poverty. The study seeks to determine whether these effects materialize. Special attention is devoted to compare water quality between sources and to identify the linkages between water use, sanitation and hygiene behaviour. The importance of sanitation is illustrated through the incidence of E-coli at different water sources. Interestingly, public taps from the project deliver far cleaner water at source, but - due to insufficient sanitation measures - a great deal of this benefit is lost at user level (see Figure 2). Water contamination due to transport and storage cannot be
addressed only through technical measures (water tabs provided by public agencies) but requires thorough attention for training and consciousness-raising (usually provided by local NGOs).

Figure 2: E-coli incidence at different water sources (Benin)

These complementarities between drinking water and sanitation measures deserve due attention and might also ask for combining financial and technical support through a mixture of public and civic aid delivery modalities. The widely believed comparative advantage of NGOs in supporting local training, capacity building and ownership can be used to enhance linkages between hardware and software program components. The drawback of this alliance might be that NGO aid becomes strongly clustered around bilateral programs, thus reinforcing spatial skewness of aid distribution and reducing the poverty targeting of NGO aid (Koch, 2009; Fruttero and Guari, 2005).

In the field of agricultural development and food security, similar complementarities are found in programs focusing on land titling and registration. Fort (2008) draws on the experience of evaluating the national Titling and Registration Program in Peru (PETT), to present new evidence on the impact of this type of programs. This study concludes that land titling and registration could enhance tenant’s landholding security, but that complementary policies are needed to materialize its potential effect. Providing land titles clearly increases the subjective ownership feelings of local farmers and may increase demand for credit, but this only results in more on-farm investments if additional supply of rural credit is made available. The critical complementarity between titling and credit provision is frequently overlooked and the net results of land titling programs may therefore remain rather disappointing. Similar complementarities are also found in programs for enhancing land productivity (requiring both technical and financial support) and in programs focussing on value chain development (based on business-to-business linkages with additional NGO support for strengthening farmers' organization).
The general lessons than can be drawn from these evaluation studies indicate that aid effectiveness might be strongly enhanced if a conscious combination of interventions is pursued, sometimes also involving different donor agencies (that offer specific types of aid). This requires a thorough analysis of the most limiting factors and critical constraints to poverty reduction in each specific context. Moreover, the particular mix and sequence of aid modalities could also be helpful to develop pathways for gradually reducing aid dependency through a changing composition of external and local contributions to development programs. However, aid complementarities should not be managed only from the supply side, but also require a careful management at the demand side in order to verify whether the incentives intrinsic to the aid delivery regimes are consistent with the behavioural motivations of the receiving agents.

4. Identifying Substitution Effects

Substitution effects occur when domestic resources are switched away from activities supported by foreign aid, thus changing the availability of resources for other remaining activities. In analogy with a price change, aid recipients are likely to replace expensive domestic activities with less costly - or more rewarding - alternatives supported by foreign aid. Otherwise, the aid fungibility literature suggests that local external project funds are preferably used for the purchase of tradeables (investments) whereas domestic resources are allocated to non-tradeables and financing of recurrent costs (Feyzioglu et al., 1998).

The general expectation that aid enhances macroeconomic growth through domestic savings and investments proved to be difficult to confirm empirically. This is partly due to unrealistically high expectations regarding the impact of aid, but can also be explained by numerous methodological problems (finding accurate model specifications) and conceptual constraints (selecting adequate growth models). The explanation with the longest history is that aid goes to consumption, thus crowding out our domestic savings and investment.

There is a longstanding debate on the implications of international aid for domestic savings and investments (White, 1993). This is related to the fact that 'cheap' aid may replace more expensive domestic capital. The net effect depends on the impact of aid on domestic investments and is informed by the implications for the interest rate (usually negative effect) and for total income (expected positive effect). In a situation of large deficits, aid only has a minor effect on capital costs but a likely stronger impact on income, and crowding-in may in fact then occur. The crowding-out effect is likely to dominate in the long run only when the economy is operating near full employment.

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7 There is a vast literature based on endogenous growth models suggesting that in the long run the saving (and investment) rate is less important for growth. Institutional factors influence resource efficiency and the ability of an economy to innovate and respond to opportunities. Numerous growth models have been formulated to estimate the impact of policies and institutions on growth. However, Knack (2001) argues that aid may increase the rewards to rent-seeking behavior and, hence, undermine the quality of governance.
The academic literature is still somewhat inconclusive about the crowding-in/out effects of aid at aggregate level. Shields (2007) examines the relationship between foreign aid and domestic savings using data for 119 countries. Regressions for each country are run separately in order to find which countries have a positive aid-saving experience. Countries are categorized according to the strength of the aid-saving relationship. Few countries show evidence of substantial crowding out. Consequently, aid is found to be mostly beneficial to saving and, hence, stimulating domestic investment for the preponderance of these countries.

Masud and Yoncheva (2005) tested whether foreign aid reduces government efforts for achieving developmental goals, making a difference between different types of aid. They compare aid effectiveness between official bilateral aid with (European) NGO flows, using specific human development indicators of poverty reduction (infant mortality and illiteracy). Analyzing panel data from 76 countries over 12 years, they find that NGO aid significantly reduces infant mortality (i.e. is more focus on poorer countries and better reaching the grassroots) while for bilateral aid no significant effect is registered (possibly due to lack of additionality). For literacy reduction, only government expenditures - with budget support - show significant effects. Moreover, aid through NGO channels does not seem to crowd-out public expenditures. There is evidence of a substitution effect between bilateral aid and public social sector expenditures, whereas NGO aid mostly does not affect the social spending in the recipient country. Similar differentiated effects have been registered for grants compared to loans (Lessmann and Markwardt, 2010) and for multilateral aid compared to bilateral aid. A follow-up paper (Nancy and Yontcheva, 2006) where determinants of aid allocation by NGOs are analysed, shows that NGO's are more likely to intervene in poor countries with low life expectancy. This is further analysed by Nunnenkamp and Ohler (2009) for different channels of German aid, identifying specific drivers for bilateral aid (strong needs orientation) and NGO channels (more merit-oriented focusing on voice and accountability).

In a recent paper, Arndt et al. (2010) re-assess recent contributions to the aid-growth literature - taking inspiration from the program evaluation literature - to develop a new counterfactual framework that leads to more robust conclusions. The average treatment effect of aid on long-run growth is found to be small but positive and statistically significant with an elasticity of GDP growth to foreign aid around 0.10 that materializes with a considerable time-lag. These estimates are consistent with the view that foreign aid stimulates aggregate investment and also may contribute to productivity growth, despite some fraction of aid being allocated to consumption.

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8 Morissey (1990) uses an input-output analysis to estimate and compare the impact of multilateral and tied bilateral aid on the UK economy in 1980 and 1985. The results suggest, quite strongly, that multilateral aid generates greater benefits both in volume terms and per equivalent amount of aid expenditure.

9 Koch (2009) finds, however, that Dutch NGOs tend to cluster activities around bilateral aid and concentrate their efforts in better endowed regions.
While most of the empirical analyses were focussed at aggregate macroeconomic level, program and project evaluations find considerable evidence that at sector and local level aid may lead to rather strong substitution effects. In the health sector, there is considerable debate whether HIV/AIDS control may be crowding out other health initiatives, like vaccinations (Schiffman, 2006). Lu at al. (2010) show that for every dollar of international health aid provided to governments, government health funding falls by US$0.43–1.14. Interestingly, development assistance for health to the non-governmental sector had a positive and significant effect on domestic government health spending. These results were robust to different model specifications and subset analyses.

Substitution effects are most widely debated in the area of budget support, usually based on a rather narrow concept of conditionality. In practice, the occurrence of substitution effects is highly dependent on the degree of ownership and the national policy convergence (see Figure 3).

**Figure 3: Budget support in Zambia**

Budget support in Zambia turned out to be most effective in those areas where the support is linked to a high degree of national ownership (e.g. in agriculture, and to a lower extent in education and health care). In addition, aid effectiveness is also better guaranteed if complementary national budgets are devoted to the sector (like in agriculture). If those funds are not available (like in the WASH sector) project support is likely to offer better results.\(^{10}\)

In another area, IOB evaluation studies on the impact of sector budget and program support to basic education suggest that there is little evidence for substitution effects (IOB, 2011). Free or subsidized basic education in Kenya resulted in fewer children attending school, with private schools for the poor closing down owing to a crowding out effect caused by the introduction of ‘free’ tuition fees. The net impact could at best have been a simple transference of children from the private sector to the government sector rather than a net increase in enrolment (Tooley et al., 2008; Vos et al., 2004). In Zambia, budgetary decentralization shifted spending from the

province to the districts, negatively affecting the equity of fund allocation and crowding out parental and community contributions. In several countries, decentralization led to lower national government spending, a decline in aggregate education expenditures, and a rise in formal and informal payments by parents (Das et al., 2004). Lower levels of government were handed over responsibilities without commensurate funding. As a result, teacher salaries and complementary inputs declined and drop-out rates began to rise in some countries (Vandycke 2000).

Research using RCTs conducted within the Mexican PROGRESA program –where beneficiary households receive a subsidy conditional on school attendance - indicates that the programme does crowd out private transfers (Albarran and Attanasio, 2002). The likelihood to receive private transfer and the amount received are significantly and negatively affected by the programme. Transfers received from friends and relatives suffer stronger crowding out effects compared to the amount received from migrant family members.

Ricket-Gilbert et al (2011) use a double-hurdle model with panel data from Malawi to investigate how fertilizer subsidies affect farmer demand for commercial fertilizer. While controlling for potential endogeneity caused by the non-random targeting of fertilizer subsidy recipients, results show that on average 1 additional kilogram of subsidized fertilizer crowds out 0.22 kg of commercial fertilizer, but crowding out is much lower among the poorest farmers and higher among non-poor farmers. This indicates that targeting fertilizer subsidies to the rural poor is likely to maximize the contribution of the subsidy program to total fertilizer use.

Rascky and Schwindt (2008) discuss the impact of foreign aid in case of catastrophic events (earthquakes; cholera epidemics) on the level of mitigative activities in aid-receiving countries. They show that the anticipation of foreign aid partly crowds out preventive collective action for ex-ante risk management. The crowding-out effect may result in both a lower probability of surviving an disaster and an increase in an event’s proportion. Estimates suggest that foreign aid in previous years might crowd out ex-ante risk management activities in recipient countries.

Food assistance is one of the most debated forms of support meeting widespread scepticisms regarding its possible influence on local disincentives to work and on crowding out of private transfers. There is a long literature discussing different aspects of food assistance including (and certainly not limited to) the incentive effects of such transfers on labour supply (Abdulai et al, 2005), change in local production through price effects (Tadesse and Shively, 2009), crowding out of informal assistance (Dercon and Krishnan, 2003), effects on productivity through improved nutritional status, effects on asset accumulation to break poverty traps (Gilligan and Hoddinott, 2007), appropriate forms of cash vs. in kind transfers (Basu, 1996) or efficacy of conditionality. However, much evidence suffers from failure to take endogeneity in program placement and participation into account, and empirical findings are far from unequivocal.
Sulaiman (2010) estimates the welfare effects of food aid in the post-conflict setting of Southern Sudan using an RCT approach. Food aid resulted in a significant negative impact (13%) on per capita household income, but no effect on working hours of work or economic activities by adult members was registered. The decline in income thus mostly occurs through a reduction in child labour. There is also a positive effect on school attendance by girls (about 10 percentage points) and an improvement in housing status. No indications are found of crowding out of private transfers to participants, but there is a small but significant impact of the transfers given out by the participants.

Evaluation studies at project level usually find considerable substitution effects occasioned by targeted interventions. Ruben and Fort (2012) analyze the impact of certification on the welfare of coffee farmers in Peru, and find no significant increase in net household income. Although coffee yields and prices substantially improved, income derived from other household activities decreased since farmers substituted land and labour away from food crops and off-farm work. This illustrated that targeted aid programs provide incentives for concentration of efforts and resources towards the supported activity but might lead to the neglect of other remaining activities. Interestingly, the expenditure effects of the program were still positive: certified farmers devoted a lower income share to direct consumption and health care and could invest more in housing and education. The enhanced income security might thus provide incentives for shifting expenditures from consumption towards investments.

Similar conclusions were drawn from a recent evaluation of the millennium villages in Kenya (Wanjala and Muradian, 2011). Using household survey data from Sauri Millennium village and propensity score matching methodology, this paper analyzes the impact of the Millennium Village Project (MVP) interventions on agricultural productivity and income. The results show a significant increase in agricultural productivity but an insignificant income effect, which can be attributed to small land sizes and over-reliance on agriculture. The results indicate the need to diversify economic activities and point to a revision of the simple assumptions regarding the relationship between productivity and income.

These and other micro studies ask our attention for a thorough evaluation of the effects and impact of aid programs on different components and indicators of client performance. Substitution effects are easily overlooked if single result indicators are used. More attention is therefore required for understanding the behavioural reactions exhibited by the aid receiver and the likelihood of crowding-in and crowding-out responses.
5. Creating Spillover effects

International aid is often conceptualized as an 'input' that is capable of generating specific outcomes and results, whereas little consideration is given to spillovers generated towards other sectors or activities and/or for external agents. While focussing on one particular area of intervention, insights on - positive and negative - spillovers might easily get lost. If aid is considered as a 'catalyser', spillover effects become indeed the major outcome.

Spillover effects are externalities of activities or processes that influence those who are not directly involved. Different types of spillovers can be distinguished: geographical or spatial spillovers (caused by geographical proximity), technological spillovers (distributing experience, skills and knowledge), institutional spillovers (on the functioning of local organizations) and behavioural spillovers. Many spillovers occur with inter-temporal differences and may have considerable time-lags to materialize. The empirical literature suggests that the magnitude of the spillovers depends on the character of input-output linkages, the complexity of technologies and the type of sourcing, and exchange relationships within chains or networks.

Much of the research on spillover effects took place within the framework of private enterprises that undertake (foreign) direct investments which may promote broader economic growth (Blalock and Gertler, 2008). Panel data are required to disentangle the likelihood of reversed causation. Moreover, spillovers might also be caused by differences in the institutional and legal environment. Madariaga and Poncer (2007) rely on sub-national level data across cities to estimate a dynamic panel growth equation taking into account issues of spatial dependence in China. Their analysis enables to determine whether FDI is characterized by a substitution or a complementary pattern across Chinese cities. Results show that economic growth responds positively to capital inflows received locally as well as in proximate locations. A 50 percent increase in real per capita income in surrounding cities results in a 10 percent increase in local income. In a similar vein, Spencer (2008) focuses on knowledge spillover from foreign FDI to identify positive horizontal spillover to indigenous firms. These spillovers include demonstration effects, local linkages, employment effects and competition effects that result in higher resource productivity. It is suggested that long-run spillovers are usually larger than short-run effects, while the magnitude of spillover effects tends to be higher if foreign management is willing to engage in local strategic alliances. Another study by Jordaan (2011) in Mexico confirms that FDI firms generate substantially larger local dynamic impact through backward linkages: foreign-owned firms apply more pressure on their suppliers to improve and are also significantly more involved in the provision of several types of technological and organisational support. Havranek and Irsova (2011) recently published a meta-review on vertical spillovers from FDI and conclude average spillover to suppliers is positive and economically significant, whereas the spillover to buyers is negligible. Greater spillovers are received by countries that have underdeveloped financial systems and are open to international trade. Greater spillovers are
generated by investors from distant countries and have only a slight technological edge over local firms.

The static and dynamic impact of aid on growth and development is frequently analysed using a similar framework. Some useful conclusions can be derived comparing potential spillovers from different types of aid. A great number of empirical studies have shown that infrastructure contributes to the economic growth and poverty reduction in developing countries, even while sustainability of such investments largely depends on institutional spillover effects. Technical cooperation grants may create substantial knowledge spillovers that provide a key contribution to factor productivity growth (Sawada et al., 2010). However, these learning-by-doing effects are usually inferior to the effects reached through more external openness and free trade.

Regional public goods - like regional banks, feeder roads, waterways and power networks, natural resource management and local security systems - are strongly complementary to private investment and create large spillovers. The same holds true for international public goods - climate, cross-border diseases, financial stability and security - that are not subject to pricing and therefore suffer from structural undersupply. International cooperation is nowadays frequently suggested as device for guaranteeing adequate provision of these public goods and thus safeguarding the positive spillovers.

Many impact evaluations of development programs usually do not explicitly take into account externalities for non-participants. RCTs evaluations that use the random characteristics or the eligibility criteria of the programme are more able to identify the spillover effects. However, when implementation is not random (e.g. targeting) or participation is voluntary and open, identification of the treatment effect becomes problematic. The usual comparison of participants with the control group could miss to measure the spillover effects within the village. This could lead to an underestimation of the programme effects if the outcomes of participating households would is compared with the improved outcomes of nonparticipants. Once attention for such ‘leverage ‘ or ‘catalytic’ effects is included, results reveal that significant spillovers occur.

Janssens (2005) finds both direct effects on the immunization rates of participants’ children and significant spillovers on immunization rates of non-participants’ children in rural India. The impact of interventions might be substantially underestimated if such external effects were not taken into account. In the case of immunization, the programme externalities for non-participants are 40-50 % of the direct programme effect on participants. Likewise, the programme spillover effect on preschool enrolment of non-participants is equal to 54 percent of the size of the direct programme effects. Finally, programme spillovers on school enrolment of non-participants are 49 percent of the total impact on participants (but not significant for the sub-sample of boys. In a similar vein, Kremer et al (2009) find that merit grants for education to adolescent girls in Kenya also have large positive spillovers to non-clients (boys) and even to their parents.
Spillovers are also frequently acknowledged as a key component in strategies to address development in a fragile state context. Since external costs of fragility to neighbouring countries are extremely high, there are sound reasons to focus development assistance towards the 'turnaround' of failed states in the pre- and post-conflict era. 11 Both technical assistance and other aid show significant effects on the time which an incipient turnaround takes to become a sustained turnaround. For both the relationship is, however, non-linear. Technical assistance is subject to diminishing returns with an optimal amount around 5% of GDP. The non-linearity for financial aid indicated that small amounts may actually slow down the process of turnaround, while only very big aid volumes (> 30% of GDP) work (Chauvet and Collier, 2004). Such thresholds imply that due attention should be given to donor alliances and aid harmonization.

Similar externalities could also be acknowledged in analyses regarding the effectiveness of macro-economic (budget) support. Instruments of general and sectoral budget support are explicitly designed to generate spillovers within and between sectors and to create leverage towards more cost-efficient service provision. Donor engagement in resource and risk pooling has contributed to increased discretionary expenditure and enhanced allocative efficiency in national budgets. Such results are sometimes difficult to discern, given the usual trade-off between increased access to public services and improved outcomes of the system. The IOB evaluation on budget support to basic education in Zambia shows that the increase in enrolment in poorer districts absorbs most of the improvements in learning achievements (see Figure 4).

Figure 4: Impact of budget support on basic education (Zambia ; 2005-10)

11 Chauvet & Collier (2004) estimates that the average cost in net present value terms of just one single country falling into conflict status is SUS 80 billion, (i.e. larger than the world’s annual aid budget to all countries). The typical neighbour loses 1.6 percentage points of its growth rate if its neighbour is a failing state.
For an adequate understanding of the potential dynamics of spillover effects from aid it is required acquiring good insight in the micro-macro linkages. Building schools, improving classrooms and even teacher training nowadays yield limited net effects. Learning achievements increase most with investments in school management that guarantee better resource coordination (the interaction between classrooms, books availability and teacher attendance) and thus control premature drop out (see Figure 5). Consequently, payment for delivery-based educational finance systems might be considered as cost-efficient procedures to create important institutional and behavioural spillovers, but only if combined with adequate monitoring and inspection procedures.

![Figure 5: Cost-effectiveness of different instruments](image)

Source: IOB (2008)

6. **Donor Roles under the New Aid Architecture**

The international aid architecture is subject to broad transformations, both due to the fact that current development aid only represents a minor resource flow to developing countries (compared to FDI and remittances), and also occasioned by recognition that development efforts are only partly financed from aid and require substantial national contributions (both from governments and citizens).

The proliferation of different aid modalities and the fragmentation of donor support implies that due attention should be given to the choice and selection of most appropriate aid transfer channels (bilateral, multilateral, private or civic aid) and to the preferred type of delivery mode (cash, in-kind, loans, conditional transfers, etc.) for contributing to sustainable growth and effective poverty alleviation. We therefore discussed some key mechanisms that determine
which type of aid works. It is likely that the potential - positive and adverse - effects of aid are mainly the consequence of how aid is given.

Much traditional aid is provided under the exogenous growth paradigm, focussing on local savings or investment gaps as inspired by Harrod-Domar growth models. Attention for resource complementarities and substitution effects increased when Solow-type models were introduced that account for decreasing returns, consider the effects of technological change and different stages of growth. Spillover effects became more important in endogenous growth models developed by a.o. Sala-i-Martin and Barro that devote attention to the role of local institutional conditions and human capital in technological change processes.

Any overall appraisal of the specific role and potential of different aid modalities that take advantage of the dynamic implications of complementarities, substitution options and spillover effects is clearly beyond the scope of this paper. It seems possible, however, to outline some of the likely effects of three innovative aid modalities: (1) Public-private partnerships (PPPs) that are developed to involve private sector more directly into development programs; (2) Civil society support funds (CSFs) that provide donor support for civic engagement with local or national development efforts; and (3) Multi-donor trust funds (MDTF) that have been created for mobilizing support from different donor towards specific development issues. We briefly discuss the pro's and con's of these aid modalities against the background of our earlier appraisal of the factors influencing development effectiveness (see Figure 5).

Table 5: Channel comparison

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<th>Complementarities</th>
<th>Substitution Effects</th>
<th>Spill-overs</th>
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<tbody>
<tr>
<td>Public-private Partnerships</td>
<td>High</td>
<td>Medium</td>
<td>Medium/Low</td>
</tr>
<tr>
<td>Civil Society Support Funds</td>
<td>Medium</td>
<td>Low/Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Multi-donor Trust Funds</td>
<td>Low</td>
<td>Medium/Low/High</td>
<td>Medium</td>
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Public-private partnerships are usually highly appreciated for their capacity to generate resource complementarities and hardly suffer from direct crowding-out effects. It remains, however, most difficult to prove the (ex-post) additionality of PPPs and substitution effects are likely to be relevant. Moreover, there is still scarce evidence of positive spill-over effects generated by PPPs (and some indications of negative spill-over in terms of critical employment conditions). Civil Society Funds face low substitution risks in remote areas and tend to be more complementary in
sectoral programs that involve several donors. Spillovers of CSF programs depend on location and entrance costs. Multi-donor trustfunds (MDTF) are usually highly problem-focussed but characterized by limited complementarities. Crowding-out from common public budgets has been frequently registered. Spillover effects strongly depend on linkages with local governance structures.

The emergence of these new aid modalities makes it more urgent to shift attention in impact analyses beyond the direct registered effects. This may have profound implications for the way impact studies are designed and conducted, both with respect to the sample selection and concerning the appropriate indicator framework. In addition, distributional effects (equity) and behavioural change become major elements of the analysis. The evaluation frontier is therefore moving towards an analysis of the interaction effects between aid flows and the complementarities with local resources, and the response of local agents to this set of incentives.

The appraisal of new aid modalities not only depends on their potential impact, but is also related to aspects of aid management, delivery and administration. The aid modalities discussed before require different types of donor support and their transaction costs are likely to vary. In a similar vein, due attention should be given to the prospects of sustainability (e.g. the likelihood of continuation of the program after closure of external funding). Moreover, prospects for sequencing aid and tailoring support to local opportunities and conditions depend on the degree of ownership and the alignment with priorities and programs undertaken by recipient entities.
References


