1 Introduction

B. Mak Arvin and Byron Lew

Foreign aid is the transfer of financial or other resources from richer countries to poorer ones that is intended to serve, first and foremost, the recipients' interests, but which may also be used to pursue other objectives with political, strategic, or commercial imperatives. The origins of aid can be traced to the immediate post-World War II period that saw the creation of the United Nations and the nascent independence movement among former colonies of several countries. The Marshall Plan, under which the United States (US) helped to rebuild a battered Europe, funneled $13.3 billion (about $300 billion in today's dollars[1]) of assistance to this region. The success of that enterprise prompted the US along with the United Kingdom (UK), and later other Western European countries, to provide aid to poorer nations, especially to many former European colonies that had gained independence.[2] Since then, aid has attempted to fulfill high expectations that are tied not only with development, but also with geo-politics, trade, and a host of other considerations.

It would be fair to say that foreign aid today is one of the most important factors in international relations and in the national economy of many countries – as well as one of the most researched fields in economics. Although much has been written on the subject of foreign aid, this work contributes by taking stock of knowledge in the field, with chapters summarizing long-standing debates as well as the latest advances. Several chapters are original studies providing new analytical insights or empirical evidence on different aspects of aid. All chapters demonstrate how researchers have dealt with increasingly complex issues over time – both theoretical and empirical – on the allocation, impact, and efficacy of aid, with aid policies at the center of the discussion. In sum, the handbook studies a wide spectrum of foreign aid topics that should be of interest to researchers, students, and policy makers.

This introductory chapter outlines the core themes of the different parts of the monograph. This is followed by a brief overview of the individual contributions to the book.

The volume is organized in five parts. In Part I there are seven chapters addressing issues related to aspects of aid allocation including assessing net aid flows, review of methods evaluating aid flows, modeling the aid allocation decision, examination of the geography of distribution, as well as an empirical test of motivations for the distribution of China's recent aid flows to Africa. Part II contains chapters looking at linkages between aid and trade. Chapters explore tied-aid, effect of policies adopted in response to the World Trade Organization's (WTO's) Aid for Trade initiative, and impacts of the Great Recession on aid flows and trade. In Part III, chapters appraise the macroeconomic impacts of aid on developing countries as well as the reverse benefits donors derive from aid provision. Also, the link from aid to corruption is probed in two chapters. Part IV addresses the aid effectiveness debate. It includes a meta-analysis and a detailed review of the aid effectiveness literature. There are several original empirical studies investigating aspects of the link from aid to growth, including the mediating effect of state fragility, the impact of exchange rate appreciation, as well as the impact of aid on education. There is also a case study of aid's impact on corruption in Bangladesh. The section rounds out with a study asking whether aid can promote greener cities. Part V, addressing various policies related to aid effectiveness, comprises six chapters which deal with governance, taxation, microfinance, and aid disbursement. The first four chapters analyze donor mechanisms to improve aid effectiveness, whether it is adherence to a common international architecture, efficiency of donor aid allocation through internal mechanisms, strategic competition among donors, or use of trust funds to increase donor influence on aid disbursement. Chapters also explore and test the link from aid to recipient taxation policy and highlight the need for aid to enhance the effectiveness of microfinance in developing economies.

In Part I, Guillaumont and Wagner detail the evolution of the use of performance-based allocation (PBA) as used by the World Bank, regional development banks, and multilateral aid agencies. They detail changes in how the Country Policy and Institutional Assessment (CPIA) index has been weighted into a PBA measure, along with per capita income and population. They also note how PBA measures differ across the multilateral development banks (MDBs). They then turn to listing flaws with the MDBs' implementation of PBAs: governance is not a direct measure of effectiveness, the link between policy quality and aid effectiveness is uncertain, and the current reliance of PBA on measures of governance is not equitable. To the extent to which poor governance is a country feature, residents of countries with poor governance are being doubly penalized when aid is withheld. They also note that such fragile states are relatively more adversely affected by exogenous shocks and thereby more in need of aid. Guillaumont and Wagner discuss that in response to this concern over equity, MDBs have taken to applying a separate PBA to fragile states, the World Bank's low income countries under stress.

Guillaumont and Wagner further detail how increasingly aid is being allocated without PBA, implying either a fixed allocation or more discretion in the allocation mechanism. Aid allocations for small countries are determined by a floor, which basically means bypassing PBA oversight. This floor has been rising, increasing the number of countries for whom allocations are not accountable. In addition, as more aid is being disbursed through earmarked funds (detailed in Chapter 30 by Reinsberg et al.), less aid is allocated through PBA. Given these flaws, Guillaumont and Wagner suggest some possible improvements. The PBA measure should include measures of economic and climatic vulnerability, and human capital. The floors and ceilings should be dropped and the proportionality between aid allocation and population should be replaced by a non-proportional but monotonically-increasing function. Also, highly fragile states should be evaluated separately.

Das and Serieux provide an empirical analysis of bidirectional financial flows in order to assess effective net aid inflows. While there is a large literature assessing the detrimental effect of aid used to finance consumption of imports, little has been written analyzing the link from aid inflows to capital outflows. Since financial inflows are ultimately fungible, if aid inflows are offset by capital outflows, aid effectiveness will be reduced as less aid will be used for consumption and investment. Reverse flows can arise when aid is used for debt-servicing or when aid-generated capital inflows spur capital flight. As well, aid used for foreign reserve accumulation effectively sterilizes the aid. Das and Serieux estimate that 25 percent of aid inflows generate capital outflows. For concessional loans, the reverse flow is about 45 percent whereas for grants it is only 12 percent. Geographically, reverse flows are greatest among Asian and sub-Saharan African nations and almost zero for the Middle East and North Africa.

Peiffer and Boussalis provide a detailed review of the distribution of aid flows from donor to recipient both at the aggregate level and disaggregated by sector. They provide a framework to distinguish among the many studies focusing particularly on donor interest both in its saliency to the donor and as a function of donors' economic conditions. They note the shift in the post-Cold War period to donors' focus on recipient institutional quality both with respect to economic policy and to human rights. But despite regularities among donors, many differences exist and persist. Because of differences in priorities and goals, a focus on disaggregated aid flows by sector suggests that matching donors and recipients by interests of donors, and needs and merits of recipients becomes more multifaceted. Where aid is directed toward disaster relief, for example, donor interests may still influence flows. This is also true, though to a lesser extent, for human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) relief. In contrast, food aid appears to be directed by recipient need and uninfluenced by donor interest.

In Chapter 5 Kumar provides a detailed summary of models of the Samaritan's Dilemma. The problem addresses donors' willingness to provide aid flows despite inefficient, ineffective or inappropriate usage of funds by recipients. In particular, he addresses the apparent failure of aid conditionality in increasing aid effectiveness. The problem stems from time inconsistency whereby donors are unable to issue credible threats because the welfare of recipients is part of the welfare function of donors. Since aid increases donor welfare, cutting aid harms both parties. Kumar summarizes models with exchange only where aid flows enter directly into consumption of the recipient. He then extends the analysis to production where foreign aid can be used for current consumption or for enhancing productive capacity for the future.

Kumar also summarizes models which can better explain deliberate inefficiencies like corruption. These models incorporate heterogeneous agents in the recipient country: elites and the poor. He then discusses possible solutions directly addressing the time-inconsistency problem. These solutions include delegating disbursement to third parties for whom utility of the recipient country is less important, awarding aid within a tournament for efficient usage, and disbursing aid through alternate instruments like using multi-period budgetary transfers rather than direct capital transfers.

A summary of forms and uses of aid flows to address the United Nation's Millennium Development Goals is provided by Guisan et al. They focus on the broad form in which financial flows provide assistance not only through aid but also foreign direct investment, private donations, worker remittances, and tourism revenues. They note in particular that aid accounts for only about 14 percent of international flows. Recognizing that education is still the most important determinant of an economy's success, they point out that expenditures on education in developing countries are still too low and their increase should be a significant focus of aid flows.

Vázquez provides a detailed survey of studies determining geographic allocation of aid. He summarizes the basic model underlying most of the empirical studies, viewing the problem from the perspective of the donor as constrained optimization, treating aid as a good in a country's utility or social welfare function. He then summarizes methodological developments in the empirical aid effectiveness literature. These include shifts in methods adjusting for selectivity and censoring for zero-valued observations and simultaneity bias in aid allocation decisions. He also provides a useful summary of the findings, stressing that while aid is determined by politics as much as by recipient need, there are still patterns whereby small countries, middle-income countries and particularly 'attractive' or darling countries receive more aid than would otherwise be warranted. He warns that aid effectiveness, getting funds to the neediest, is still an important issue and studies need to account for the composition and sectoral distribution of aid.

China's expanded role in providing financial flows for development in Africa is assessed by Lew and Arvin. This chapter is one of several new studies utilizing the recently released data on China's aid and investment flows from AidData.org. The recent view of Chinese aid and investment in Africa is not that it is a neo-colonial scramble for resources, but rather that a variety of long-term strategies motivate China's aid and investment. China has been criticized for ignoring human rights and supporting corrupt and dictatorial regimes. The chapter is an empirical study of the distribution of aid and investment by recipient country using a panel. Because of the many zero-value observations, a two-stage approach is used. Lew and Arvin find some support for the hypothesis that Chinese funds do not flow only to resources. But one result does stand out: China favors political stability. It seems that regardless of how stability is realized, be it through democracy or autocratic government, it is very important to China and is consistent with the evidence of long-term strategic involvement by China in Africa.

The five chapters in Part II each address an aspect of the link between aid and trade policy or trade patterns.[3] With aid flows characterized as international capital transfers, their effects and causes become intertwined with other balance of payments items, particularly trade. Lahiri explores several of the major issues arising. Of particular concern is the link from aid to trade, so called 'tied-aid'. And if aid is tied to trade, is this good or bad for the aid recipient? Treating this as a subtopic of the larger transfer problem, Lahiri summarizes several major models, showing that depending on assumptions, tied-aid can be Pareto improving. Lahiri further summarizes results for cases where aid is tied to trade policy reform, particularly to tariff reductions by the aid recipient. He then explores the welfare implications of cases where trade policy reform by the potential aid recipient can substitute for direct aid flows, and cases where aid and trade policy reform can be complements.

The next two chapters examine empirically the impact of the WTO's Aid for Trade initiative to expand the capacity of developing nations to integrate into the global economy, particularly with regard to diversification of trade out of a reliance on commodity exports. Hühne et al. note that aid flows could affect trade positively or negatively depending on their effect on exchange rates, whether they are linked to expanding primary commodity exporting, or whether their effect on productivity through expanded infrastructure and/or economies of scale dominates. To this end, the authors disaggregate trade into primary commodities and manufactured goods and estimate the impact of aid using a gravity model. They find that indeed Aid for Trade boosts exports of manufactured goods, though the quantitative impact is modest.

Gounder's focus is on the impact of Aid for Trade on small Pacific island nations. These are countries which, due to their small size, are particularly vulnerable when their trade exposure is too concentrated in a narrow range of commodity exports. She reviews the nexus of trade agreements within which many of the islands of Oceania are linked to each other and with Australia and New Zealand, and explores details by which Aid for Trade has been implemented. She also estimates the impact of aid on trade. Here she disaggregates aid into three components: infrastructure, productive capacity building, and trade policy regulations. She finds that aid for infrastructure building is important, as exports to countries not receiving this form of aid are reduced. Also, aid for trade policy regulation has a positive and statistically significant elasticity with respect to trade.

In a similar study, Martinez-Zarzoso also tests for the effects of aid on bilateral trade links between donors and recipients, though here the context is broader both in the set of countries examined and the form of aid. The twist here is in the estimation of the model and the inferences drawn therefrom. She estimates a gravity model of bilateral trade with bilateral aid flows as an endogenous explanatory variable. The method is typical though the inclusion of indicators for free trade agreements highlights the importance of trade liberalization in certain cases. As a second step Martinez-Zarzoso then estimates the effect of aid flows on a recipient country's total exports to all destinations, regardless of donor status. While finding no support for a link between exports of recipients and aid received, she does present some tantalizing evidence suggesting that aid might work to raise incomes indirectly through export expansion.

The impact of the financial crisis of 2008 on trade flows from developing economies is examined by Brambila-Macias et al. The crisis affected the availability of credit, including financing for trade. The crisis also reduced incomes, reducing import demand on one hand, and making funds available for aid more scarce on the other. Brambila-Macias et al. also use a gravity model and include covariates to capture the impact of reduced demand and of banking crises. They find that while economic downturns did reduce trade, banking crises did not have significant effects on most economies, with the exception of Asian economies, an effect possibly due to their greater trade exposure on average.

The first chapter in Part III, by Mavrotas, is a detailed review of the general consensus on major macroeconomic effects of aid. He considers the effects of aid on growth, the degree of aid fungibility and the fiscal response, the harm of aid volatility, and aid-induced Dutch disease. While there is some consensus that aid can improve growth for countries with sound policies, Mavrotas does raise concerns over this apparent correlation, noting the endogeneity between growth and good policy. In particular, he underscores the importance of determining which policy variables should be used to measure aid effectiveness. He also notes that as a policy variable, a budget surplus is not always indicative of a policy stance; clearly, substantial public investment projects will contribute to budget deficits. As much as a focus can be on good policy, there should also be a focus on social capital, a view not yet well-adopted in the empirical literature.

Mavrotas then explores the impact of aid on the recipient country's government budget balance. While there is no consensus on how fungible aid can be, there is agreement that aid increases government spending.[4] The issue is whether it is wasted as consumption or contributes as growth-enhancing investment. There is also some recent evidence suggesting aid can perversely end up substituting for government revenue, suggesting aid becomes a form of tax break for taxpayers in the recipient country.[5] Also important to the impact of aid is its form. Different types of aid address different needs and have different macroeconomic effects. The danger for researchers is that unless different forms of aid are distinguished, heterogeneity of aid will lead to aggregation bias, a potential source of bias evident in much of the literature.[6]

The other two major macroeconomic effects surveyed by Mavrotas are the importance of looking beyond levels of aid and examining aid volatility; and the Dutch-disease implications of aid. Here he identifies two forms of volatility: deviation of aid flows from trend, and differences in the timing of aid commitments and disbursements.[7] To the extent that aid volatility reduces aid effectiveness, there is evidence that countries with better policy regimes experience less aid volatility and therefore possibly better growth. As well, countries with a greater diversity of donors experience lower aid volatility.

Mavrotas also presents a synthesis of the views of aid causing Dutch disease. As much of the aid flow is likely to be used for purchase of non-tradable goods, there is a distinct possibility of a real exchange rate appreciation. He notes there is some support for this effect in the literature.[8] But if aid flows are used for investment to enhance productivity of the private sector, particularly manufacturing, the effects of Dutch disease can be mitigated.

Pradhan and Arvin explore the nexus among two forms of international capital flows – aid and foreign direct investment – the degree of a recipient's trade openness, and the resulting economic growth. They explore Granger causality among these four variables within the context of a dynamic panel. This allows them to utilize the information in the panel to determine the extent to which there are long-run equilibrium relationships among these variables, and to determine the direction of Granger causality. Further, they estimate these relationships simultaneously using a vector error-correction model, allowing them to identify and distinguish between short-run and long-run relationships. Significantly, they find a long-run equilibrium relationship among aid, foreign direct investment, trade openness and economic growth – as well as a complex network of causal relations between the variables.

Bland and Kilby incorporate preferences of larger donors over which countries receive aid through a comparative analysis of disbursement of committed aid by three international institutions: the World Bank, the Asian Development Bank (ADB) and the Inter-American Development Bank (IDB). They show that large donors can exert influence in determining which countries receive aid by delaying aid disbursement, and they show that this mechanism differs by the disbursing institution. The important difference lies in the voting structure, with donor countries holding the majority in the World Bank and the ADB, while recipient countries hold a majority in the IDB. They develop a test of informal influence by examining whether differences in a recipient country's voting patterns in the United Nations (UN) compared to the voting pattern of the US can explain the speed of loan disbursement. Once a loan is approved, countries can still block aid disbursement through judgment over whether conditions for recipient loan eligibility are being maintained. Bland and Kilby find that this voting pattern difference does explain disbursement rates for World Bank and ADB loans, but not for IDB loans. They then discuss views as to how the differences in voting structure among the three institutions are translated into these differences in informal influence of the larger donor countries.

Some subtle and some not-so-subtle forms in which donor interests are met through aid are summarized by Sogge.[9] He begins with a brief review of the context in which aid flows tend to finance capital flight. These counter flows have expanded as a result of trade liberalization policies, often adopted as part of aid conditionality, particularly when such conditionality reduces oversight over international flows. Alongside counter-flows, aid tends to be linked to increased donor exports through direct or indirect tying of aid.[10] Further, Sogge discusses how aid can be used to subsidize donor countries' foreign direct investment in recipient countries through soft loans or credits. Benefits to donors arise from aid used for procurement of services – particularly by large consulting firms; from food aid benefiting the large agribusiness firms and the shipping companies who move the bulky cargo, and from agricultural research benefiting agribusiness. When aid is provided to assist recipients in conforming to international intellectual property agreements like the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), the benefits are overwhelmingly to donors through enhanced flows of rents. Even aid flows directed to health and education can redound to donors' benefit through the direct channel of brain drain flow of human capital, but also through funds used to pay for tuition and living costs of students studying in donor countries. It is even apparent that much health care research spending is devoted to improving both the returns to big pharma or to control diseases most likely to jump from developing to developed world.

Isopi presents a simple summary of possible equilibria in a principal (donor)–agent (recipient) setup. In the model, the donor's utility depends on the utility of the recipient and the cost of the aid. Recipients are modeled as two groups, the elite who implement the aid-funded projects and the poor who are the targets of the aid-funded projects. Fully implementing the project requires that the elite incur a cost for effort; and they are assumed to benefit from higher output generated from the project. Because actions taken by the elites are not observed, but only the outcomes, corruption may ensue as elites may shirk and retain a share of the funds provided. Isopi identifies two sets of equilibria, good and bad. In one of the two bad equilibria, donors continue to provide aid even with corruption; in the other equilibrium, donors stop providing aid. The problem left to consider is that donors get stuck in the bad equilibrium and continue to provide aid to corrupt regimes.

Also addressing the theme of corruption, but from an empirical perspective, Asongu reviews recent studies of the link between aid and corruption for samples of African countries.[11] He finds support for the hypothesis that institutional quality is key, and that aid targeted at building institutional capacity in African countries with low levels of institutional quality is effective notwithstanding the link between aid and corruption. The impact on corruption depends on whether aid is provided to governments to expand expenditures which tends to exacerbate corruption, or whether aid is channeled to private investment, which is more benign. Asongu also discusses the debate over the impact of aid uncertainty on corruption, suggesting that uncertainty over aid inflows could motivate governments otherwise dependent on local tax revenues to improve institutions.[12]

Chapter 20, in Part IV, by Doucouliagos and Paldam is a meta-analysis of studies of aid effectiveness. They examine over 1700 studies of the effect of aid on growth published over the period 1970 through 2011. Their basic result is that the overall effect of aid on growth is so small as to be barely statistically significant, and certainly economically insignificant. The chapter is also a useful introduction to meta-analysis in the social sciences for those not yet familiar with the methods. Doucouliagos and Paldam observe a time pattern in the effect of aid on growth, with the strength of the effect diminishing until about 2008, then rising quite sharply thereafter. They attribute the general decline to a tightening of the variability of estimates due to the increase in the number of papers published. The rise at the end of the period in the estimated effectiveness of aid they attribute to publication selection bias – the tendency for researchers to report their best results and for journals to avoid publishing negative or non-results. Doucouliagos and Paldam provide good description of changes to the manner by which aid is disbursed – for example, adherence to the Organisation for Economic Co-operation and Development (OECD's) Paris declaration – and to the ability of researchers to use better econometric techniques to estimate the effectiveness of aid. They reject both hypotheses and conclude the impact of aid on growth is marginal at best. This certainly helps us understand why the debate over aid effectiveness continues. The chapters that follow in this part present some additional evidence as to why Doucouliagos and Paldam find such a weak link between aid and growth.

The chapter by Chauvet is a detailed and comprehensive review of the recent literature on the heterogeneity of the effectiveness of aid. As Chauvet notes, much of this literature has been motivated by the empirics of Burnside and Dollar (2000) indicating that aid is effective only for countries with good policy regimes; and theory in Collier and Dollar (2001, 2002) arguing for the need to direct aid to those countries where the marginal benefit of aid is higher.[13] A standard explanation for why aid flows do not conform to these two goals is the problem of time-inconsistency – detailed in Chapter 5 by Kumar – whereby it is not desirable to punish *ex post*. Additionally, it may be that poverty reduction and growth may not be the primary goals of donors; for example, aid could be used to support democratization, or to improve bad institutions.

Addressing directly the problem of the heterogeneity of aid effectiveness, because the effect of aid could be non-linear due to Dutch disease and/or recipient country institutional constraints, models using interactions between policy and aid like Burnside and Dollar could be mis-specified. Measures of policy regime soundness used by Burnside and Dollar have been updated with better measures of overall governance, the World Bank's CPIA indicators, but even with these better measures, it is not clear that countries starting with bad institutions should be denied aid. This is even more pertinent to the extent that institutions themselves are influenced by aid. Chauvet reviews studies that have found that aid may help improve institutions in democratic-leaning countries, but perversely may reinforce dictatorial regimes. She considers other possible influences on the aid–growth relationship. Aid may dampen the impact of shocks due to climate or international commodity prices, particularly for smaller, less-diversified countries already vulnerable. Also, aid seems to be of more benefit in post-conflict situations.

A significant problem in the empirical literature is the endogeneity between aid and growth. While many studies have instrumented for aid using various characteristics of the recipient country, some argue that not all instruments – like the lag of the ratio of arms imports to total imports, or total population – are valid, failing the exclusion restriction. Chauvet reviews newer techniques, using supply-side instruments, that is, characteristics of the donor–recipient pairing, like colonial links or distance. She also covers studies using novel instruments for aid like rainfall, international commodity prices and even gross domestic product (GDP) levels crossing the World Bank International Development Association's threshold for access to the concessional aid window.

Another set of studies Chauvet discusses are those that examine the impact of aid on growth at the industry or firm level. Using such micro-data resolves problems of endogeneity since industry or firm growth is less likely to influence aggregate country-level aid flows. Also, the impact of Dutch Disease or institutional quality can be assessed more precisely because of differential sensitivity to these effects by industry.

Finally, Chauvet examines studies attempting to distinguish short-run from long-run effects.[14] She summarizes two different approaches. Some studies make use of multi-year averages of variables finding positive aid–growth relationships. Others have looked at short-run impacts on intermediate results. If aid is successfully directed to education, in the long-run higher human capital should lead to higher growth. These studies suggest that there is a stronger impact of aid on education and health outcomes like immunization rates and reduction in infant mortality for countries with good institutions. She also summarizes studies looking at aid's impact on income inequality within recipient countries, noting some mixed results whereby aid may worsen the income share of the poor, even in democracies.

McGillivray and Feeny revisit the Burnside and Dollar (2000) analysis and investigate the mediating effect of aid recipients' policy quality on the link between aid and growth. They follow Burnside and Dollar by interacting aid with policy variables. They augment the model in two ways. They allow the effect of aid on growth to be non-linear; modeled as a quadratic. More substantively, they also model policy in a novel way by looking at state fragility. By definition, fragile states have weaker institutional structures and a lower capacity to absorb aid effectively. In their empirics, McGillivray and Feeny define a fragile state indicator variable whose value is one for countries where both the CPIA index measure and per capita incomes fall below defined thresholds. From among various possibilities, they find good results when defining the CPIA index threshold as the bottom quintile. Their main finding is that the impact of aid on growth is indeed positive in their entire sample of countries regardless of fragility. However, there is a large difference in aid effectiveness between these two groups. Growth due to aid for fragile states accrues at about half the rate of non-fragile states. They find that the ratio of aid to GDP that maximizes growth is approximately 14 percent for fragile states but closer to 40 percent for all others.

Fielding and Gibson present empirical evidence of the transfer problem, the effect of aid on real exchange rate appreciation – Dutch disease – in undermining aid effectiveness. If there is a real exchange rate appreciation due to aid inflows, traded goods become less competitive and demand shifts to domestic non-traded goods. However, if aid is spent on capital goods thereby raising productivity, traded goods will not be as adversely affected by real exchange appreciation. Moreover, if productivity due to investment of aid in capital goods increases productivity in production of non-traded goods, the real exchange rate appreciation itself can be mitigated. Therefore, the link from aid to Dutch disease is conditional on how the aid is used and also on the exchange rate regime in place.

Fielding and Gibson find substantial heterogeneity across African countries in the response of output to aid. They attempt to control for both the exchange rate regime and for the usage and productivity of aid. For aid productivity, they use the ratio of gross domestic investment to GDP to proxy for the propensity to invest. Measures of the productivity of capital are less precise. They use the level of per capita GDP, trade openness, and measures of institutional quality – specifically business regulation and public policy formation, average annual inflation, and number of years of war. They find that the effect of Dutch disease cannot be explained by these observables; most of the effect is buried in the country-specific fixed effect. So while they cannot identify which factors influence the impact of Dutch disease, Fielding and Gibson note that the effect varies substantially across countries so that it cannot be considered a universal problem notwithstanding the deleterious effects on some countries.

An example of a test of the aid effectiveness, as measured by intermediate outcomes, is supplied in Alvi and Mukherjee's chapter, which examines the direct impact of aid on primary school enrollment and completion rates. Compared to macro tests of the impact of aid on aggregate growth, the potential for evidence of aid's impact on an outcome to which it is directed is greater, particularly given the fundamental importance of education for growth. Lacking data on the outcome to be measured, increased knowledge and skills, Alvi and Mukherjee instead use both completion rates as final indicators and enrollment rates as intermediate indicators to serve as the explanatory variables. They test for an impact of aid, both committed to and disbursed for education, as their direct tests. They find both are statistically significant in explaining enrollments, but neither are statistically significant in explaining completion rates. While better access to schools and better infrastructure within schools attracts more students, these alone are not sufficient to raise the knowledge and skill levels of aid-receiving countries.

Quibria and Islam focus on Bangladesh's experience from which they draw general conclusions on governance and corruption. Bangladesh is an excellent case to study and Quibria and Islam provide an overview of the shifts in aid flows, growth, and achievement by Bangladesh of many notable development goals in education, health and fertility. They summarize features of lending by the World Bank, the Asian Development Bank, and Japan as the largest of the bilateral aid donors. They note that by the 1990s, the World Bank was imposing increasing degrees of conditionality on concessional loans, conditions and goals which Bangladesh met partly but not fully. Generally, Bangladesh was more successful in macroeconomic management, modestly successful in education and health, but weak in general governance. From Bangladesh's perspective, the influence of donors has been increasing even as aid flows themselves are declining as a share of GDP, and aid projects and programs tend to be imposed rather than provided as financing for programs arising internally.

Quibria and Islam summarize implications for Bangladesh of the three major barriers for aid effectiveness: absorptive capacity, Dutch disease, and poor governance. They suggest that while Bangladesh suffers from inability to process aid fully effectively, part of the problem is the myriad and intersecting policy and reporting requirements imposed by donors. They suggest that Bangladesh does not suffer from real exchange appreciation but rather from a lack of infrastructure. With respect to governance, while Bangladesh does rank very poorly on corruption and various measures of governance, Quibria and Islam question whether aid plays a role in exacerbating corruption, even despite such prominent scandals such as the Padma Bridge contract. Finally, Quibria and Islam point out that the current debate over whether aid effectiveness should be assessed for policy conditionality – currently done using the World Bank's CPIA index – or outcome conditionality is particularly pertinent to Bangladesh. While Bangladesh does not have a despotic government, the country's initial poor quality of governance will take much time to overcome and reform, and Quibria and Islam argue that this should not exclude the country from receiving aid.

Kablan explores a specific aspect of aid: its impact on the development of infrastructure for green cities. The chapter is in two parts. In the first, Kablan identifies the available evidence on aid effectiveness towards the goal of green cities and discusses the modes adopted for effective usage. In the second, she presents evidence of the usage and diffusion of green technology funded by aid disbursements. Kablan categorizes green aid into five categories: buildings, transport, air pollution, energy, and water supply and sewerage; she then provides illustrative examples for each.[15] She notes the usage of several aid funds, like the World Bank's Clean Technology Fund and Climate Investment Funds as well as national funds such as France's Agence Française de Développement. Projects funded under these and similar funds meet a set of uniform criteria and as such are scalable and transferable. Kablan then compiles and presents data on green aid by types of goals addressed, such as those listed above, and by geographic regions.

Part V opens with a chapter by Brown who summarizes the issues surrounding policy coherence for development. Horizontal policy coherence refers to the extent to which policies of a donor country – both among development agencies and across other departments dealing with foreign policy – do not conflict. Vertical policy coherence refers to the alignment of policies between donors and multilateral agencies, and between donors and recipients. After first reviewing why policy coherence is not always met, Brown then addresses how quality of policy coherence among donors is assessed, noting that most measures address donor goals while better measures would assess outcomes such as the effectiveness of the panoply of policies implemented by donors. For example, liberalization of agricultural trade will raise prices received by producers across the global South, but higher prices will reduce welfare of urban consumers regardless of the net welfare impact on a particular country. Other keys to policy coherence include ownership and alignment – the extent to which aid supports policies originating with recipient – and harmonization, and policies among donors not working at cross-purposes. Brown also notes the possible negative impacts of policy coherence which include creating monopolistic control over aid disbursement, and shifting the control over implementation higher up the political ladder from departments to presidents or prime ministers and cabinet.

An aspect of policy coherence is the effectiveness of the development aid organizations (DAOs). Epstein and Gang explore the organizational structure of DAOs to determine how best to align internal structures and incentives with external policy goals. They apply a typical principal–agent framework but in a novel context where the principal is now the donor government or agency and the agent is the department within the government or agency implementing the policy. Epstein and Gang assume the agency is composed of two or more departments charged with implementing the policy, and they posit two forms of reward to the departments: winner-take-all and proportional reward. In the winner-take-all scheme, the department that exerts the greatest effort receives the contract.[16] Epstein and Gang show that this will work only in a circumstance where there is great diversity in the productivity of departments. In most other scenarios, departments prefer the reward to be proportional to effort. While this latter result is intuitive, the former result is not. When a particular department has unique and unparalleled expertise, it is better to let it exert the effort rather than dividing the pool of resources among several departments.

Calleja and Rowlands explore donor interest in allocating aid. They characterize strategic interactions among donors; they then examine aid outflow patterns to test whether donors indeed play a game of one-upmanship in seeking influence through aid disbursement. Calleja and Rowlands note that studies have shown how donors attempt to influence recipients through aid in competition with other donors, be it through competition for export markets or for strategic influence over foreign policy more generally. Such strategic behavior undermines donor aid coordination, and aid flows will not reflect recipient needs. Calleja and Rowlands scrutinize the dynamics of competitive aid allocation. They hypothesize that donors secure influence by maximizing the number of countries to which they are a high-ranking donor.

Calleja and Rowlands illustrate donor rank-sensitivity using histograms of donor rank performance. This evidence suggests that the US tends to prefer to be the highest ranked donor, while Japan seems to be content with second place. Both the UK and France display a tendency to rank highly with former colonies, while Germany, lacking former colonies, in contrast looks for higher but not highest ranking more widely. Because donor rank is only one of many possible factors determining aid flows, Calleja and Rowlands provide two tests of aid dynamics: changes in aid when a country's aid ranking is lowered by increases in aid flows from other donors, and changes in aid allocation when donors' aid budgets change. In general, the evidence is mixed. They find some evidence for each test in support of the hypothesis of strategic aid responses in a limited number of cases, but also evidence of a lack of interest in rank. Evidence is strongest for Australia in response to increases in aid from Japan to several Pacific Island nations, and for Portugal in response to increased aid from the US to two of its former colonies. In response to aid budget increases from 2006–07, Spain seemed to allocate aid to improve its ranking, but Spain's aid allocations in response to a budget decrease in 2011–12 suggests a lack of concern for ranking. Other smaller donors, such as Sweden, the Netherlands and Ireland, do not seem to display strategic behavior either in response to other donors or in response to aid budget changes. Canada seems to fall in the middle, responding to changes in rank in some cases but not others. Calleja and Rowlands conclude that strategic interactions among donors likely do influence aid flows, but are only part of the many factors influencing their distribution. They suggest that strategic factors may become more important in the future in response to the emergence of new donors, such as China.

Reinsberg et al. examine a particular aspect of donor interest, the mechanisms used to disburse funds and the recent rise of a new hybrid form, multi-bi aid. Aid is most commonly distributed bilaterally between donor and recipient, accounting for about 60 percent of total flows. Aid is also distributed through multilateral organizations like the World Bank or the UN, accounting for about 25 percent. However, the use of a third mechanism, termed multi-bi aid, has increased dramatically since 2004, currently accounting for about 15 percent of total aid, or 60 percent of the volume of multilateral trade. A multi-bi agency appears similar to a multilateral agency except that it has less discretion over how to disburse the aid funds. The funds are provided on a short-term, voluntary, basis and private organizations may participate on management structures.

Reinsberg et al. review two general explanations for the rise of multi-bi aid. One version suggests they are tools for coordinating aid to better meet recipient needs. The less optimistic view sees their rise as responding to disenchantment with foreign aid without the Cold War motive of aid for strategic influence, and consequent demands for increased donor scrutiny over aid effectiveness. Reinsberg et al. provide more detail of this alternative motive as well as discussing timing and why international development organizations participate. They summarize views of the effectiveness of multi-bi aid in delivering aid, particularly whether they improve coordination and harmonization among donors, or whether they themselves are symptomatic of aid fragmentation, taxing recipient countries capacity while increasing volatility of aid flows.

Importantly, Reinsberg et al. provide consistent estimates of the size of bilateral, multilateral, and multi-bi aid by year; and break down multi-bi aid by international development organization through which they are disbursed, by donor country, by sector of allocation and by region of allocation, with additional detail for the most important recipients. From their breakdown they note that a large majority of multi-bi aid is channeled through single donor trust funds, strong evidence against the coordination motive hypothesis. They also show that there is relatively little difference in the distribution of aid among the three institutional types by sector or by region, suggesting donor motives. Reinsberg et al. tend to view multi-bi aid as complementing rather than substituting for other forms of aid.

One of the reasons for mixed findings on aid effectiveness is the fungibility of aid and the ability for recipient governments to substitute aid for tax revenue. Morrissey and Torrance provide an empirical test of the relationship between aid and tax revenue using a new set of government finance data to address deficiencies in the commonly used International Monetary Fund's (IMF's) Government Finance Statistics. They first underscore the theoretical linkage between aid and tax revenue. While taxation comes with a political cost, as well as a hard cost in terms of the bureaucracy needed to raise tax revenues, aid is not free of obligation. It comes with its own costs: the bureaucracy needed to interact with donors, the reporting and conditionality of accountability to donors, and the loss of independence when governments are dependent on donors to meet their policy objectives. Morrissey and Torrance suggest that as the cost of raising revenue falls, countries will tend to prefer domestic revenue sources over foreign. Because of the cost of tax collection, poorer countries will have lower tax to GDP ratios and will receive more aid. This means that taxes and aid are endogenous. Further, when estimating a relationship between tax revenue and aid, merely lagging aid by a year or two will not eliminate the endogeneity given the persistence of tax policy and taxation capacity. Morrissey and Torrance re-estimate a standard model in the literature modified by disaggregating aid into loans and grants, and by using longer lags of aid as instruments. They are unable to find the negative relationship between aid and tax revenue, and in some of their specifications find a positive relationship between grants and tax revenue. They argue that there is no consistent relationship between aid and tax revenues given the heterogeneity of the relationship and the ability for each country to choose the trade-off between accepting aid and relying on tax revenues.

Hermes and Lensink provide a comprehensive review of microfinance, focusing particularly on the link between aid and the effectiveness and sustainability of microfinance institutions. They summarize the benefits of microfinance for the poor and discuss the variety of forms it takes beyond simple provision of credit. Newer developments in microfinance include assistance with savings, flexible loan repayment structures with payment schedules linked to the crop cycle or allowing for early repayment, and the introduction of life and other insurance, as well as pensions. They note the problems in the literature on the effectiveness of microfinance, particularly sample self-selection since borrowers approach lenders. They also discuss results of recent randomized controlled trials, which are not encouraging. In general the results of microcredit and financial performance of the microfinance institutions is weak. However, they note that performance with savings instruments and with flexible loans is better.

Hermes and Lensink then explore whether microfinance can meet both its goals of social sustainability by expanding its market to offer credit to more of the world's poor, and financial sustainability given that microfinance has depended on subsidies provided by aid. In the last ten years, competition has increased with growth in microfinance leading to declining quality of loan portfolios. At the same time, increased microcredit availability has caused many to take on too much debt, increasing their likelihood of missing loan repayments. Hermes and Lensink note that this growth has leaped ahead of the availability of aid-financed subsidies. They examine whether microfinance should continue to be subsidized. Because microfinance is targeted at the poor who often live in remote, rural locations and who are not able to easily signal their creditworthiness, costs are high, thus justifying subsidies. However, subsidizing credit may cause misallocation of funds, induce corruption, and attract borrowing by those who are already better-off to the neglect of the poor. Empirical evidence of the effectiveness of subsidies to microfinance shows mixed results, but it is clear that the type of subsidy provided can have an impact. Subsidies for start-up costs, for flexible loan repayment schedules, and for related non-financial services such as financial literacy training can be effective. This suggests that aid may still be productively channeled into microfinance if directed appropriately.

In conclusion, the rich diversity of analyses and perspectives on foreign aid and development issues – as well as the wide range of questions and topics covered – that characterize this work are a testimony to the importance of foreign aid in economics and international relations. These chapters are also a testament to the expertise of those who generously contributed to this book, many of whom have been working in the area of foreign aid for decades. We hope that readers will find this handbook intellectually stimulating and that it will contribute to further learning, research and debate in this important field.

NOTES

1. Using the value of consumer bundle of aid that was provided.
2. This makes sense in light of recent research which suggests that giving aid leads to higher well-being for donors when they feel psychologically connected to the recipients of their assistance (see Arvin and Lew, 2010a, 2010b; Aknin et al., 2013).
3. While there have been many studies concerning the relationship between foreign aid and donor country exports (see, for example, Arvin et al., 2003 for a survey), a subset of the literature argues that even *untied* aid may cause donor exports to increase. Here, the argument is that untied aid may generate goodwill for a donor, leading to higher exports from the donor country to the recipient. Evidence on this is provided in early studies by, for instance, Arvin and Baum (1997), Arvin and Choudhry (1997), and Arvin et al. (2000).
4. Das and Serieux (Chapter 3 in this volume) also consider the potential for reverse flows with inflows of aid offsetting required outflows such as debt-repayment.
5. Implications for government revenue are developed further in Morrissey and Torrance (Chapter 31 in this volume).
6. Some implications of aggregation bias are addressed in Peiffer and Boussalis (Chapter 4 in this volume).
7. Bland and Kilby (Chapter 16 in this volume) identify how such timing differences can be due partly to donor interest.
8. More detail is presented in Fielding and Gibson (Chapter 23 in this volume).
9. Extending the evidence presented in Das and Serieux (Chapter 3 in this volume).

10. Aid for Trade effects are detailed in Part II.
11. Related to the link between aid and corruption is the possible nexus between aid and the state of democracy in a developing country. See, for example, Arvin and Barillas (2002) and Arvin et al. (2002) for a discussion and empirical analysis.
12. See Chapter 31 in this volume, by Morrissey and Torrance, for a detailed exploration of this last observation.
13. See, for example, Beynon (2002) and Roodman (2008) for a critical assessment of this work.
14. See also Chapter 15 in this volume, by Pradhan and Arvin, where a clear distinction is made between short-run and long-run effects.
15. See Arvin et al. (2006) and Arvin and Lew (2007, 2009) for the evidence on the connection between foreign aid and the state of the environment across countries, addressing air and water pollution and net deforestation.
16. In the proportional reward system, the reward is proportional to effort.

REFERENCES

Aknin, L.B., E. Dunn, G. Sandstrom and M. Norton (2013), 'Does social connection turn good deeds into good feelings? On the value of putting the "social" in prosocial spending', *International Journal of Happiness and Development*, **1** (2), 155–71.

Arvin, B.M. and F. Barillas (2002), 'Foreign aid, poverty reduction, and democracy', *Applied Economics*, **34** (17), 2151–6.

Arvin, B.M. and C. Baum (1997), 'Tied and untied foreign aid: a theoretical and empirical analysis', *Keio Economic Studies*, **34** (2), 71–9.

Arvin, B.M. and S. Choudhry (1997), 'Testing for causality between untied aid and exports: do untied aid disbursements create goodwill for donor exports?', *Canadian Journal of Development Studies*, **18** (1), 9–22.

Arvin, B.M. and B. Lew (2007), 'Can foreign assistance bring better air quality to developing countries?', *International Journal of Applied Business and Economic Research*, **5** (1). 31–7.

Arvin, B.M. and B. Lew (2009), 'Foreign aid and ecological outcomes in poorer countries: an empirical analysis', *Applied Economics Letters*. **16** (3), 295–9.

Arvin, B.M. and B. Lew (2010a), 'Does happiness affect bilateral aid flows between donor and recipient countries?', *European Journal of Development Research*, **22** (4), 546–63.

Arvin, B.M. and B. Lew (2010b), 'Aid and happiness: untangling the causal relationship in nine European donor countries', *Global Business and Economics Review*, **12** (4), 341–58.

Arvin, B.M., F. Barillas and B. Lew (2002), 'Is democracy a component of donors' foreign aid policies?', in B. Mak Arvin (ed.), *New Perspectives on Foreign Aid and Economic Development*, Westport, CT: Praeger, pp. 171–98.

Arvin, B.M., B. Cater and S. Choudhry (2000), 'A causality analysis of untied foreign assistance and export performance: the case of Germany', *Applied Economics Letters*, **7** (5), 315–19.

Arvin, B.M., P. Dabir-Alai and B. Lew (2006), 'Does foreign aid affect the environment in developing economies?', *Journal of Economic Development*, **31** (1), 63–87.

Arvin, B.M., A. Piretti and B. Lew (2003), 'Foreign aid and export expansion: testing for causality and cointegration', *Rivista Internazionale di Scienze Sociali*, **111** (4), 459–92.

Beynon, J. (2002), 'Policy implications for aid allocations of recent research on aid effectiveness and selectivity' in B. Mak Arvin (ed.), *New Perspectives on Foreign Aid and Economic Development*,Westport, CT: Praeger, pp. 199–264.

Burnside, C. and D. Dollar (2000), 'Aid, policies and growth', *American Economic Review*, **90** (4), 847–68.

Collier, P. and D. Dollar (2001), 'Can the world cut poverty in half? How policy reform and effective aid can meet international development goals', *World Development*, **29** (11), 1787–802.

Collier, P. and D. Dollar (2002), 'Aid allocation and poverty reduction', *European Economic Review* **46** (8), 1475–500.

Roodman, D. (2008), 'Through the looking glass, and what the OLS found there: on growth, foreign aid, and reverse causality', Working Paper Number 137, Center for Global Development, Washington, DC.