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# The Macroeconomics of Aid: Overview

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**ABSTRACT** *This Special Issue explores macroeconomic effects of aid from various perspectives through a blend of studies, both conceptual and empirical in nature. The overall aim is to enhance the understanding of the macroeconomic dimensions of aid in the policy and research communities, and to inspire further innovative work in this important area. This opening article provides a scene setting summary of five generations of aid research, with a particular focus on how the JDS has contributed to this literature, and ends with an overview of the papers included in this Issue.*

## 1. Introduction

The death of aid has often been declared, and private capital flows (foreign investment, portfolio flows and remittances) as well as earnings from natural resources now far exceed official development assistance (ODA) in aggregate. However, the recent and sharp downturn in resource earnings, the ability of ODA to fund public goods that private capital cannot, and the difficulty of small and fragile economies in attracting private capital, all imply that the need for aid might not be as dead as its critics believe. Moreover, even strongly growing economies (including those where aid has helped that growth) find it difficult to diversify their economies, achieve inclusive growth and adapt to the threat of climate change. There are large unmet needs in infrastructure (especially for climate resilience and for poor communities) and in human capital formation (especially in the education and health of the poor). The cost of meeting these challenges far exceeds domestic revenues and external private capital flows.

Despite the apparent continued need for aid, its supply may well stagnate or fall. With donor budgets under pressure, criticism of aid reinforces those calling for aid to be scaled-back (or ended). This is despite the significant progress made in many of the UN's Millennium Development Goals (MDGs), to which aid contributed, the ambitions of the Sustainable Development Goals (SDGs), and the close connection between peace and inclusive development.<sup>1</sup>

Some criticism of aid is based on robust evidence, and aid has had its shortcomings. But much popular criticism of aid rests on no evidence at all, on out-of-date studies (many of which are methodologically weak) or on a misunderstanding of causation and country context. Many critics correlate weak or negative growth with aid flows, without much (if any) attention to the direction of causation, the overall determinants of growth (of which aid is just one) or the counter-factual to aid. For many critics it seems self-evident that a dollar of aid will reduce a government's incentive to collect a dollar of tax, without considering the strong support that donors have given to domestic revenue mobilisation. Many critics cite 'Dutch Disease' as an inevitable consequence of aid, without recognising that the phenomenon can be contained by policy and by donor investment in the economy's supply side (through, for example, infrastructure and human capital formation).

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Research methodology must take on board these complexities and contexts of aid and its impact. Otherwise, policy in both donor and partner countries will be ill-served. Many of these issues are macroeconomic in nature: the impact on growth; the fiscal impact; the construction of macroeconomic scenarios in which aid provides finance (including the climate dimension); and the respective roles of fiscal, monetary, and exchange-rate policies in relation to aid inflows (with policy lessons for other types of flows including remittances, private capital and resource earnings). The papers in this Special Issue offer new insights on some of these macroeconomic aspects of aid.

Public scepticism of aid has been fuelled by popular books and critical media reports so academic researchers have a role to play in providing careful and considered analysis. This is not to say that researchers agree – far from it as the discussion of debates here will show. Numerous papers on aid have been published in many academic journals and these have helped to build up a factual base about aid, broadening access to information and analysis that may otherwise be confined to reports in official agencies. The *Journal of Development Studies* has published many of these papers and for over 30 years has contributed to knowledge on aid. This Special Issue adds to this long tradition to further enhance the understanding of the macroeconomic dimensions of aid in the policy and research communities, and to inspire further innovative work in this important area. Sections 2–5 of this Introduction provide a scene setting summary of five generations of aid research,<sup>2</sup> Section 6 provides an overview of the papers that make up this Issue, and Section 7 concludes by highlighting the need for more research on aid's role, and potential, to assist structural transformation and job creation.

## 2. Early studies of foreign aid

As bilateral and multilateral aid programmes were established from the late 1940s onwards, the study of aid, both its modalities and impact, grew alongside aid practice. Over time, the aim of research became increasingly to improve aid's effectiveness, eventually leading to the priority given to 'evidence-based policy' that we see today. As the study of development took off, and as development studies and development economics defined themselves as distinct subject areas, new journals were established, providing an opportunity to publish the first rigorous studies of foreign aid. Before that, discussion of aid was largely confined to official documentation in the (new) donor agencies and the foreign ministries of donor countries. Much of it consisted of internal reports, and was not easily accessible.

The JDS published its first issue in late 1964, and Toye (2015) discusses the origins and early years of the journal. The 1960s and 1970s saw about 15 aid papers in the JDS. The first paper on foreign aid was Clifford (1966) on the tying of aid, a recurring topic in the aid debate for many years. A decade later, Thirlwall (1976) took up this issue and asked 'when is trade more valuable than aid?' In hindsight, one can't help reflect on the 'when' in the title: Thirlwall's question was about the relative importance of aid and trade under differing circumstances; not about the desirability and impact of aid per se. In contrast, 'trade-not-aid' has since become a rallying call for aid's critics, as if aid, trade (or indeed private capital and domestic revenues) can ever be complete substitutes for each other. Morrissey (1991) returned to the relationship between aid and trade in the context of a specific British tied aid policy instrument and at a time when there was a growing lobby against tied aid in Britain championed by NGOs and supported by Claire Short (abolishing tied aid was one of her first actions as Secretary of State for International Development when DFID was established in 1997).

Only two papers were published on aid in the 1980s: Sisaye and Stommes (1980) on government budgeting and Mosley (1981) on aid for the poorest. This is quite surprising given that this was the era of structural adjustment, when multilateral aid and donor conditionality became highly controversial (Addison, 2015). Nevertheless, Mosley (1981) set the terms of the debate for several decades helping, with others, to focus the debate onto the questions of 'does aid work?' and if not 'why?' In an influential book, Mosley (1987) launched the idea of a micro-macro paradox in aid's impact: the impact of aid seemed to evaporate as we move from the micro to the macro levels because positive impacts could be identified at the project level but not at the economy level of aid and economic

growth. Mosley (1987) proposed a number of reasons for the paradox, notably incentive effects on behaviour and the political economy of aid. This thread was picked up in JDS in the seminal study of White (1992) on the macroeconomics of aid, highlighting the econometric difficulties in establishing a causal impact from aid to growth (concerns that came to influence the vast cross-country econometric literature on aid and growth for decades). White argued at the time that many believe there is no effect of aid on growth in spite of inconclusive evidence and the early optimism surrounding aid's potential impact. The disagreement between sceptics and optimists has been a continuing feature of the literature, testimony to the importance of aid.

To be clear, both White and Mosley suggested (alongside many others) that the econometric aid-growth literature was contentious. Was this really true? When Hansen and Tarp (2000) addressed this question they did not find much evidence for a negative and statistically significant effect of aid on growth. They made an inventory of all existing econometric studies in what they termed first and second generation work (aid-savings-investment-growth). Among 131 early simple cross country regression studies, several showed aid to be associated with decreased savings, but only one (Gupta & Islam, 1983) suggested a decrease bigger than the aid inflow, implying that total savings, with one exception, goes up. Moreover, only one study and one regression (Mosley, 1987) shows a negative impact on growth. Hansen and Tarp (2000) demonstrated that the regressions in this and a series of insignificant aid-growth studies were mis-specified. A careful analysis of the evidence available up to the mid-1990s did not justify the conclusion that aid had no positive impact on growth.

### 3. Assessing aid

In the mid-1990s a third generation of aid studies emerged using dynamic panel data, usually with the Generalised Method of Moments (GMM) estimator. This was very much based on an expectation that new data and new methods (which took the endogeneity of aid seriously) would provide new insights. Boone (1994) was a frontrunner, and he inspired *The Economist* (10 December 1994) to declare that aid was 'down the rat hole' (an early declaration of the death of aid).

Boone was soon superseded by Burnside and Dollar (1997) who argued that aid works, but only when policy is good. Burnside and Dollar had elegantly cut the Gordian knot of aid impact and they did so including an aid-policy interaction term in their regressions. This became a corner stone in the World Bank's Assessing Aid paradigm and selectivity in aid allocation along Washington Consensus lines seemed to gain traction, and was in line with the new growth theory. Could it really be true that matters were this simple? After all, what is aid about? Helping those in need some would argue. A fundamental principle of economics also seemed conspicuously absent in the Burnside-Dollar analysis, that of diminishing returns. While aid, policy and their interaction (aid x policy) were present in the regressions, all the associated squared terms were not. Theory provides no definitive guidance here, and Hansen and Tarp (2001) demonstrated that aid x policy drops out when squared terms are included. While this may look innocent to the untrained eye, it is actually quite fundamental to the analysis, and Burnside-Dollar stood seriously challenged. A rationale for aid to fragile states with weak policy and institutions had not been wiped out by the Burnside-Dollar analysis.

All of this did not, however, have much impact on the critics of aid. This was so even when Hansen and Tarp were joined by Dalgaard, Hansen, and Tarp (2004) and a series of studies published in the JDS around the turn of the millennium. These include Hermes and Lensink (2001), Lensink and White (2001), Dalgaard and Hansen (2001), Guillaumont and Chauvet (2001) and an early time series paper by Feeny (2005). In the 2000s JDS moved to the forefront of the aid-growth debate. If it happened that many of these papers provided evidence of conditional aid effectiveness this was not due to publication bias. Instead it reflected a desire to let other voices be heard in what was becoming a very negative literature.

#### 4. New methods and new disagreements

The volume of aid was rising again by the turn of the Millennium. Soon, however, a fourth generation of decidedly pessimistic aid-growth studies emerged. The charge was led by Rajan and Subramanian (2005). They argued that a large increase in aid would lead to Dutch Disease effects that would undermine any potential beneficial impacts on growth. The evidence is decidedly mixed (Fielding, 2010); indeed, analysis of 65 developing countries over 40 years provides ‘evidence on the absence of Dutch disease type of problems caused by aid’ (Selaya & Thiele, 2010, p. 1762). One may expect small island states, especially those in the Pacific with high aid dependence, would be particularly susceptible to Dutch Disease effects. However, Fielding (2010) finds that aid is associated with real exchange rate appreciation in only three out of 10 Pacific economies and shows that characteristics such as increased trade openness or greater government effectiveness can substantially mitigate any adverse effects of aid. It is certainly not the case that aid necessarily or even generally has Dutch Disease effects (see Addison and Balamoune-Lutz in this Issue).

In analysing the effect of aid on growth, Rajan and Subramanian (2005) argued in favour of supply side instruments for aid (motivated by scepticism of GMM estimators) in long run cross-section analysis, and concluded that no statistically significant and positive effect of aid could be found in the data. Thus, it looked as if Rajan and Subramanian had revived the micro-macro paradox. Leaving aside the issue that one cannot conclude that aid does not work based on insignificant parameters, this motivated Arndt et al. (2010) to ask whether the literature had come full circle. Their response was quite clear. Introducing a new estimator and improving the specification and instrumentation of the Rajan and Subramanian approach, they demonstrated that cautious optimism rather than bleak pessimism was called for in the assessment of aid’s impact.

A number of JDS papers supported this cautious optimistic view. Feeny and McGillivray (2010) find that aid has a significant positive impact on real per capita income growth for a large sample of small island states. Although there are diminishing returns in their analysis these set in (and only reduce the positive effect) when aid is above 35 per cent of GDP and aid exceeded this level in only four of 28 small island states (Feeny & McGillivray, 2010, p. 907). For a sample of 65 developing countries over 1962–2001, Selaya and Thiele (2010) find a significant positive effect of aid on growth, driven by the impact on growth in industrial and service sectors (there is no impact on agriculture).

A number of studies address concerns that using the donor measure of aid allocated to a country, as is common practice in aid-growth studies, may overstate the amount actually received by, or available to spend in, the recipient. This measurement error could generate attenuation bias reducing the estimated coefficient on aid. More generally, how aid is used influences any potential effect on growth. Serieux (2011, p. 1094) suggests that up to half of aid to sub-Saharan African (SSA) countries may effectively be used to finance debt servicing costs or for accumulating reserves (and possibly capital flight), implying that the aid is not available to finance investment. This would reduce effectiveness in aid-growth regressions but does not imply that the aid is being misused as financing such flows is important for macroeconomic management. A related strand of enquiry aims to assess if aid is spent and absorbed in the recipient economy. Hansen and Headey (2010) find that small aid-dependent recipients do seem to spend and absorb most aid, whereas it is in small recipients where other sources of revenue (such as from natural resources) are relatively more important that aid may be used to accumulate reserves. For 25 low-income SSA countries, Martins (2011) finds that most aid is spent (and can finance investment) and about two-thirds of the associated foreign exchange is used to finance imports (hence absorbed).

Other studies applied new methods and added to the pessimistic view of aid. Doucouliagos and Paldam (2008) applied meta regression analysis methods to studies of aid and growth and concluded that aid is not effective. However, Mekasha and Tarp (2013) demonstrate limitations in the analysis and show that in fact the meta evidence supports aid effectiveness.<sup>3</sup> Similarly, while Nowak-Lehmann, Dreher, Herzer, Klasen, and Martínez-Zarzoso (2012) claim that aid is ineffective on the basis of estimates from a panel time series analysis a replication study by Lof, Mekasha, and Tarp (2015) shows that their results are distorted. If there is one general conclusion from the many disagreements

in the aid-growth regressions literature it is to caution against drawing firm unqualified conclusions. Even if the serious data and econometric difficulties are addressed, which is not always the case, cross country analysis can only suggest a pattern or tendency that holds on average. Countries, however, are heterogeneous, perhaps none more so than low-income countries.

## 5. Convergence

Arndt et al. (2010) marks the beginning of the fifth generation of aid-growth studies reviewed in Arndt, Jones, and Tarp (2015a), who provide an overview of the full population of studies that (i) refer to an average aggregate aid-growth relation for developing countries as a group; (ii) include data spanning at least 30 years; (iii) attempt to address the endogeneity of aid; and (iv) are published in a peer-reviewed economics journal over the period from November 2008 to July 2014. Arndt et al. (2015a) conclude that recent empirical studies provide consistent support for the view that aid has had a positive average effect on growth (and economic return) when viewed over an extended time frame. In fact, a series of simulations undertaken by the authors find that the average internal rate of return lies above the 10 per cent level. The view that aid is ineffective finds much weaker support in the existing literature and the notion that aggregate aid is actively harmful on average finds no endorsement in recent academic research.

The above observations are underpinned by the unpacking of the aid impact undertaken in Arndt, Jones, and Tarp (2015b) and the time-series study of aid to 36 African studies by Juselius, Møller, and Tarp (2014). Starting with Dalgaard and Hansen, the papers in this Special Issue, in different ways, substantiate this overall assessment, providing insights from a variety of complementary analytical approaches and empirical starting points. Simplistic claims that the up-to-date aid-growth studies amount to a set of highly conflicting and mutually inconsistent results does not appear justified when analytical techniques and existing data are used with sufficient care, and attention is given to analysing this relationship over the necessary long-term horizon.

There is an answer to why it took so long to figure all this out:

Both aid volumes and their associated impacts are not so large as to be easily identifiable in macroeconomic data. The simulation modeling presented here underscores that long time frames are required to detect a growth impact. This reflects lags in the realization of benefits and the relatively moderate contribution of aid to the overall growth rate. In reality, detecting the contribution of aid is further complicated by large fluctuations in growth that have been an inherent part of the experience of nearly all developing countries. On top of this, observations of both the flow of aid funds to developing countries and their growth rates are known to be imperfect. For these reasons, it is not surprising that the economics profession has only recently converged on the more consistent range of estimates. (Arndt et al., 2015a, p. 26).

No serious researcher would ever claim that aid is a panacea – the present editors included. Aid of the size seen so far can only be a supportive policy. While celebrities can appeal and get funding, the development profession well knows that development is a lot tougher than just throwing money at the problem. No one will say it is easy; which means that the use and effectiveness of aid should continue to be debated. Yet, this is not in contradiction with arguing that aid has by and large made a difference. The study of aid and growth has helped in figuring out what works and what does not work in development.

Debates about aid will – and should – continue. The recent discussions around the observations made by Deaton (2013) on the usefulness (or rather lack hereof) of aid are an illustration. Deaton relies on studies that have been seriously challenged and may not be right. An alternative conclusion is that ‘objective assessment of the evidence and a consideration of the dynamics of institutional development suggest a more positive role for aid in the developing world’s ongoing efforts to escape poverty’ (Ravallion, 2014, abstract). In a similar vein, Jones and Tarp (2016) ask whether foreign aid harms the

institutions of recipient governments. Based on careful use of the available data they conclude that: (i) there is a small positive net effect of total aid on political institutions; (ii) the aggregate net positive effect is driven by stable inflows of governance aid; and (iii) there is no systematic negative effect of aid on political institutions. This is consistent with the finding of Kersting and Kilby (2014) that aid promotes democracy, because recipients are aware that donors will reward democratisation and respond accordingly. The growing positive literature on aid effectiveness that has been converging since 2008 should – in our assessment – be borne in mind by those engaging in the sometimes heated public debates.

It is our hope that the present Special Issue will contribute to the continued search for sound assessments of both the strengths and weaknesses of foreign aid; and that it will motivate further work in this important area of economic inquiry. Section 6 provides a brief overview of the six individual papers included.

## 6. The papers in this issue

The six papers in this Special Issue address three aspects of the macroeconomics of aid: estimating the aggregate return on aid; the relationship between aid and tax revenue; and the relationship between aid and the exchange rate. The first of these is relevant, and indeed offers a resolution, to the micro-macro paradox as comparison is made between the rate of return on project investments and the macro return on aid investments. The next three papers contribute to studies of the fiscal effects of effect. The final two papers add to the strand of Dutch disease studies referred to above. All six papers have one important characteristic in common: the need for approaching data and choosing the appropriate methodology with care and diligence if the resulting analysis is to be of use for other researchers and policy-makers. The basic objective of aid is to get the most development possible out of available resources. Research can make a contribution to this objective.

In the first paper, Dalgaard and Hansen estimate the aggregate return on aid-financed investment, effectively the marginal productivity of aid capital. The paper estimates aggregate or macro returns on aid to enable comparison with estimates of the micro returns to individual investment projects. In doing so it helps reconcile the micro-macro paradox observed by Mosley (1986). He noted that while evaluations of aid projects find significant positive rates of return on the investment (the micro evidence) these did not appear to aggregate up to the macro level due to the seeming lack of a significant effect of aid on economic growth in his analyses. Dalgaard and Hansen make clear that the return to aid according to the productivity of capital approach is very distinct from the effect of aid on growth, and thus very distinct from the return to aid in studies such as Lensink and White (2001). Specifically, they are concerned with the coefficient on aid capital, one component of the capital stock, in an aggregate production function. The appropriate comparison then is not with estimates of the effect of aid on growth but with estimates of the marginal productivity of capital, and especially public capital (as most aid investment is public). Furthermore, in showing that the productivity of aid investment is higher than the productivity of domestic (private) investment they challenge those who argue that aid is inefficient because the marginal productivity of capital in developing countries is low.

The productivity of capital is a fundamental element in any analysis of the sources of growth. Indeed, according to some theories, physical capital investment is about the only thing that matters (Jones & Manuelli, 1990) and it is evident that physical capital accumulation is an important factor in economic growth. Dalgaard and Hansen estimate and contrast the returns to domestic investment and to capital accumulated through investment financed by foreign aid. To address endogeneity and the likelihood that both of the returns vary across countries and time, they develop a correlated random coefficients model to estimate returns and assess robustness using alternative estimators and two different data sources for GDP and investment. The results are robust: the return on aid is around 20 per cent, similar to estimates of the rate of return on projects (so no micro-macro paradox exists) and to macro estimates of the return on public capital, and higher than the return on domestic private capital.

Evidence that aid investments are productive is encouraging given the allocation of aid resources for infrastructure projects and it demonstrates beneficial effects of aid. This does not, per se, guarantee that aid increases growth. It is consistent with the notion that aid-financed investment contributes to growth while the overall impact may in principle be offset by other effects of aid and other determinants of growth (Herzer & Morrissey, 2013).<sup>4</sup> Not all aid finances physical capital investment, indeed probably less than half does. A significant share of the aid delivered through government finances social sector or human capital investment for which, even if returns are similarly positive, it would take many years to have a discernible impact on growth. Aid to government may have more immediate effects through fiscal behaviour as such aid influences the level and allocation of government spending and may affect taxation and borrowing behaviour. The next three papers address these aspects of the macroeconomic effects of aid.

Bwire, Morrissey and Lloyd, in their study of Uganda, is the first of two papers applying the Cointegrated Vector Autoregressive (CVAR) methodology to time series data in single country studies of the effects of aid on government fiscal behaviour. There is very little theoretical guidance, other than by assumption or construction, on fiscal response to aid; various factors will influence how a government views aid and domestic tax revenues as potential substitutes (Morrissey, 2015), so it is reasonable to consider this a country-specific empirical question. The CVAR methodology is appropriate in this context as no structural model or behavioural priors are required and there is an established protocol for testing which variables are endogenous to (determined by) the system, which are exogenous (drivers) and which can be excluded from a particular relationship. While the method is not a panacea, as the time series are relatively short and relationships may not be stable (even 40 years may not actually be a long series), it can be informative when evaluated against a narrative of fiscal policy. The ability to distinguish between the long-run equilibrium relationship and short-run dynamics can be an advantage, and the only claim is that the CVAR methodology is a valuable addition to the macro-econometric toolbox.

Bwire et al. note that Uganda was at the forefront of African countries implementing tax and public financial management reforms from the 1990s, with special effort devoted to improving the accuracy of recording aid in the budget. These reforms were intended to improve budget planning and management but as this is only likely to occur gradually the CVAR methodology is not inherently suited to analysing such changes (the long-run equilibrium relationship may not change as there need not be any regime shift). However, Bwire et al. are able to avail of annual data for 1972–2008 and quarterly data for 1997–2014 to provide some assessment of the effects of the reforms. The same CVAR methodology is applied to both datasets and results suggest that aid has been a significant element of long-run fiscal equilibrium, associated with increased tax effort and public spending and reduced domestic borrowing. Whilst aid flows to Uganda have been substantial, the resource gap has remained large and often required domestic borrowing (repaid when revenues are healthy). There is evidence that fiscal reforms have improved aid and expenditure management, in particular by improving the recording of aid receipts (so budget planners know the inflows and associated commitments), contributing to improved fiscal performance in Uganda. The slow growth in tax revenue and regular aid shortfalls prevented sustaining a balanced budget inclusive of aid. In terms of policy, it is crucial to increase the reliability and predictability of aid, coordinate aid delivery systems and make aid more transparent. This involves effort by donors and the government.

Mascagni and Timmis in turn explore the fiscal effects of aid in Ethiopia using the CVAR methodology to model long-run and short-run dynamics. They use national data for 1961–2010, including a measure of aid capturing flows through the budget as measured by the recipient. The data suggests three main conclusions on the long-run equilibrium: government long-term spending plans are based on domestic sources, treating aid as an additional source of revenue; both grants and loans are positively related to tax revenue; and aid is positively associated with spending, with a particularly strong relation between capital expenditure and grants. Ethiopia, like Uganda, has not been very effective in increasing tax revenue but both studies show that this should not be interpreted as aid encouraging lower tax effort. In Uganda, aid has supported increased tax revenue, perhaps reflecting donor support for fiscal reforms. In Ethiopia it appears to be more of an incentive effect: the



government knows that if tax revenues are increased donors will reward the effort with additional aid that can be used to finance increased investment spending.

Crivelli and Gupta assess whether revenue conditionality in IMF-supported programmes has contributed to domestic resource mobilisation (increasing the tax to GDP ratio) and whether it helped offset potential negative effects of foreign aid on tax revenues. The authors acknowledge the extent of debate on the effect of aid on tax effort, and indeed their reported results are not robust to alternative specifications (and any negative effect of aid grants on tax only appears to apply for middle-income countries). While it may be the case that denying access to aid will be a strong motivation for mobilising domestic tax revenue (Eubank, 2012), this is an extreme case and the associated low levels of resource may not be conducive to economic development and growth. As most developing countries do receive aid the effect on tax effort is likely to depend on how the government views the trade-off between aid dependence and donor conditionality as against domestic revenue and autonomy (Morrissey, 2015). In some countries aid may substitute for tax effort, in others it may not. The question addressed is whether donor revenue conditionality affects this. The analysis is carried out on panel data covering 1993–2012 for up to 119 low- and middle-income countries and shows that revenue conditionality does mitigate any negative effects of aid on tax revenue, especially in low-income countries. This result only holds for taxes on goods and services (neither aid nor conditionality appear to affect income or trade taxes). As trade liberalisation leads to a declining share of trade taxes in total tax revenue, efforts to increase tax revenue need to focus on income taxes and taxes on goods and services. Revenue conditionality seems to have supported one element of this and an implication of this study is that the IMF should pay more attention to measures to help increase income tax revenues in the design of revenue conditionality. One possible innovation is to support the establishment of Semi-Autonomous Revenue Authorities as there is some evidence that these are associated with increasing tax revenues (Ahlerup, Baskaran, & Bigsten, 2015).

Turning to the two articles in this Special Issue, which focus on relationship between aid and the exchange rate, Juselius, Reshid, and Tarp take as their starting point the study by Juselius et al. (2014) of 36 sub-Saharan African countries. While the latter study noted a positive impact of aid in the absolute majority of these countries, Tanzania and Ghana, two major aid recipients, stood out as cases where aid did not seem to have been equally beneficial. The authors therefore single out these two countries for a more detailed empirical investigation using a CVAR analytical approach. More specifically they ask: (i) What was the effect of major structural reforms on the macroeconomic growth rates in Ghana and Tanzania? Do these effects differ, and if so why? (ii) Does the inclusion of the real exchange rates (open economy effects) and the inflation rate (nominal effects) significantly alter conclusions regarding the long-run impact of aid on key macroeconomic variables in Tanzania and Ghana?; and (iii) Are the macroeconomic transmission mechanisms in Ghana and Tanzania similar (and if so to which extent) or are they different; and what is the potential role played by Dutch disease?

Accordingly, focus is on the effect of aid when allowing external and nominal factors to play a role in the macroeconomic transmission mechanism; and it emerges that that aid played a significantly positive — but very different — role in the two countries. Due in part to generous aid inflows, Tanzania experienced positive investment and GDP growth from the late 1960s to 2007. Yet, until the mid-1980s, the impact of aid on growth was well below its potential as the large inflows of aid facilitated a serious over appreciation of the real exchange rate. In Ghana, declining aid in the 1970s was associated with lacking growth while the reactivation of aid flows in the 1980s supported an economic rebound. When monetary and external factors are properly accounted for, it emerges that aid has indeed been pivotal to growth in both real GDP and investment. Tanzania and Ghana are, in other words, not special cases in terms of the impact of aid on growth once open economy effects are accounted for.

In the final paper Addison and Balamoune-Lutz examine aid-induced Dutch Disease — after controlling for the effects of remittances and FDI flows — in the context of two North African countries, Morocco and Tunisia. They do so by performing a multivariate time series analysis of aggregated annual data over the period 1980–2009. Aid causes real exchange rate appreciation in the case of Morocco, especially in the long-run, but has no effect on the real exchange rate in the case of

Tunisia. Remittances cause a real depreciation in Tunisia but have no significant effect in Morocco, while FDI does not have an effect on the real exchange rate in either country. The authors proceed to discuss the policy implications of the main results: aid and other types of foreign exchange inflow have the potential to cause Dutch Disease. Yet, this is not automatic in the way suggested by the critics of aid. Morocco and Tunisia provide contrasting outcomes; and the results confirm the importance of the macroeconomic framework in which aid is provided, and the key role for infrastructure and other supply-side improvements to the final real-economy impact of aid and other inflows.

## 7. Conclusions

While growth returned to much of Africa and the developing world over the past decade, it is nevertheless clear that diversifying economies into products and services with higher-value added has been a bigger challenge. The rise in per capita incomes has created larger domestic markets for local enterprises, but most low-income economies are still too small in their size for internal demand to provide the main engine of growth: success in exporting remains vital to the growth of the private sector and the creation of more jobs, especially those characterised by higher labour-productivity (which is associated with higher earnings). At the same time the recent sharp decline in the prices of oil, gas and metals has exposed the vulnerability of economies whose engagement with the global economy is still characterised by an over-dependence on the exports of unprocessed commodities. Middle-income countries that are resource-rich, as well as low-income countries that have recently graduated to middle-income status, are economically vulnerable if they do not make better use of their resource wealth to achieve the structural transformation of their economies.

An important role for future research is to clarify what role foreign aid can play in supporting both low- and middle-income countries accelerate the structural transformation of their economies, thereby creating more wage- and self-employment. Given the predominance of women in low-income occupations, the structural transformation agenda also needs clarity as to how best aid can help enable the creation of better occupations for women in economies that do achieve structural change. In addition, remote and environmentally stressed areas often have deep and widespread chronic poverty: their connections to a country's growth poles are often weak due to poor infrastructure, especially in transport networks. Aid can play an important role in enabling economic growth and job creation to reach areas of the deepest poverty. As the impact of climate change grows, we also need more understanding of structural transformation's links to the creation of green economies, and the potential for aid to provide additional technical support and finance to this most urgent of tasks.

Given that the tasks are many, and development finance is limited, there is a clear role for research to inform policy as to the best uses of aid relative to other sources of development funding, both domestic and foreign. This includes the creation of macroeconomic frameworks that are supportive of not just economic stability, but also growth and job creation. Aid has the potential to contribute more to technical assistance in the macroeconomic area, and this is another issue on which future research should engage.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Notes

1. UNU-WIDER's project, Research and Communication on Foreign Aid (ReCom) examined the impact of aid in five key areas: growth and employment; the social sectors; gender equality; environment and climate; governance and fragility (see: <http://recom.wider.unu.edu>).
2. As part of the background research for this overview we prepared a complete inventory of all articles addressing issues of foreign aid published in the JDS the last 50 years. These articles were identified using the following search terms: 'development assistance', 'development cooperation', 'development aid', 'aid', 'ODA', 'Official Development Assistance'.

This inventory was presented by Finn Tarp at the 50<sup>th</sup> Anniversary Conference of the *Journal of Development Studies* on 11–12 September 2014.

3. Although Docouliagos and Paldam (2015) do not admit the limitations of their earlier study they do acknowledge that there is increasing evidence for aid effectiveness. Mekasha and Tarp (in press) revisit the evidence and provide a comprehensive assessment of studies applying meta analysis techniques.
4. See Arndt et al. (2015a) and Jones and Tarp (2016) for up-to-date evidence that off-setting effects do not appear on balance to shift the overall impact in practice.

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