



Aid, Growth and Development

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One Key Question of Interest

Does foreign aid boost economic growth on average in developing countries?

□ Much debated both in the academic and popular literature

“The notion that aid can alleviate systemic poverty, and has done so, is a myth. Millions in Africa are poorer today because of aid; misery and poverty have not ended but have increased.”

(Dambisa Moyo, 2009)

“A reasonable estimate is that over the last thirty years [aid] has added around one percentage point to the annual growth rate of the bottom billion.”

(Paul Collier, 2007)

The Early Literature

Aid and Growth

1970s and 1980s

- **Early optimism** – Gustav Papanek's high-profile articles using simple cross-country regressions (early 1970s)
- But **increasing disappointment** with traditional (Harrod-Domar and two gap) models
- Aid may work at micro – but its impact is not only smaller than predicted (for many reasons) – it also somehow 'evaporates' on its way to the macro level (**micro-macro paradox**)
- Eventually widespread **perception of failure** – reported in influential summary overview studies...by Paul Mosley, Anne Krueger, Howard White etc
- But what did the simple cross-country research actually show? **No impact??**

The Early Literature

Hansen and Tarp (2000)

- 131 "early" (simple) cross-country regression studies.....
 - Several studies showed aid associated with decreased savings **BUT** only one study (and one regression) (Gupta & Islam, 1983) shows impact is greater than the aid – so **net savings effect** positive
 - Aid increases **investment!** Not a single study contradicts
 - Only one study (and one regression) (Mosley, 1987) shows negative impact on **growth**
- Aid seemed to work – on average
- **But then the goal posts moved**

Aid and Growth in the 1990s (Panel Data Cross-country Regressions)

- New **panel** data
- New **theory** (introducing economic policy and institutions directly)
- Taking account of the **endogeneity** of aid
- Taking **non-linearity** serious
- New econometric methods – dynamic panels (**GMM**)
- Boone (1994): Aid down the **rathole**
- But Boone soon started **fading**....

Aid and Growth: Burnside-Dollar (1997)

- Burnside-Dollar: aid works
 - **But only** in good policy countries
- Burnside-Dollar cut the *Gordian knot* introducing an **aid x policy** interaction term in the statistical analysis alongside aid itself (aid insignificant, interaction significant at 10%)
- Note underlying development **paradigm** and key policy implication: selectivity
- Note also: you could **equally well** (based on the Burnside-Dollar analysis) have argued: policy works, but only in aid receiving countries

A More Convincing Story

- Hansen and Tarp (2001) – there is a more convincing story/better description of the data:
 - Aid works, but diminishing returns
 - The interaction term, aid x policy, loses out to **aid squared!**
 - And policy also works
- But Burnside-Dollar continued influential (although gradually undermined in practice)
- And then the goal posts moved again

Pessimistic Contributions 2000-08

- Leading example: **Rajan and Subramanian 2008 (RS08)**
 - **Long-run** cross-section averages rather than dynamic panel methods
 - RS08: **no robust positive systematic effect** of aid – seems to hold for: different **types** of aid and **alternative** time periods
 - The return of the micro-macro paradox!
- Anecdotal background – what drove the story? (Vietnam point)

UNU-WIDER Research from 2009

Prior and Time Dimension

- First: prior from growth theory = **modest**
 - Rajan and Subramanian (2008): 10% Aid/GDP → 1% increase in per capita growth rate (but might be higher)
- Second: **time dimension** is important due to long run cumulative effects of aid
 - Education & health (Ashraf et al. 2008; Acemoglu & Johnson 2007)
 - Another reason to opt for long-run cross-section averages rather than dynamic panel methods

Aid Impact in the Aggregate

*Arndt, Jones and Tarp (AJT)
Journal of Globalization and
Development (2010)*

Have We Come Full Circle

Arndt-Jones-Tarp (AJT) (2010)

- Start from RS08 (same data and instrument), i.e. we retain focus on long-run cross-section – but then:
 - (1) Improve the **instrumentation** strategy
 - (2) Strengthen the growth equation **specification**
 - (3) Introduce a new treatment/control **estimator**
- Quick review of results:
 - Cannot reject the theoretical prior of an aid-growth parameter = 0.1 (only in simple OLS is the result insignificant)
 - If null hypothesis is no impact (parameter = 0) then in fact it appears 10% aid of GDP gives 1.3% additional growth (significant at 1%). We can reject a “no impact” hypothesis
 - No micro-macro paradox!

Summary Results [1970-2000]

Instrument	Specification	Estimator	
		RS08	AJT
RS08	RS08	0.10	0.15*
	AJT	0.10	0.10**
AJT	RS08	0.22*	0.21*
	AJT	0.25**	0.13***

The Long Run Impact of Aid on Macro-variables in Africa

Juselius, Møller and Tarp

*Oxford Bulletin of Economics and
Statistics (2014)*

Purpose and Method

- To offer an econometrically coherent and transparent picture of how aid has worked in 36 countries in Sub-Saharan Africa
- To address the widespread misuse of 'statistical insignificance' as an argument for aid ineffectiveness
- The Cointegrated VAR model

Findings

- Aid has a positive long-run effect on key macro-variables (GDP, investment, consumption) for the vast majority of countries
- In only 3 out of 36 countries is there a negative effect of aid on GDP or investment
- The transmission of aid to the macro economy quite heterogeneous.

Unpacking the Aggregate Impact of Aid

Arndt, Jones and Tarp
World Development (2015)

Motivation

- **Many studies ask: does aid increase growth?**
 - Addresses the question: should we give aid?
- **BUT many possible paths linking aid to growth**
 - Which ones matter?
 - What should we give aid for?
- **Open the 'black box'**
 - Identify key drivers linking aid to growth
 - Non-growth outcomes important *per se*
 - *e.g., poverty reduction, human capital etc. (MDGs).*

Results: Impact of Aid

Outcome	Baseline	+\$25 p.c./year
GDP per capita growth	1.7	2.2
Poverty headcount at \$1.25 / day	21.7	18.2
Agriculture (% GDP)	20.7	13.2
Investment (% GDP)	17.2	18.7
Av. years total schooling, 15+	4.9	5.3
Life expectancy at birth (years)	61.0	62.3

Note: baseline is the observed median of the outcome variables

Aid and Growth: What Meta-Analysis Reveals

Mekasha and Tarp

Journal of Development Studies

(2013)

Meta-analysis

- Meta-analysis a commonly applied approach in medical science research (contested in social sciences)
- Main idea: to quantitatively combine empirical results from a range of independent studies & get a single effect estimate
- One can either allow for or ignore heterogeneity (differences) among studies

Meta-analysis (cont)

- **Ignoring heterogeneity (fixed effect model)**
 - All studies estimate the same "one" single true effect (of aid on growth)
 - Any variation = due to chance/sampling error only
- **Allowing for heterogeneity (random effect model)**
 - Each paper tries to estimate a true effect – but this effect will vary
 - Variation = chance + true variation in effect size

Our Key Finding

Controlling for heterogeneity, the weighted average effect of aid on growth is found to be positive & statistically significant

What is the Aggregate Economic Rate of Return to Foreign Aid?

Arndt, Jones and Tarp

World Bank Economic Review

(accepted)

Findings

- ReCom position paper on aid, growth and employment
- In recent years, academic studies have been converging towards the view that foreign aid promotes aggregate economic growth.
- We employ a simulation approach to: (i) validate the coherence of empirical aid-growth studies published since 2008; and (ii) calculate plausible ranges for the rate of return to aid. Our results highlight the long run nature of aid-financed investments and the importance of channels other than accumulation of physical capital.
- We find the return to aid lies in ranges commonly accepted for public investments and there is little to justify the view that aid has had a significant pernicious effect on productivity.

Conclusion

Why so Long?

- Both aid volumes and their associated impacts are not so large as to be easily identifiable in macroeconomic data.
- Our simulation modelling 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.
- Not really surprising that the economics profession has only recently converged on the more consistent range of estimates.



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