

Development economics

Lecture 11: The role of foreign aid in development economics

Vojtěch Bartoš

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Where are we on our path?

► Lectures

1. Introduction
2. Traditional growth models
3. Modern (endogenous) growth models
4. Taking stock on growth models and poverty traps
5. Games in economic development
6. Measuring poverty and inequality
7. Group differences and discrimination
8. Culture, institutions, and the role of history
9. Health and nutrition
10. Education
11. **The role of foreign aid**
12. Credit markets and microcredit
13. Risk and insurance
14. Behavioral development economics

Facts about foreign aid

Is foreign aid effective?

Determinants of foreign aid

Foreign aid and conflict

Foreign aid and accountability

Why foreign aid?

- *"We must [make] the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half the people of the world are living in conditions approaching misery. [...] Their poverty is a handicap and a threat both to them and to more prosperous areas. For the first time in history, humanity possesses the knowledge and the skill to relieve the suffering of these people."* — Harry Truman, 1949 (Inaugural Address)

How do we stand with eradication of poverty?

- **“For the first time ever**, an end to poverty is actually within humanity’s financial reach.” Bjorn Lomborg 2017
- **“For the first time in history**, ...scientific and technological progress ...within reach of eliminating extreme poverty.” Jeffrey Sachs 2005
- **“For the first time in history**, humanity possesses the knowledge and the skill to relieve the suffering of these people.” Harry S Truman 1949
- **“For the first time in history** the counsels of mankind are to be concerted for improving the conditions of men, women, and children all over the world.” Woodrow Wilson 1919
- **“For the first time in the history of the world** through the progress of science, all the means in superabundance to well-feed, clothe, lodge the human race may now be accomplished” Robert Owen 1857

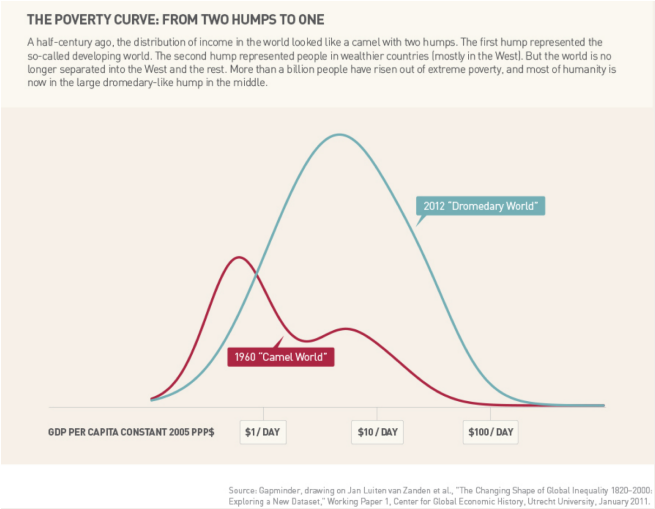
Debate: Does aid harm or benefit?

- ▶ Aid has a positive effect:
 - ▶ "Aid can help poor countries break out of the vicious cycle of poverty by funding the core inputs to development – teachers, health centers, roads, wells, medicine, to name a few..." (United Nations, 2004)
 - ▶ "[Cutting aid] amounts to a death sentence for more than 6 million Africans a year who die of preventable and treatable causes, including undernourishment, a lack of safe drinking water, malaria, tuberculosis and AIDS." (Sachs, 2005)

Debate: Does aid harm or benefit?

- ▶ Aid rather harms:
 - ▶ "[in the past forty years] \$568 billion spent on aid to Africa, and yet the typical African country is no richer today than 40 years ago." (Easterly, 2006)
 - ▶ "One central dilemma for foreign aid [is that] when the 'conditions for development' are present, aid is not required. When local conditions are hostile to development, aid is not useful, and it will do harm if it perpetuates those conditions" (Deaton, 2013)
 - ▶ Humanitarian aid reducing human suffering can lower the accountability of governments for conflicts. This might increase the probability of conflicts. (Polman, 2010)

How do we stand with eradication of poverty?



Source: Gates (2014)

What did aid bring (health care example)?



Source: Gates (2014)

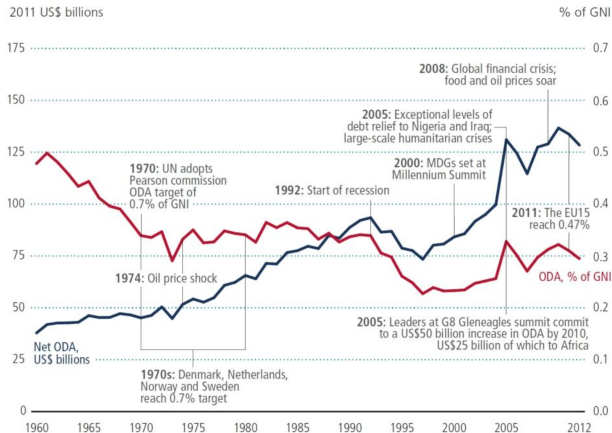
How much foreign aid should be disbursed?

- *"In recognition of the special importance of the role that can be fulfilled only by official development assistance, a major part of financial resource transfers to the developing countries should be provided in the form of official development assistance. Each economically advanced country will progressively increase its official development assistance to the developing countries and will exert its best efforts to reach a minimum net amount of 0.7 percent of its gross national product at market prices by the middle of the decade." — UN 1970, paragraph 43*

How much foreign aid is disbursed?

- ▶ Overall around \$3.5 trillion given in foreign aid between 1960 to 2013 (OECD Development Assistance Committee).
 - ▶ 2015 US annual budget is around \$3.9 trillion.
 - ▶ Rising role of non-OECD countries: Chinese foreign aid: \$300 million in 2000, \$2 billion in 2013 (source: AidData; comparable to Belgium and Spain)
- ▶ Official development assistance (ODA)

How much foreign aid is disbursed?

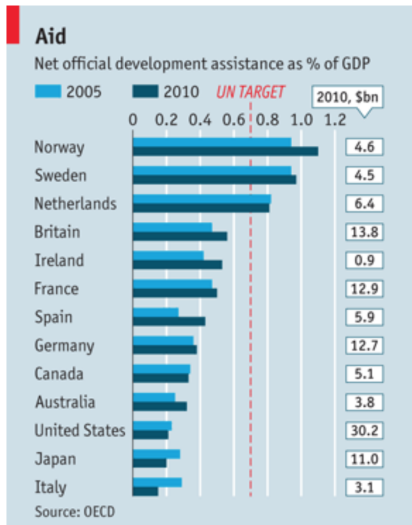


ODA has grown to record highs since the 1970s – but the path has not always been smooth

Net ODA, 1960–2012

Source: Development Initiatives (2013)

How much foreign aid is disbursed?



Source: The Economist (2011)

Who are the top donors (over time)?

Table 1: Top Donors by Decade

Rank	1960s		1970s		1980s	
	Country	Avg. ODA	Country	Avg. ODA	Country	Avg. ODA
1	United States	18,311	United States	13,191	United States	15,102
2	France	4,477	Saudi Arabia	5,903	Japan	9,197
3	United Kingdom	2,399	Germany	4,777	France	6,841
4	Germany	2,283	France	4,278	Germany	6,601
5	Saudi Arabia	1,548	Japan	3,789	Saudi Arabia	6,083
6	Japan	1,155	United Kingdom	3,054	United Kingdom	3,483
7	Canada	616	Canada	2,315	Netherlands	2,947
8	Australia	600	Netherlands	1,893	Italy	2,925
9	Italy	469	Kuwait (KFAED)	1,583	Canada	2,908
10	Belgium	467	Sweden	1,478	Sweden	1,962
Rank	1990s		2000s		2010 - 2013	
	Country	Avg. ODA	Country	Avg. ODA	Country	Avg. ODA
1	Japan	15,100	United States	22,308	United States	29,555
2	United States	13,083	Japan	11,219	United Kingdom	14,451
3	France	9,891	Germany	9,839	Germany	13,039
4	Germany	9,043	United Kingdom	9,415	France	11,559
5	United Kingdom	4,356	France	9,357	Japan	10,537
6	Netherlands	3,832	Netherlands	5,300	Netherlands	5,495
7	Italy	3,572	Spain	3,864	Sweden	5,290
8	Canada	2,941	Sweden	3,496	Canada	5,086
9	Sweden	2,559	Canada	3,429	Australia	4,835
10	Denmark	2,017	Italy	3,322	Norway	4,784

Notes: Average annual ODA disbursement is reported in millions of 2009 USD. Source: OECD DAC1 flows by donor/QWIDS.

Source: Qian (2014)

Who are the top recipients (total aid spent, over time)?

Table 2: Top Recipients by Decade

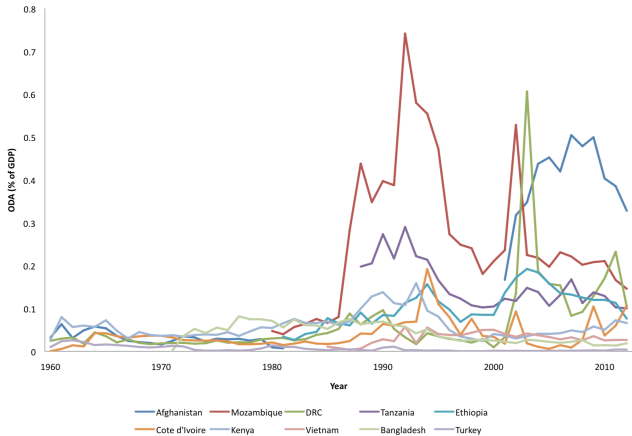
Rank	1960s		1970s		1980s	
	Country	Avg. ODA	Country	Avg. ODA	Country	Avg. ODA
1	India	5,240	Egypt	4,414	India	3,349
2	Pakistan	2,097	India	4,341	Egypt	2,838
3	Vietnam	1,662	Indonesia	4,117	Bangladesh	2,465
4	Korea	1,285	Syria	3,837	Israel	2,276
5	Algeria	1,270	Bangladesh	3,707	Indonesia	1,822
6	Brazil	1,145	Pakistan	3,614	Pakistan	1,743
7	Turkey	996	Vietnam	2,216	Syria	1,724
8	Indonesia	788	Israel	2,124	China	1,696
9	Egypt	666	Jordan	2,022	Jordan	1,526
10	Chile	566	Korea	2,019	Sudan	1,487
Rank	1990s		2000s		2010 - 2013	
	Country	Avg. ODA	Country	Avg. ODA	Country	Avg. ODA
1	Egypt	4,198	Iraq	6,382	Afghanistan	4,850
2	China	3,552	Afghanistan	2,908	DRC	2,887
3	India	2,541	Nigeria	2,576	Vietnam	2,575
4	Indonesia	2,117	Vietnam	2,229	Ethiopia	2,508
5	Israel	2,040	Ethiopia	2,168	Pakistan	2,043
6	Bangladesh	2,031	DRC	2,018	Tanzania	2,024
7	Pakistan	1,471	Tanzania	2,009	India	1,871
8	Mozambique	1,448	Pakistan	1,922	Turkey	1,752
9	Philippines	1,420	India	1,708	West Bank & Gaza Strip	1,693
10	Tanzania	1,381	China	1,663	Kenya	1,679

Notes: Average annual ODA disbursement is reported in millions of 2009 USD. Source: OECD DAC2 flows by recipient/QWIDS.

Source: Qian (2014)

Who are the top recipients (as a share of recipient GDP)?

Figure 5: ODA Received by Top 10 Recipients as % of GDP, 1960-2013



Notes: Top recipient is defined according to ODA disbursement in 2013. Small island nations are excluded. Source: OECD DAC2 flows by recipient/QWIDS. WDI data for GDP.

Source: Qian (2014)

Who are the top recipients (per capita, over time)?

Table 4: Top Recipients by Decade – Per Capita ODA

Rank	1960s		1970s		1980s	
	Country	Avg. ODA PC	Country	Avg. ODA PC	Country	Avg. ODA PC
1	Jordan	370	Jordan	652	Jordan	626
2	Djibouti	328	Suriname	488	Israel	542
3	Israel	210	Djibouti	414	Djibouti	350
4	Belize	189	Oman	369	Suriname	212
5	Suriname	181	Israel	366	Mauritania	210
6	Swaziland	136	Syria	255	Belize	204
7	Liberia	131	Belize	234	Botswana	180
8	Laos	118	Mauritania	222	Syria	177
9	Algeria	105	Gabon	175	Gambia	169
10	Tunisia	94	Botswana	167	Gabon	163

Rank	1990s		2000s		2010 - 2012	
	Country	Avg. ODA PC	Country	Avg. ODA PC	Country	Avg. ODA PC
1	Israel	394	Kosovo	444	Kosovo	333
2	Djibouti	242	Iraq	228	Afghanistan	222
3	Bosnia-Herzegovina	240	Guyana	191	Liberia	222
4	Guyana	232	Serbia	181	Bhutan	192
5	Suriname	213	Bosnia-Herzegovina	165	Guyana	180
6	Jordan	192	Nicaragua	162	Jordan	174
7	Nicaragua	176	Jordan	143	Djibouti	160
8	Belize	168	Bhutan	142	Suriname	144
9	Bhutan	158	Lebanon	137	Bosnia-Herzegovina	143
10	Guinea-Bissau	144	Djibouti	133	Serbia	139

Notes: Average annual per capita ODA disbursement. Small island nations are excluded Source: OECD DAC2 per capita lows by recipient/QWIDS.

Source: Qian (2014)

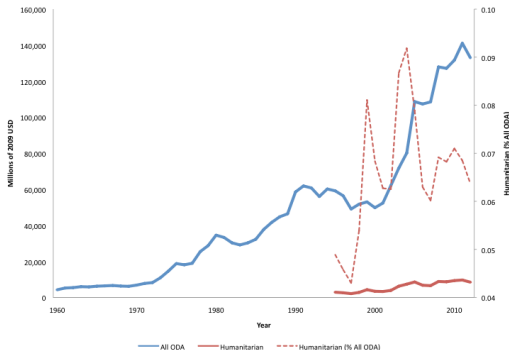
Where are we so far?

- ▶ Aid increasing from around \$40 billions in 1960 to around \$128 billion 2013, but still not reaching the UN 0.7% of GDP target
- ▶ Top donors also remain mostly unchanged: US, the UK, Germany, France and Japan
- ▶ Top foreign aid recipients changes significantly over time.
- ▶ Annual aid to the poorest twenty percent of countries of the world comprise only 1.69% to 5.25% of total global aid flows
 - ▶ Relatively small amount: but if poverty trap story, these countries should be given much more. What other reasons for giving?
 - ▶ Political motives? Later on...

What is the share of humanitarian aid?

- ▶ Surprisingly: ranges between 4% to 9% of total ODA (1995 to 2013)
- ▶ But most heated public debate about humanitarian aid
- ▶ What other sources of aid?

Figure 9: Humanitarian Aid, 1960-2013



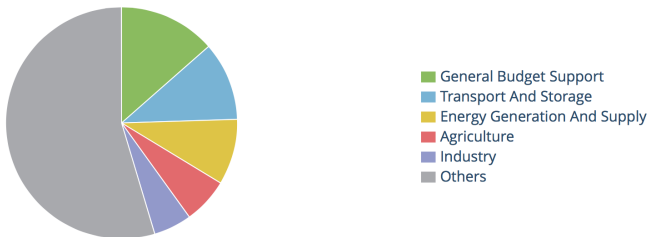
Source: OECD DAC2a humanitarian aid.

What are other types of foreign aid?

- "The average [recipient] country [between 1970 to 2005] received 2.2% of GDP as foreign aid in one of these [colored] categories." (Bjørnskov, 2013)

Sector Distribution of Aid Flows

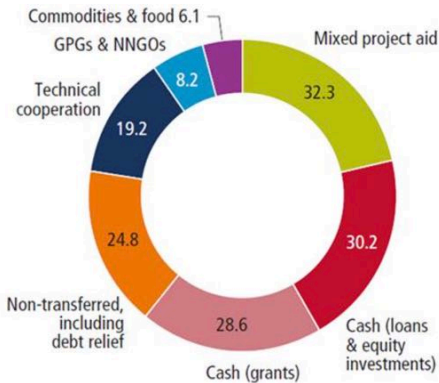
1947 - 2012



Source: AidData (2015)

Non-transferred aid matters too

- ▶ Korea spends the least amount of its foreign aid disbursements at home (5.53%) and Austria spends the most at home (68.61%) (Qian, 2014).
- ▶ Among the top ten donors, non-transferred aid from 9.99% for the US to 40.08% for France.
- ▶ Major categories of non-transferred aid:
 - ▶ Debt relief
 - ▶ Administrative costs
 - ▶ Expenditures on refugees in donor countries



Source: Development Initiatives (2013)

Facts about foreign aid

Is foreign aid effective?

Determinants of foreign aid

Foreign aid and conflict

Foreign aid and accountability

Is foreign aid effective?

- ▶ What does foreign aid do / cause?
 - ▶ Positive: Aid can relieve credit constraints faced by the government and allow it to invest in the development of public infrastructure and human capital, which can in turn increase growth.
 - ▶ Negative (or none):
 - ▶ Crowding out of domestic savings by aid; aid dependency.
 - ▶ Aid can trigger the *Dutch Disease*: increase in aid increases the exchange rate → increases the price of exports → reduces the competitiveness of the manufacturing sector (Rajan and Subramanian, 2011)
- ▶ Does foreign aid increase growth?

Burnside and Dollar (2000): Aid, policies, and growth

- Cross-country evidence from 56 countries during 1970-1993

$$g_{it} = \beta_y y_{it} + \beta_a a_{it} + \beta'_p p_{it} + \beta'_1(p_{it} a_{it}) + \beta'_z z_{it} + g_t + \varepsilon^a_{it}$$

$$a_{it} = \gamma_y y_{it} + \gamma'_p p_{it} + \gamma'_z z_{it} + a_t + \varepsilon it^a$$

- y_{it} ... log of initial real per capita GDP
- p_{it} ... vector of policies that affect growth
- z_{it} ... other exogenous variables that affect growth/aid
- g_t ... mean growth, time t (remove by time fixed effects)
- a_t ... mean aid at time t (remove by time fixed effects)
- Economic policy measures:
 - Dummy for trade openness (Sachs and Warner, 1995)
 - Inflation rate (macro policy, Fischer 1993)
 - Budget surplus/deficit as percentage of GDP (Easterly and Rebello, 1993)

Burnside and Dollar (2000)

TABLE 3—GROWTH REGRESSIONS: USING ALL COUNTRIES
AND THE INDIVIDUAL POLICY VARIABLES

Estimation method	(1)	(2)	
	OLS	OLS	2SLS
Initial GDP	-0.65 (0.55)	-0.61 (0.58)	-0.74 (0.62)
Ethnic fractionalization	-0.58 (0.73)	-0.53 (0.73)	-0.69 (0.78)
Assassinations	-0.44* (0.27)	-0.44* (0.27)	-0.44 (0.27)
Ethnic fractionalization × assassinations	0.81* (0.45)	0.81* (0.45)	0.81* (0.46)
Institutional quality	0.64** (0.17)	0.64** (0.17)	0.63** (0.17)
M2/GDP (lagged)	0.015 (0.015)	0.014 (0.015)	0.017 (0.016)
Sub-Saharan Africa	-1.53** (0.73)	-1.61** (0.76)	-1.35* (0.76)
East Asia	0.89 (0.56)	0.93* (0.57)	0.80 (0.58)
Budget surplus	6.85** (3.39)	7.00** (3.38)	6.49* (3.47)
Inflation	-1.40** (0.41)	-1.40** (0.41)	-1.39** (0.41)
Openness	2.16** (0.51)	2.12** (0.50)	2.25** (0.54)
Aid/GDP	—	0.036 (0.13)	-0.085 (0.19)

- Results using three policy measures noisy, so rather use an index estimated in Equation 1 (*aid* not included):
- $\text{Policy} = 1.28 + 6.85 \times \text{Budget surplus} - 1.40 \times \text{Inflation} + 2.16 \times \text{Openness}$

Burnside and Dollar (2000)

TABLE 1—SUMMARY OF REGRESSION SPECIFICATIONS AND IDENTIFICATION

Variable	Equation			
	Variants of (4), growth			(5), aid
Endogenous variables				
Real growth rate	LHS	LHS	LHS	
Aid/GDP	RHS	RHS	RHS	LHS
(Aid/GDP) × policy		RHS	RHS	
(Aid/GDP) ² × policy			RHS	
Exogenous variables				
Logarithm of initial income	Included	Included	Included	Included
Policy index	Included	Included	Included	Included
Institutional quality	Included	Included	Included	
Ethnic fractionalization	Included	Included	Included	
Assassinations	Included	Included	Included	
Ethnic fractionalization × assassinations	Included	Included	Included	
M2/GDP, lagged	Included	Included	Included	
Logarithm of population				Included
Arms imports/imports, lagged				Included
Sub-Saharan Africa dummy	Included	Included	Included	Included
East Asia dummy	Included	Included	Included	
Egypt dummy				Included
Franc zone dummy				Included
Central America dummy				Included
Logarithm of initial income × policy				
Logarithm of population × policy				
Arms imports/imports, lagged × policy				
(Logarithm of initial income) ² × policy				
(Logarithm of population) ² × policy				

Burnside and Dollar (2000)

TABLE 4—GROWTH REGRESSIONS: USING ALL COUNTRIES AND THE POLICY INDEX

Estimation method	(3)		(4)		(5)	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Initial GDP	−0.61 (0.56)	−0.79 (0.59)	−0.56 (0.56)	−0.71 (0.60)	−0.60 (0.57)	−0.90 (0.65)
Ethnic fractionalization	−0.54 (0.72)	−0.70 (0.75)	−0.42 (0.73)	−0.47 (0.83)	−0.42 (0.72)	−0.73 (0.81)
Assassinations	−0.44* (0.26)	−0.43 (0.27)	−0.45* (0.26)	−0.44* (0.26)	−0.45* (0.26)	−0.41 (0.27)
Ethnic fractionalization × assassinations	0.82* (0.44)	0.78* (0.44)	0.80* (0.44)	0.75* (0.45)	0.79* (0.44)	0.71 (0.45)
Institutional quality	0.64** (0.17)	0.63** (0.17)	0.67** (0.17)	0.68** (0.19)	0.69** (0.17)	0.66** (0.18)
M2/GDP (lagged)	0.014 (0.013)	0.019 (0.015)	0.016 (0.014)	0.025 (0.017)	0.012 (0.014)	0.017 (0.016)
Sub-Saharan Africa	−1.60** (0.73)	−1.31* (0.72)	−1.84** (0.74)	−1.71** (0.82)	−1.87** (0.75)	−1.29 (0.84)
East Asia	0.91* (0.54)	0.81 (0.53)	1.20** (0.58)	1.27** (0.63)	1.31** (0.58)	1.15** (0.56)
Policy index	1.00** (0.14)	1.01** (0.14)	0.78** (0.20)	0.65** (0.30)	0.71** (0.19)	0.74** (0.20)
Aid/GDP	0.034 (0.12)	−0.12 (0.18)	0.49 (0.12)	−0.10 (0.21)	−0.021 (0.16)	−0.32 (0.36)
(Aid/GDP) × policy	—	—	0.20** (0.09)	0.37 (0.33)	0.19** (0.07)	0.18* (0.10)
(Aid/GDP) ² × policy	—	—	−0.019** (0.0084)	−0.038 (0.038)	—	—

Burnside and Dollar (2000)

TABLE 5—GROWTH REGRESSIONS: USING LOWER-INCOME COUNTRIES AND THE POLICY INDEX

Estimation method	(6)		(7)		(8)	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Initial GDP	−0.74 (0.80)	−0.74 (0.78)	−0.60 (0.79)	−0.58 (0.78)	−0.72 (0.81)	−0.83 (0.77)
Ethnic fractionalization	−0.78 (0.81)	−0.78 (0.83)	−0.56 (0.80)	−0.45 (0.95)	−0.58 (0.80)	−0.67 (0.84)
Assassinations	−0.75* (0.46)	−0.75* (0.45)	−0.84* (0.43)	−0.90** (0.45)	−0.79* (0.44)	−0.76* (0.44)
Ethnic fractionalization × assassinations	0.95 (0.89)	0.95 (0.89)	0.88 (0.90)	0.85 (0.90)	0.69 (0.91)	0.63 (0.90)
Institutional quality	0.77** (0.19)	0.77** (0.19)	0.80** (0.20)	0.81** (0.21)	0.84** (0.20)	0.84** (0.19)
M2/GDP (lagged)	0.028* (0.016)	0.028* (0.016)	0.031* (0.017)	0.035* (0.019)	0.024 (0.017)	0.025 (0.017)
Sub-Saharan Africa	−1.86** (0.65)	−1.85** (0.67)	−2.20** (0.67)	−2.35** (0.91)	−2.24** (0.67)	−2.11** (0.73)
East Asia	0.70 (0.56)	0.69 (0.56)	1.33* (0.71)	1.63 (1.21)	1.54** (0.67)	1.46** (0.71)
Policy index	1.14** (0.19)	1.14** (0.19)	0.74** (0.35)	0.55 (0.76)	0.56* (0.31)	0.59 (0.38)
Aid/GDP	−0.033 (0.13)	−0.034 (0.16)	−0.013 (0.13)	−0.010 (0.17)	−0.18 (0.17)	−0.24 (0.26)
(Aid/GDP) × policy	—	—	0.27** (0.12)	0.43 (0.49)	0.26** (0.08)	0.25** (0.12)
(Aid/GDP) ² × policy	—	—	−0.024** (0.0093)	−0.041 (0.047)	—	—

Burnside and Dollar (2000)

TABLE 8—ALLOCATION OF AID: LOWER-INCOME COUNTRIES

	Total	Bilateral	Multilateral	World Bank
Initial GDP	-2.43** (0.44)	-1.11** (0.27)	-1.32** (0.27)	-0.47** (0.080)
Population	-0.84** (0.14)	-0.45** (0.082)	-0.39** (0.084)	-0.079** (0.018)
Policy	0.20 (0.16)	0.061 (0.12)	0.14** (0.062)	0.040** (0.020)
Sub-Saharan Africa	0.082 (0.38)	0.43 (0.26)	-0.34 (0.25)	-0.12* (0.068)
Egypt	1.81** (0.56)	1.60** (0.45)	0.21 (0.19)	0.10 (0.071)
Franc zone	0.54 (0.50)	0.34 (0.36)	0.19 (0.18)	0.040 (0.098)
Central America	0.28 (0.40)	0.52 (0.34)	-0.23 (0.21)	-0.060 (0.072)
Arms imports (lagged)	0.012 (0.018)	0.011 (0.014)	0.0006 (0.0044)	-0.0028* (0.0015)
Observations	195	195	195	195
Mean of aid/GDP	2.07	1.38	0.69	0.17
\bar{R}^2	0.61	0.53	0.55	0.50

Notes: The estimates were obtained by OLS. The variables are described in the text. The dependent variable is the indicated type of aid as a percentage of GDP. Standard errors are in parentheses. They were computed to be robust to heteroskedasticity and first-order serial correlation.

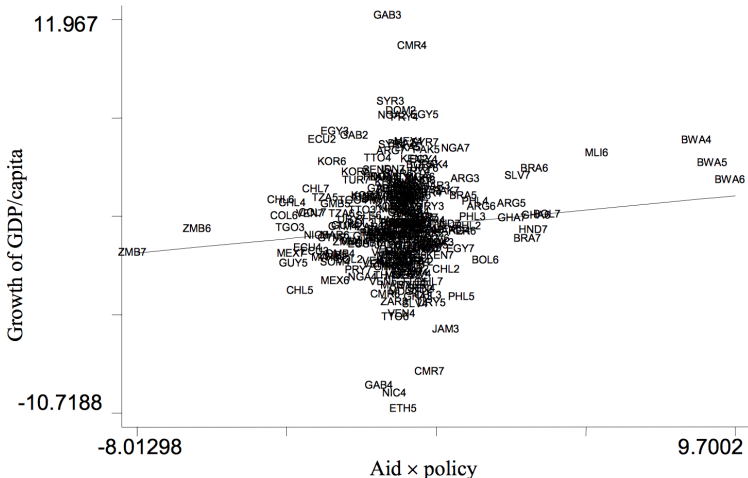
* Significant at the 10-percent level.

** Significant at the 5-percent level.

Burnside and Dollar (2000)

- ▶ Results:
 - ▶ Multilateral aid can promote growth if given to countries with "good policies"
 - ▶ Aggregate effect of 0 - counterbalanced by "bad policy" countries
 - ▶ OLS results similar to IV: no evidence of "simultaneity bias"
 - ▶ If 5 outliers dropped, stronger results for subsample of low income countries (GDP per capita less than \$1,900)
 - ▶ Countries with "good policies" do not attract more aid from bilateral donors (approx 2/3 of aid in total), but they do from multilateral donors

Burnside and Dollar (2000)

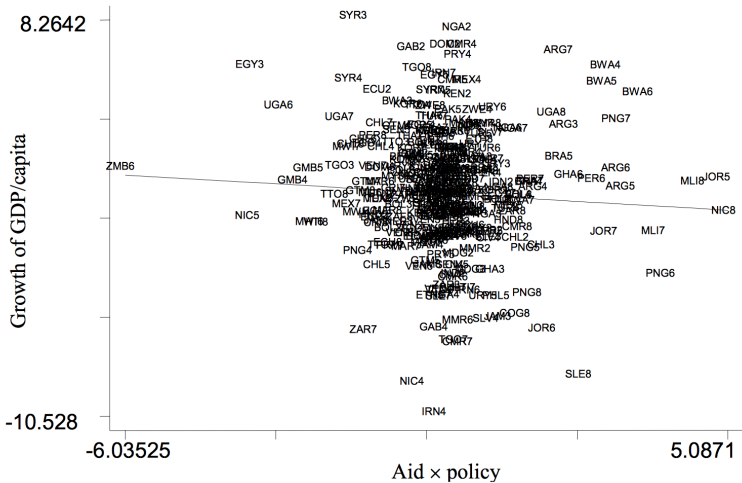


Does foreign aid increase growth?

- ▶ Adoption of BD (2000) results:
 - ▶ In early 2002, The Economist rebuked then-U.S. Treasury Secretary Paul O'Neill for his skepticism about foreign aid, on the grounds that *"there is now a strong body of evidence, led by the research of David Dollar, Craig Burnside and Paul Collier, all economists at the World Bank, that aid does boost growth when countries have reasonable economic policies."*
 - ▶ On March 14, 2002, President Bush announced a \$5 billion increase in U.S. foreign assistance, about a 50 percent percent increase, saying *"So we will reward nations that have more open markets and sustainable budget policies"*

- ▶ Easterly et al. (2003): Dollar and Burnside (2000) results invalid if four years longer period (to 1997) and more countries (64 instead of 56) used.

Easterly, Levine, Roodman (2004)



Source: Easterly, Levine, Roodman (2004)

Does foreign aid increase growth?

- ▶ Another response from Burnside and Dollar (2004): even new data and other indicators support original claim.
 - ▶ Main problem is adding new countries Burkina Faso, Congo, Iran, Jordan, Myanmar, Papua New Guinea and Uganda; original country sample still valid.
 - ▶ *"We revisit the relationship between aid and growth using a new data set focusing on the 1990s. The evidence supports the view that the impact of aid depends on the quality of state institutions and policies. [...] The interaction of aid and institutional quality has a robust positive relationship with growth that is strongest in instrumental variable regressions."*
 - ▶ Policy-makers take this into account: *"We also show that in the 1990s the allocation of aid to low-income countries favored ones with better institutional quality."*

Does foreign aid increase growth?

- ▶ What to take away from the disagreement between BD (2000, 2004) and ELR (2004)?
 - ▶ Need for better data → AidData
 - ▶ Need for better estimation techniques needed → natural variation that affects the outcome of interest only through aid or conduct a randomized experiment (Banerjee, 2006; Boston review)
 - ▶ Nothing about *categories* of aid, nothing about strategic considerations of donors.

Galiani et al. (2017): The Effect of Aid on Growth: Evidence from a Quasi-Experiment

- ▶ Regression discontinuity design
- ▶ 35 poor countries – some crossed an arbitrary per capita income threshold over which countries are ineligible for aid from the World Bank's International Development Association (IDA), while some did not.
 - ▶ *"[Threshold] was originally set at \$580 [per capita GDI], and has been adjusted annually only for inflation. By 2010, the threshold had increased to \$1175."*
 - ▶ Data for period between 1987 and 2010
- ▶ Aid as a share of GNI drops by about 59% after crossing the threshold (Table 2: also other aid sources dry up)
- ▶ Assumption: countries (just) above the threshold are identical to those (just) below the threshold except that those above receive (exogenously) less aid

Galiani et al. (2017)

Table 1 Sample countries and years of crossing the IDA threshold

Country name	Year of crossing (graduation)	Country name	Year of crossing (graduation)
Albania	1999 (2008)	India	2010 (2014) ^e
Angola	2005 (2014)	Indonesia	1994
Armenia	2003 (2014)		2004 (2008)
Azerbaijan	2005 (2014)	Kiribati	1988
Bhutan	2004 ^b		1992 ^c
Bolivia	1997	Moldova	2007 ^b
	2005 ^d	Mongolia	2006 ^b
Bosnia and Herzegovina	1997 (2014)	Nigeria	2008 ^b
Cameroon	2008 ^b	Papua New Guinea	2009 ^b
China	2000 (1999)	Peru	1990 ^f
Congo, Rep.	2006 ^b	Philippines	1994 (1993)
Djibouti	2007 ^d	Samoa	1995 ^c
Egypt	1995 (1999)	Solomon Islands	1997
Equatorial Guinea	1998 (1999)	Sri Lanka	2003 ^b
	2000	Sudan (pre-2011)	2008 ^a
Georgia	2003 (2014)	Syrian Arab Republic	1998 ^f
Ghana	2009 ^d	Timor-Leste	2006 ^b
Guyana	1999	Turkmenistan	2002 ^f
	2005 ^d	Ukraine	2003 ^f
Honduras	2000 ^d	Uzbekistan	2010 ^b

Countries that crossed the IDA threshold from below between 1987 and 2010. Categorization of current borrowing countries from <http://www.worldbank.org/ida/borrowing-countries.html> (accessed in November 2015)

^a Inactive countries: no active IDA financing due to protracted non-accrual status.

^b Blend countries: IDA-eligible but also creditworthy for some IBRD borrowing.

^c Small island economy exception: small islands (with fewer than 1.5 million people, significant vulnerability due to size and geography, and very limited credit-worthiness and financing options) have been granted exceptions in maintaining their eligibility.

^d Borrowing on blend terms: countries that access IDA financing only on blend credit terms.

^e India graduated from IDA at the end of FY14 but will receive transitional support on an exceptional basis through the IDA17 period (FY15-17)

^f Never IDA-eligible

Galiani et al. (2017)

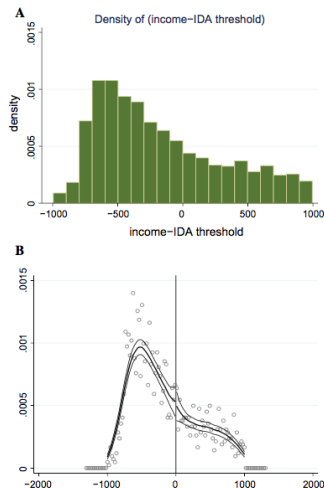


Fig. 3 a Histogram of income. b McCrary test of bunching. *Note* There are 1,920 country-year observations from 112 countries that were ever on the DAC list between 1987 and 2010. For each country-year observation, we calculate the distance of the current per capita GNI (y_{it}) from the current IDA threshold (\bar{y}_t). We restrict the distance ($y_{it} - \bar{y}_t$) between -1000 and 1000. Graph A is a histogram of country-year observations against ($y_{it} - \bar{y}_t$), grouped in 100-dollar bins. Graph B shows the McCrary density test. The discontinuity estimate (log difference in height from left to right) is -0.0476, with a standard error of 0.1776

Galiani et al. (2017)

- Crossing threshold used as an instrument:

$$Aid_{jis-1} = \beta_1 y_{is-1} + \beta_2 Crossing_{is-2} + \beta_3 Pop_{is-1} + \lambda_i + \tau_s + \varepsilon_{jis}$$

- Predicted Aid_{jis-1} used in the main estimation:

$$g_{is} = \beta_1 y_{is-1} + \beta_1 \widehat{Aid}_{jis-1} + X'_{is} \beta_3 + \lambda_i + \tau_s + \varepsilon_{is}$$

- Results: Aid increases growth: 1 p.p. increase in the aid to GNI ratio from the sample mean raises g_{is} by 0.35 p.p.
- Problems?
 - Further, only *local average treatment effect* - what about those way below the threshold? See section 7, but inconclusive.

Galiani et al. (2017)

Table 3 Baseline results

Main specification	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS	(7) 2SLS
Aid_{it-1}	0.0105 (0.00455)** [0.004]	0.0133 (0.00615)** [0.006]	0.0281 (0.0100)*** [0.010]	0.0352 (0.0147)** [0.014]	0.0475 (0.0239)** [0.023]	0.0485 (0.0177)*** [0.018]	0.0552 (0.0190)*** [0.019]
y_{it-1}	-0.0675 (0.0246)*** [0.022]	-0.161 (0.0231)*** [0.022]	-0.0371 (0.0256) [0.026]	-0.0249 (0.0322) [0.033]	-0.0976 (0.0516)* [0.051]	-0.0957 (0.0387)** [0.039]	-0.0835 (0.0415)** [0.043]
Period FE	X	X	X	X	X	X	X
Country FE	X		X	X			
First differenced		X			X	X	X
IV			X	X	X	X	X
IV from predicted income				X			X
IV first differenced					X		
N	247	212	247	247	212	212	212
Number of countries	35	35	35	35	35	35	35
First stage F statistic (K-P Wald)			16.50	7.385	19.52	16.16	24.06
95 % A-R CI			[.0118, .0627]	[.0136, 0.1247]	[-0.0083, 0.1034]	[0.0212, 0.1166]	[0.0258, 0.1207]
AR(2) p value					0.729	0.830	0.824

Each observation is a country-period. The dependent variable is the period average real per capita GDP growth rate. Standard errors clustered at the country level are reported in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Wild cluster bootstrapped standard errors are reported in brackets. See text for more details

Source: Galiani et al. (2017)

Facts about foreign aid

Is foreign aid effective?

Determinants of foreign aid

Foreign aid and conflict

Foreign aid and accountability

Determinants of foreign aid

- ▶ Alesina and Dollar (2000) find two possible determinants of the amount of aid sent (ODA) (both implying strategic allocation of aid)
- ▶ Colonial ties
 - ▶ Aid positively correlated with former colonial ties and increases with the duration of colonization
 - ▶ Problems: **Omitted variable bias**: colonial ties could influence aid flows through other channels: donor countries may have more information about former colonies → reduces monitoring costs.
- ▶ Political strategic purposes
 - ▶ Aid positively correlated with the number of votes the recipient country votes equally with the donor country in the UN
 - ▶ Problems: **Reverse causality**: Higher aid amount can make the recipient country feel obliged to vote more favorably with the donor country (although, if expected outcome...)

Determinants of foreign aid

- ▶ How can we overcome the problems of omitted variables and reverse causality?
 - ▶ Natural or randomised experiments
- ▶ Eisensee and Stromberg (2007): Humanitarian assistance in disaster affected lower if media coverage targeted at other events, such as Olympic Games or some breaking news
- ▶ Assumptions: Occurrence of other newsworthy events not related to disasters in developing countries
- ▶ Specification (2SLS):
 - ▶ First: $news_i = \beta_1 news\ pressure_i + \beta_2 olympics_i + X_i' \beta + v_i$
 - ▶ Second: $relief_i = \alpha_1 \widehat{news}_i + X_i' \alpha + \varepsilon_i$
- ▶ All regressions include country, disaster type, month, and year fixed effects and report heteroskedastic robust standard errors.

Determinants of foreign aid

- *"In May 1999, a storm struck India [...] killing 278 people and affecting 40,000. On the same day, a fifteen-year-old [...] shot and wounded six classmates at Heritage High School in suburban Atlanta. The two events competed for news time. [The] Indian storm was not covered. [O]ne year earlier, a storm of similar size struck India (killing 250 and affecting 40,000 people). [T]here was less breaking news around, and the storm was covered by the television network news. Two days later, the U. S. Ambassador in India [...] declared this storm a disaster, and its victims consequently received U. S. relief. He did not issue a disaster declaration for the May 1999 storm and its victims received no U. S. government relief."*

Eisensee and Stromberg (2007)

TABLE IV
EFFECT OF THE PRESSURE FOR NEWS TIME ON DISASTER *NEWS* AND *RELIEF*

	Dependent variable: <i>News</i>				Dependent variable: <i>Relief</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>News Pressure</i>	-0.0162 (0.0041)***	-0.0163 (0.0041)***	-0.0177 (0.0057)***	-0.0142 (0.0037)***	-0.0117 (0.0045)***	-0.0119 (0.0045)***	-0.0094 (0.0058)	-0.0078 (0.0040)**
<i>Olympics</i>	-0.1078 (0.0470)**	-0.1079 (0.0470)**	-0.0871 (-0.0628)	-0.111 (0.0413)***	-0.1231 (0.0521)**	-0.1232 (0.0521)**	-0.1071 (0.0763)	-0.1098 (0.0479)**
<i>World Series</i>	-0.1133 (-0.1065)				-0.1324 (0.1031)			
<i>log Killed</i>			0.0605 (0.0040)***				0.0582 (0.0044)***	
<i>log Affected</i>			0.0123 (0.0024)***			0.0376		
<i>Imputed log Killed</i>				0.0491 (0.0034)***				0.0442 (0.0037)***
<i>Imputed log Affected</i>				0.0151 (0.0020)***				0.0394 (0.0020)***
Observations	5,212	5,212	2,926	5,212	5,212	5,212	2,926	5,212
R-squared	0.1799	0.1797	0.3624	0.2875	0.1991	0.1989	0.4115	0.3726

Eisensee and Stromberg (2007)

TABLE VI
DEPENDENT VARIABLE: *Relief*

	OLS					IV		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
News	0.2886 (0.0200)***	0.158 (0.0232)***	0.1309 (0.0178)***	0.2323 (0.0328)***	0.2611 (0.0569)***	0.8237 (0.2528)***	0.6341 (0.3341)*	0.6769 (0.2554)***
News*abs(Pr(news)-0.5)				-0.4922 (0.1059)***	-0.302 (0.0840)***			
abs(Pr(news)-0.5)				0.5374 (0.0943)***	0.2959 (0.0831)***			
log Killed		0.0486 (0.0046)***					0.0198 (0.0208)	
log Affected		0.0358 (0.0024)***					0.0299 (0.0048)***	
Imputed log Killed			0.0378 (0.0038)***	0.0546 (0.0049)***	0.0307 (0.0046)***			0.0109 (0.0132)
Imputed log Affected			0.0375 (0.0020)***	0.0445 (0.0023)***	0.0345 (0.0026)***			0.0292 (0.0045)***
F-stat, instruments, 1st stage						11.0	6.1	11.1
Over-id restrictions, $\chi^2_{df}(p\text{-value})$						0.51 ₁ (0.47)		0.64 ₁ (0.42)
Observations	5,212	2,926	5,212	5,212	5,027	5,212	2,926	5,212
R-squared	0.2443	0.4225	0.3800	0.3860				

Nunn and Qian (2014): US Food Aid and Civil Conflict

- ▶ Nunn and Qian (2014): US food aid is mostly driven by domestic production surpluses
- ▶ Amount of US food aid determined by domestic farmers' price support
 - ▶ Price floor on wheat by government.
 - ▶ Favorable weather \Rightarrow wheat surplus \Rightarrow government increases wheat purchases.
 - ▶ Purchased wheat as food aid to poor countries.
- ▶ Assumption: Weather conditions in wheat producing regions unrelated to the needs of poor countries

Nunn and Qian (2014)

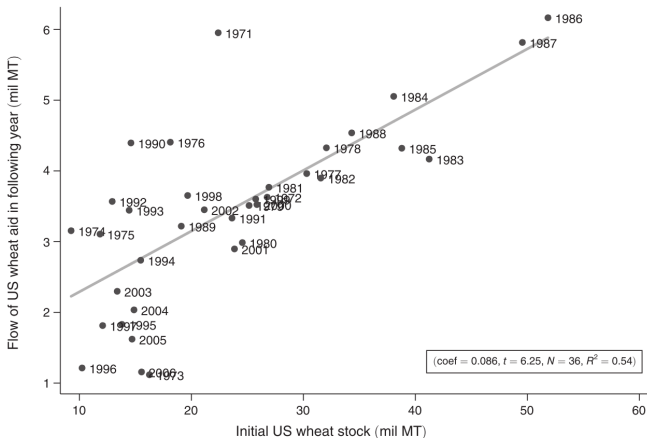


FIGURE 2. US WHEAT AID AND INITIAL US WHEAT RESERVES

Source: Nunn and Qian (2014)

Facts about foreign aid

Is foreign aid effective?

Determinants of foreign aid

Foreign aid and conflict

Foreign aid and accountability

Nunn and Qian (2014)

- ▶ Main interest of the paper: Does aid increase conflict?
 - ▶ Q: Why should aid increase conflict?
 - ▶ *"We are unable to determine whether our aid helps or hinders one or more parties to the conflict ... it is clear that the losses – particularly looted assets – constitutes a serious barrier to the efficient and effective provision of assistance, and can contribute to the war economy. This raises a serious challenge for the humanitarian community: can humanitarians be accused of fueling or prolonging the conflict in these two countries?"* — Médecins Sans Frontières, Amsterdam
- ▶ Q: How to estimate the effect of aid on conflict?
- ▶ Q: Why OLS estimation of $conflict_i = \beta_1 aid_i + X' \beta_2 + \varepsilon_i$ yields incorrect estimates?

Nunn and Qian (2014)

- Again, using instrumental variables:

$$conflict_{irt} = \beta_1 \widehat{aid}_{irt} + X'_{irt} \beta_2 + \beta_3 \delta_r * Y_t + v_{ir} + \varepsilon_{irt}$$

- $conflict_{irt}$ is both ongoing and onsetting conflict, they then separate ongoing from onsetting in the analysis
- And the instrument:

$$aid_{irt} = \beta_1 (wheat_{t-1} * \bar{D}_{ir}) + X'_{irt} \beta_2 + \beta_3 \delta_r * Y_t + v_{ir} + \varepsilon_{irt}$$

- Where \bar{D}_{ir} is a fraction of years between 1971 and 2006 country i receives any US food aid (controlling for propensity of US aid).
- Reason: Is it likely that the country would receive any aid anyways?
- (Possible crowding-out of other types of aid rejected in the analysis, i.e. results show that *aid causes conflict*)

Nunn and Qian (2014)

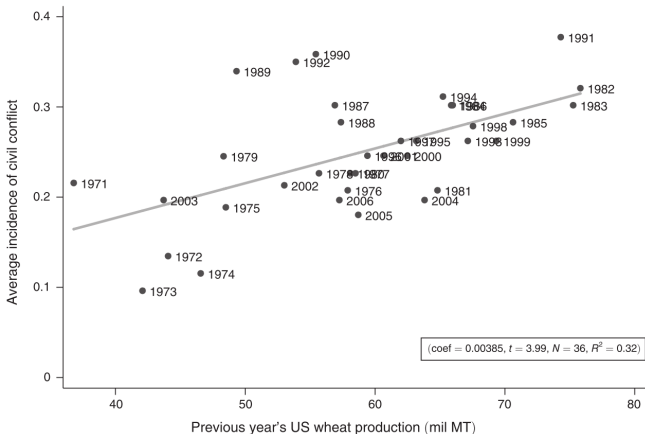


FIGURE 4. AVERAGE CIVIL CONFLICT INCIDENCE AND LAGGED US WHEAT PRODUCTION, REGULAR RECIPIENTS: $\bar{D}_{lr} \geq 0.30$

Source: Nunn and Qian (2014)

Nunn and Qian (2014)

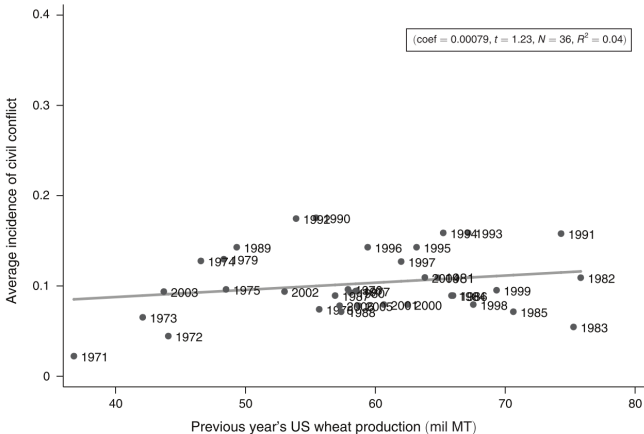


FIGURE 3. AVERAGE CIVIL CONFLICT INCIDENCE AND LAGGED US WHEAT PRODUCTION, IRREGULAR
RECIPIENTS: $\bar{D}_{ir} < 0.30$

Source: Nunn and Qian (2014)

Facts about foreign aid

Is foreign aid effective?

Determinants of foreign aid

Foreign aid and conflict

Foreign aid and accountability

Accountability and foreign aid

- ▶ Note: donors accountable to own electorate, not the the electorate of the poor countries. Where are we so far?
 1. News coverage matters
 2. Food production at home determines size of aid
 3. Even if conflict caused by more aid, it does not stop flow of aid
- ▶ Possible culprits?
 - ▶ Strategic interests vs. lack of quality data and proper empirical situations
- ▶ Need for more accountability and transparency.
 - ▶ Randomized control trials (Banerjee, 2006 Boston Review)
 - ▶ Setting measurable targets and holding agencies accountable (GiveWell.org)