

Aid effectiveness and
The political economy of
economic research

Martin Paldam

Inst. of Econ., University of Aarhus, Denmark

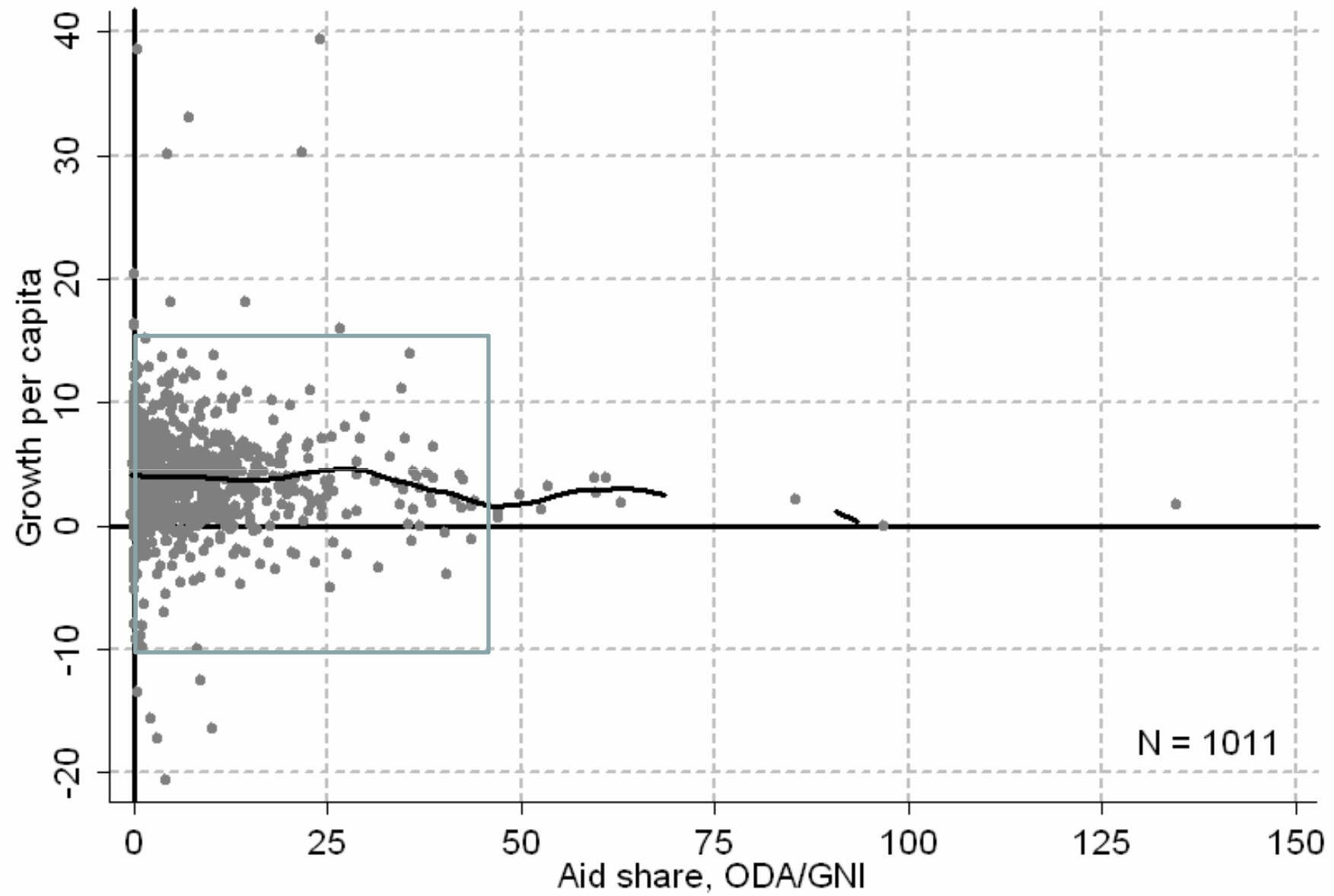
URL: <http://www.martin.paldam.dk>. Talk available
from <http://www.martin.paldam.dk/Foredrag.php>

Joint work with **Chris (Hristos) Doucouliagos**,
Deakin university, Melbourne, Australia

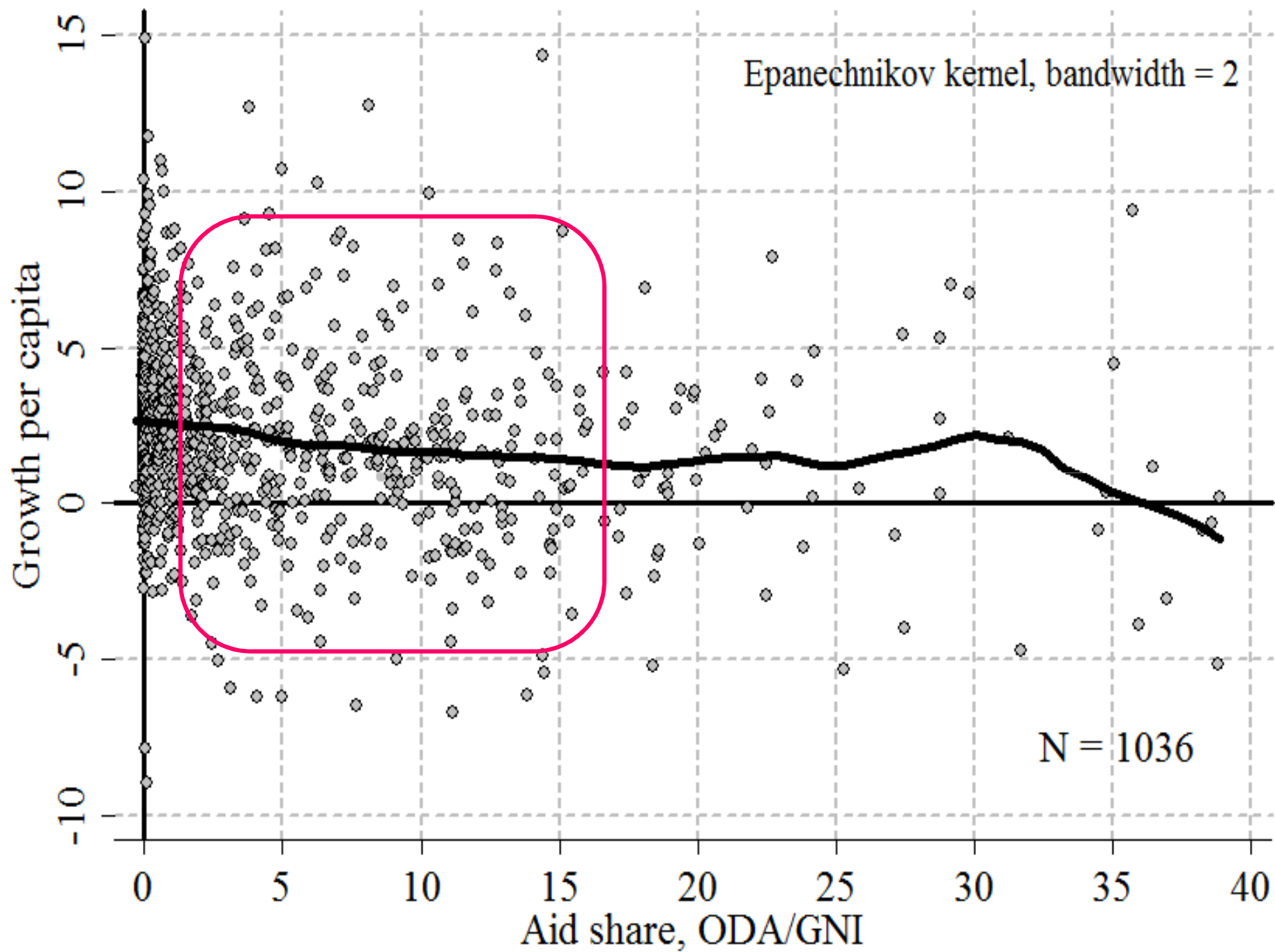
The aid effectiveness:
real economic growth per capita g
the aid share $h = ODA/Y$

Aid effectiveness on growth: $\partial g / \partial h = \beta$

- Is β positive and significant ?
- If you look at the data: Very dubious
- **The next four slides should make you cry!**



Kernel = epanechnikov, bandwidth = 4

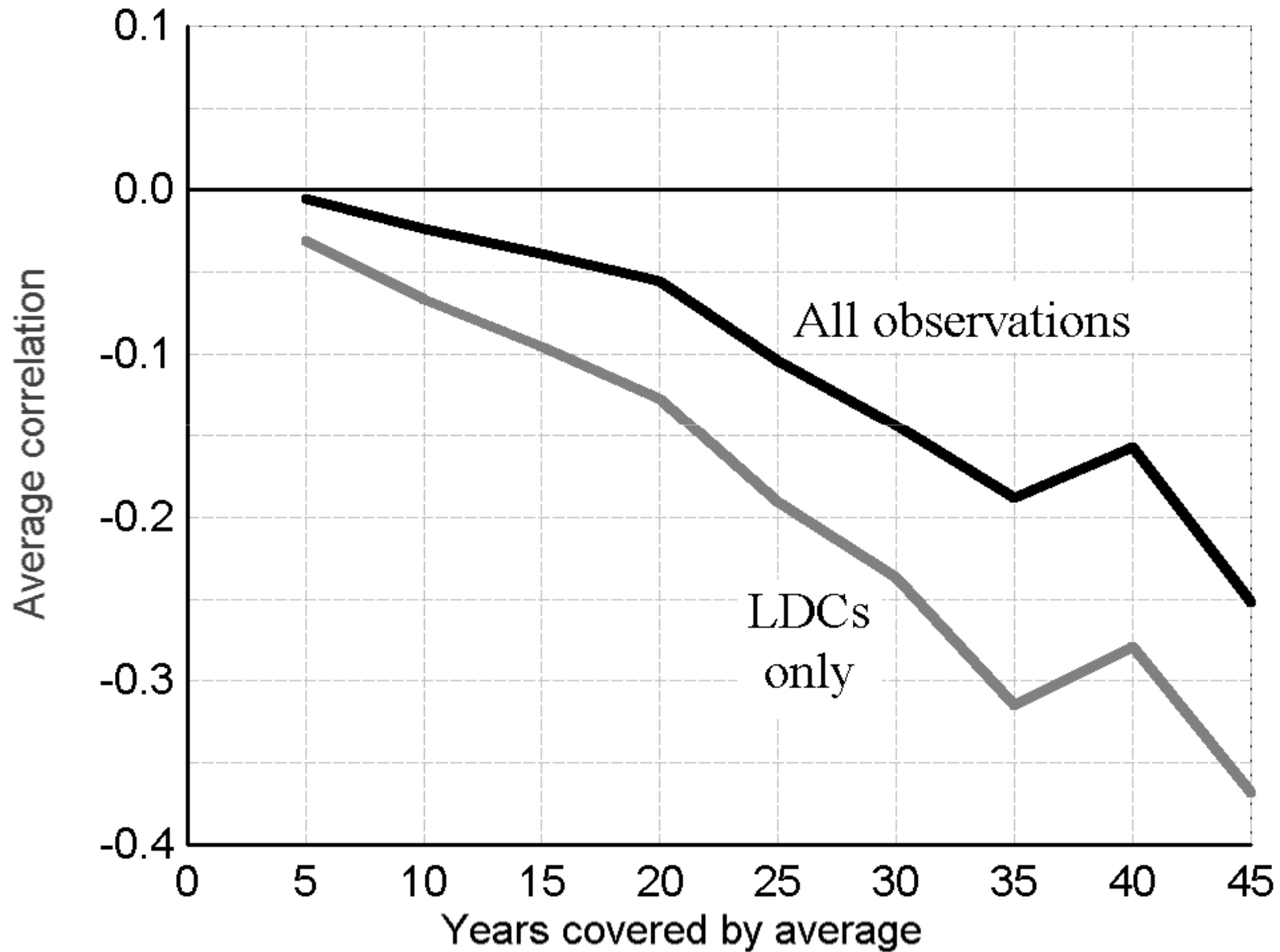


The zero correlation fact:

aid and growth for all countries with numbers

Period	N	Cor	Period	N	Cor
1960-65	92	-0.12	1985-90	143	-0.12
1965-70	103	-0.00	1990-95	169	-0.00
1970-75	111	-0.01	1995-00	178	0.09
1975-80	122	0.06	2000-05	175	-0.02
1980-85	134	0.09	Aver.	1227	-0.00

The correlation and the time dimension (full series)



The data show

The zero-correlation fact: $\text{cor}(g, h) \approx 0$.

- Very bad: Much better for the world if $\beta > 0$
Big literature trying to overcome the zero-correlation fact. 25,000 regressions run on the 1,000 data shown.
- Is it likely that a model can be developed on these data showing a positive aid effectiveness?
- Sure – but robustness is a problem!!
- Two methods for finding a positive β :
control for: **country heterogeneity** and **simultaneity**

How to do it:

2 series with zero correlation: g and h

Add sets 5 of controls, z , from set of 50 possible

estimate model (1): $g = \beta h + (\gamma_1 z_1 + \gamma_5 z_5) + u$

- The 5 controls can be chosen in 50 over 5 ways it is 2,118,760 ways. Each gives an estimate of β
- The average of all these estimates is zero
- Half of the estimates are positive. 5% are significant.
- 2½ % are significantly positive this is 52,969 estimates
- Choose one of those and you have shown that aid works and you have 52,968 estimates to show robustness
- **Thus, it can be done! And it has!**

How can the results of such a game be made convincing ?

- **Independent replication.**

Same model, new data, new authors → same results.

- **Meta studies** show a genuine effect, $\beta_M \neq 0$

See TD Stanley and H Doucouliagos, 2012

Meta-Regression Analysis in Economics and Business.

Routledge, London

- Now to my own contributions:

3 primary studies + pt 7 (4 WP) meta studies

Primary studies: With different co-authors

P.S. Jensen. Can the new aid-growth models be replicated? *Public Choice* 127, 147–75. 2006

Mere hjælp til Afrika. Hvad vil man opnå? Effekten af hjælp på vækst, korruption og demokrati i Afrika. *Økonomi og Politik* 80, 2-20. 2007

T.T. Herbertsson. Does development aid help poor countries converge to our standard of living? *Danish Economic Journal* 145, 188-214. 2007

Bibliographies: PW Christensen, HD & MP

Master list of the AEL: the Aid Effectiveness Literature. (152 papers) 2nd ed. 2009

Master list of the AAL: the Aid Allocation Literature. (166 papers). 2007

Meta studies of the AEL by HD & MP: $h \rightarrow g ++$

- 1 Aid effectiveness on accumulation. A meta study. *Kyklos* 59, 227-54. 2006
- 2 **Aid effectiveness on Growth. A meta study. *EJPE* 24, 1-24. 2008**
- 3 Conditional aid effectiveness. A meta study. *J. of International Development* 22, 391-410. 2010
- 4 The aid effectiveness literature. The sad results of 40 years of research. *J. of Economic Surveys* 23, 433-61. 2009
- 5 The Ineffectiveness of Development Aid on Growth: **An update.** *EJPE* 27, 399–404. 2011
- Mekasha, T.J., Tarp, F. Aid and growth. What meta-analysis reveals. *J. of Development Studies* May. 2013
- 6 The robust result in meta-analysis of aid effectiveness: A response to Mekasha and Tarp. *J of Development Studies* May. 2013

Meta studies of the AAL by HD & MP: $g \rightarrow h$

- 1 Explaining development aid allocation by growth: A meta study. *Journal of Entrepreneurship & Public Policy* 2, 2013
- 2 Development aid inertia: Stylized facts and a meta study. WP
- 3 The effects of income and population on development aid: A quantitative survey of the data and the literature. WP
- 4 Does development aid reward good behavior? A meta-analysis of the effects human rights and democracy. WP
- 5 Commercial and strategic interests. Preliminary

The presentation discusses the political economy of some of the results of **11 meta studies** (2 more planned) of:

- The **AEL**, Aid Effectiveness Literature, 2005-8.
 $h \rightarrow g, s, i, \dots$ in recipient country 152 papers
- Also: The **AAL**, Aid Allocation Literature 2007-8.
 $y, g, \dots \rightarrow h$, recipient and donor relations 166 papers. Not today
- Meta studies \rightarrow very strong reactions of referees: Most negative and positive I have experienced.

Meta: From the study an effect in the data

→ study the (full) literature on the effect.

Case: 300 papers, 360 authors, 250 man-years.

Taking this effort seriously.

By asking three questions to a literature:

- Q1. Does the result *converge* to something that we can consider the true value? **The meta-average**
- Q2. Are there *breakthroughs* (structural jumps) which can be identified and explained
- Q3. Does the distribution of the results – the funnel – have **asymmetries**, that is, *biases*

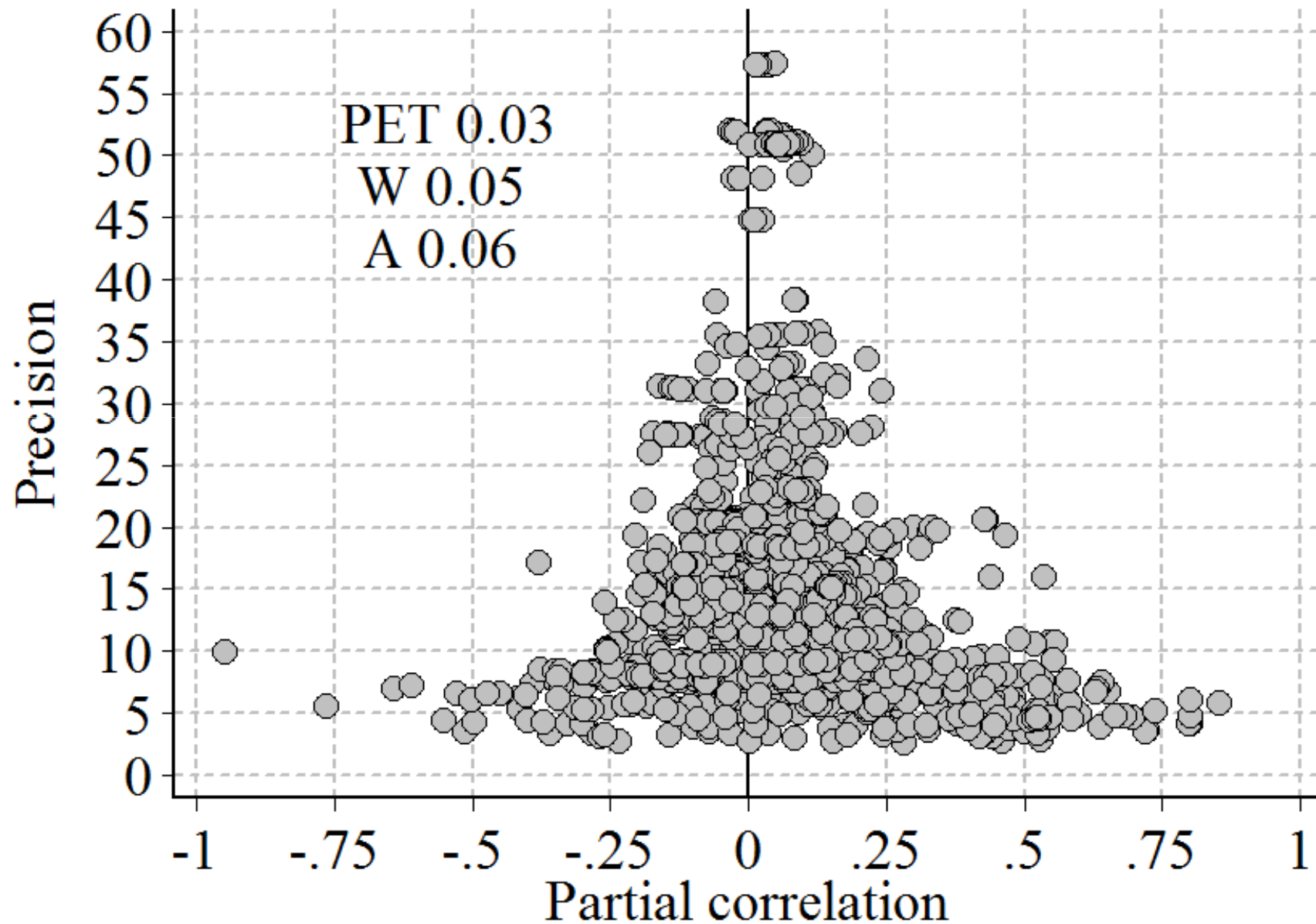
Two levels of the meta study of the parameter β :

- **Level 1: Cookbook OK.** Four steps:
 - (s1) Collect the β -literature and the N-set
 - (s2) Code the sets of b_i , with $s_i, p_i = 1/s_i, t_i = b_i/s_i$
 - (s3) Study the funnel, which is the (b_i, p_i) -scatter
 - (s4) Calculate: The average \underline{b} . The FAT-PET to get the FAT and the PET meta-average β_M .
 - **Results very robust .**
- **Level 2: Identify + code the controls.**
 - Explain the width of the funnel,
 - Augmented meta averages, if FAT = 0, else not!
 - No cookbook yet. **Results are less robust.**

In most literatures: Most b_i come with nice high t -ratios: We know β well. Also, statistical theory about reg. coefficient and many simulations of funnels. Thus:

- Funnels should be lean, and symmetrical.
- But two observations from many meta studies
- **Ob1.** Funnels are amazingly **wide**. Common with range of 3 – 4 times of estimates. High t 's an artifact
- **Ob2.** Funnels are often **asymmetric**, in ways that can be interpreted as **publication bias**.

The funnel plot 1,344 estimates of aid effectiveness



Back to the aid effectiveness literature

The zero correlation result :

An **insider-outsider asymmetry**

- **Well-known** by insiders, but rarely mentioned and **little-known** outside circle of experts.
- Can we explain the insider-outsider asymmetry?
- PS: Insiders always more informed than outsiders, but the zero correlation result is very basic.

More important:

Can we get round the zero-correlation result?
And still claim that aid generate development?

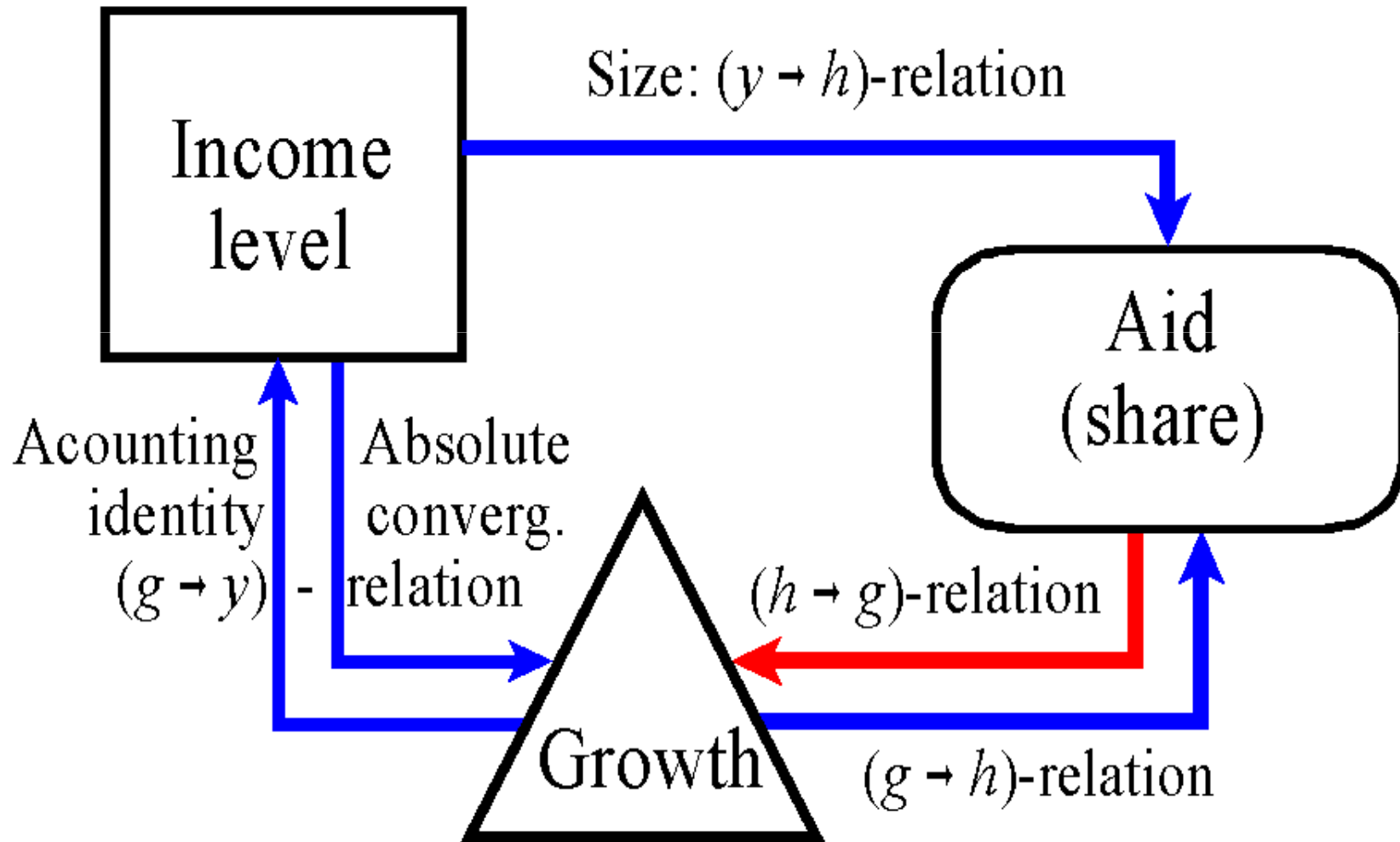
First explanation of all economists:

It is an artifact, due to biases

from rest of **income-growth-aid nexus**

The income-growth-aid nexus:

A literature on each arrow: Aid effectiveness red



5 relations: Summary

- **$(h \rightarrow g)$ -relation:** Our subject
- **$(g \rightarrow h)$ -relation:** Simultaneity bias?
 - Two ways to study that:
 - Augment FAT-PET with simultaneity dummy. See update 2011. Result: small positive, insignificant.
 - Meta study of 30 papers of $g \rightarrow h$ relation. Result: Small, positive insignificant.
 - **Bias: tiny positive – not significant**

$(g \rightarrow y) \times (y \rightarrow h)$ -relation: Misspecification bias?
Two ways to study that: Control relation for y .
Significant, but unclear bias. Study both relation
and multiply effects found.

- **$(g \rightarrow y)$ -relation** bookkeeping + absolute convergence: Small, positive, insignificant.
- **$(y \rightarrow h)$ -relation:** Meta study of 124 studies with 1,030 estimates of effect: Moderate OK
- Thus: Product of small and moderate is very small!
Bias tiny negative.

Hence: The data is a big problem.
They point to aid ineffectiveness

Shift perspective to research process
Note: Researchers are human beings

Economic theory assume: all humans have priors/interests.

- **Why not us? Are we not human?**
- Also economists have priors/interests.
- **Further:** We operate on the market for economic research. **It may not be a perfect market.**
Our small talk at lunch tables, in bars etc.
Often assumes that journals have biases,
that referee processes are ...

Limit discussion to: (a) **Empirical** + (b) **macro**

- Ad (a): We analyze M studies of the same effect
Ad (b): Data is limited relative to the amount of research. Thus *data mining problem*
- What can we prove?
- Meta studies claim they can prove a great deal.
Not for individual studies, but for specific literature
- Our studies find typical results. (In a moment)

We like to believe that research is a process that search for truth that converges to *the* truth.

In causa: Truth is the true value of β .

- Process within researcher, his incentives
Process on market, its incentives
- Are the incentives truth-finding consistent?
- [In this research 94% male researchers +
male/female researchers find same results]

Process within individual researcher:

- He search for a value of β , till he is satisfied.
The paper is thus the result of a *stopping rule in his search process:*
- He stops when he has found a β that:
 - (a) Is in accord with his priors or his interests
 - (b) Is publishable
 - (c) Can be defended statistically
- PS: When he stops has he **found truth or confirmed his priors?**

Process on the market for papers:

Innovation + replication generates trust in results

- Innovation: Theory, estimation technique, data.
Innovation easy to publish (?)
- Replication: Much more difficult to publish
 - *Independent*: New authors on new data
 - *Dependent* (1): Same author on new data
 - *Dependent* (2): New author on same data
 - Macro: Normally overlapping data so only:
Marginally independent
Thus: **Effect on estimate of extra data**

Data mining: (important that we look at macro)

The number of estimates on subsets of the same data is large relative to the number of observations

- Phillips curves. Estimated on the w, p, u data for 30 countries over the last 50 years?

Guess: 5 mill estimates?

Money demand: As many estimates

- Growth regressions (Sala-i-Martin alone 85 mill)
- Aid effectiveness part of growth regression

Consequence: Many false variables

- Type I errors reduced: Rejecting true model
Type II errors increased: Accepting false models
- Hence in heavily mined fields:
Many type II errors: False variables
- Thus independent replication necessary.
And meta studies highly needed

Not problem of each researcher; but the collective.
We all read up some of the literature and
join the **mining collective**.

- We fish in the common pond of *df*'s.
A double tragedy of the common.
- 1. It is the standard tragedy that we exhaust the *df*.
- 2. It is also a tragedy that nothing visible happens
we can just go on and on!

The **AEL**, studies: $\mu = \partial g / \partial h$, conditional on everything our profession has thought of.

- **Micro basis:** Average LDC growth $g \approx 1.5\%$.
Projects based on cost-benefit (growth contribution): Social rate of return 10%.
Thus, $h = H/Y \approx 7.5\% \rightarrow g \approx 0.75\%$: **Half**
- Some project irrelevant for growth:
Thus only part of 0.75 pp:
 $\frac{1}{4}$ - $\frac{1}{2}$ of LDC growth should be due to aid.
- **It should be highly visible in data, but it is not.**

Thus a challenge: It is the AEL paper generator:

In 2006 aid exceeded \$ 100 bill + AEL paper
nr 100 published. Since then avalanche!

- Data: Aid started in mid 1960s. Now ap 145 data per year: and 6000 annual observations.
Averaged to 5 years: about 1000.
- Regressions: Published 1,400, made 40,000?
Alternative: Sum of $N = 35,000$
- Likely that false models have appeared

Thus, the AEL starts from a zero correlation, and put structure on this result till something appears.

- Model version of Barro-growth regression:

$$g_{it} = \alpha + \mu h_{it} + (\gamma x_{1it} + \dots + \gamma x_{nit}) + u_{it}$$

or

$$g_{it} = \alpha + \mu h_{it} + \delta z_{it} + \omega h_{it} z_{it} + (\gamma x_{1it} + \dots + \gamma x_{nit}) + u_{it}$$

- Researchers have tried 60 x 'es and 10 z 's.
Many millions possible permutations, each gives a different estimate of μ . As average is zero half are positive, and 5% are significant. What to choose?

Funnel skew: Look for bias. Main possibilities

	Bias	From inside or outside
(1)	Polishing	Authors, referees, journals
(2)	Ideology	Mostly authors, some journals
(3)	Goodness	Authors, maybe journals
(4)	Interests	Sponsors → authors and maybe journals
(5)	History	Authors have written before + belong to “clubs”, write PhD under... , seek job at ... , Journals have history too

In the AEL: everything goes together to generate:

The reluctancy bias

Researchers and journals are reluctant to publish negative results

PS: the insider-outsider asymmetry

- Proof follows
- Let us look at the 5 priors – one at a time:

Polishing:

- We want to display our goods as well as possible.
- Then they are easier to sell to journals
work more when insignificant
- Career + feel well.
- Strong incentives to publish:



It's publish or perish, and he hasn't published

What do we expect to see?

- Easier to polish in small samples:
Study t -ratios as a function of df : $t = t(n)$
- If random $\ln t$ proportional to $\ln n$:
- The MST: $\ln |t_i| = \alpha_0 + \alpha_1 \ln n_i + u_i$
test: $\alpha_1 < 0 \rightarrow$ polishing
- Often found in meta studies, in the AEL also.

Ideology: Ideology predicts the sign of $\beta \rightarrow$

Bias: authors with that ideology find **right** sign.

In the AEL two ideological groups:

- Libertarians (Friedman, Bauer): Aid \rightarrow larger public sectors \rightarrow planning \rightarrow socialism \rightarrow harms
- “New-left”: Aid from capitalist states \rightarrow capitalism and exploitation \rightarrow harms
- **Both found negative sign as predicted**
(not many authors)

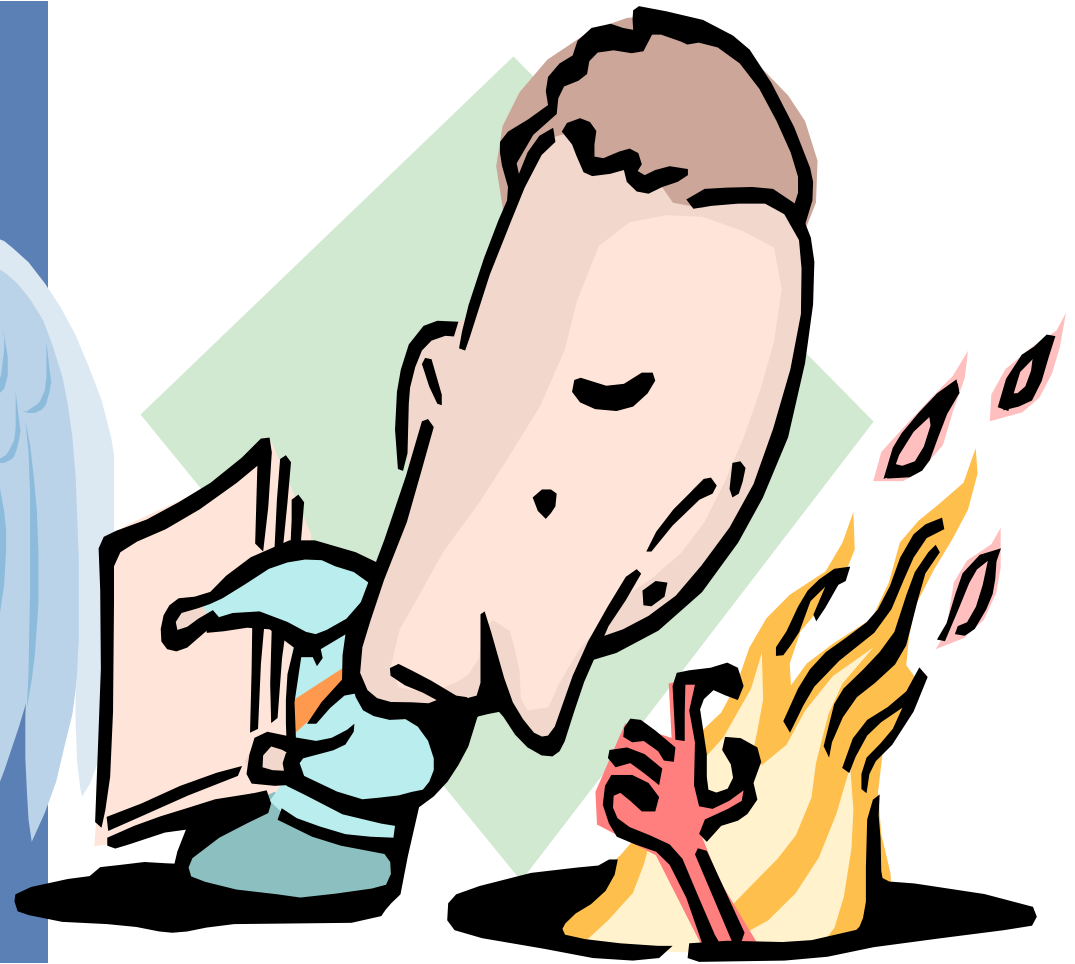
Goodness: Aid aims at something good hence it works

- Common finding: We all want to look good and most want to be politically correct
- Shown as asymmetry of funnel plot: **The FAT.**
Part of the funnel is censored.
- In the AEL: Aid aims at doing good (+ ...)
So to show that it fails is bad.
- Also, nice to be on the side of the angels: Bono, Jeff Sachs, Gordon Brown, Koffi Anan, etc.

Show: Aid works



Show: Aid fails



Sponsor interests: Big sponsor is the aid industry

- Normally: Many different sponsors Ok.
- In the AEL: Diffuse interests on the one side.
Aid Industry on other side. It claims that aid works!
- **Turnover for 2011 \$ 134 bill.** Big industry, with many parts: bureaucracy + political parties + NGOs + business + unions.
- Gives about 10% in consultancy fees + 0.25 to 0.5 % to research. Danida professor, UN-WIDER-institute 60 mill from aid industry to AEL research

Show: Aid works



Show: Aid fails



**Both goodness and sponsor interests causes
reluctancy.**

Researchers are reluctant to publish negative results

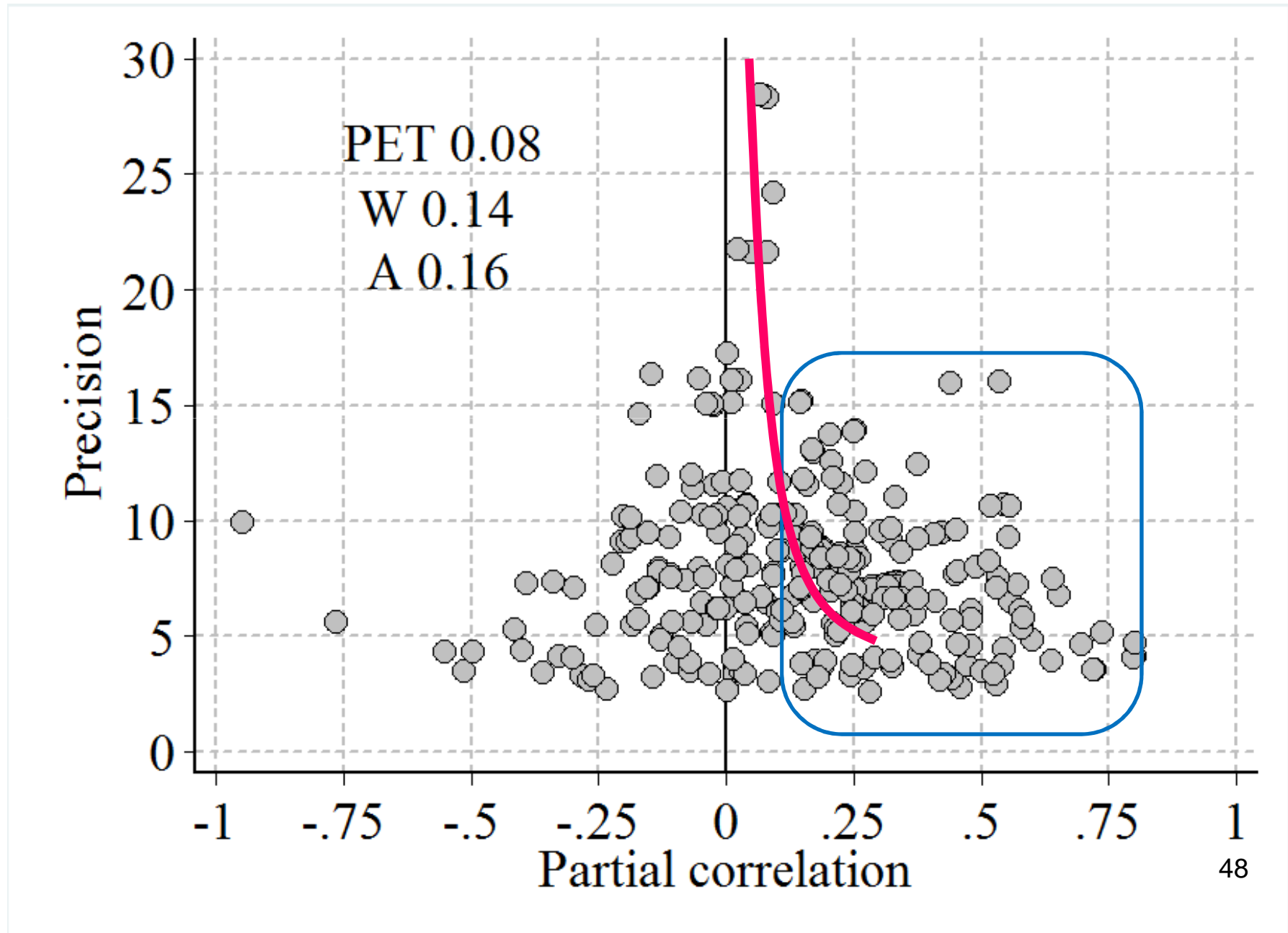
History of authors/groups

- 50% of authors are in one paper only.
The rest are in more + many additional links.
- People are $z > 0.5$ committed after one paper to find the same result. Our guess $z = 0.9$
- Very significant: Fighting schools
- We now **look at the FAT-PET tool and funnels**

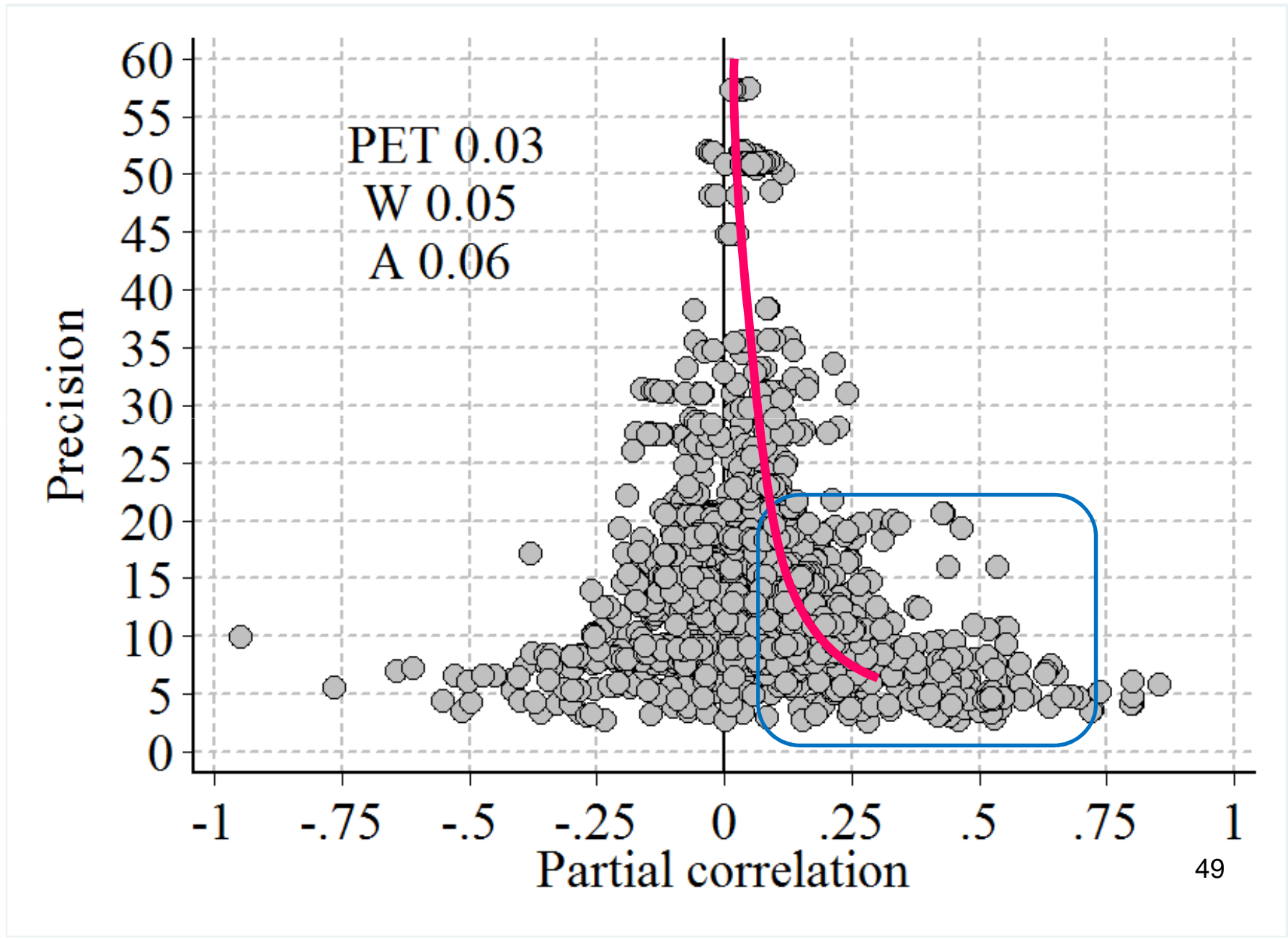
Two averages: Plain \underline{b} and PET meta-average β_M
The FAT-PET MRA (Tom Stanley)

- $b_i = \beta_M + \beta_F s_i + u_i = \beta_M + \beta_F / p_i + u_i$
 β_M is the PET meta average
 β_F is the FAT, funnel asymmetry test
- The FAT-PET converge to β_M when $p_i \rightarrow \infty$
- PS: funnels should be symmetrical
if the FAT $\neq 0$ something is amiss: There is a bias

The literature (2c): Before 2000



The literature (2d): All 1,344



Are the results robust: Super test
M&T from UN-WIDER tried to shoot us down:

Regression	(1) FAT	(2) PET	N
	(i) Original D&P08 (p.11)		
Robust s.e.	0.73 (4.41)	0.03 (1.82)	541
Clustered s.e.	0.73 (2.43)	0.03 (1.00)	541
Robust regr.	0.83 (4.77)	0.02 (1.32)	541
	(ii) M&T results (p.11)		
Robust s.e.	0.79 (4.84)	0.03 (1.73)	537
Clustered s.e.	0.79 (2.67)	0.03 (0.94)	537

	(iii) D&P08 with new revision			
Robust s.e.	0.69 (4.18)		0.03 (2.23)	536
Clustered s.e.	0.69 (2.30)		0.03 (1.19)	536
Robust reg.	0.79 (4.49)		0.03 (1.73)	536
	(iv) D&P08 with published estimates			
Robust s.e.	0.66 (3.76)		0.04 (2.28)	512
Clustered s.e.	0.66 (2.09)		0.04 (1.22)	512
Robust reg.	0.82 (4.49)		0.02 (1.43)	512
	(v) D&P08 with additional estimates			
Robust s.e.	0.70 (4.52)		0.03 (1.90)	618
Clustered s.e.	0.70 (2.34)		0.03 (0.99)	618
Robust reg.	0.81 (4.85)		0.02 (1.14)	618 ⁵¹

Proving reluctance:

Asymmetry of missing negative values

How should it look? Should be visible on $\mu = \mu(N)$.

Sorting out $\mu = \mu(N)$ and $\mu = \mu(t)$

Problem: **Learning by doing:**
 $\mu = \mu(t)$ should slope upward.

The Evolution of the Effect of Aid on Growth

	(1)	(2)	(3)
	Number of	Aids effect	Raw
	N [NP]	on growth, μ	average
Pre 1980	24 [7]	0.231 (0.71)	0.267
Pre 1990	88 [15]	0.080 (0.70)	0.204
Pre 2000	245 [34]	0.041 (0.67)	0.153
Pre 2009	979 [103]	0.023 (1.13)	0.059

Problem: No learning by doing,

We find unlearning by doing ???

Our interpretation: Publication bias fall with n

$$\text{Run: } \beta_{Nt} = \alpha + \beta n + \gamma t + \varepsilon$$

Problem: Multicollinearity, n and t rise together

α	β on n	γ on t	Obs
0.31 (7.1)	-0.043 (-4.7)		538
0.19 (9.7)		-0.00027 (-4.4)	
0.28 (5.9)	-0.026 (-2.1)	-0.00015 (-1.9)	

Thus: **Reluctancy confirmed**

Is it goodness or interests?

- Test: Use (poorly measured) interest variable to identify interests
- Effect of interest: Always sign as expected, not always significant:
It is not a big effect, but it is there!
- **Thus 50-50 result**

A few other results:

- No effect of quality of publication
- We have identified no structural shifts due to new theory or new estimators in the AEL.
- **No effect of new estimators,
but clear effect of new data.**
- An incentive that is not truth finding consistent

The end:
Conclusion 1

The literature has not overcome the zero
correlation result:

We have to conclude that
aid is ineffective in generating
development

The end:
Conclusion 2

We behave as predicted
by our theories

We are human!