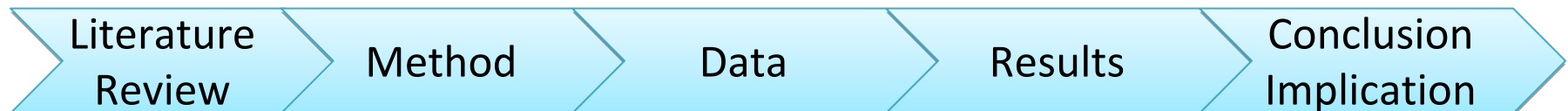


# Is Foreign Aid a Vanguard of FDI?

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The University of Tokyo and RIETI



# Impacts of ODA on Economic Growth Using Macro Data

Seminal work by Burnside and Dollar (2000)

Growth of GDP  
per capita

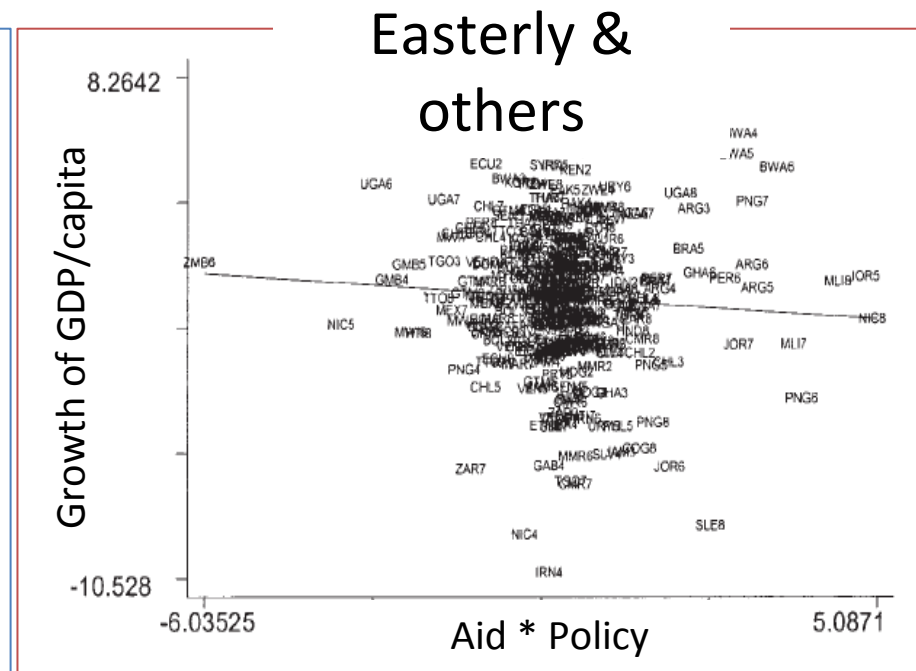
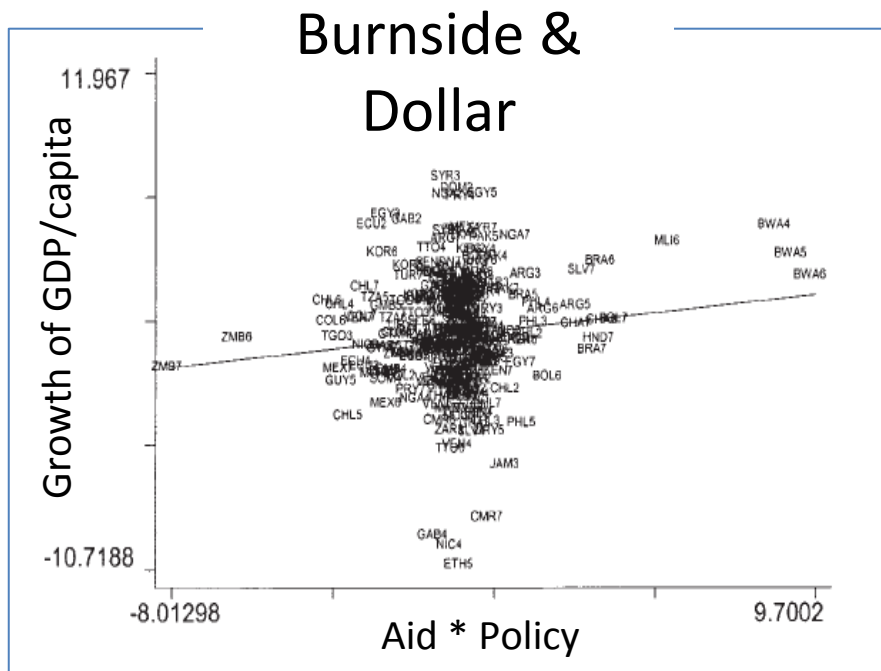
ODA/GDP

Positively correlated for countries  
implementing good policies  
(low inflation, small gov't deficit, openness to trade)

→ ODA to countries with good governance is justified.

# Re-examination by Easterly and others

- When different samples or estimation methods are used, most studies found **no correlation** between growth and ODA regardless of policies

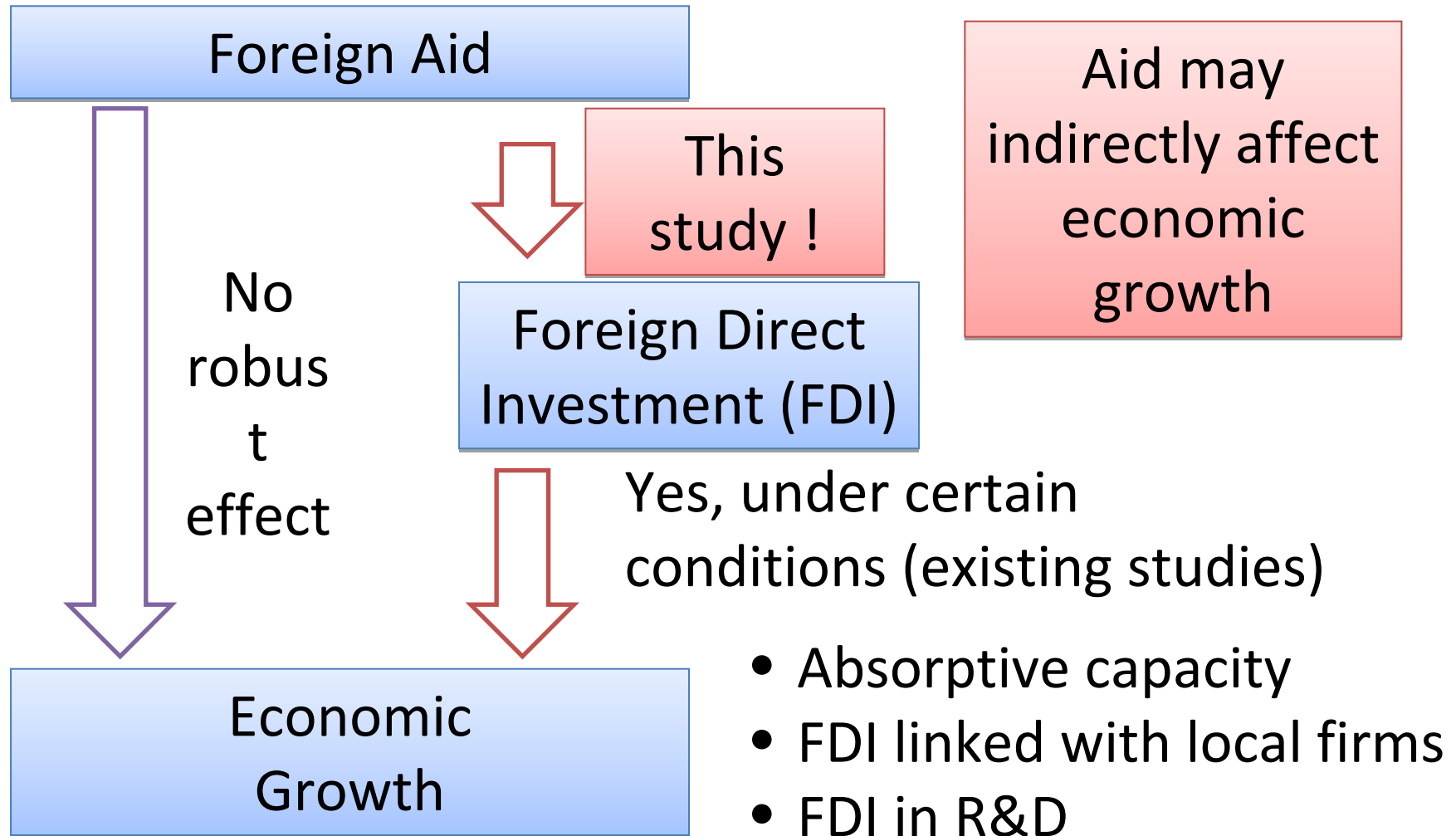


No clear relation between economic growth and ODA

## Why is estimation of causality difficult?

- **Reverse causality** from growth to ODA  
E.g. Low-growth countries tend to receive more ODA.  
→ Correlation  $\neq$  Causation
- **Simultaneity**  
E.g. When the world economy is doing bad, both growth and ODA are likely to decrease.  
→ Correlation  $\Leftarrow$  A third factor affects both

# Motivation of This Study



# Cross-country Evidence on the Impact of FDI on Economic Growth

- Mixed results
- But positive effect conditional on large absorptive capacity of the host country
  - High education level (Borensztein et al., 1998)  
(+ when 0.52 years or more of secondary schooling)
  - Development of the financial sector  
(Alfaro et al., 2004)
  - Low level of corruption (Durham, 2004)

## Firm-level Evidence

### on the Impact of FDI on Domestic Productivity

- Mixed results
- But positive spillover effect conditional on large absorptive capacity of the host country & characteristics of FDI
  - R&D-intensive domestic firms
  - Vertical linkages with domestic firms
  - FDI in R&D
  - FDI associated with employment of skilled workers

## Existing Studies on the Impact of ODA on FDI

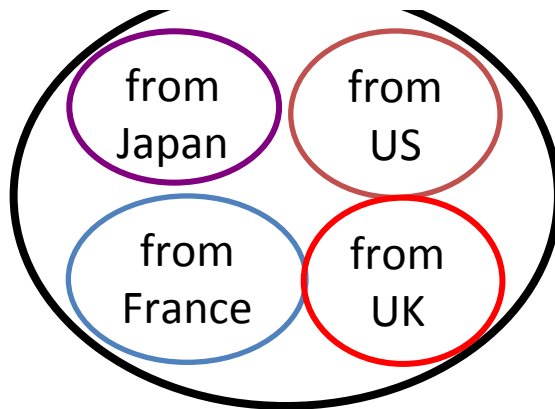
- Harms and Lutz (2006)
  - **No significant effect** in general
  - Positive for recipient countries with heavy regulatory burden (puzzling results)
- Karakaplan et al. (2005)
  - **No significant effect** in general
  - Positive for countries with good governance (contradicting Harms and Lutz) or developed financial markets



# What's New in This Study?

- Existing studies

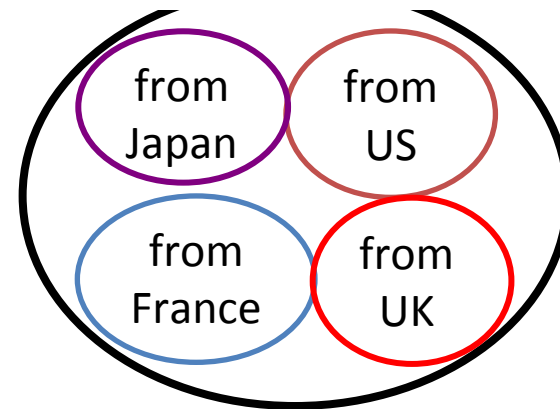
Total aid in the recipient



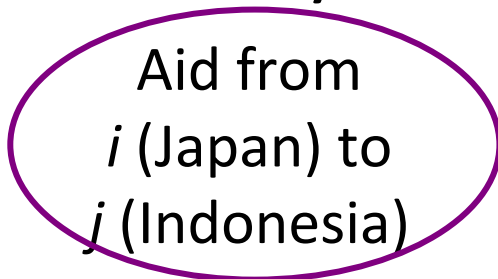
?



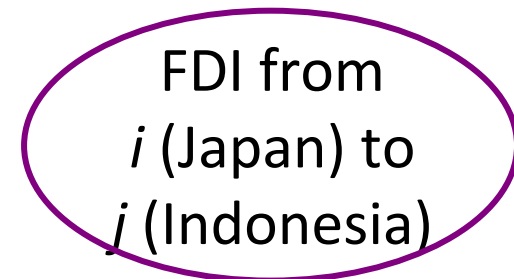
Total FDI to the recipient



- This study



vanguard  
effects



# Effects of ODA on FDI: Hypotheses

Effect on FDI from  $i$  (e.g., Japan) to  $j$  (e.g., Indonesia)

	Infrastructure effect	Rent- seeking effect	Vanguard effect
Aid from $i$ (Japan) to $j$ (Indonesia)	+	—	+
Aid from $h$ (US) to $j$ (Indonesia)	+	—	0

## Possible Causes of Vanguard Effects

1. **Diffusion of information** on the recipient country to private firms of the donor country
2. **Quasi government guarantee** to the recipient country
3. **Diffusion of business rules and standards** specific to the donor country

## Estimation Equation based on a Gravity Model

$$\ln FDI_{ijt} = \rho \ln FDI_{ijt-1} + \beta_1 \ln AID_{ijt} + \beta_2 \ln GDP_{it} + \beta_3 \ln GDP_{jt} \\ + \beta_4 \ln DIST_{ij} + \beta_5 SKDIF_{ijt} + \beta_6 X_{jt} + \alpha_{ij} + \alpha_t + \varepsilon_{ijt}$$

- $FDI_{ijt}$ : FDI flows from country  $i$  to  $j$  in year  $t$
- $AID_{ijt}$ : aid from country  $i$  to  $j$
- $GDP_{it}$ : GDP of  $i$ ,  $DIST_{ij}$ : distance between  $i$  and  $j$
- $SKDIF_{ijt}$ : difference in skill levels between  $i$  and  $j$
- $\alpha_{ij}$ : country-pair specific fixed effects,  $\alpha_t$ : time effects

## Estimation Method

- Econometric issues
  - Country-pair specific fixed effects
  - Endogeneity
    - Simultaneity:  
Business cycles  $\rightarrow$  aid, GDP, and FDI
    - Reverse causality: GDP  $\rightarrow$  FDI
- Our estimation method  
Blundell and Bond's (1998) system GMM,  
using lagged regressors as instruments

## Data (1)

- Unbalanced panel of 1384 observations for the period 1990-2002
  - Source countries: 5 top donors  
France, Germany, Japan, UK, and US
  - Recipient countries:  
98 low- or middle-income countries  
(for which data are available)

## Data (2)

- FDI
  - Source:  
*OECD International Direct Investment Statistics*
- Foreign aid
  - Source:  
*OECD Creditor Reporting Systems*
  - Data for each activity of aid
    - Aid for infrastructure:  
economic/social infra., production activities
    - Aid for non-infrastructure:  
program aid, humanitarian aid, debt relief

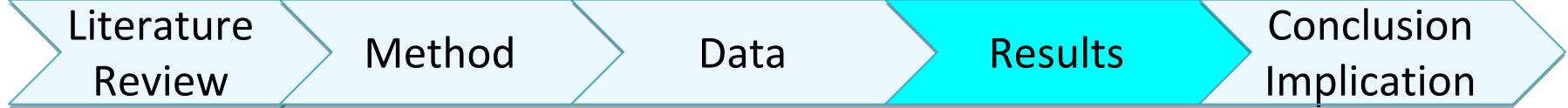


Table 2. Impact of Total Aid in country  $j$  on FDI flows from  $i$  to  $j$

	(2)	(4)	(6)
	GMM	GMM	GMM
Total aid in country $j$	0.398 (0.058)**	0.330 (0.067)**	0.324 (0.067)**
$\ln \sum_i AID_{ij}$	0.004 (0.041)	-0.125 (0.313)	-0.079 (0.408)
$\ln \sum_i AID_{ij} * Kaufmann1_j$		0.011 (0.018)	
$\ln \sum_i AID_{ij} * Kaufmann1_j$		-0.078 (0.194)	
$\ln \sum_i AID_{ij} * Kaufmann2_j$			0.029 (0.093)
$\ln \sum_i AID_{ij} * Kaufmann2_j$			0.129 (1.153)

No significant impact of total aid on FDI

Consistent with existing studies

Standard errors in ( ). \*\* = significant at 1%, \* = significant at 5%.



Table 3. Impact of Aid for Infra. and Non-infra. on FDI flows from  $i$  to  $j$

Total aid for infrastructure in country $j$	(2)	(4)	(6)
	GMM	GMM	GMM
$\ln \sum_i AID\_INF_{ij}$	-0.013 (0.032)	-0.002 (0.034)	
$\ln \sum_i AID\_NonINF_{ij}$	0.025 (0.017)		0.026 (0.016)

Total aid for non-infrastructure

\*\* = significant at 1%, \* = significant at 5%.

No significant impact of aid for infrastructure or for non-infrastructure

Table 4. Impact of Aid from  $i$  to  $j$  on FDI stock from  $i$  to  $j$



Aid from  $i$  to  $j$

	(1)	(2)	(3)	(4)
	GMM	GMM	GMM	GMM
$\ln AID_{ij}$	0.013 (0.015)			
$\ln AID\_INF_{ij}$		0.010 (0.014)	0.014 (0.015)	
$\ln AID\_NonINF_{ij}$		0.015 (0.013)		0.010 (0.013)

No significant impact of aid from  $i$  to  $j$  on FDI from  $i$  to  $j$

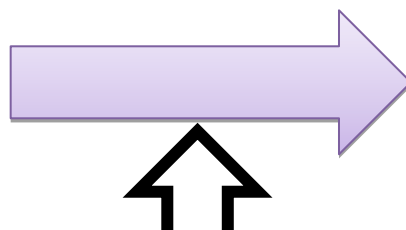
↓

No vanguard effect

Standard errors in ( ).  
 \*\* = significant at 1%, \* = significant at 5%.

# Incorporate possible difference in the size of aid effect across donors

ODA from  
Japan to  
Indonesia



FDI from any  
country to  
Indonesia

Assuming the same size so far  
but now different

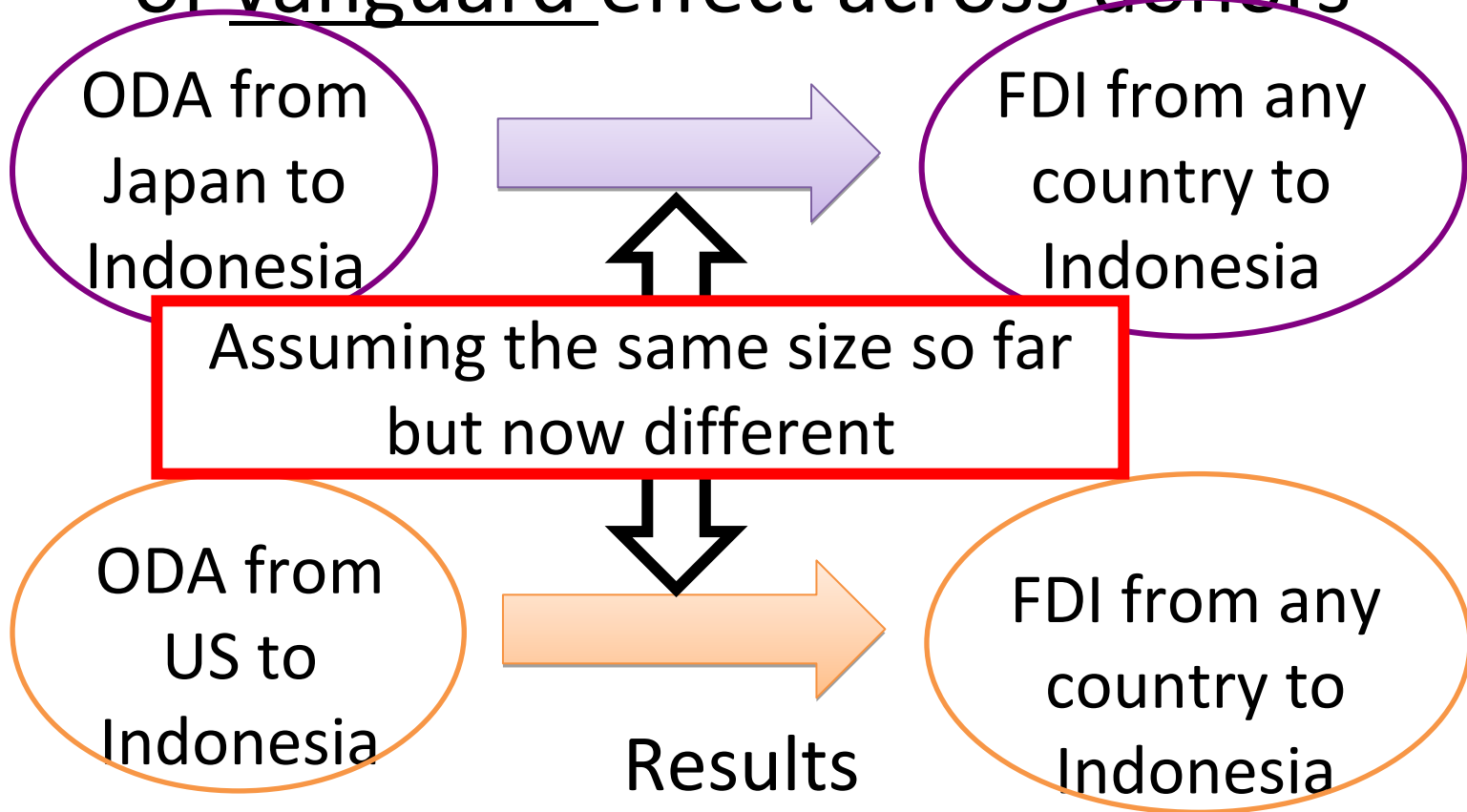
ODA from  
US to  
Indonesia



FDI from any  
country to  
Indonesia

Results (table omitted)  
No effect of aid from any country

# Incorporate possible difference in the size of vanguard effect across donors



Vanguard effect of infrastructure aid from Japan  
No vanguard effect of aid from any other country

## Summarizing Results (1)

- **No effect of aid on FDI in general**
  - Total aid does not promote FDI from any country.
  - Aid from  $i$  to  $j$  does not promote FDI from  $i$  to  $j$ .  
(No vanguard effect)
  - Distinction between aid for infrastructure and aid for non-infrastructure does not change the results.

## Summarizing Results (2)

- Assuming impacts of aid varies in size across donor countries
  - Vanguard effects of Japanese aid for infrastructure
    - Japanese aid promotes FDI from Japan, while having no impact on FDI from others.
  - 6-7% of FDI from Japan to East Asia attributes to aid from Japan.

## Why is Japanese Aid So Unique?

- Heavy emphasis on infrastructure  
(But, this cannot explain the vanguard effect)
- Close interaction between public & private sectors
  - Exchange of personnel
    - ➔ information diffusion through aid projects
- Technical assistance to set up business rules and standards which are familiar with Japanese firms
  - Japanese certification systems for engineering skills
  - Technical assistance to teach Japanese-style QC system

## Possible Implications

- Results from existing studies on FDI:  
FDI promotes growth of the host country if
  - the host country has absorptive capacity
  - FDI is linked with local firms
  - FDI is associated with local R&D.

↓
- Japanese aid helped economic growth of LDCs, particularly East Asian countries, through promoting FDI from Japan.  
(though not direct evidence)



Implication to Japan Korea ODA

# Cooperation

ODA from Japan to Mozambique

ODA from Korea to Mozambique

FDI from Japan to Mozambique

FDI from Korea to Mozambique

Cooperation (information ↑)

FDI, Production networks of Japanese and Korean firms ↑

## Possible Direction of Japan-Korea ODA Cooperation

- Intensify vanguard effect of the 2 countries
  - Effective use of vanguard effect should be achieved in countries with little FDI from Japan and Korea (Backward ASEAN, Central Asia, and Africa)
  - ➔ Win<sup>3</sup> relation among Japan-Korea-recipient
    - How?
      - Sharing information
      - Transfer of institutions and technologies common to the 2 countries