Harnessing FDI for Economic Growth

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Is FDI special and thus worthy of a preferential treatment?

- "One dollar of FDI is worth no more (and no less) than a dollar of any kind of investment" (D. Rodrik 2003)

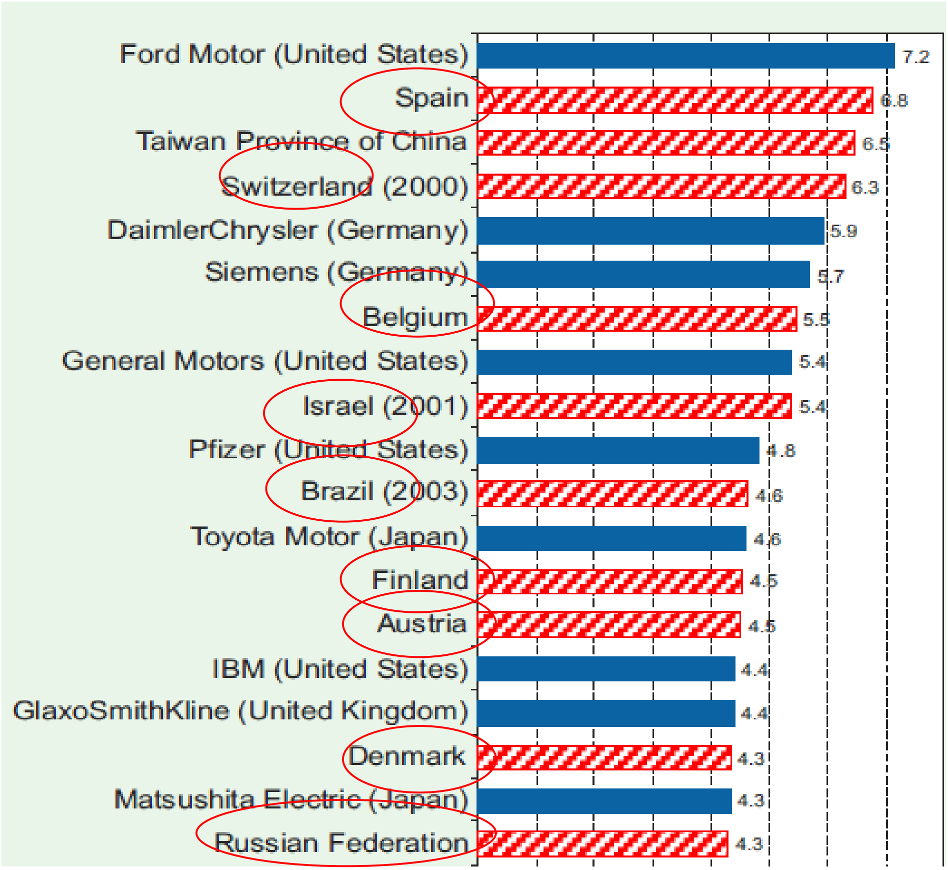
- Yet, 59 out of 108 countries surveyed in the World Bank's census of investment promotion agencies offered FDI incentives in 2004

Multinational corporations (MNCs) are creators of knowledge

MNCs are responsible for most of the world’s R&D

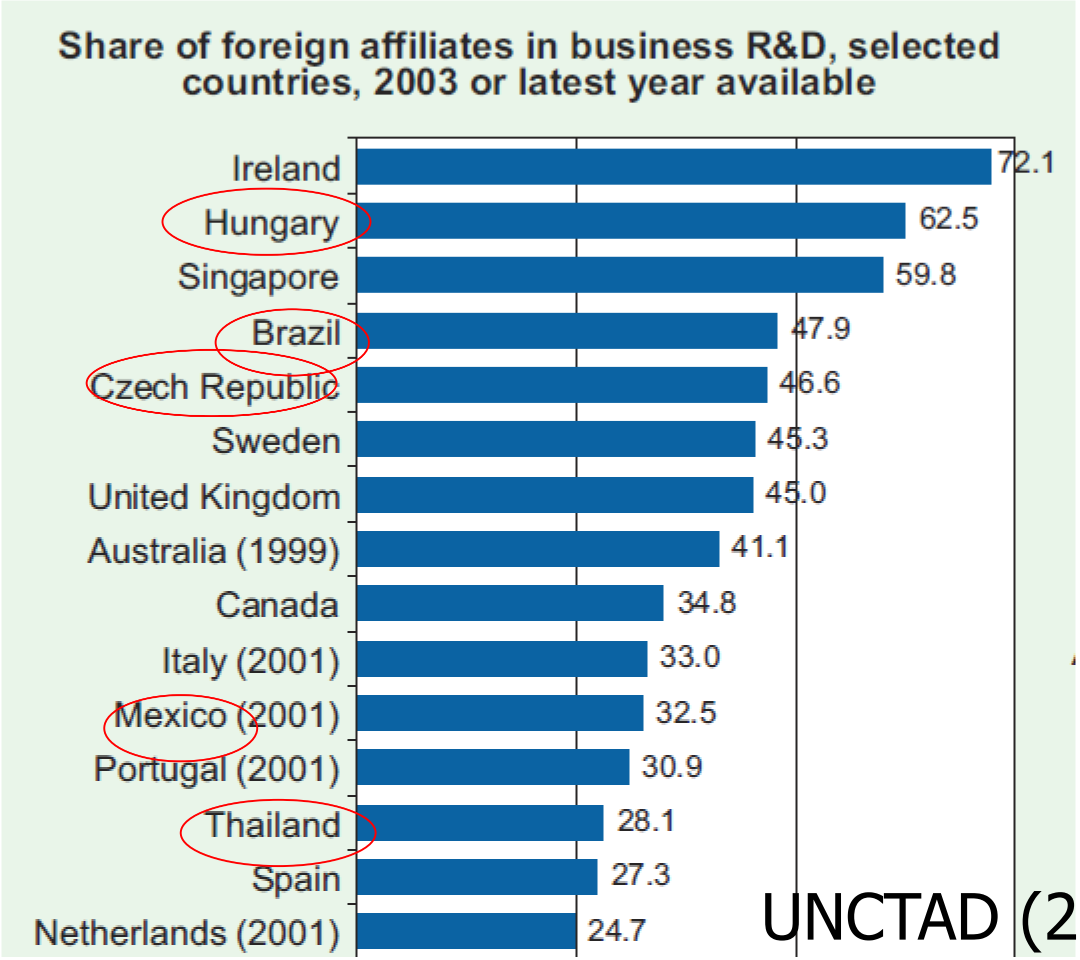
- 700 MNCs accounted for 46% of the world’s total R&D expenditure and 69% of the world’s business R&D in 2002 (UNCTAD 2005)
- R&D budgets of large MNCs may exceed R&D spending of some countries

MNCs' R&D budgets may exceed R&D spending of countries (2002, $bn)



UNCTAD (2005)

MNCs are a driver of innovation in host countries



UNCTAD (2005)

MNCs are better managed
(Bloom and Van Reenen QJE 2007)

Average management score by firm type
in the UK, France and Germany

MNCs transfer knowledge to host countries

Evidence from Indonesia
(Arnold and Javorcik JIE 2009)

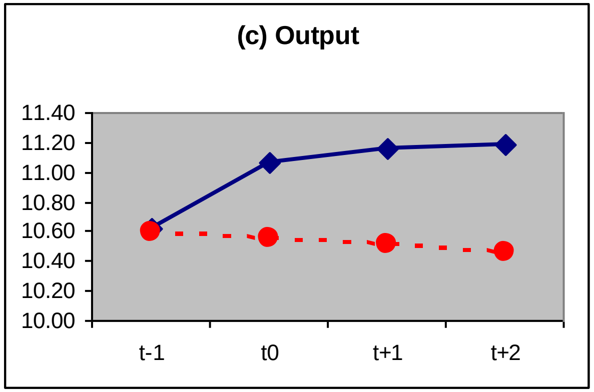
- Plant-level information on 400 new FDI recipients (1983-2001)
- Combine propensity score matching with a difference-in-differences approach
- Control group: plants with similar observable characteristics <u>before</u> a foreign acquisition, operating in the same industry/year

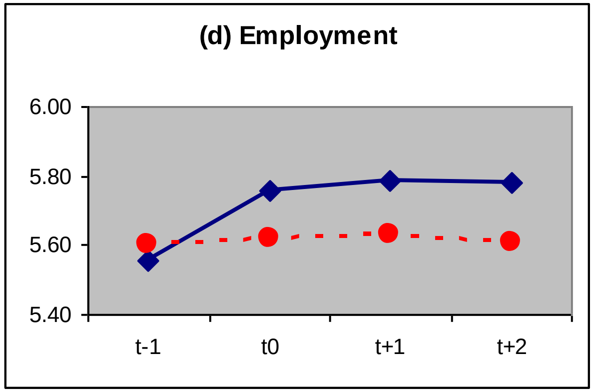
$$1/n\ \Sigma_{1\text{ to }n}[(\text{Productivity}_{\text{FDI recipient, post-FDI}} - \text{Productivity}_{\text{FDI recipient, pre-FDI}}) - (\text{Productivity}_{\text{control, post-FDI}} - \text{Productivity}_{\text{control, pre-FDI}})]$$

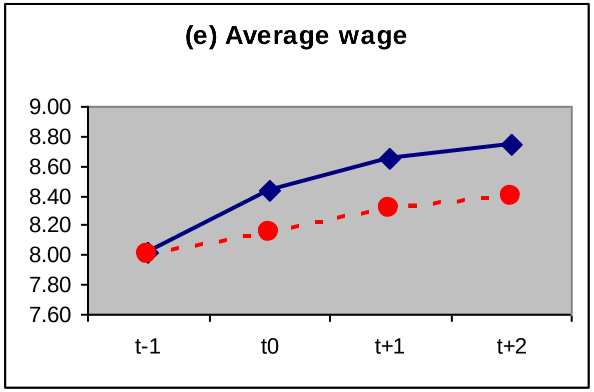
Foreign acquisitions boost productivity

Total factor productivity (in logs)				
	Pre-acquisition Year	Acquisition year	One year later	Two years later
FDI recipients	0.864	1.079	1.142	1.215
Control group	0.867	0.976	1.022	1.083
Difference		**0.106*** (0.034)**	**0.122*** (0.045)**	**0.135*** (0.051)**

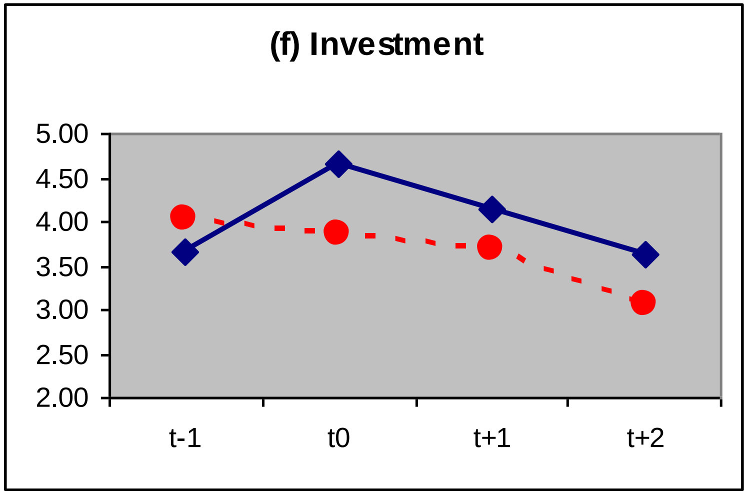
Foreign acquisitions induce rapid changes

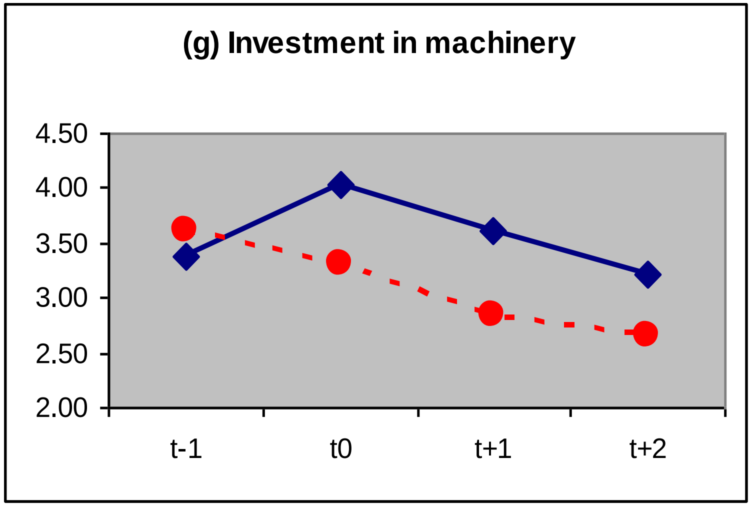




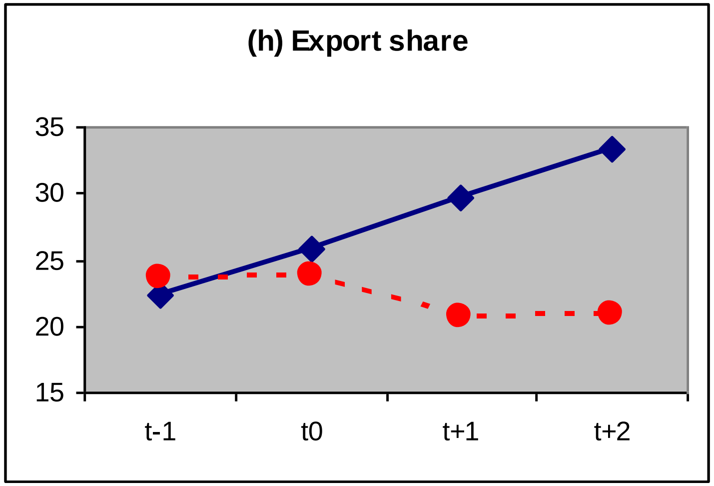


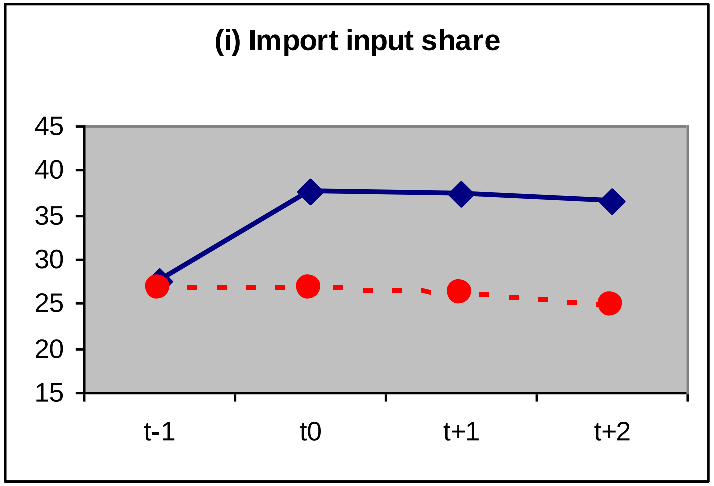
Foreign acquisitions lead to higher investment





Foreign acquisitions facilitate integration into global markets

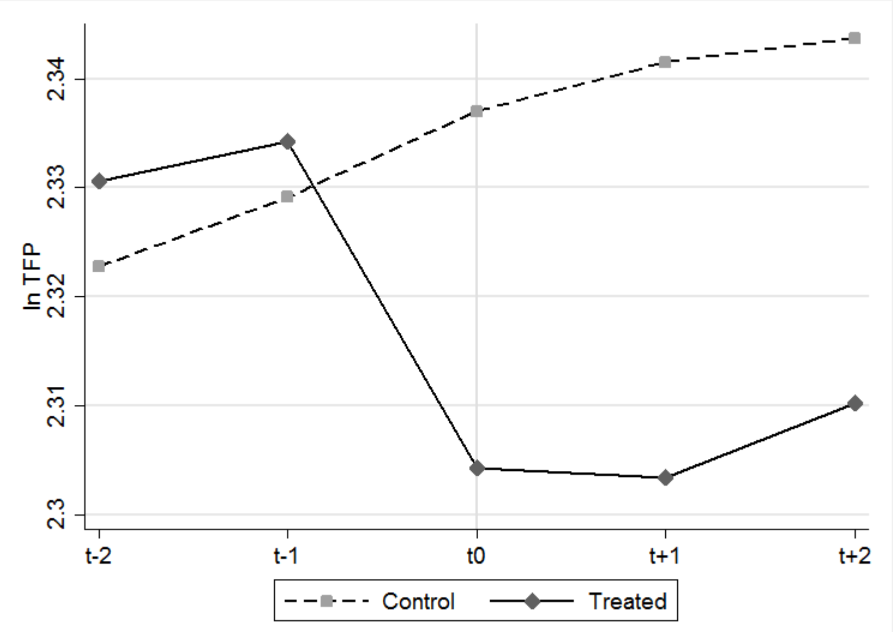




Is it a one-time or a continuous knowledge transfer?

Divestment => Lower productivity
(Javorcik & Poelhekke JEEA 2017)

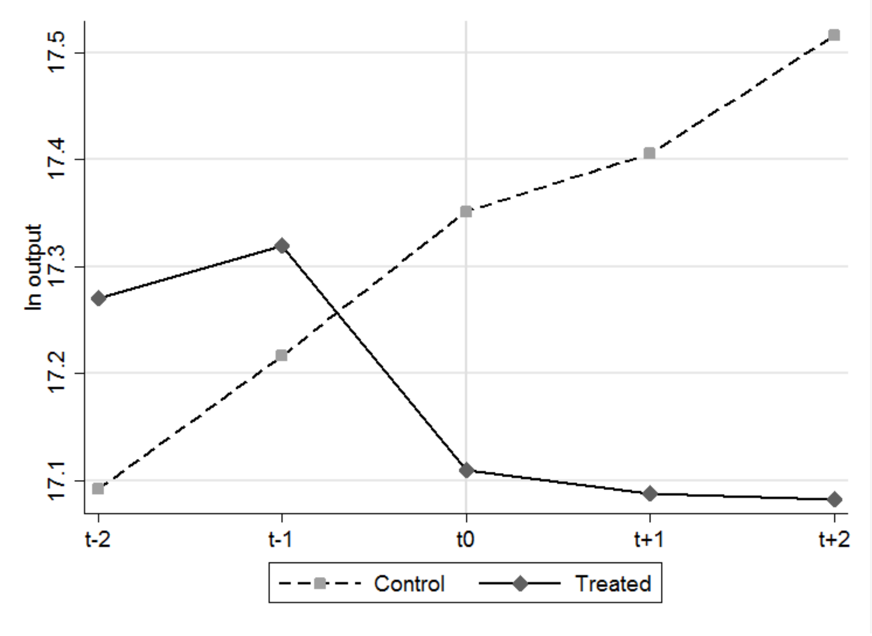
	Divestment year	One year later	Two years later
		Δln(TFP)	
Divestment	**-0.038*****	**-0.043*****	**-0.038*****
	(0.007)	(0.007)	(0.008)
Observations	314	314	314
R-squared	0.090	0.095	0.065



Divestment => Lower output

(Javorcik & Poelhekke JEEA 2017)

	Divestment year	One year later	Two years later
		Δln(Output)	
Divestment	**-0.345***** (0.101)	**-0.421***** (0.126)	**-0.537***** (0.131)
Observations	328	328	328
R-squared	0.033	0.032	0.047



Divestment => Loss of export markets
(Javorcik & Poelhekke JEEA 2017)

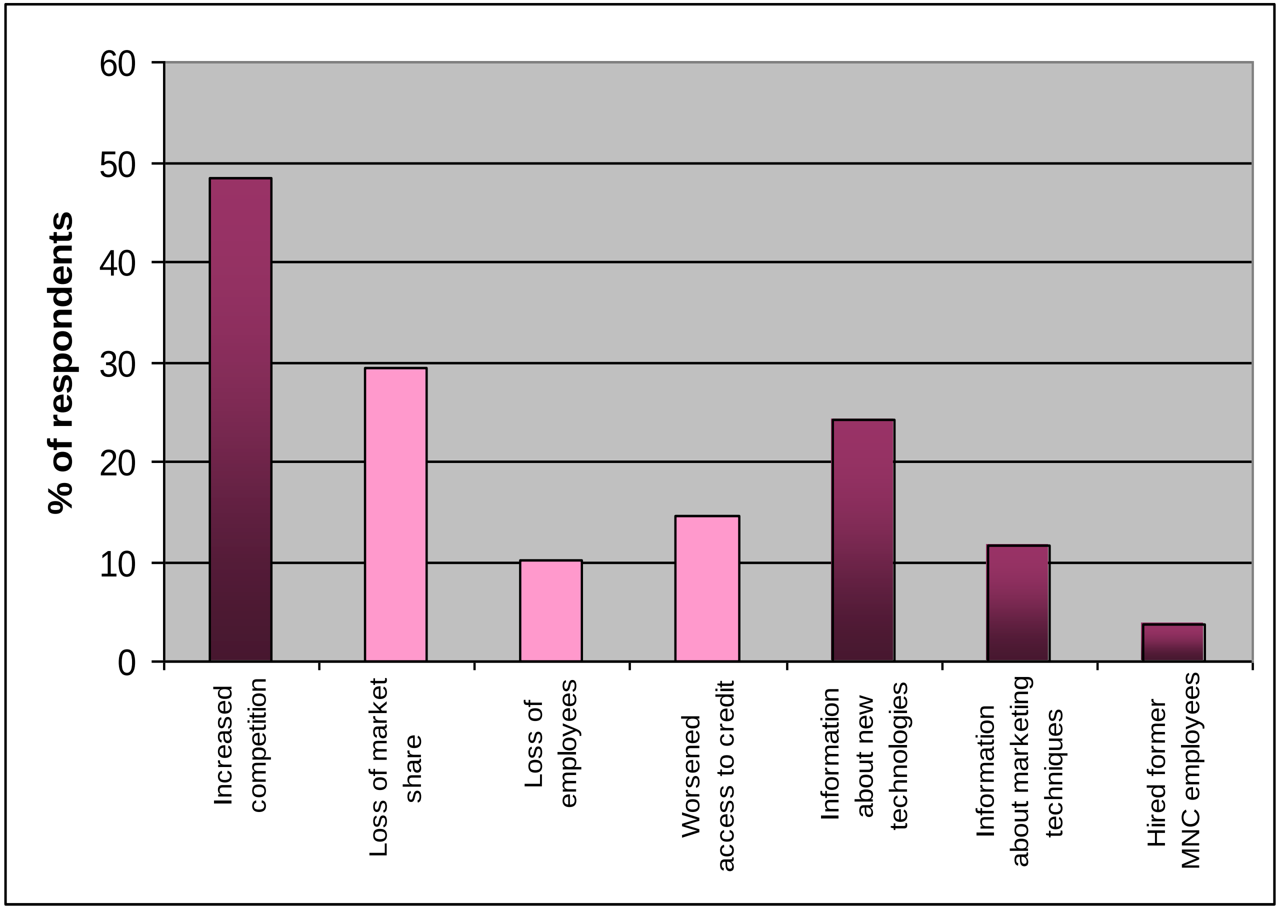
	Divestment year	One year later	Two years later
	Δ Share of output exported		
ATT	-0.055	**-0.119*** **	**-0.121** **
	(0.040)	(0.046)	(0.049)
Observations	344	344	344
R-squared	0.005	0.019	0.018
	Δ log(Domestic sales +1)		
ATT	-0.304	0.416	0.749
	(0.714)	(0.772)	(0.856)
Observations	344	344	344
R-squared	0.001	0.001	0.002
	Δ Share of imported inputs		
ATT	**-0.068** **	**-0.061* **	**-0.069** **
	(0.029)	(0.033)	(0.034)
Observations	338	338	338
R-squared	0.017	0.010	0.013

It is not just about export markets

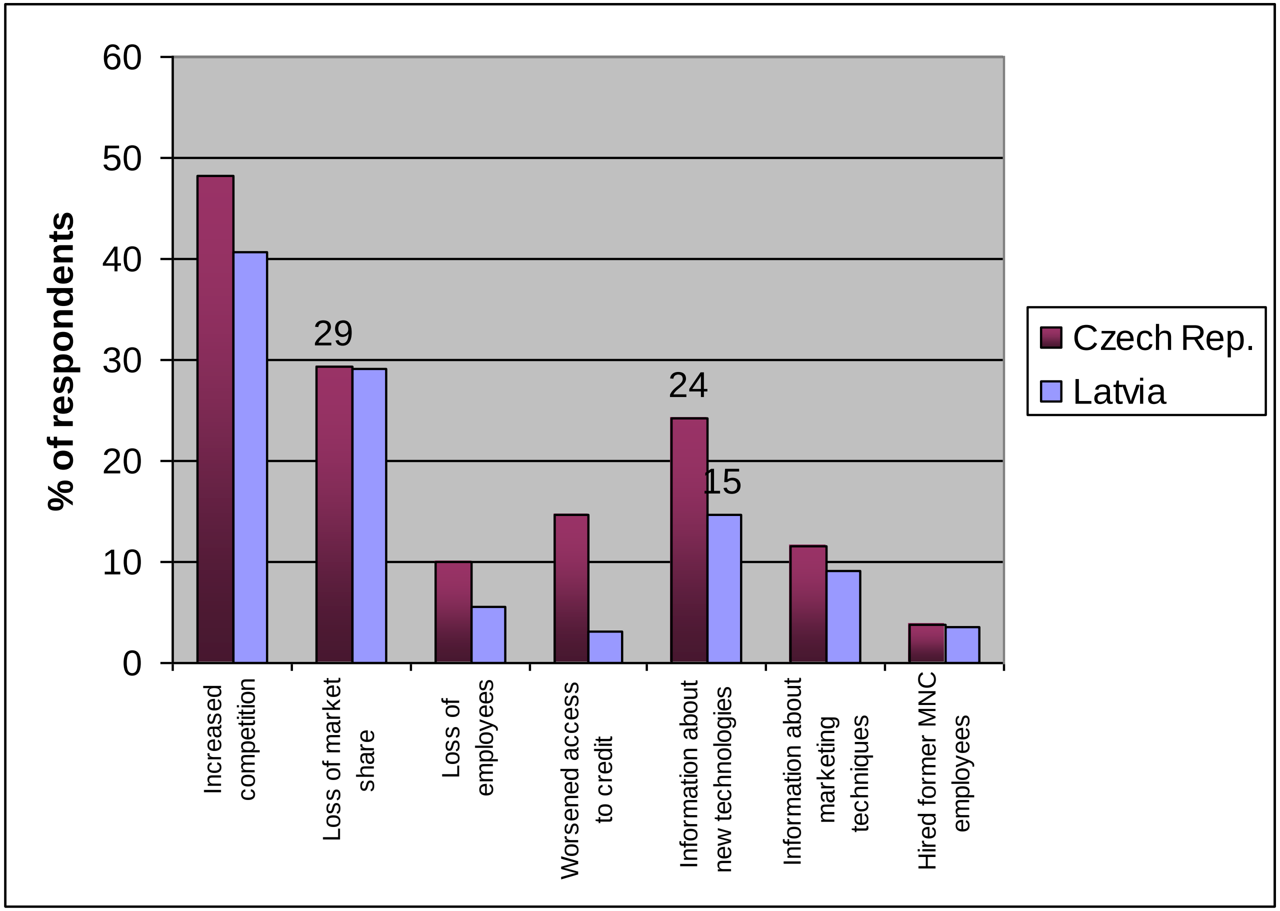
	Non-exporters at t-1			Exporters at t-1		
	t	t+1	t+2	t	t+1	t+2
$\Delta_s$log(TFP)	-0.034***	-0.050***	-0.040***	-0.044***	-0.040***	-0.031***
$\Delta_s$log(Output)	-0.342**	-0.333	-0.596***	-0.393***	-0.392**	-0.333*

Entry of MNCs can change the industry landscape

FDI affects domestic firms through multiple channels (Czech Rep.)



Relative magnitudes of the effects differ by country



Knowledge spillovers vs competition

- Kalemli-Ozcan, Sorensen Villegas Sanchez and Volosovych (2017)
  - **Negative** TFP effects on domestic firms **in the same 4-digit sector**
  - **Positive** TFP effects on domestic firms **in the same 2-digit (but not the same 4-digit) sector**

Supplying industries can benefit from entry of MNCs

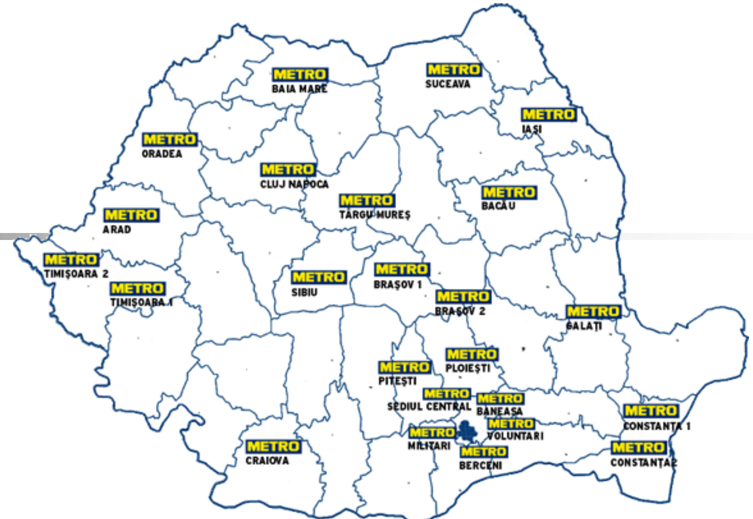
Effect of FDI on firms in the supplying industries

- While MNCs have an incentive to *prevent* leakage of knowledge to their competitors, they may want to *promote* knowledge transfer to local suppliers

- FDI boosts **productivity** in the supplying industries
  - Evidence from Lithuania (Javorcik AER 2004)
  - Evidence from Indonesia (Gertler and Blalock JIE 2007)
  - Meta study (Havranek and Irsova JIE 2011)

FDI boost **product complexity** in the supplying industries
(Javorcik, Lo Turco and Maggioni EJ 2017)

- Complexity is captured using a measure developed by **Hausmann and Hidalgo** (PNAS 2009)
- Turkish firms in sectors and regions more likely to supply foreign affiliates are also more likely to introduce more complex products

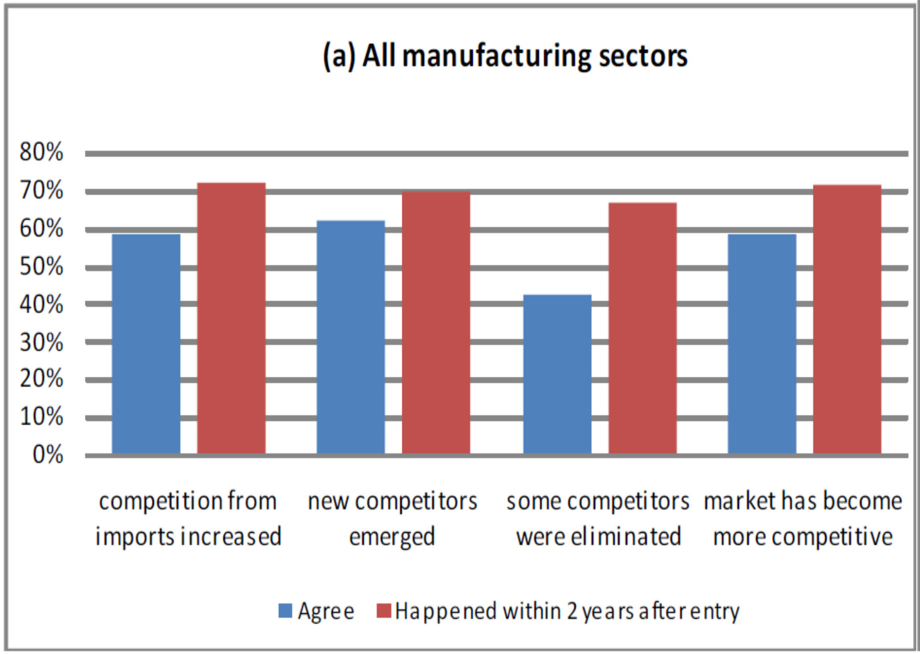


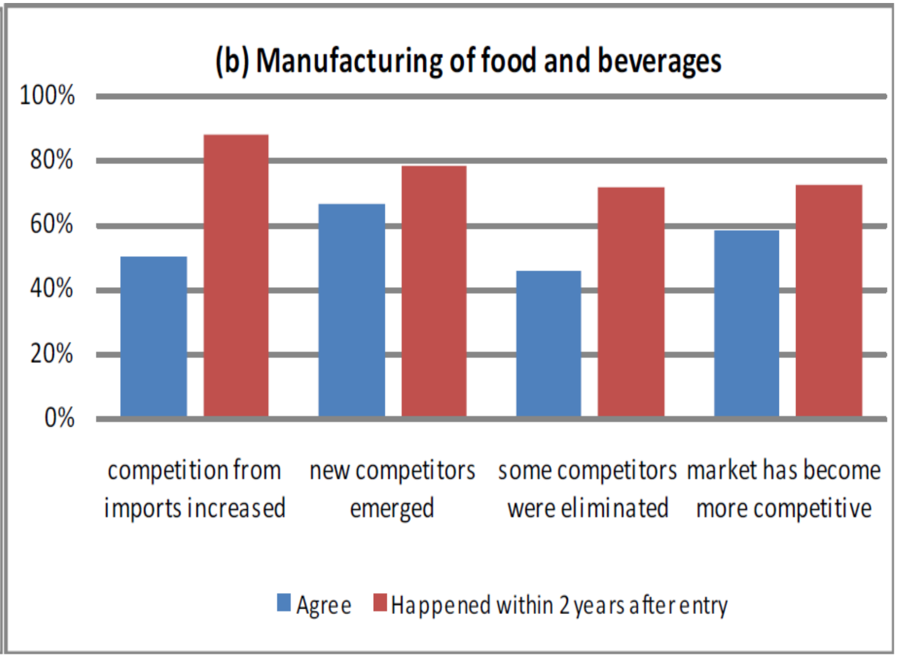
What about global retail chains?
(Javorcik and Li JIE 2013)

Distribution of Foreign Retail Chains in Romania, 1997

Distribution of Foreign Retail Chains in Romania, 2005

What were the effects of the entry of foreign retail chains on the market in your city?





Data source: A World Bank Enterprise Survey in Romania (2008), and authors' calculation

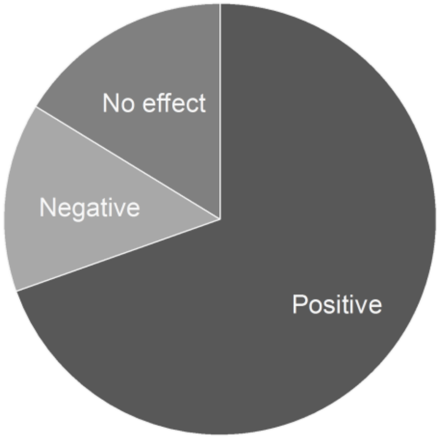
Magnitude of the effects

- On average, food suppliers' productivity increases by **3.8-4.7** percent after foreign chains enter a region

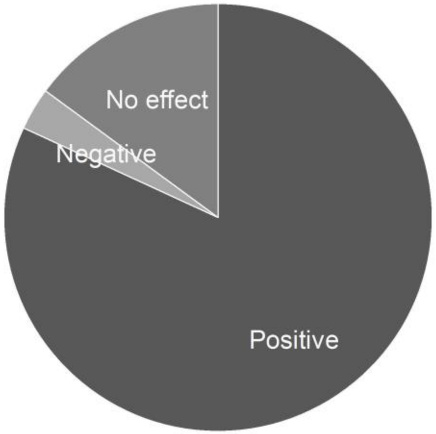
- On average, food suppliers' productivity increases by **3.3-3.7** percent as the number of foreign chain outlets doubles in a region

Manufacturing firms can benefit from FDI inflows into **services**

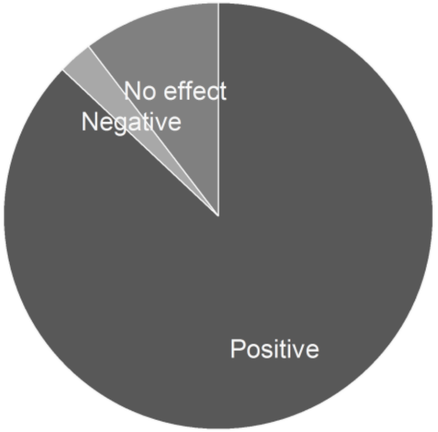
Perceived effects of opening Telecommunications sector to FDI



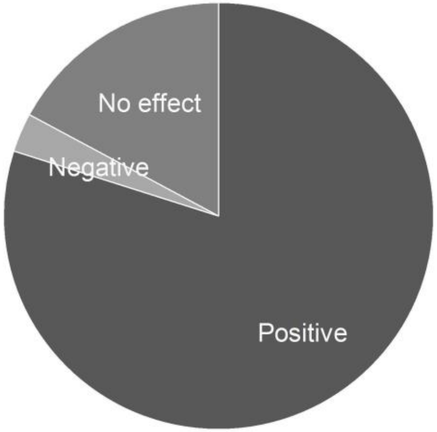
Prices



Quality

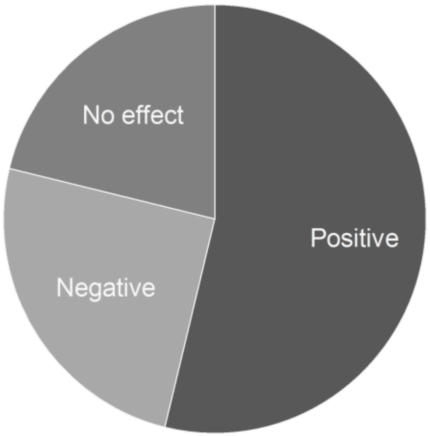


Services

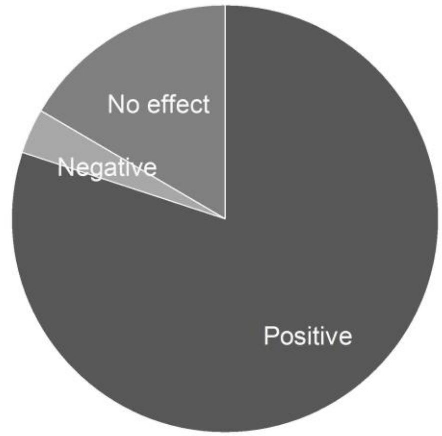


Availability

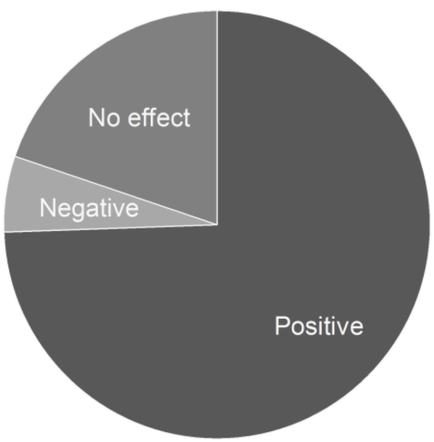
Perceived effects of privatization and foreign entry into Banking



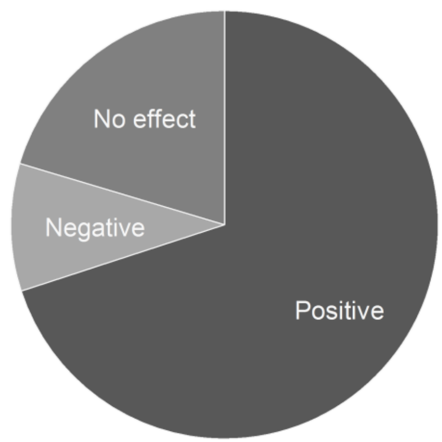
Prices



Quality



Services



Availability

Arnold, Javorcik & Matoo (2011)

Baseline specification, Firm fixed effects, OLS TFP

Dependent Variable: ln(TFP)		I	II	III	IV	V
Services input linkages	EBRD	1.158***				
		(0.397)				
	FDI		6.220***			5.661**
			(1.934)			(2.316)
	Concentration			-0.342		2.919
				(2.822)		(2.732)
	Privatization				10.087**	5.398
					(4.856)	(5.819)
		...	...	...	...	...
	No. of obs.	7155	7155	7155	7155	7155
	R^2	0.095	0.095	0.093	0.094	0.095

Magnitude of the effect

- A one-standard-deviation increase in FDI in services => a **5.9%** increase in the average productivity of Czech firms in downstream sectors

- Services liberalizing from the level of Romania to the level of the Czech Republic => a **4.8%** increase in the average productivity of Czech firms relying on services inputs

FDI facilitates upgrading of the export structure

Channels through which FDI may affect export quality

- **Intensive margin**: exporting larger quantities of high quality products than domestic firms

- **Extensive margin**:
  - producing higher quality versions of already exported products
  - introducing new, higher value, products

- **Knowledge spillovers**: inducing local producers (in the same sector or the supplying sectors) to upgrade the quality of exports

Cross-country evidence
(Harding and Javorcik REStat 2012)

- Trade data
  - 4-digit SITC level
  - 1984-2000
  - Number of products in sample: 726
  - 82 developing and 23 high income countries
  - Unit values=Export value/Quantity of exports

- Strategy
  - Use information on **sectors targeted by national investment promotion agencies** collected in a World Bank survey
  - Data on sectors each country targeted and when the policy was in place
  - Sector targeting is considered best practice in investment promotion

Findings

- FDI inflows into developing countries increase unit values of exports by 11%
- The effect stronger for final goods than for intermediates
- Less robust results for high income countries

Supported by micro-level evidence (Bajgar and Javorcik 2017)

- MNC presence
  - ⇒ higher **unit values** and **quality** of goods exported by Romanian firms in the upstream and downstream industries
  - ⇒ quality measured as in Khandelwal, Schott and Wei (AER 2013)

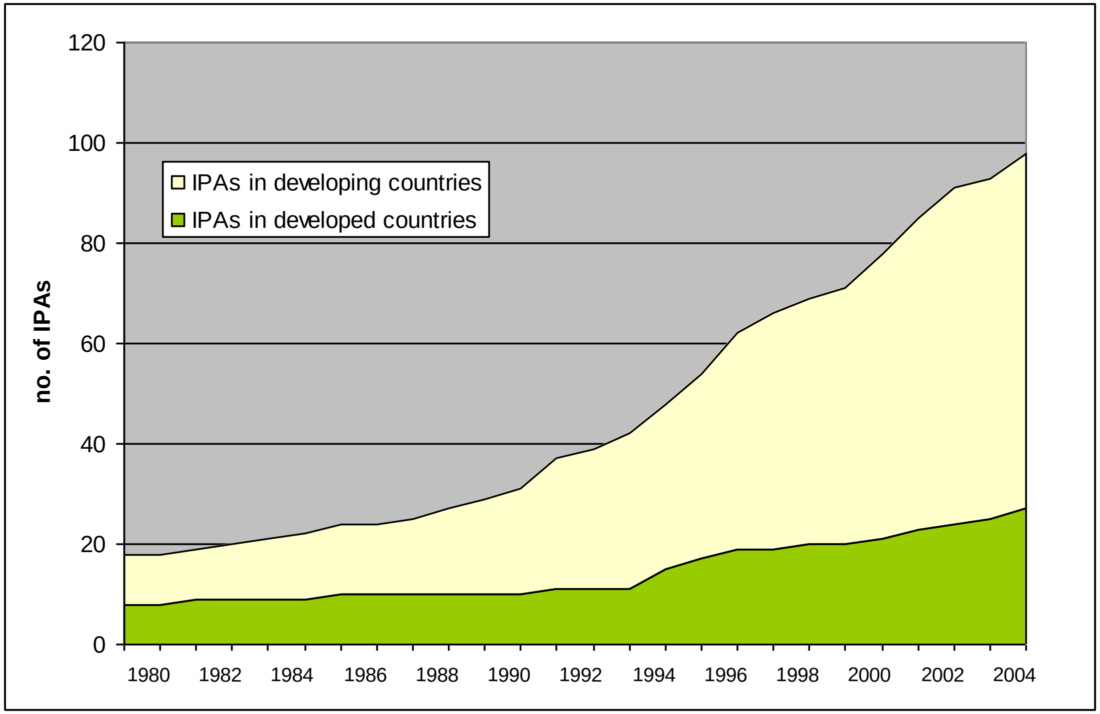
Using Investment Promotion to maximize the benefits of FDI

What is investment promotion?

- Image building
- Investment generation
- Investor servicing
- Policy advocacy
- Incentives

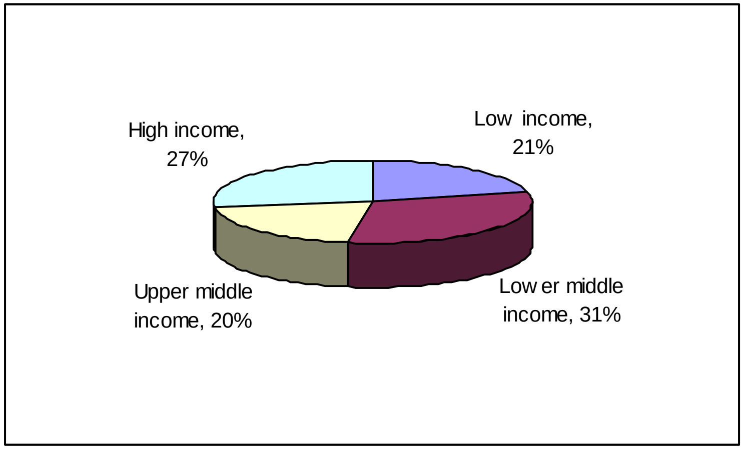
It takes more than a sound investment climate to attract FDI

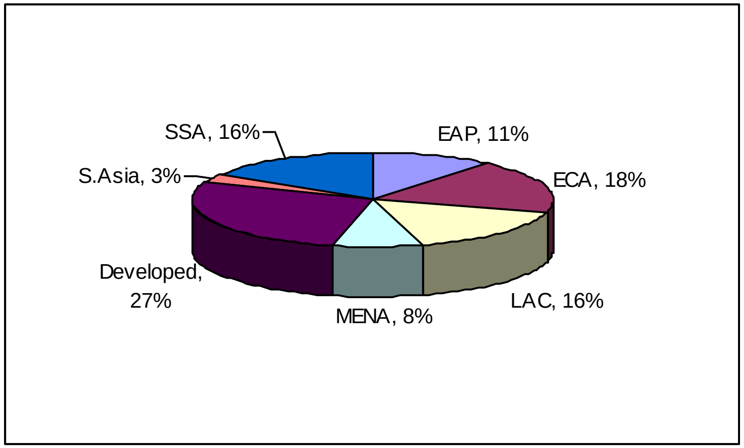
"Any country that believes it is not in competition with other countries for footloose global capital will find itself left behind." (Jeffrey D. Sachs)



Data on investment promotion

- 2005 Census of Investment Promotion Agencies (IPAs)
- 110 respondents from all over the world, including 81 from developing countries
- Additional 31 countries without IPA





Harding and Javorcik (EJ 2011)

$$\ln FDIflow_{cit} = \alpha + \beta Sector\_targeted_{cit} + \gamma_{ci} + \gamma_{ct} + \gamma_{it} + \varepsilon_{cit}$$

- $Sector\_targeted_{cit}$ = 1 if country c targets sector i at time t, 0 otherwise
- Country-sector fixed effects γ_{ci}
- Country-year fixed effects γ_{ct}
- Sector-year fixed effects γ_{it}

- Data: US FDI, 1990-2004, 132 countries, 15 sectors

- Note: **there is no evidence of successful sectors being chosen for targeting**

Targeted sectors get more FDI

	All	All	All	All	Developing	Developing	Developing	Developing
Sector targeting	0.308				**0.935*** **			
	[0.341]				[0.330]			
L. Sector targeting		**0.770** **				**1.159*** **		
		[0.362]				[0.346]		
L2. Sector targeting			**1.033** **				**1.377*** **	
			[0.406]				[0.387]	
L3. Sector targeting				**0.968** **				**1.360*** **
				[0.457]				[0.430]
Observations	17196	17193	16610	16009	13012	13012	12522	12017
Number of country-sector groups	1570	1570	1570	1568	1203	1203	1203	1201
R-squared (within)	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.19

Removing cases where targeting was determined by previous success or failure in attracting FDI to the sector

	All	All	All	All	Developing	Developing	Developing	Developing
Sector targeting	**0.866***				**1.511*****			
	[0.488]				[0.472]			
L. Sector targeting		**1.373*****				**1.821*****		
		[0.514]				[0.489]		
L2. Sector targeting			**1.166****				**1.654*****	
			[0.564]				[0.534]	
L3. Sector targeting				0.839				0.824
				[0.640]				[0.595]
Observations	15285	15282	14750	14204	11699	11699	11246	10782
Number of group(code sectid)	1389	1389	1389	1387	1075	1075	1075	1073
Within R-squared	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.21

Magnitude of the effect

- In developing countries, targeting increases FDI inflows by **155%**

- Is it a lot?
  - in the sample of developing countries that received US FDI, the median sector-level inflow was $11mn
  - 155% increase => **additional $17 mn dollars of FDI**

  - This is not a large amount if we consider that
    - Over the years 1999-2001, the government of Indonesia approved $26.2 billion in new foreign investment
    - General Electric: initial five-year investment of $50 million to open a GE Technology and Learning Center in Qatar
    - Boeing invested $55 million in the Czech Republic in 1998

Incentives do not seem to work

Post targeting	**0.868***	**0.975****	**0.954****	**0.933****	**1.163****
	[0.445]	[0.419]	[0.383]	[0.383]	[0.564]
Post targeting*Special incentives	0.336				
	[0.753]				
Post targeting*Special incentives*General incentives		-0.042			
		[0.782]			
Post targeting*Special incentives at time t			0.215		
			[0.888]		
Post targeting*Special incentives at time t*General incentives				0.251	
				[0.887]	
Post targeting*General incentives					-0.302
					[0.641]
Observations	8623	8545	8623	8545	12559
No. of country-sector groups	792	786	792	786	1167
Within R-squared	0.20	0.20	0.20	0.20	0.19

Post targeting is equal to one if industry i was targeted by country c at time t, and zero otherwise. Special incentives is a dummy taking on the value of 1 if the agency indicated that the investors in targeted sectors had been eligible for more incentives than those entering non-targeted sectors, and zero otherwise. In columns (3) and (4) we take into account the timing of special incentives. General incentives is a dummy taking on the value of 1 if the host country was offering financial incentives, fiscal incentives or subsidized infrastructure to foreign investors in general, and zero otherwise. All models include country-year, sector-year and country-sector fixed effects.

Conclusions

- MNCs are creators of knowledge
- FDI is a channel of knowledge transfer to host countries
- There is evidence of knowledge spillovers, particularly to the supplying sectors
- Investment promotion can be used to maximize the benefits of FDI

Thank you