How Effective is Investment Promotion? Firm-Level Evidence*

Christian Volpe Martincus (Inter-American Development Bank) Jerónimo Carballo (University of Colorado Boulder) Juan Blyde (Inter-American Development Bank) Ignacio Marra de Artiñano (Inter-American Development Bank)

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^{*} The views and interpretations in this presentation are strictly those of the author and should not be attributed to the Inter-American Development Bank, its executive directors, or its member countries.

FDI Promotion Why Do We Care

- All countries around the world have implemented policies to attract foreign direct investment (FDI).
- Investment promotion activities by dedicated agencies (IPAs) stand out among them (e.g., Alfaro and Charlton, 2007; and Harding and Javorcik, 2011; 2012; and 2013).

FDI Promotion Why Do We Care

► The number of IPAs has substantially increased in recent decades.



FDI Promotion Why Do We Care

 The median IPA manages a budget of \$10 million, has 104 employees, and has five different mandates (Sztajerowska and Volpe Martincus, 2018).



- National image building: actions aimed at improving the perception of the country as an attractive location for FDI.
- Investment generation: identifying and approaching potential investors.
- Investor servicing: assistance to investors in analyzing business opportunities, obtaining permits for establishing a business in the host country, disseminating information on available incentives, as well as support in accessing those incentives; and investment aftercare for already established multinational companies.
- Policy advocacy: activities aimed at improving the investment climate, identifying the public inputs needed by the private sector, and coordinating with the rest of the public sector to deliver those inputs.

 Distribution of budget across core functions: There is dispersion across IPAs, but investment generation and facilitation are clearly agencies' core functions.



In performing these core functions, IPAs carry out a large number of specific promotion activities...



► ...and prioritize sectors and countries...and sometimes exclude them...



The Impacts of FDI Promotion What We Know

- ► The Existing (Macro) Evidence
 - Targeting and FDI

 \Rightarrow Targeted promotional efforts led to higher FDI inflows to developing countries from the US between 1990 and 2004. Priority sectors received 155 percent more FDI after being targeted, which translated into an additional annual inflow of u\$s 17 million for the median county-sector combination (Harding and Javorcik, 2011).

Inquiries' Handling, Websites, and FDI

 \Rightarrow IPAs that handle investors' inquiries in a more professional manner and have higher-quality websites attract larger volumes of FDI (Harding and Javorcik, 2013).

The Impacts of FDI Promotion What We Do Not Know

- ► The Missing (Micro) Evidence
 - ► Are Effects for Real?

 \Rightarrow Identification of the effects relies on cross-country-sector variation. Unobserved time-varying country-sector characteristics that are relevant for investment and potentially correlated with investment promotion are not satisfactorily controlled for.

What are the most effective (combination of) instruments (e.g., missions, advertising, etc.)? What is the right dosage (e.g., one, two,...,five missions)?

 \Rightarrow There is no evidence on the extensive and the intensive margin of investment promotion policies, i.e., numbers of supported firms and intensity of such as support as captured by the number and specific combination of activities, and their relative effects.

► Are there heterogeneous effects (e.g., across firms, sectors, origins)?

This Paper What Do We Do

- Our paper precisely addresses three main questions:
 - Has investment promotion significantly affected the likelihood that multinational firms establish an affiliate in the respective country?
 - Does the dosage and the specific combination of policy instruments make a difference?
 - To what extent the effects of investment promotion are heterogeneous across firms, sectors, and countries?

This Paper How Do We Do It

- In answering these questions:
 - We apply a difference-in-differences strategy to identify the effects of investment promotion activities by Costa Rica's and Uruguay's national agencies on multinational firms' location decisions.
 - We use a unique dataset that combines data on distribution of foreign affiliates across countries including information on the main sector and the year of establishment and data on (the specific) assistance by those agencies to multinational firms over time.

This Paper Our Contributions

- We contribute to this existing literature in multiple ways.
 - We assess the effectiveness of public interventions specifically designated to attract FDI using firm-level data on *both* investment decisions and assistance statuses.

 \rightarrow Unlike studies based on aggregate data, we can observe all four possible combinations of policy treatments and outcomes: assisted multinational firms that locate/never locate in the host country and non-assisted multinational firms that locate/never locate in the host country.

- We characterize the extensive and the intensive margin of investment promotion policies (numbers of supported firms and support intensity) and provide evidence on their effects and those of their dosage.
- ▶ We examine heterogeneous effects across groups of firms.

 \rightarrow Since agencies' activities aim at ameliorating informational problems, their impact is likely to be larger when these problems are more important, e.g., on firms from home countries new to the host country.

Outline

1 Data and Descriptive Evidence

2 Empirical Approach

3 Estimation Results

4 Conclusions

Data and Descriptive Evidence Data

- We gathered, to our knowledge for first time, firm-level data on *both* investment decisions and assistance statuses for two countries, Costa Rica and Uruguay, over a long time period.
- Database on Investment Promotion Assistance to Firms
 - IPAs' Database: list of all multinational firms assisted by the IPA each year over the period 2000-2016, the nature of the service (either initiated by the firm or the agency), the specific type of service, the responsible official(s), and a year-specific list of prioritized sectors and countries.

Databases on Location of Affiliates of Multinational Firms

- WorldBase: data on home country, year of establishment, and sector of activity for all multinational firms and data on host country, year of establishment, and sector of activity for each of their affiliates.
- IPAs' Database: data on starting year, sector of activity, and operation regime (e.g., free trade zones) for established foreign affiliates.

Data and Descriptive Evidence Descriptive Evidence

Established Multinational Firms, 2000-2016							
Veee	E.	Main Sect	ors	Main Home Coun	Main Home Countries		
rear	Firms	Sectors	Share	Countries	Share	Firms	
			Costa Ric	a			
2000	172	64, 46, 20	0.413	USA, PAN, GBR	0.587	6	
2001	187	64, 46, 20	0.417	USA, PAN, GBR	0.578	10	
2002	194	64, 46, 82	0.423	USA, PAN, GBR	0.562	9	
2003	205	64, 46, 82	0.405	USA, PAN, GBR	0.571	9	
2004	217	64, 46, 82	0.401	USA, PAN, GBR	0.585	15	
2005	225	64, 46, 82	0.400	USA, PAN, GBR	0.582	23	
2006	233	64, 46, 82	0.408	USA, PAN, GBR	0.575	23	
2007	251	64, 46, 82	0.422	USA, PAN, GBR	0.570	24	
2008	258	64, 46, 82	0.422	USA, PAN, GBR	0.570	30	
2009	268	64, 46, 82	0.418	USA, PAN, GBR	0.575	33	
2010	285	64, 46, 82	0.417	USA, PAN, GBR	0.569	57	
2011	296	64, 46, 82	0.419	USA, PAN, GBR	0.571	76	
2012	313	64, 46, 82	0.422	USA, PAN, GBR	0.569	90	
2013	377	64, 46, 82	0.388	USA, PAN, GBR	0.556	98	
2014	378	64, 46, 82	0.389	USA, PAN, GBR	0.556	121	
2015	382	64, 46, 82	0.387	USA, PAN, GBR	0.552	128	
2016	390	64, 46, 82	0.390	USA, PAN, GBR	0.554	114	
			Uruguay				
2000	545	64, 46, 21	0.384	USA, ARG, BRA	0.450	0	
2001	604	64, 46, 21	0.388	USA, ARG, BRA	0.444	0	
2002	651	64, 46, 21	0.395	USA, ARG, BRA	0.445	0	
2003	712	64, 46, 21	0.388	USA, ARG, ESP	0.450	0	
2004	774	64, 46, 19	0.391	USA, ARG, BRA	0.447	0	
2005	864	64, 46, 19	0.396	USA, ARG, ESP	0.448	0	
2006	982	64, 46, 19	0.406	USA, ARG, BRA	0.453	0	
2007	1,105	64, 46, 19	0.408	USA, ARG, BRA	0.451	0	
2008	1,248	64, 46, 19	0.406	USA, ARG, BRA	0.467	0	
2009	1,344	64, 46, 19	0.403	USA, ARG, BRA	0.472	5	
2010	1,453	64, 46, 19	0.409	USA, ARG, BRA	0.476	62	
2011	1,518	64, 46, 19	0.398	USA, ARG, BRA	0.473	127	
2012	1,602	64, 46, 19	0.394	USA, ARG, BRA	0.468	204	
2013	1,815	64, 46, 19	0.386	USA, ARG, BRA	0.460	303	
2014	1,865	64, 46, 19	0.385	USA, ARG, BRA	0.459	428	
2015	1,893	64, 46, 19	0.387	USA, ARG, BRA	0.459	456	
2016	1,906	64, 46, 19	0.387	USA, ARG, BRA	0.458	501	

Outline

1 Data and Descriptive Evidence

2 Empirical Approach

3 Estimation Results



Empirical Approach Baseline Specification

► We estimate the following baseline general empirical model:

$$\mathbb{I}(\text{FDI})_{\text{fhst}} = \sum_{k=K^0}^{K^1} \alpha_k \mathbb{I}(\text{IP})_{\text{fhst-k}} + \sum_{j=1}^J \beta_j X_{\text{fhst-1}}^j + \lambda_{\text{fhs}} + \rho_{\text{st}} + \theta_{\text{ht}} + \varepsilon_{\text{fhst}}$$

- where I(FDI)_{fhst} is a binary indicator that either captures presence or establishment of a multinational firm in the host country (alternativeley, is the number of affiliates); I(IP)_{fhst(-k)} is a binary indicator of investment promotion assistance status.
- Standard errors are clustered by firm for inference purposes.

Empirical Approach Heterogeneous Effects

The baseline equation can be generalized to allow for heterogeneous effects across groups of firms, sectors, and home countries as follows:

$$\mathbb{I}(\text{FDI})_{\text{fhst}} = \sum_{k=K^0}^{K^1} \sum_{l=L^0}^{L^1} \alpha_k^l \Phi_l \mathbb{I}(\text{IP})_{\text{fhst-k}} + \sum_{j=1}^J \beta_j X_{\text{fhst-1}}^j + \lambda_{\text{fhs}} + \rho_{\text{st}} + \theta_{\text{ht}} + \varepsilon_{\text{fhst}}$$

where *l* indexes the groups of firms, sectors, or home countries; and Φ is the corresponding group indicator.

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Estimation Results Baseline Estimates

Costa Rica								
	Presence	Affiliates	Establishment	Reinvestment				
IPA	0.213***	0.304***	0.109***	0.042*				
	(0.025)	(0.034)	(0.016)	(0.021)				
Observations	2,783,672	2,783,672	2,704,356	3,726				
Uruguay								
IPA	0.067***	0.088***	0.020***	-0.029				
	(0.012)	(0.015)	(0.004)	(0.026)				
Firm Fixed Effects	Yes	Yes	Yes	Yes				
Sector-Year Fixed Effects	Yes	Yes	Yes	Yes				
Home Country-Year Fixed Effects	Yes	Yes	Yes	Yes				
Observations	2,783,672	2,783,672	2,670,452	8,916				

Estimation Results Robustness Checks: Additional Controls

Costa Rica								
	Pres	ence	Affi	iates	Establi	shment	Reinv	estment
IPA	0.224***	0.125***	0.321***	0.160***	0.114***	0.115***	0.024	0.020
	(0.026)	(0.019)	(0.037)	(0.026)	(0.017)	(0.020)	(0.024)	(0.032)
IPA(-1)		0.065***		0.106^{***}		0.003		0.018
		(0.013)		(0.017)		(0.019)		(0.039)
IPA(-2)		0.064***		0.083***		-0.017		-0.063**
		(0.015)		(0.018)		(0.015)		(0.028)
IPA(-3)		0.055***		0.098***		0.006		-0.035**
		(0.016)		(0.022)		(0.012)		(0.015)
Number of Sectors		-0.001*		-0.001		-0.000**		0.004
		(0.000)		(0.001)		(0.000)		(0.003)
Number of Affiliates		0.000***		0.001***		0.000***		-0.001
		(0.000)		(0.000)		(0.000)		(0.001)
Number of Host Countries		0.002***		0.002***		0.000**		0.000
		(0.001)		(0.001)		(0.000)		(0.002)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Home-Country Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,783,672	2,706,089	2,783,672	2,706,089	2,704,356	2,626,532	3,726	3,212

Estimation Results Robustness Checks: Additional Controls

Uruguay								
	Pres	ence	Affi	iates	Establi	shment	Reinve	stment
IPA	0.064***	0.045***	0.086***	0.068***	0.018***	0.016***	-0.023	-0.017
	(0.012)	(0.010)	(0.016)	(0.015)	(0.004)	(0.004)	(0.038)	(0.075)
IPA(-1)		0.018**		0.016		-0.003		0.007
		(0.008)		(0.010)		(0.009)		(0.080)
IPA(-2)		-0.011		-0.018		-0.022***		-0.023
		(0.008)		(0.013)		(0.008)		(0.055)
IPA(-3)		0.007		0.006		0.011		-0.096*
		(0.012)		(0.013)		(0.007)		(0.056)
Number of Sectors		-0.001		-0.001		-0.000		0.004
		(0.000)		(0.001)		(0.000)		(0.007)
Number of Affiliates		0.001***		0.001***		0.000 * * *		0.000
		(0.000)		(0.000)		(0.000)		(0.001)
Number of Host Countries		0.002^{***}		0.003***		0.001^{***}		-0.002
		(0.000)		(0.001)		(0.000)		(0.004)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Home-Country Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,783,672	2,706,089	2,783,672	2,706,089	2,670,452	2,607,637	8,916	6,348

Estimation Results Robustness Checks: Placebo Exercises

Costa Rica							
	Presence	Affiliates	Establishment	Reinvestment			
IPA	0.007	0.010	0.000	-0.022			
	(0.008)	(0.012)	(0.006)	(0.042)			
Observations	1,359,319	1,359,319	1,308,341	1,472			
Uruguay							
	Presence	Affiliates	Establishment	Reinvestment			
IPA	0.004	0.006	0.002	0.000			
	(0.005)	(0.006)	(0.003)	(0.000)			
Firm Fixed Effects	Yes	Yes	Yes	Yes			
Sector-Year Fixed Effects	Yes	Yes	Yes	Yes			
Home Country-Year Fixed Effects	Yes	Yes	Yes	Yes			
Firm Level Control Variables	Yes	Yes	Yes	Yes			
Observations	1,359,319	1,359,319	1,306,834	3,183			

Estimation Results Robustness Checks: Addressing Self-Selection

Costa Rica								
	Presence	Affiliates	Establishment	Reinvestment				
IPA – Initiated by the IPA	0.297***	0.417***	0.131***	-0.019				
	(0.046)	(0.060)	(0.030)	(0.028)				
IPA – Initiated by the firm	0.174***	0.176***	0.150***	0.019				
	(0.043)	(0.047)	(0.041)	(0.047)				
Observations	2,783,672	2,783,672	2,704,356	3,726				
Uruguay								
IPA – Initiated by the IPA	0.066***	0.101***	0.018***	-0.002				
	(0.017)	(0.025)	(0.006)	(0.036)				
IPA – Initiated by the firm	0.076***	0.086***	0.024***	-0.045				
	(0.022)	(0.025)	(0.009)	(0.042)				
Firm Fixed Effects	Yes	Yes	Yes	Yes				
Sector-Year Fixed Effects	Yes	Yes	Yes	Yes				
Home Country-Year Fixed Effects	Yes	Yes	Yes	Yes				
Observations	2,783,672	2,783,672	2,670,452	8,916				

Estimation Results Heterogeneous Effects: In/Out FTZ and Different Programs

Costa Rica								
	Presence	Affiliates	Establishment	Reinvestment				
Free Trade Zone								
IPA – Free Trade Zone	0.457***	0.684***	0.445***	-0.028				
	(0.052)	(0.066)	(0.082)	(0.029)				
IPA – Not in Free Trade Zone	0.139***	0.192***	0.057***	0.053**				
	(0.021)	(0.031)	(0.012)	(0.023)				
Spec	Specific Investment Promotion Services							
Information Services	0.072***	0.073**	0.142***	0.084***				
	(0.022)	(0.033)	(0.022)	(0.029)				
Procedural Services	0.053**	0.098***	0.010	-0.013				
	(0.025)	(0.031)	(0.015)	(0.019)				
Human Capital Services	0.242***	0.368***	0.096***	-0.016				
	(0.039)	(0.049)	(0.027)	(0.021)				
Firm Fixed Effects	Yes	Yes	Yes	Yes				
Sector-Year Fixed Effects	Yes	Yes	Yes	Yes				
Home Country-Year Fixed Effects	Yes	Yes	Yes	Yes				
Observations	2,783,672	2,783,672	2,704,356	3,726				

Estimation Results Heterogeneous Effects: Origin Countries and Sectors

Costa Rica							
	Presence	Affiliates	Establishment	Reinvestment			
IPA – Common Language	0.011	0.006	0.022	0.094			
	(0.013)	(0.013)	(0.023)	(0.057)			
IPA – Different Language	0.236***	0.342***	0.116***	0.021			
	(0.027)	(0.037)	(0.017)	(0.023)			
IPA – OECD Home Country	0.234***	0.350***	0.119***	0.021			
	(0.028)	(0.040)	(0.019)	(0.023)			
IPA - Non-OECD Home Country	0.146**	0.144**	0.061**	0.092*			
	(0.060)	(0.060)	(0.028)	(0.055)			
IPA – Primary and Manufacturing	0.178***	0.305***	0.095***	0.050**			
	(0.038)	(0.061)	(0.026)	(0.025)			
IPA – Services	0.248***	0.330***	0.116***	0.006			
	(0.034)	(0.043)	(0.020)	(0.032)			
Firm Fixed Effects	Yes	Yes	Yes	Yes			
Sector-Year Fixed Effects	Yes	Yes	Yes	Yes			
Home Country-Year Fixed Effects	Yes	Yes	Yes	Yes			
Observations	2,783,672	2,783,672	2,704,356	3,726			

Estimation Results Heterogeneous Effects: Origin Countries and Sectors

Uruguay							
IPA – Common Language	0.227***	0.330***	0.103***	-0.022			
0 0	(0.055)	(0.089)	(0.034)	(0.055)			
IPA – Different Language	0.049***	0.062***	0.013***	-0.031			
	(0.011)	(0.013)	(0.004)	(0.029)			
IPA – OECD Home Country	0.071***	0.095***	0.020***	-0.035			
-	(0.013)	(0.018)	(0.005)	(0.030)			
IPA - Non-OECD Home Country	0.055**	0.067**	0.019*	-0.000			
-	(0.022)	(0.028)	(0.011)	(0.057)			
IPA – Primary and Manufacturing	0.085***	0.097***	0.029***	0.044			
	(0.026)	(0.030)	(0.011)	(0.053)			
IPA – Services	0.061***	0.086***	0.017***	-0.037			
	(0.013)	(0.018)	(0.004)	(0.028)			
Firm Fixed Effects	Yes	Yes	Yes	Yes			
Sector-Year Fixed Effects	Yes	Yes	Yes	Yes			
Home Country-Year Fixed Effects	Yes	Yes	Yes	Yes			
Observations	2,783,672	2,783,672	2,670,452	8,916			

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Conclusions What We Have Learned

- Investment promotion policies are ubiquitous.
- However, little is know on whether, and, if so, to what extent and how they affect multinational firms' location decisions.
- This paper attempts to close this gap in the literature by providing for the first time evidence on the effects of investment promotion and their channels and mechanisms using time-specific, firm-level data on *both* investment decisions and support status.
- Our results reveal that investment promotion assistance has had significant positive effects on the probability that multinational firms are present, establish a first affiliate, and expand their number of affiliates in the host country in question.
- Results are robust to several checks.

THANK YOU

Christian Volpe Martincus, Principal Economist, IDB christianv@iadb.org