Does the impact of employment protection legislation on foreign direct investment differ by the skill intensity of locations?

An empirical investigation

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Outline

Definition and Measurement of Employment Protection Legislation (EPL)

Definition
Employment protection encompasses regulations, either legislated or written in labor contracts that limit the employer's ability to hire or fire workers without delay or cost. (Pissarides 2001)

Measurement
OECD EPL Index: overall - regular - temporary

Results of earlier studies

Author (Year) Journal	Countries	Period	EPL Measure Result
Haaland et al. (2003) *Finanzarchiv*	3 CEECs	1994-97	excess job re-allocation rate sign neg
Javorcik and Spatareanu (2005) *RevWorldEcs*	19 hosts ++)	1998-01	Global Compet Rep; Djankov et al. 20(sign neg
Görg (2005) *Kyklos*	33 hosts of US FDI	1986-96	Global Competitiveness Report sign neg
Benassy-Quéré et al. (2007a) *WorldEc*	OECD hosts +)	1985-00 °)	Fraser Institute; French Ministry Fin (in)sign neg
Benassy-Quéré et al. (2007b) *Economic Policy*	18 hosts of US FDI +)	1994-02	Fraser Institute (in)sign pos
Radulescu and Robson (2008) *Labor*	19 OECD hosts	1975-97	Blanchard and Wolfers 2000 sign neg
Ham and Kleiner (2007) *IndRel*	19 OECD hosts +)	1985-00	Djankov et al. 2001 a) sign neg
Gross and Ryan (2008) *RegSciUrbEcs*	15 hosts of Jap FDI +)	1985-00	OECD Index sign neg
Leibrecht and Scharler (2009) *EcsTransition*	7 CEEC hosts +)	1995-04	OECD Index insign neg
Dewitt et al. (2009) *RevWorldEcs*	OECD countries +)	1986-95	Global Compet Rep; OECD index sign neg x)
Azémar and Desbordes (2010) *WorldEc*	33 US hosts	1982-94°°)	World Bank Doing Business sign neg xx)

+) sector level

++) firm level

°) 4 benchmk ys

°°) 3 benchmk ys

a) industrial relations system

x) EPL differential

xx) firing costs only

Impact of exit costs on FDI

- Generally, rigid labor markets impose adjustment and exit costs on MNEs, which c.p. hamper inward FDI due to a reduction in an investment's profitability.
- This deterrent impact of high adjustment and exit costs on FDI due to rigid labor markets may be amplified by a host location's low-skill intensity (= hypothesis of this paper).
  WHY?
  - High adjustment and exit costs in the form of rigid labor markets prevent MNEs from reacting to changes in the comparative advantage of a particular host location.
  - As the global supply of low-skilled labor is abundant compared to that of high-skilled labor it is likely that FDI into low-skill-intensive locations is more sensitive to changes in comparative advantage than FDI into high-skill-intensive locations.
  - Thus, high adjustment and exit costs should be of greater relevance for MNEs undertaking FDI into low-skill-intensive locations.

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Estimation Equation

$$lnFDI_{ijt} = b_1 + b_2 X_{it} + b_3 Z_{ijt} + b_4 I_{ijt} + c_t + a_{ij} + e_{ijt} \quad (1)$$

with i ... host country j ... industry t ... time

Interaction effect I_{ijt} between EPL and HLS

$$\partial lnFDI_{ijt} / \partial lnEpl_{it} = b_2 + b_4 lnHLS_{ijt} \quad (2)$$

Standard Error

$$\sigma_{\partial lnFDI_{ijt}/\partial lnEpl_{it}} = \sqrt{var(\widehat{b_2}) + lnHLS^2 var(\widehat{b_4}) + 2lnHLScov((\widehat{b_2})(\widehat{b_4}))} \quad (3)$$

Outline

Data

- Time range: 1995-2005
- Manufacturing industries: DA, DB, DD/DE, DG, DH, DJ-DM
- Countries: AUT FIN FRA GER NLD GBR USA; CZE HUN SVK SVN

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Variables of main interest

Variable	Rationale	Exp. Sign
HLS_{ijt}	Depending on the motive of FDI, this variable signals either higher incentives to fragment production (vertical FDI) or less possibilities to duplicate plants (horizontal FDI).	negative
Epl_{it}	Tighter employment protection legislation increases adjustment and exit costs.	negative
I_{ijt}	Stricter employment protection legislation matters particularly for locations with a large share of low-skilled workers.	negative

Control variables:
market potential, GDP p.c., ICT-infrastructure, EATR, labor costs, labor productivity, government spending on R&D, political risk, legal barriers to FDI.

Outline

Results for overall EPL measure

	M1	M2	M3	M4	M5
lnPot					
lnGDPcap					
lnIct					
lnEATR					
lnLabcost					
lnGovgerd					
lnHLS					
lnEplov					
lnRisk					
lnFreefdi					
lnLabprod					
lnCpi					
Interaction term					
Obs					
Cluster					
R^2 *overall*					
TD (p-value)					
F-test (p-value)					

	M1	M2	M3	M4	M5
lnPot	1.21*				
	(1.44)				
lnGDPcap	1.74**				
	(1.88)				
lnIct	0.71**				
	(1.8)				
lnEATR	-1.15***				
	(2.90)				
lnLabcost	-1.31*				
	(1.55)				
lnGovgerd	0.48***				
	(2.04)				
lnHLS	-0.48*				
	(1.50)				
lnEplov	-0.48**				
	(1.71)				
lnRisk	0.13				
	(0.23)				
lnFreefdi	0.15				
	(0.69)				
lnLabprod	0.002				
	(0.01)				
lnCpi	-0.044				
	(1.03)				
Interaction term					
Obs	1016				
Cluster	108				
R^2 *overall*	0.62				
TD (p-value)	0.004				
F-test (p-value)					
HT (p-value)					

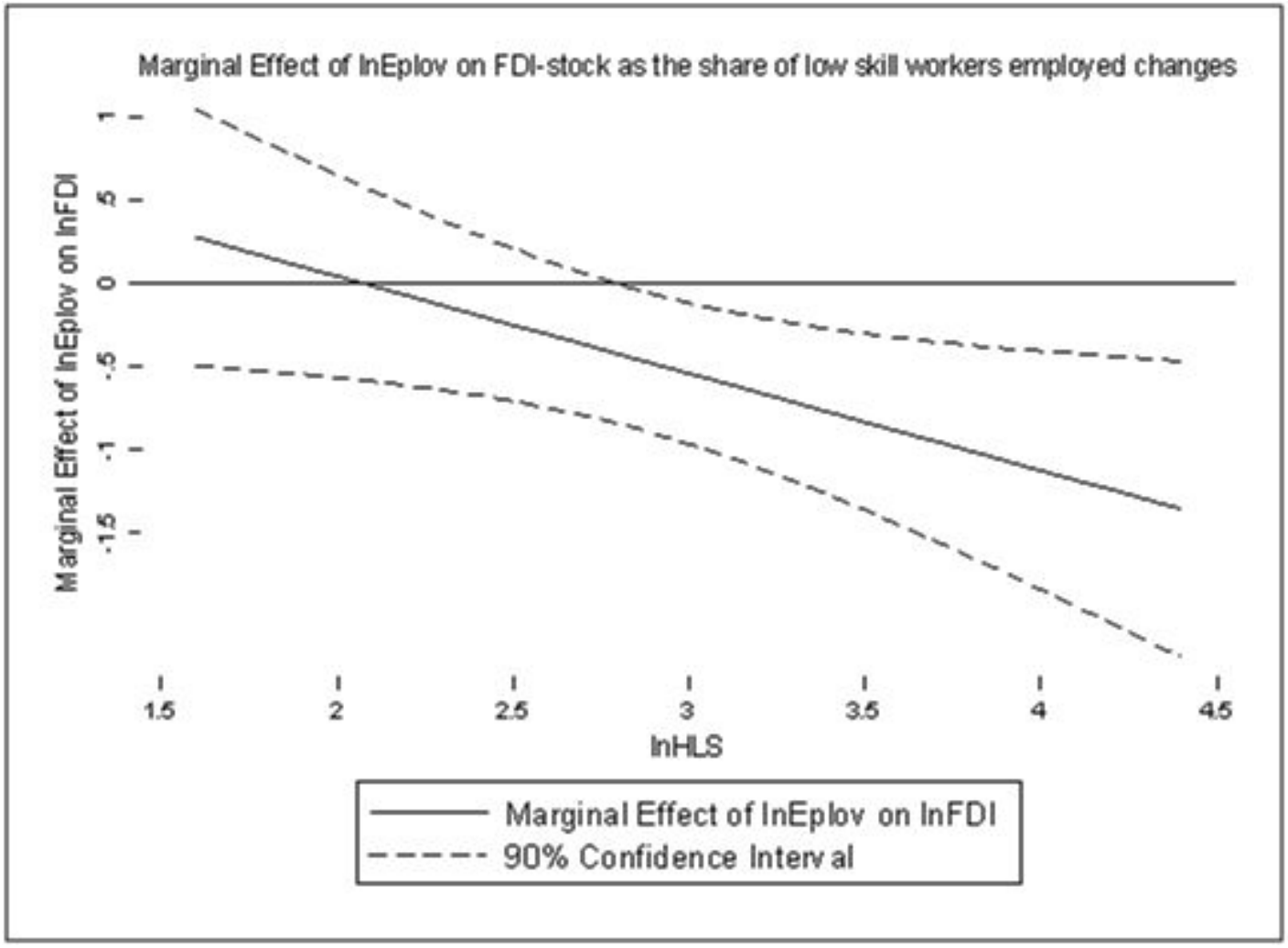
	M1	M2	M3	M4	M5
lnPot	1.21*	1.77***			
	(1.44)	(2.16)			
lnGDPcap	1.74**	not included			
	(1.88)				
lnIct	0.71**	0.96***			
	(1.8)	(2.65)			
lnEATR	-1.15***	-0.89***			
	(2.90)	(2.47)			
lnLabcost	-1.31*	-1.55**			
	(1.55)	(1.78)			
lnGovgerd	0.48***	0.35*			
	(2.04)	(1.49)			
lnHLS	-0.48*	-0.50*			
	(1.50)	(1.54)			
lnEplov	-0.48**	-0.41*			
	(1.71)	(1.49)			
lnRisk	0.13	0.62			
	(0.23)	(1.04)			
lnFreefdi	0.15	0.1			
	(0.69)	(0.46)			
lnLabprod	0.002	0.05			
	(0.01)	(0.25)			
lnCpi	-0.044	-0.03			
	(1.03)	(0.81)			
Interaction term	not included	not included			
Obs	1016	1016			
Cluster	108	108			
R^2 *overall*	0.62	0.61			
TD (p-value)	0.004	0.021			
F-test (p-value)					
HT (p-value)					

	M1	M2	M3	M4	M5
lnPot	1.21*	1.77***	1.15*		
	(1.44)	(2.16)	(1.38)		
lnGDPcap	1.74**	not included	1.82***		
	(1.88)		(2.11)		
lnIct	0.71**	0.96***	0.76**		
	(1.8)	(2.65)	(1.88)		
lnEATR	-1.15***	-0.89***	-1.14***		
	(2.90)	(2.47)	(3.10)		
lnLabcost	-1.31*	-1.55**	-1.21*		
	(1.55)	(1.78)	(1.45)		
lnGovgerd	0.48***	0.35*	0.49**		
	(2.04)	(1.49)	(1.95)		
lnHLS	-0.48*	-0.50*	-0.47*		
	(1.50)	(1.54)	(1.55)		
lnEplov	-0.48**	-0.41*	-0.49**		
	(1.71)	(1.49)	(1.79)		
lnRisk	0.13	0.62	ns		
	(0.23)	(1.04)			
lnFreefdi	0.15	0.1	ns		
	(0.69)	(0.46)			
lnLabprod	0.002	0.05	ns		
	(0.01)	(0.25)			
lnCpi	-0.044	-0.03	ns		
	(1.03)	(0.81)			
Interaction term	not included	not included	not included		
Obs	1016	1016	1016		
Cluster	108	108	108		
R^2 *overall*	0.62	0.61	0.63		
TD (p-value)	0.004	0.021	0.001		
F-test (p-value)					
HT (p-value)			0		

	M1	M2	M3	M4	M5
lnPot	1.21*	1.77***	1.15*	1.49**	
	(1.44)	(2.16)	(1.38)	(1.67)	
lnGDPcap	1.74**	not included	1.82***	1.79**	
	(1.88)		(2.11)	(1.95)	
lnIct	0.71**	0.96***	0.76**	0.63**	
	(1.8)	(2.65)	(1.88)	(1.72)	
lnEATR	-1.15***	-0.89***	-1.14***	-1.25***	
	(2.90)	(2.47)	(3.10)	(3.17)	
lnLabcost	-1.31*	-1.55**	-1.21*	-1.27*	
	(1.55)	(1.78)	(1.45)	(1.48)	
lnGovgerd	0.48***	0.35*	0.49**	0.48***	
	(2.04)	(1.49)	(1.95)	(2.01)	
lnHLS	-0.48*	-0.50*	-0.47*	-0.26	
	(1.50)	(1.54)	(1.55)	(0.75)	
lnEplov	-0.48**	-0.41*	-0.49**	1.12	
	(1.71)	(1.49)	(1.79)	(1.2)	
lnRisk	0.13	0.62	ns	0.03	
	(0.23)	(1.04)		(0.05)	
lnFreefdi	0.15	0.1	ns	0.15	
	(0.69)	(0.46)		(0.74)	
lnLabprod	0.002	0.05	ns	-0.01	
	(0.01)	(0.25)		(0.06)	
lnCpi	-0.044	-0.03	ns	-0.03	
	(1.03)	(0.81)		(0.71)	
Interaction term	not included	not included	not included	-0.55**	
				(1.78)	
Obs	1016	1016	1016	1016	
Cluster	108	108	108	108	
R^2 *overall*	0.62	0.61	0.63	0.62	
TD (p-value)	0.004	0.021	0.001	0.002	
F-test (p-value)				0.048	
HT (p-value)			0		

	M1	M2	M3	M4	M5
lnPot	1.21*	1.77***	1.15*	1.49**	1.49**
	(1.44)	(2.16)	(1.38)	(1.67)	(1.71)
lnGDPcap	1.74**	not included	1.82***	1.79**	1.79***
	(1.88)		(2.11)	(1.95)	(2.08)
lnIct	0.71**	0.96***	0.76**	0.63**	0.66*
	(1.8)	(2.65)	(1.88)	(1.72)	(1.61)
lnEATR	-1.15***	-0.89***	-1.14***	-1.25***	-1.25***
	(2.90)	(2.47)	(3.10)	(3.17)	(3.20)
lnLabcost	-1.31*	-1.55**	-1.21*	-1.27*	-1.22*
	(1.55)	(1.78)	(1.45)	(1.48)	(1.45)
lnGovgerd	0.48***	0.35*	0.49**	0.48***	0.47***
	(2.04)	(1.49)	(1.95)	(2.01)	(2.06)
lnHLS	-0.48*	-0.50*	-0.47*	-0.26	-0.24
	(1.50)	(1.54)	(1.55)	(0.75)	(0.74)
lnEplov	-0.48**	-0.41*	-0.49**	1.12	1.22
	(1.71)	(1.49)	(1.79)	(1.2)	(1.44)
lnRisk	0.13	0.62	ns	0.03	ns
	(0.23)	(1.04)		(0.05)	
lnFreefdi	0.15	0.1	ns	0.15	ns
	(0.69)	(0.46)		(0.74)	
lnLabprod	0.002	0.05	ns	-0.01	ns
	(0.01)	(0.25)		(0.06)	
lnCpi	-0.044	-0.03	ns	-0.03	ns
	(1.03)	(0.81)		(0.71)	
Interaction term	not included	not included	not included	-0.55**	-0.58***
				(1.78)	(2.03)
Obs	1016	1016	1016	1016	1016
Cluster	108	108	108	108	108
R^2 *overall*	0.62	0.61	0.63	0.62	0.62
TD (p-value)	0.004	0.021	0.001	0.002	0.001
F-test (p-value)				0.048	0.033
HT (p-value)			0		

Interacting EPL and Skill



Note: The graph shows the statistical significance of the total effect evaluated at various levels of the lnHLS.

Conclusions

Results challenge the need for universal flexibilization of labor markets in order to attract FDI:

- To the extent that government policy aims at increasing the **quantity of FDI,** further increasing the flexibility of the labor market may be in place.
- To the extent that government policy aims at changing the **quality of FDI,** also stricter employment protection may be advisable, since it would lead to a change in the composition of manufacturing activities by deterring FDI particularly into low-skill-intensive locations.

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Paper at:
http://www.nottingham.ac.uk/gep/research/papers/2009/09-21.aspx

More information at:
http://www.wu-wien.ac.at/usr/vw4/bellak/