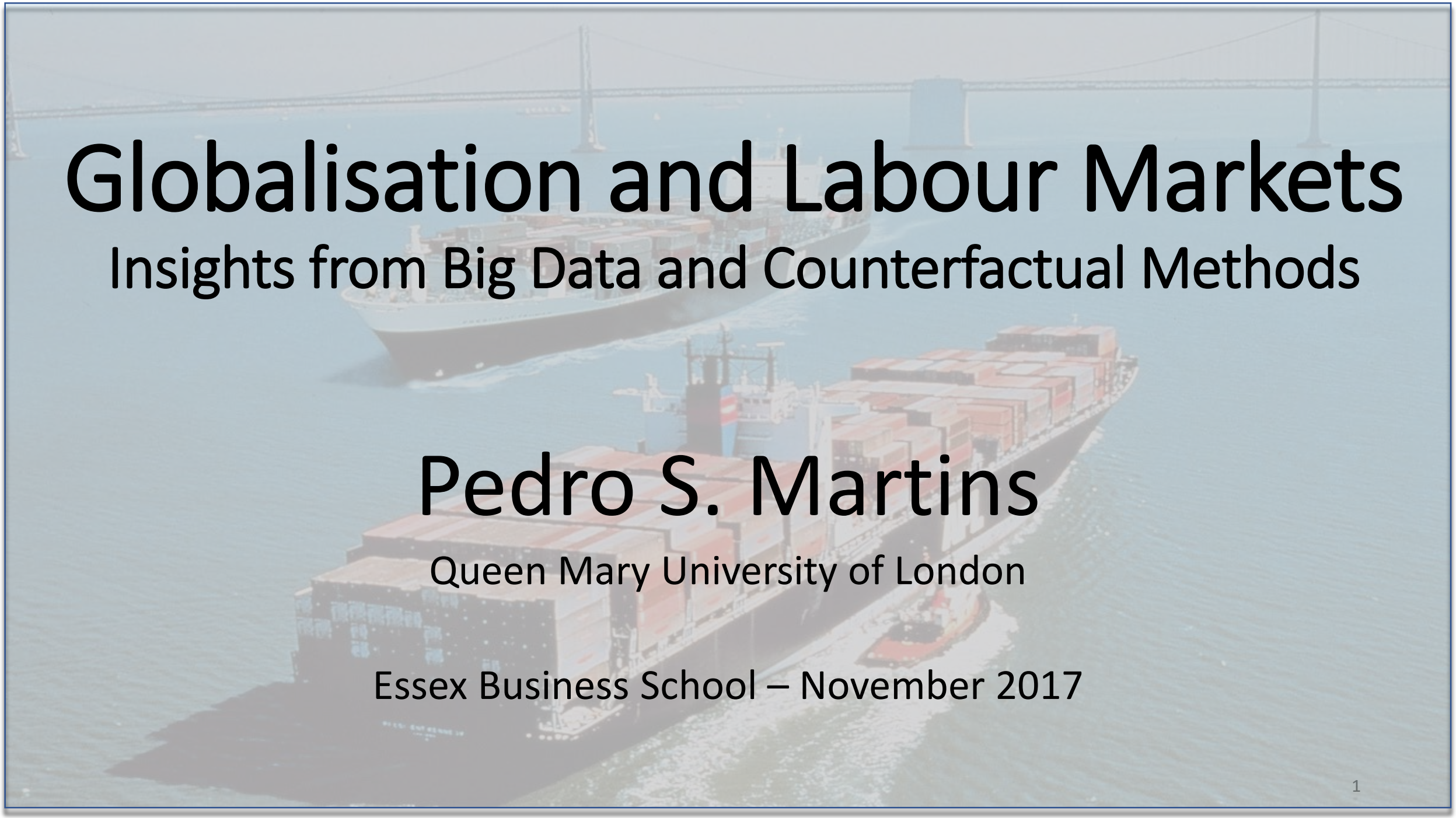

Globalisation and Labour Markets

Insights from Big Data and Counterfactual Methods

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Profile

- Professor at QMUL since 2009 (joined 2004)
- Main research interests in Labour Economics
  - Counterfactual evaluation, public policy perspectives
- Secretary of State for Employment in Government of Portugal (2011-13)
- Current *research impact* work on Collective Bargaining, Employment Services, and Student Achievement

Outline

1. **Counterfactual methods**
2. **Multinationals and working conditions**
3. **International rent sharing**
4. **Firm-worker-trade (& more) data sets**
5. **Immigrants & natives**
6. **The effects of China's imports**
7. **Labour institutions and international trade**

Counterfactual methods

1. Randomised controlled trials
2. Regression discontinuity
3. Difference-in-differences
4. Instrumental variables
5. Matching

2. Multinationals and working conditions

- ‘Foreign-Owned Firms Around the World: A Comparative Analysis of Wages and Employment at the Micro-Level', with Alexander Hijzen, Thorsten Schank, and Richard Upward, EER 2013

This paper provides the first microeconomic cross-country analysis of the effects of foreign ownership on wages, employment and worker turnover rates. Using firm-level and linked worker-firm data, we apply a standardised methodology for three developed (Germany, Portugal, UK) and two emerging economies (Brazil, Indonesia). We find that wage effects are larger in developing countries, and that for each country the largest effect on wages comes from workers who move from domestic to foreign firms. Employment growth after foreign takeover is concentrated in high-skill jobs. In contrast to widespread fears, there is no evidence that wage gains come at the expense of greater job insecurity; separation rates actually fall slightly after takeover. We conclude that the positive effect of foreign ownership on wages is not primarily driven by its impact on incumbent wages, but by its impact on the creation of high-wage jobs.

$$y_{jt} = a_j + \sum_{s=0}^{s=2} \delta_s D_t^s + \sum_{s=0}^{s=2} \gamma_s (D_t^s \cdot T_j^F) + \varepsilon_{jt},$$

Table 4
The effects of cross-border takeovers on average wages: firm-level evidence.

	Germany	*Portugal*	*United Kingdom*	*Brazil*	*Indonesia*
(*a*) *Level comparisons*[a]					
Without controls	0.255***	0.585***	0.366***	1.336***	0.771***
	(0.020)	(0.014)	(0.010)	(0.038)	(0.010)
With controls	0.106***	0.354***	0.297***	0.937***	0.334***
	(0.017)	(0.011)	(0.010)	(0.039)	(0.011)
(*b*) *Foreign takeovers of domestic firms*[b]					
Average effect	0.020	0.078***	0.048	0.147**	0.189***
	(0.015)	(0.027)	(0.025)	(0.064)	(0.046)
Effect at $t=0$	–	0.066**	0.032	0.148**	0.175***
		(0.030)	(0.027)	(0.069)	(0.044)
Effect at $t=1$	–	0.110***	0.049	0.126*	0.206**
		(0.033)	(0.028)	(0.067)	(0.084)
Effect at $t=2$	–	0.057*	0.064	0.167**	0.221**
		(0.034)	(0.034)	(0.075)	(0.090)
(*c*) *Domestic takeovers of foreign firms*[b]					
Average effect	0.001	−0.022	−0.015	–	−0.110
	(0.029)	(0.036)	(0.057)		(0.068)
Effect at $t=0$	–	0.000	−0.048	–	−0.119
		(0.038)	(0.064)		(0.072)
Effect at $t=1$	–	−0.063	0.012	–	−0.097
		(0.049)	(0.055)		(0.093)
Effect at $t=2$	–	−0.002	−0.009	–	−0.058
		(0.047)	(0.062)		(0.108)

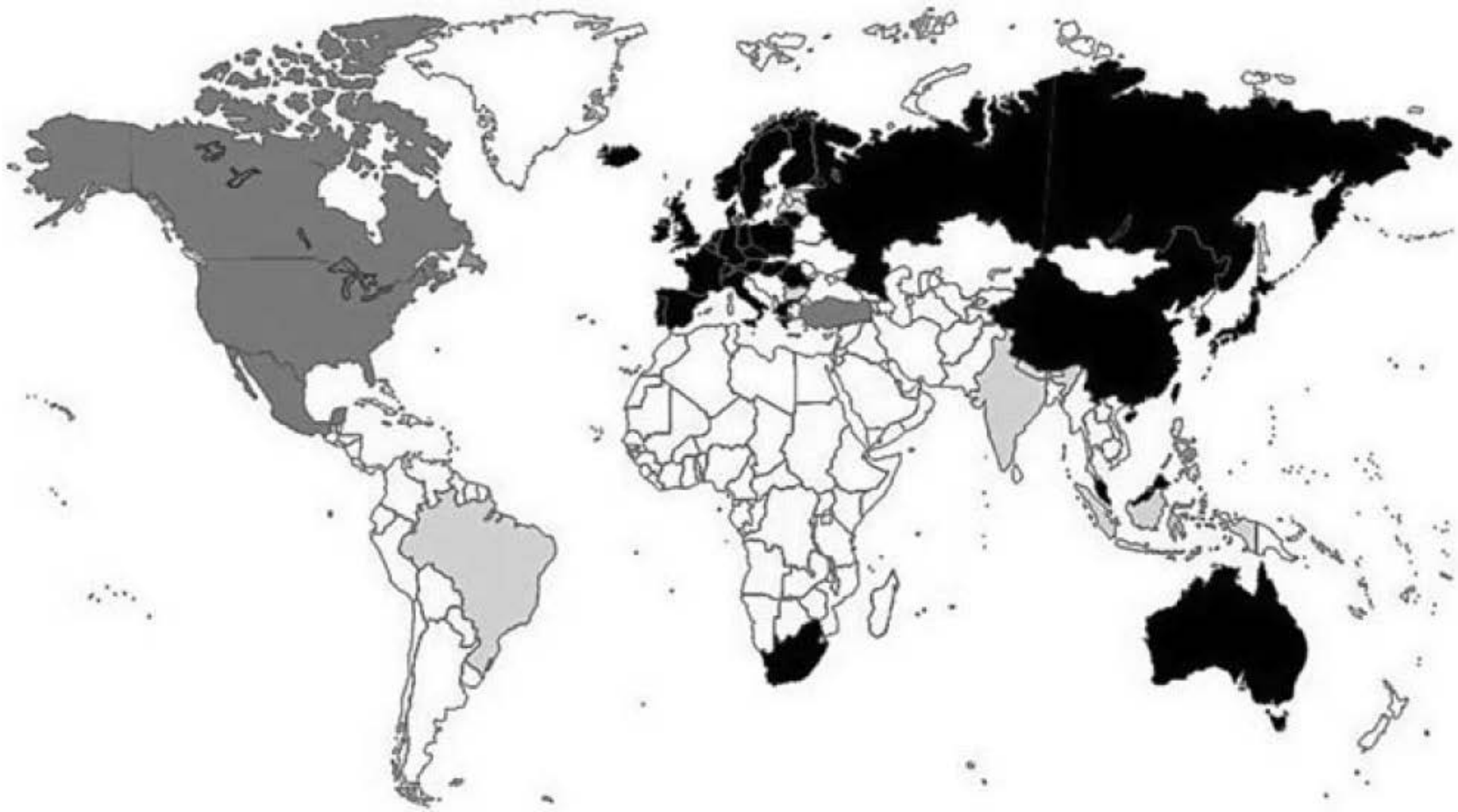
*significant at 10%, ** significant at 5%, *** significant at 1%, standard errors clustered at the firm-level.
[a] Estimated using OLS. Controls include log employment, industry and region dummies.
[b] Estimated using difference-in-difference propensity-score matching; see Eqs. (4) and (5). The propensity score is estimated using a Probit model which includes firm-level characteristics measured at $t=-1$: log employment, change in log employment, log average wage, industry and region dummies.

3. International rent sharing

- Globalized Labour Markets? International Rent Sharing Across 47 Countries, with Y. Yang, BJIR 2015

We present evidence about the role of rent sharing in fostering the interdependence of labour markets around the world. Our results draw on a firm-level panel of more than 2,000 multinationals and over 5,000 of their affiliates, covering 47 home and host countries. We find considerable evidence that multinationals share profits internationally by paying higher wages to their workers in foreign affiliates in periods of higher headquarter profits. This occurs even across continents, and not only within Europe, as shown in earlier research. The results are robust to different tests, including a falsification exercise based on 'matched' parents. Finally, we show that rent sharing is higher when the affiliate is located in countries with specific relative characteristics, such as lower economic development or taxation, while it falls with the number of affiliates. We argue that these results are consistent with transfer pricing and bargaining views.

Country Coverage.



Notes: There are four groups of countries, depending on the type of information available in our dataset: countries for which we have both parent and affiliate information (in black), only parent information (dark grey), only affiliate information (light grey), and no information (white). The first three categories include 47 countries.

$$Wage_{it}^{A} = \beta_1 Profit_{it}^{P} + \beta_2 X_{it} + \alpha_i + \gamma_t + e_{it},$$

	(1)	(2)	(3)	(4)	(5)	(6)
Profit, parents				0.030***	0.016***	0.011***
				(0.005)	(0.003)	(0.003)
Capital, parents				–0.089***	0.012***	0.091***
				(0.007)	(0.004)	(0.009)
Profit, affiliates	0.027***	0.041***	0.035***	0.024***	0.039***	0.034***
	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
Capital, affiliates	0.405***	0.177***	0.308***	0.429***	0.171***	0.292***
	(0.007)	(0.005)	(0.012)	(0.007)	(0.005)	(0.012)
Obs.	21,840	21,840	21,840	21,840	21,840	21,840
F statistic	2,933.652	246.219	533.601	1,501.145	245.621	352.496
R^2	0.352	0.783	0.939	0.358	0.784	0.94

Notes: Dependent variable: log average wage per worker of multinational affiliate. All explanatory variables are in logs. Columns 2 and 5 include country, sector and year effects, while columns 3 and 6 include affiliate firm fixed effects and year fixed effects. 'Profit, affiliates (parents)' is the profit per worker of the multinational affiliates (parents). 'Capital, affiliates (parents)' is the capital per worker of the multinational affiliates (parents). Values in parentheses are robust standard errors.
Significance levels: *, 0.10; **, 0.05; ***, 0.01.

4. Firm-worker-trade (& more) data sets in PT

- ‘Personnel Records’ – longitudinal (1982-) and matched annual firm- and worker-level data, including large number of variables
- Firm-level international trade data – product-destination information
- Innovation data (e.g. patents)
- Social security data (incl health, unempl benefits, income support)
- Collective bargaining data
- Public employment services data

5. Immigrants & natives

- Do Immigrants Displace Native Workers? Evidence from Matched Panel Data, with M. Piracha and J. Varejao

$$n_{it} - n_{it-1} = \alpha(f_{it} - f_{it-1}) + \beta x_{it} + a_i + \varepsilon_{it},$$

Table 3: Effect of immigrant employment on native employment, by job title (firm-level analysis) - Pooled OLS with Firm Effects Estimates (2003-08); Dependent variable: Change in natives' employment level, total and by job title

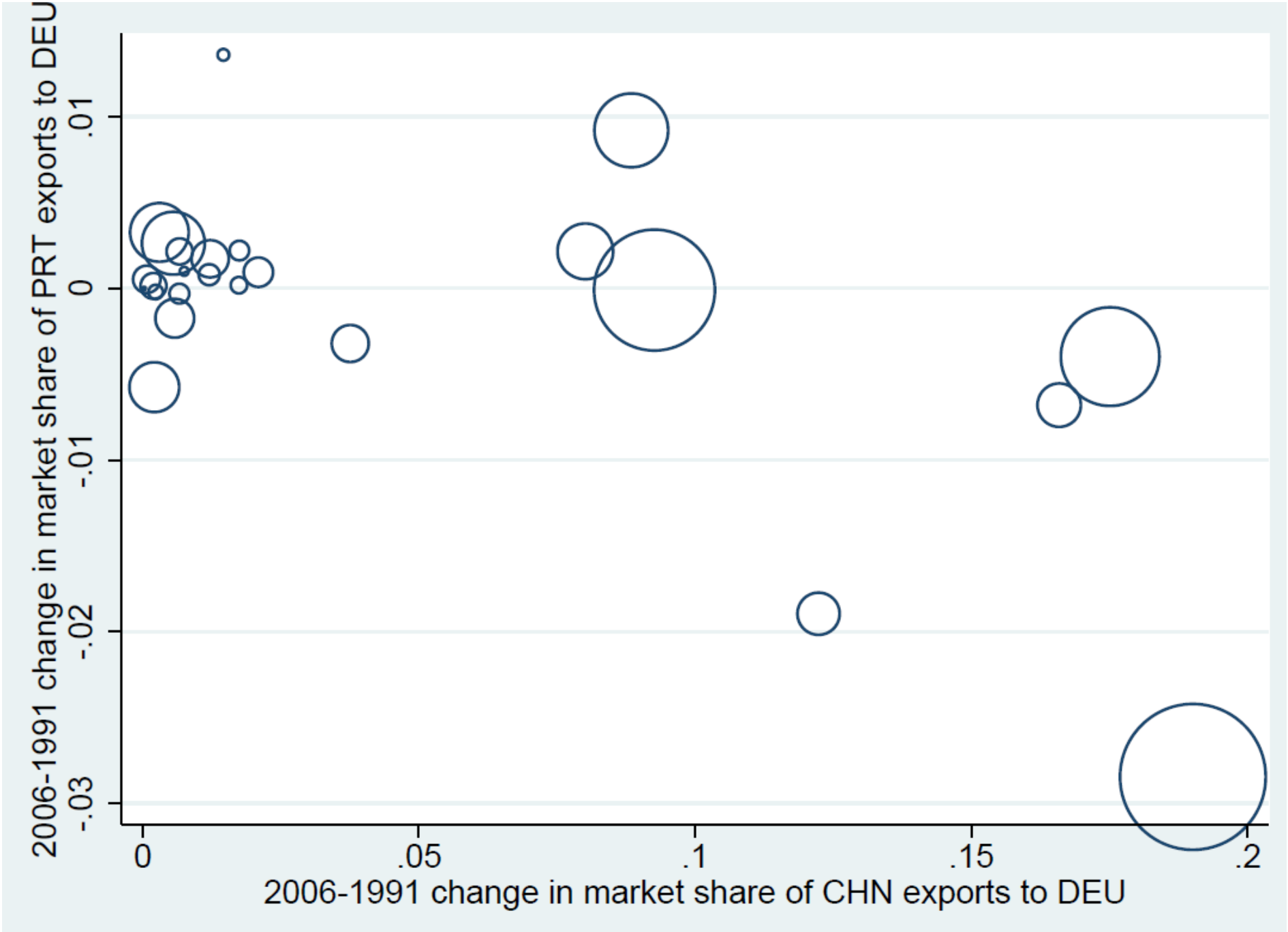
	Change in native employment								
	All natives in a firm	CEO/High Managers	Middle managers	Supervisor/team leaders	Higher-skilled Professionals	Skilled Professionals	Semi-skilled Professionals	Non-skilled Professionals	Apprentices/Trainees
Change in Immigrant's Employment by job title									
CEO/High Managers	4.979*	**3.376*** **	0.564	0.221	-0.993	-0.647	1.274	0.243	0.020
	(2.552)	(0.929)	(0.639)	(0.239)	(1.043)	(0.875)	(0.883)	(0.221)	(0.046)
Middle managers	3.746	0.542	**1.400***	-0.024	-0.899	0.596	1.105	0.707*	0.061
	(2.795)	(0.588)	(0.687)	(0.073)	(1.056)	(1.374)	(0.566)	(0.293)	(0.036)
Supervisor/team leaders	1.912**	-0.028	0.056	**1.143***	-0.086	0.660	-0.066	0.125	0.016
	(0.640)	(0.027)	(0.068)	(0.502)	(0.186)	(0.798)	(0.258)	(0.127)	(0.061)
Higher-skilled Professionals	0.916	-0.425	-0.307	0.090	**5.514***	-0.338	-0.751	-0.779	0.099
	(2.560)	(0.378)	(0.392)	(0.195)	(2.283)	(1.682)	(1.267)	(0.559)	(0.184)
Skilled professionals	1.096	-0.053*	0.126	0.040	0.142	**2.065*** **	-0.215	-0.394*	-0.043*
	(0.581)	(0.023)	(0.105)	(0.039)	(0.096)	(0.609)	(0.125)	(0.180)	(0.020)
Semi-skilled Professionals	-0.473	0.008	0.017	-0.019	-0.0003	-0.149	**1.538**	-0.094	0.007
	(1.285)	(0.021)	(0.041)	(0.040)	(0.049)	(0.307)	(0.895)	(0.126)	(0.023)
Non-skilled Professionals	1.595**	0.018*	-0.033	0.028	-0.069	-0.278	0.093	**1.699*** **	0.033
	(0.512)	(0.008)	(0.029)	(0.023)	(0.062)	(0.253)	(0.112)	(0.326)	(0.020)
Apprentices/Trainees	0.193	-0.003	-0.045	-0.015	-0.250	-0.912	0.701	0.120	**1.704*** **
	(0.788)	(0.036)	(0.046)	(0.071)	(0.259)	(0.892)	(0.678)	(0.296)	(0.472)
Constant	-3.189	0.052	-0.351	-0.273	-0.272	0.831	-0.499	-0.876	0.001
	(3.345)	(0.340)	(0.243)	(0.219)	(0.303)	(1.209)	(0.670)	(0.633)	(0.310)
R-squared	0.291	0.179	0.176	0.176	0.160	0.226	0.177	0.294	0.146
N	444,669	444,669	444,669	444,669	444,669	444,669	444,669	444,669	444,669

Notes: All results were obtained from pooled OLS regression on firm-level data, with firm fixed effects. The unit of observation in this data set is the firm. Firm fixed effects as well as year, industry and region dummies are included in the regressor set. The sample covers all firms present in at least four waves of the data and employing a minimum number of 10 employees at least in one wave. Firm cluster robust standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001. Main diagonal coefficients in bold.

6. Effects of China's imports

Collateral Damage? Labour Market Effects of Competing with China - at Home and Abroad, with S. Cabral, J. Santos and M. Tavares, mimeo

- Literature by D. Autor et al on effects of China's emergence on US labour market
- Focus on direct (import) effects only


2006-1991 change in market share of PRT exports to DEU
.01
0
-.01
-.02
-.03
0
.05
.1
.15
.2
2006-1991 change in market share of CHN exports to DEU

$$\triangle IPdir_{j,\tau} = \frac{\triangle M_{j,\tau}^{C \to P}}{WB_{j,93}},$$

$$\triangle IPO_{j,\tau} = \frac{\triangle M_{j,\tau}^{C \to O}}{WB_{j,91}},$$

$$\triangle IPind_{j,\tau} = \frac{\sum_{G=1}^{14} \omega_{j,93}^{PG} \triangle M_{j,\tau}^{C \to G}}{WB_{j,91}}, \quad \text{with} \quad \omega_{j,93}^{PG} = \frac{X_{j,93}^{P \to G}}{M_{j,93}^{\to G}}$$

$$Y_{ifj,\tau} = \beta_0 + \beta_1 \triangle IP_{j,\tau} + \beta_2 X_{i,93} + \beta_3 X_{f,93} + \beta_4 X_{j,93} + \varepsilon_{ifj,\tau},$$

Table 3: Cumulative Earnings: Direct and Indirect Impact

	OLS		2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)
$\triangle IPdir_j$	3.580**	0.551	4.820***	2.626***	2.508***	0.709*
	(1.760)	(0.473)	(1.407)	(0.876)	(0.867)	(0.408)
$\triangle IPind_j$	-8.326***	-1.269*	-8.721***	-5.468***	-5.135***	-1.337**
	(2.550)	(0.661)	(2.543)	(1.559)	(1.426)	(0.672)
Individual controls	No	Yes	No	Yes	Yes	Yes
Firm controls	No	Yes	No	No	Yes	Yes
Sector controls	No	Yes	No	No	No	Yes
First Stage						
$\triangle IPO_j$			0.578***	0.575***	0.575***	0.555***
			(0.027)	(0.025)	(0.025)	(0.023)
First Stage F-test			468.863	509.428	523.350	584.295
Number of observations	605 614	605 614	605 614	605 614	605 614	605 614
Adjusted R2	0.007	0.110	0.007	0.102	0.107	0.110

Notes: Dependent variable: 100 x Cumulative earnings (1994-2008), normalized by average earnings in 1991 and 1993. The variable $\triangle IPdir_j$ is the direct import penetration defined in Equation (1) and the variable $\triangle IPind_j$ refers to the measure of indirect import competition from China defined in Equation (2). The variable $\triangle IPO_j$ is the instrument of the variable $\triangle IPdir_j$, which is defined in Equation (5) and uses World imports from China excluding those of EU15 countries. Given the large scale of the flows, the instrument variable is divided by 1000. All regressions include a constant. All controls are considered at the start-of-period level (1993). Workers' controls include a female dummy variable, a dummy variable identifying minimum-wage earners, eight formal education categories, age and age squared. The vector of firm-level controls includes the number of employees and the natural logarithm of turnover, the share of public equity, the share of foreign equity, and five regional location dummies at the Nuts 2 level. The vector of sector-level controls include a set of dummy variables for 9 broad aggregate categories computed based on the 83 trade-exposed manufacturing industry and a measure of overall import penetration of the industry. Standard errors in parenthesis are clustered at the industry level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1%(***).

7. Labour institutions and international trade

Minimum Wages, Exports and Imports: Evidence from Longitudinal Matched Firm-Worker Data, with H. Bui

- Large literature of economic effects of minimum wages
- Focus on employment dimension
- Only one study on exports
- Here, all manufacturing firms, 2002-2012 (500k+ observations)

$$Import_{it} = \beta_0 + \beta_1 mw\_worker_{i,t-1} + \beta_2 costwagediff_{i,t-1} + \beta_3 X_{it} + \kappa_i + \gamma_t + e_{it},$$

Table: 3- Effect of minimum wage on export

Dep. vars (Columns)	Log export (logX)	Log export (logX)	Log export (logX)	Export prob (dX)
Models	(1)	(2)	(3)	(4)
Lag MW worker	-0.1063		-0.0585	-0.0206
	(-2.67)***		(-1.05)	(-5.28)***
Lag MW cost		-0.0041	-0.0025	
		(-2.69)***	(-1.19)	
No. observations	113,126	113,094	113,094	379,014
Adj. R-squared	0.8131	0.8132	0.8132	0.5444

Table: 2 - Effect of minimum wage on import

Dep. vars (Columns)	Log import (logM)	Log import (logM)	Log import (logM)	Import possibility (dM)
Models	(1)	(2)	(3)	(4)
Lag MW worker	-0.1745		-0.1833	-0.0109
	(-6.37)***		(-4.39)***	(-3.10)***
Lag MW cost		-0.0003	0.0000	
		(-1.46)	(0.00)	
No. observations	149,677	149,647	149,647	379,014
Adj. R-squared	0.8437	0.8437	0.8798	0.8307

8. Conclusions

- Our working conditions can be influenced significantly by int'l forces: multinationals, international trade, immigration, etc
- However, direction of the effect is not always the one presented in public debates
- Labour market institutions can also influence int'l variables
- Novel data sets and counterfactual methods can offer considerable insight and have great policy relevance