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# PTAs with labour provisions and labour market outcomes: Do they work?

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# Outline

- Background
- Data
- Patterns in the data
- Econometric approach
- Econometric analyses:
- Preliminary conclusions and policy suggestions

# Background

*This report is part of a wider study on “Enhancing the contribution of preferential trade agreements to inclusive and equitable trade” by ESCAP, in partnership with ECA and ECLAC and building on lessons and experiences accumulated by UNCTAD (and other relevant agencies) in this area.*

# Background II

- Rapid expansion of preferential trade agreements (PTAs) has shown an unequal pattern of the benefits of economic liberalisation.
- Some governments are attempting to ensure more equitable outcomes from trade liberalisation.
  - Unsatisfactory labour conditions in developing countries.
- Labour provisions in trade agreements have been offered as a solution.

**The ILO defines labour provisions as “any standard which addresses labour relations or minimum working terms or conditions, mechanisms for monitoring or promoting compliance, and/or a framework for cooperation”**

# Background III

- Labour provisions are part of an increasing number of PTAs.
- In the Asia-Pacific region, labour provisions are relatively under-developed (and under-researched), driven largely by the main international actors in the field, the United States and the EU.
- In the region, Korea and New Zealand stand out as the champions of such provisions.

# Background IV (Research question)

*Have labour provisions played a role in improving labour standards?*

# Background V

- I use data from Engen (2017) and other sources to see the role of labour provisions in the labour market after more than 20 years of implementation in PTAs.



# Background VI

- This report analyses, quantifies, and compares labour provisions in preferential trade agreements on three key labour outcomes:
  - Child labour,
  - Formal employment, and
  - Inequality.

These three measures are general outcomes that should exhibit improvements as labour markets improve. General outcomes are important because labour provisions tend to vary significantly from agreement to agreement.

# Background VII

- These variables ought to be correlated with ILO's four core labour standards, which are common across most PTAs w/ labour provisions.
  1. Freedom of association and collective bargaining,
  2. Elimination of forced labour,
  3. Elimination of child labour, and
  4. Elimination of discrimination in respect of employment and occupation.
- Child labour ↓ w/ LS3.
- Formality ↑ w/ LS1 & LS2.
- Inequality ↓ w/ LS4.

# Data: key variable definition

- Child labour:
  - Male/female children in employment (% of all male/female children aged between 7-14).
- Formal employment:
  - Wage and salaried workers, male/female (% of male/female employment).
- Inequality:
  - Gini Index – measure of statistical dispersion of income or wealth.
  - Theil index – Industrial pay-inequality measures using UNIDO Statistics.

# Data

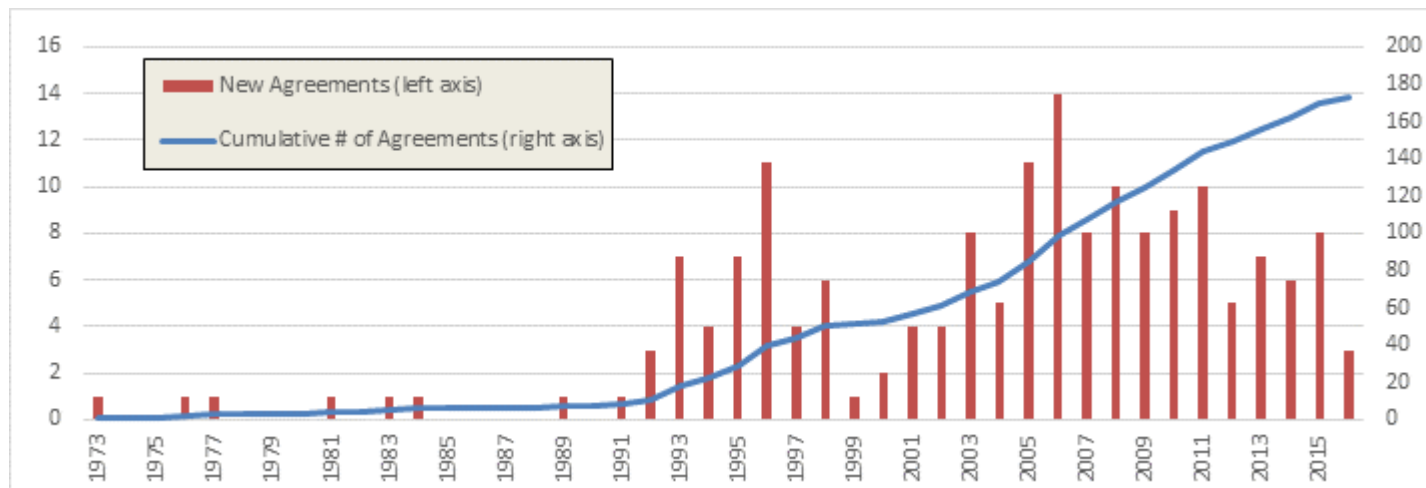
- There are 49 economies in the “ESCAP” region.
- However, not all countries have comprehensive data on labour market indicators.
  - Data is sourced from 12-29 nations, depending on the indicator.
- The principal data requirement is some degree of time-variation to estimate the equations.
  - The data covers agreements from 1973-2016.
- Child labour and Gini data are linearly interpolated.
  - Assumption: Changes are only slow, so interpolation adequately picks up missing figures.

# Data II

- Data is sourced from:
  - World Bank's World Development Indicators (WDI).
  - The University of Texas's UTIP-UNIDO data set.
  - Polity IV, Worldwide Governance Indicators (World bank),
  - Kucera-Sari Index of Freedom of association and collective bargaining rights (FACB) (Kucera and Sari, 2016).
  - Engen (2017).

# Data III

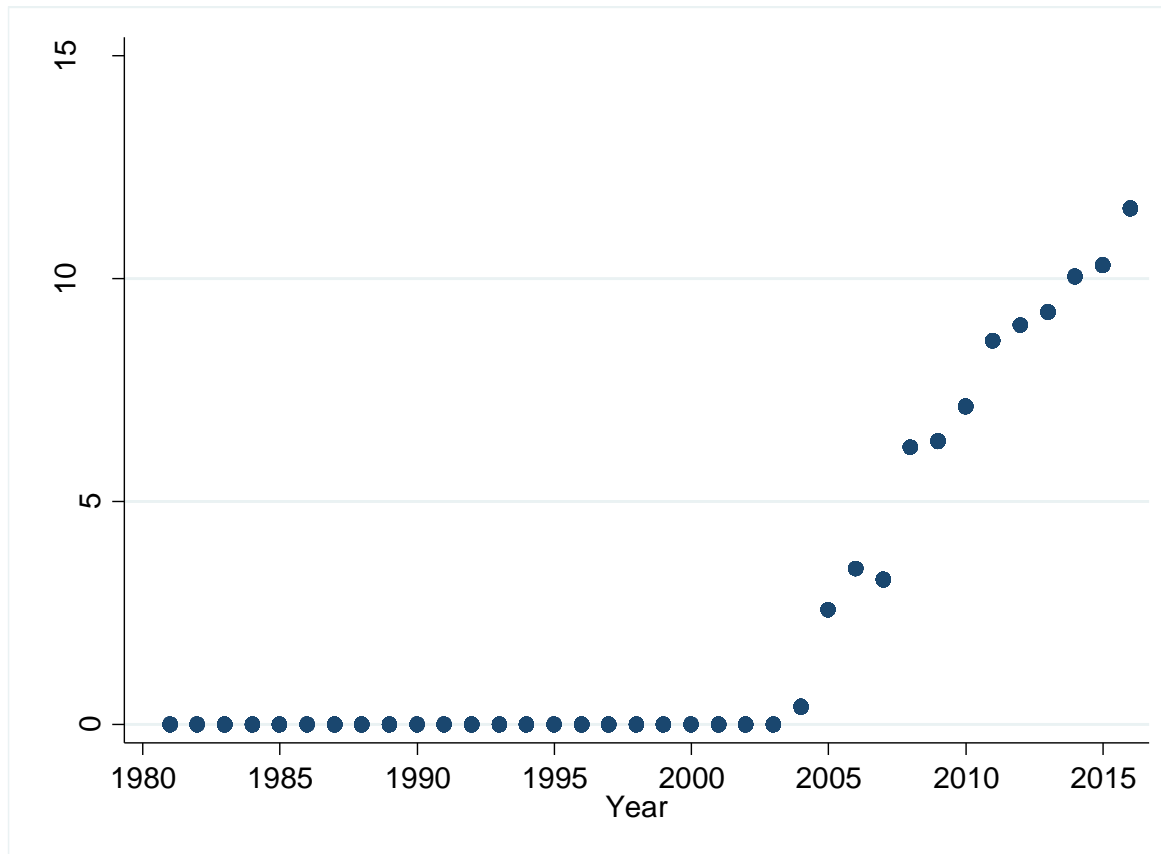
- Engen (2017) provides information on 160 labour provisions ranging from 1973 to 2016 for all countries in the Asia Pacific region and their trading partners.



Source: Figure 1; Engen (2017)

# Data IV

## Percentage of PTAs with labour provisions, 1980-2015

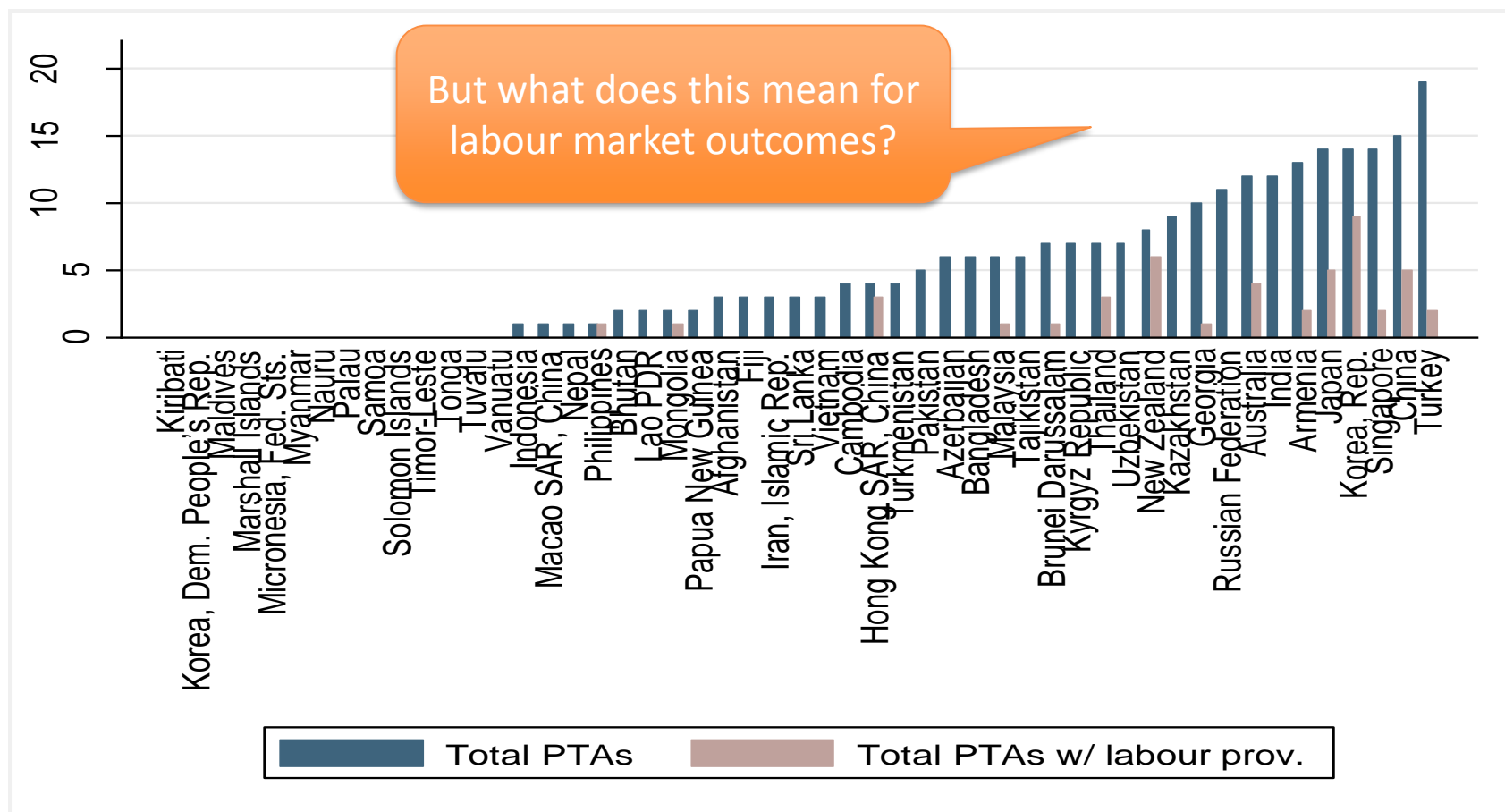


Source: Authors calculations based on data from Engen (2017)

# Patterns in the data

PTAs are common in the region, while those with labour provisions are less so.

ESCAP nations with PTAs and PTAs with labour provisions, 2016.



Source: Calculations using data from Engen (2017).



# Patterns in the data II

## Pairwise correlations between key variables

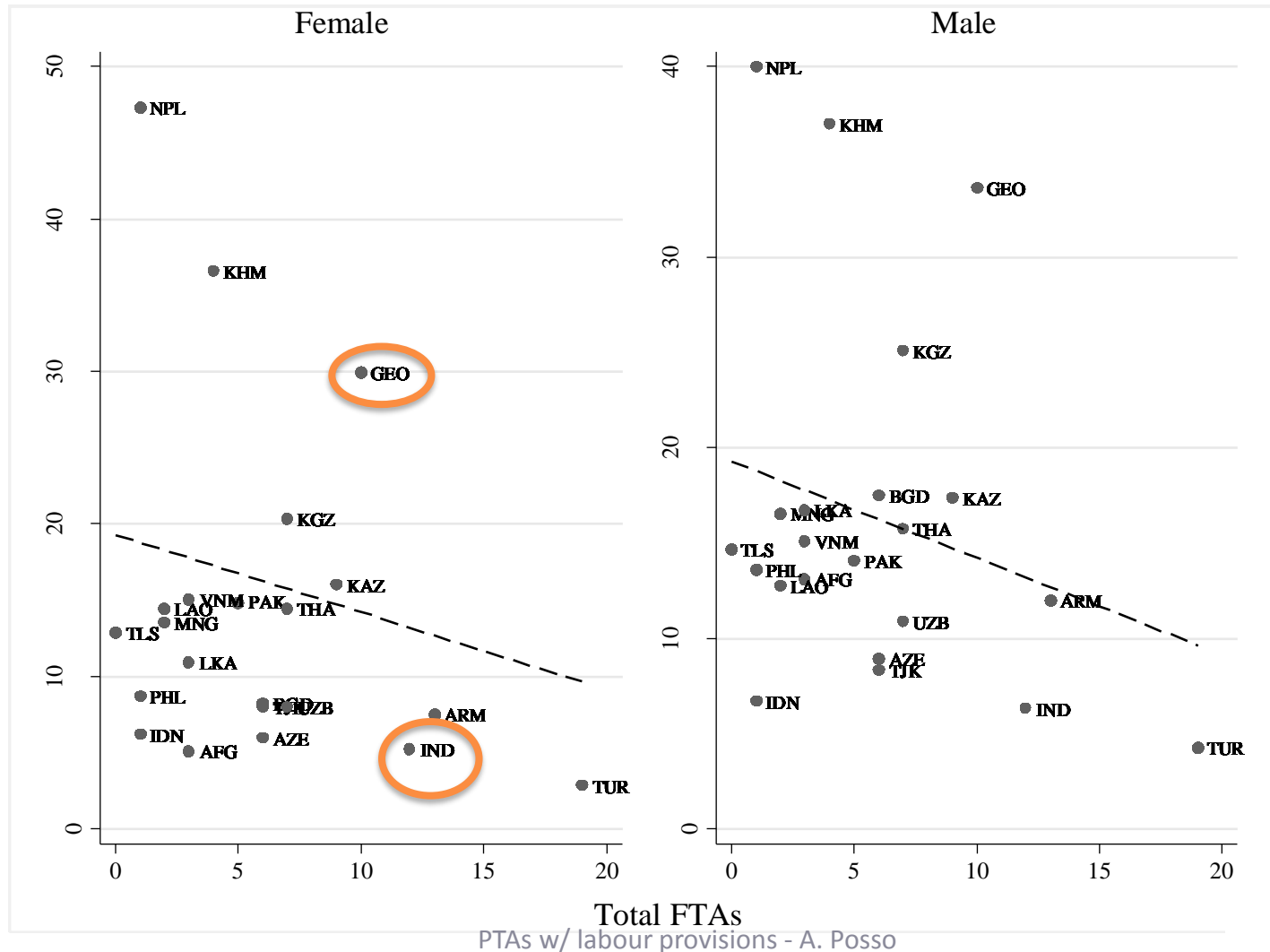
	Child labour		Vulnerable employment		Inequality	
	Male	Female	Male	Female	Gini index	Theil index <sup>^</sup>
Total PTAs	-0.26** (0.05)	-0.32** (0.02)	-0.18*** (0.00)	-0.15*** (0.00)	-0.13** (0.04)	0.17*** (0.00)
Total PTAs with labour provisions	-0.04 (0.78)	-0.03 (0.81)	-0.23*** (0.00)	-0.25*** (0.00)	0.08 (0.18)	-0.03 (0.36)

Source: WDI; UTIP-UNIDO; Engen (2017).

Notes: P-values in brackets. \*, \*\*, and \*\*\* indicate 10, 5 and 1 per cent level of statistical significance, respectively. <sup>^</sup> The Theil index refers to the UTIP-UNIDO index of manufacturing wage inequality.

# Patterns in the data III

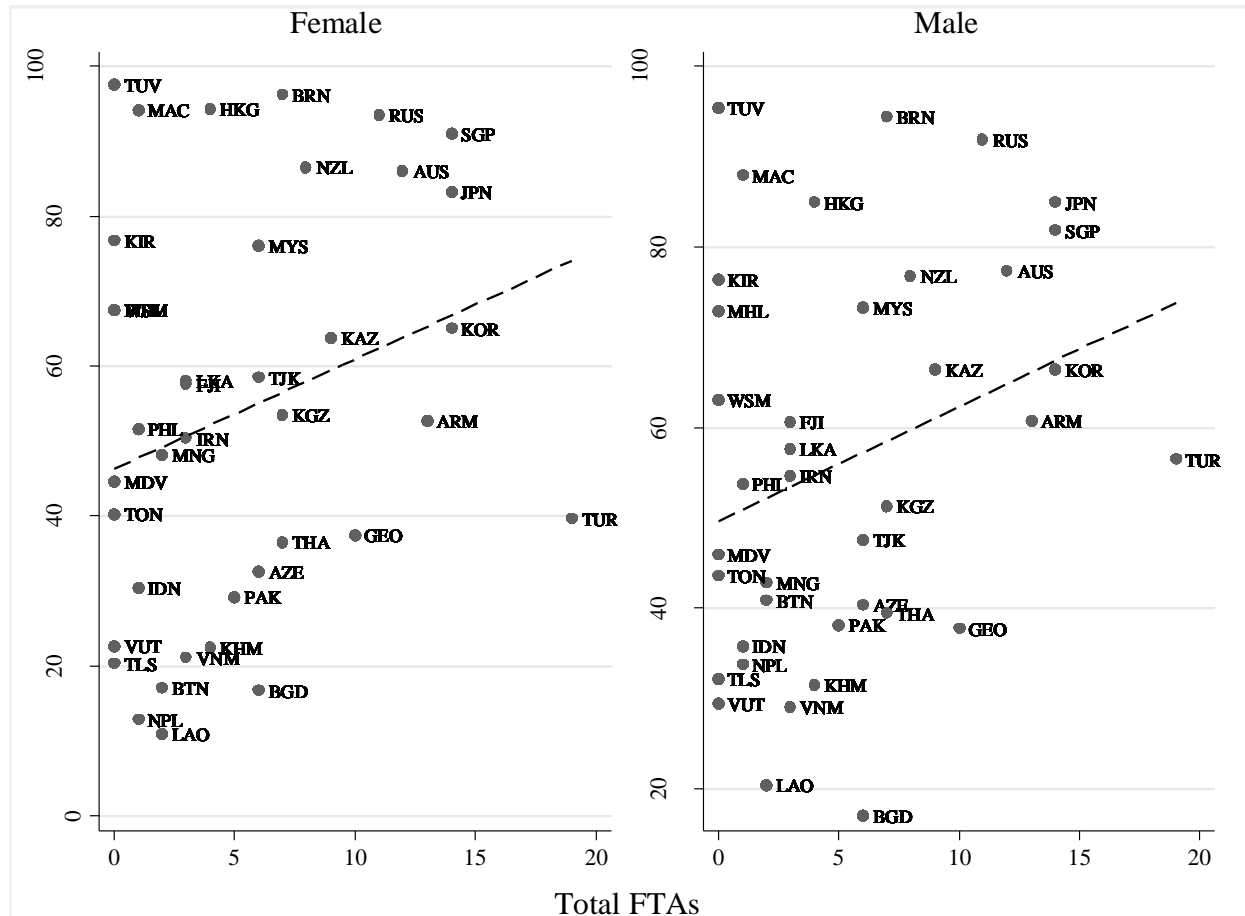
## Preferential Trade Agreements versus Child labour



Source: Calculations based on data from WDI and Engen (2017).

# Patterns in the data IV

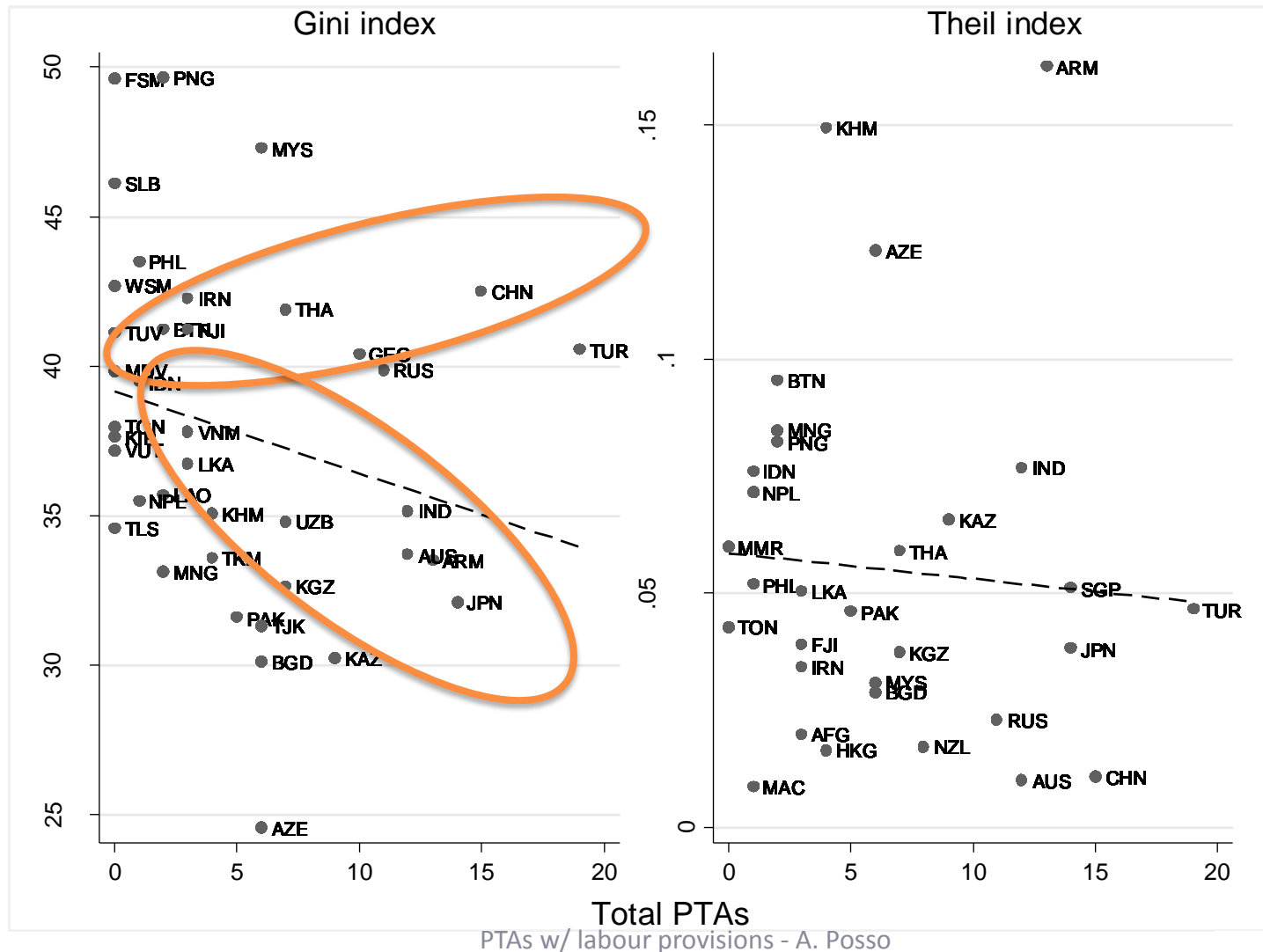
## Preferential Trade Agreements versus formal employment



Source: Calculations based on data from WDI and Engen (2017).

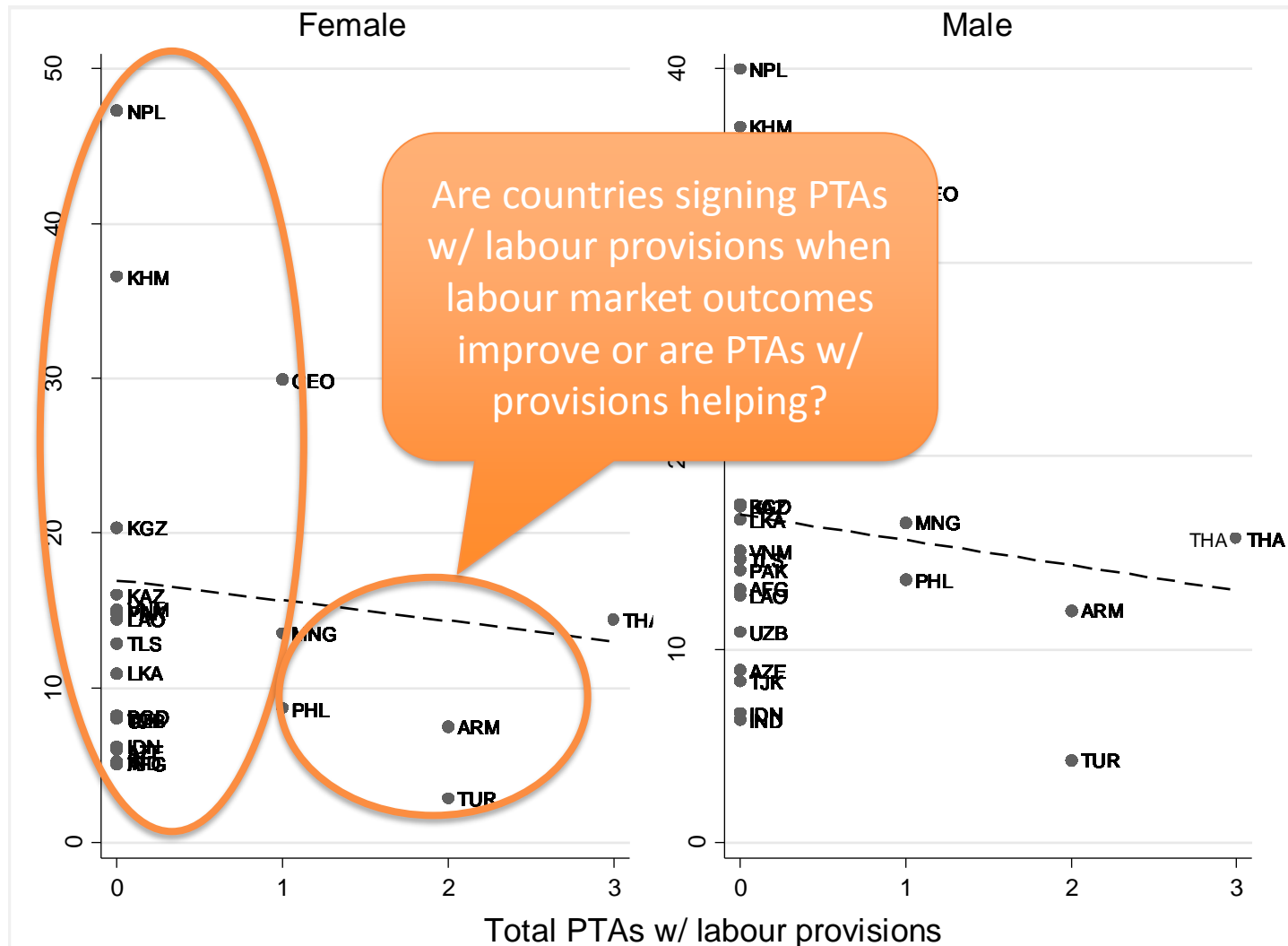
# Patterns in the data V

Preferential Trade Agreements versus inequality



# Patterns in the data VI

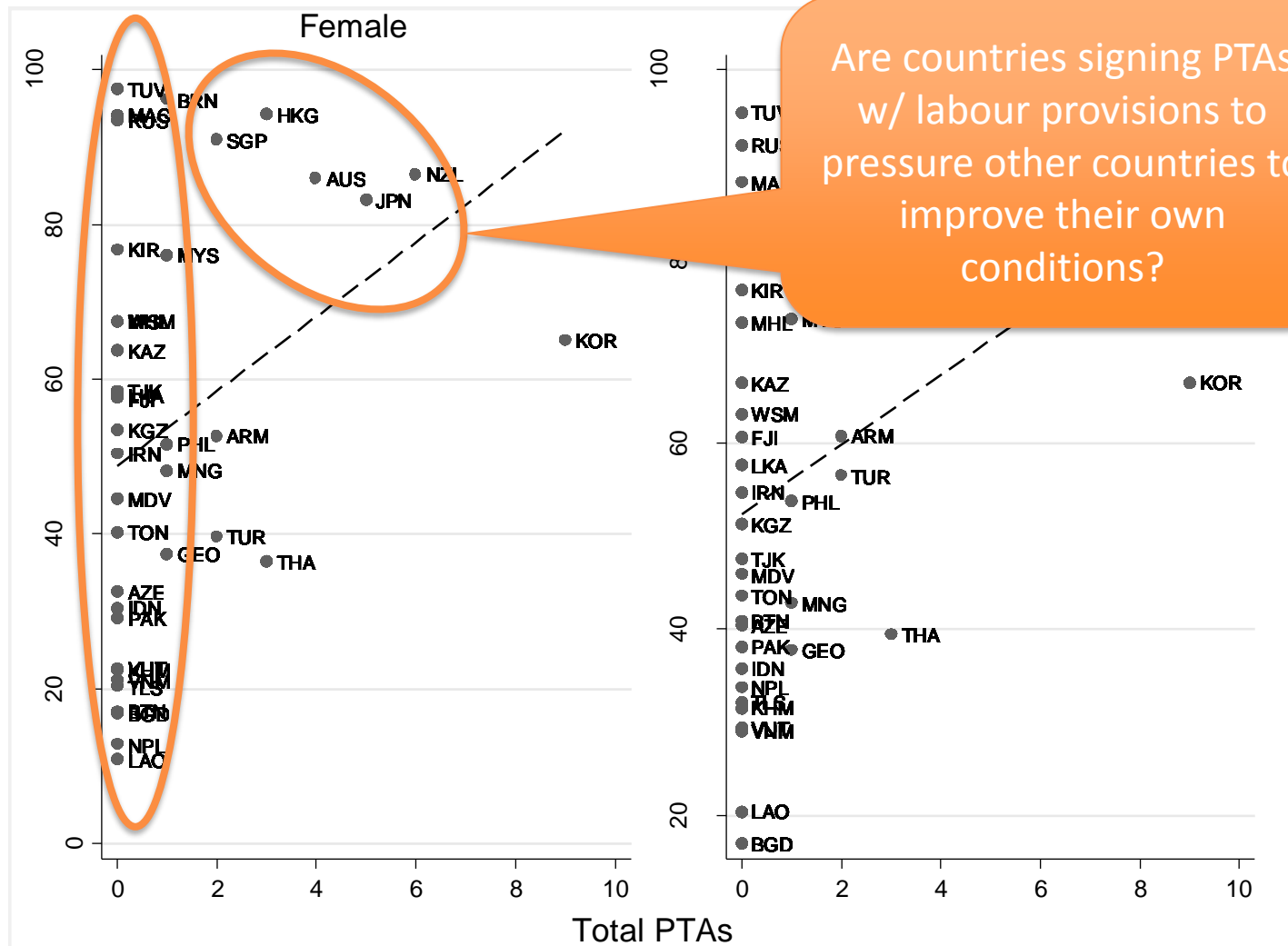
Preferential Trade Agreements with labour provisions versus child labour



Source: Calculations based on data from WDI and Engen (2017).

# Patterns in the data VII

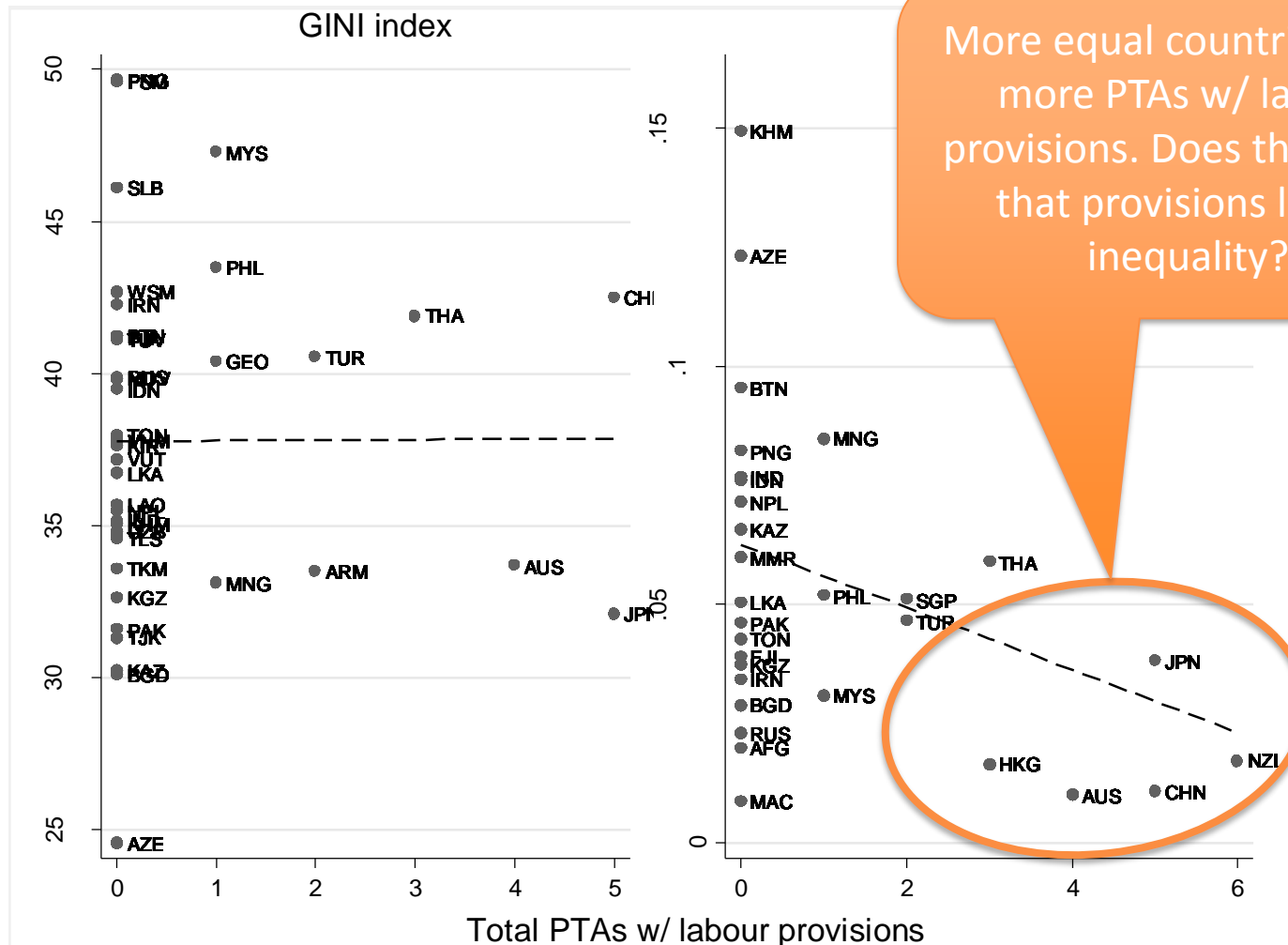
Preferential Trade Agreements with labour provisions versus formal employment



Source: Calculations based on data from WDI and Engen (2017).

# Patterns in the data VIII

Preferential Trade Agreements with labour provisions versus inequality



Source: Calculations based on data from WDI, Engen (2017), and UTIP-UNIDO.

PTAs w/ labour provisions - A. Posso

# Patterns in the data IX

- We are observing these patterns because:
  - Labour provisions work; or
  - Countries with better labour standards are signing PTAs with provisions to signal to other countries that they have good labour markets or to influence other countries to improve their own markets.
- Regression analysis can help deal with this ambiguity.



# Econometric approach

Build on macroeconomic studies that examine the nexus between trade and labour standards.

Error term

$$LO_{i,t} = \alpha + \beta_1 PTA_{i,t} + \beta_2 PTA\_LP_{i,t} + \beta_3 X_{i,t} + \mu_{i,t}$$

Other controls

Labour market  
outcome of  
country *i* at  
time *t*.

Total number  
of PTAs that  
country *i* has  
at time *t*.

Total number  
of PTAs w/  
labour  
provisions.

# Econometric approach II

$$\mu_{i,t} = \delta_i + \lambda_t + \varepsilon_{i,t}$$

Error term is  
decomposed  
into

Unobserved  
time-invariant  
characteristics

Unobserved  
time-variant  
characteristics

# Econometric approach III

- Imagine that a country has better *LO* and signed an PTA w/ labour provisions.
- The equation assumes that the PTA was signed, then *LO* improved.
- What if *LO* improved, so the country signed the PTA as a signal?

# Econometric methodology IV

- Instrumental variable (IV) approach
- IV is used to estimate causal relationships.
- A valid instrument induces changes in the explanatory variable but has no independent effect on the dependent variable.
- This allows us to uncover the causal effect of the explanatory variable on the dependent variable.
- General Method of Moments.

# Econometric methodology V

- Lag approach can also be used to determine causality.
- Signing an PTA yesterday can lead to changes in labour market outcomes today.

# Regression analysis: Child labour

Child labour regressions, fixed effects models

	(1)	(2)	(3)	
Child labour indicator:	Girls	Girls	Boys	
Model:	Base-line	Augmented	Base-line	
GDP per capita	-4.09** [-2.87]	-4.13** [-2.88]	-4.63*** [-3.28]	
Primary enrolment rate	-0.31 [-1.56]	-0.34 [-1.70]	-0.39 [-1.53]	
Secondary enrolment rate	-0.80*** [-3.36]	-0.76*** [-4.28]	-0.85** [-2.63]	
Rule of law	-4.21 [-0.84]	-2.16 [-0.55]	-6.34 [-1.08]	
Openness		0.050 [0.85]		
Total PTAs		-0.22 [-0.50]		-0.45 [-0.81]
Total PTAs w/ labour provisions		-5.74* [-1.83]		-8.34** [-2.26]
Country & year FE?	Yes	Yes	Yes	Yes
Observations	127	127	127	127
R-squared	0.54	0.58	0.50	0.53
Number of countries	18	18	18	18

The correlation between PTAs w/ labour provisions and child labour is negative and statistically significant. But this doesn't address the causality issue.

Notes: \*, \*\*, and \*\*\* denote statistical significance at the 10, 5 and 1 per cent levels, respectively. Robust t-statistics in brackets. Child labour variables are linearly interpolated to maximise the number of available observations. Child labour is defined as the per cent of girls or boys aged between 7 and 14 in employment.

Source: Authors' calculations on data from WDI and Worldwide Governance Indicators.

# Regression analysis: Child labour II

Child labour regressions, accounting for endogeneity

	(1)	(2)	(3)	(4)	(5)	(6)
Child labour indicator:	Girls	Girls	Girls	Boys	Boys	Boys
Model:	Lags (-5)	IV	GMM	Lags (-5)	IV	GMM
GDP per capita	-3.02* [-1.75]	-3.97*** [-3.48]	7.99 [1.43]	-2.35 [-1.19]	-4.49*** [-3.59]	7.61 [0.87]
Primary enrolment rate	-0.29** [-2.44]	-0.37*** [-4.13]	0.58*** [4.73]	-0.29** [-2.10]	-0.46*** [-3.88]	0.54*** [4.59]
Secondary enrolment rate	0.11 [1.26]	-0.89*** [-9.03]	-0.73*** [-3.72]	0.13 [1.30]	-0.95*** [-7.14]	-0.66* [-1.94]
Rule of law	-9.64* [-1.96]	-5.18 [-1.55]	-13.2 [-0.66]	-12.5** [-2.35]	-7.46* [-1.90]	-16.9 [-0.63]
Openness	0.054** [2.58]		-0.19 [-1.53]	0.066** [2.24]		-0.20 [-1.14]
Total PTAs	0.65 [1.70]		-1.06 [-0.76]	0.46 [0.87]		-1.36 [-0.81]
Total PTAs w/ labour provisions	-1.29 [-1.47]	-27.4* [-1.33]	-22.5 [-0.57]	-1.68 [-1.60]	-31.5* [-1.82]	-20.3 [-0.46]
Country & year FE?	Yes	Yes	No	Yes	Yes	No
Observations	221	125	127	221	125	127
R-squared	0.45			0.38		
Number of countries	21	16	18	21	16	18
Kleibergen-Paap rk LM p-value		0.16			0.16	
Kleibergen-Paap rk Wald F stat		1.58			1.58	
AR(1) p-value			0.53			0.89
AR(2) p-value			0.44			0.53
Hansen test p-value			0.88			0.89

Notes: \*, \*\*, and \*\*\* denote statistical significance at the 10, 5 and 1 per cent levels, respectively. Robust t-statistics in brackets. Child labour is defined as the per cent of girls or boys aged between 7 and 14 in employment. Child labour variables in Columns 1,3, 4 and 6 are linearly interpolated. Child labour variables in Columns 2 and 5 are five-year moving averages. Rule of law is never lagged.

Source: Authors' calculations on data from WDI and Worldwide Governance Indicators.

# Regression analysis: Formal employment

Determinants of formal employment, fixed effects regressions

	(1)	(2)	(3)	(4)
Model:	Base-line	Augmented	Base-line	Augmented
Formal employment indicator:	Women	Women	Men	Men
GDP per capita	-0.58*** [-4.86]	-0.50** [-2.63]	-0.27* [-1.92]	-0.32** [-2.75]
Educational attainment	-0.30* [-1.78]	-0.28* [-1.85]	0.081 [0.91]	0.15 [1.31]
Kucera-Sari Indicator	0.26** [2.34]	0.27* [2.04]	-0.018 [-0.22]	-0.020 [-0.18]
Openness		0.0100 [0.65]		0.028* [1.99]
PTAs		-0.079 [-0.25]		0.40 [1.50]
PTAs w/ labour provisions		0.47 [0.68]		0.10 [0.31]
Country & year FE?	Yes	Yes	Yes	Yes
Observations	50	50	50	50
R-squared	0.81	0.81	0.68	0.76
Number of countries	17	17	17	17

Notes: \*, \*\*, and \*\*\* denote statistical significance at the 10, 5 and 1 per cent levels, respectively. Robust t-statistics in brackets. Formal employment is defined as waged and salaried workers (male or female) as a percent of total employed workers (male or female). Educational attainment is measured separately for women and men in female and male regressions, respectively. Educational attainment variables are linearly interpolated.

Source: Authors' calculations on data from WDI and Engen (2017).



# Regression analysis: Formal employment II

Determinants of formal employment, IV-fixed effects, robustness tests

	(1)	(2)	(3)	(4)
Formal employment indicator:	Women	Women	Men	Men
GDP per capita	0.48 [0.70]	-0.57*** [-5.07]	0.32 [0.71]	-0.12 [-0.68]
Educational attainment		-0.30* [-1.66]		0.15* [1.68]
Kucera-Sari Indicator	0.26 [0.82]	0.26** [2.30]	-0.022 [-0.096]	-0.020 [-0.18]
PTAs w/ labour provisions	6.19 [1.33]	0.079 [0.080]	4.42 [1.43]	2.34* [1.78]
Country & year FE?	Yes	Yes	Yes	Yes
Observations	81	45	81	45
Kleibergen-Paap rk LM p-value	0.080	0.034	0.080	0.021
Kleibergen-Paap rk Wald F stat	2.72	3.71	2.72	3.34
Number of countries	17	12	17	12

Notes: \*, \*\*, and \*\*\* denote statistical significance at the 10, 5 and 1 per cent levels, respectively. Robust t-statistics in brackets. Formal employment is defined as waged and salaried workers (male or female) as a percent of total employed workers (male or female). Educational attainment is measured separately for women and men in female and male regressions, respectively. Educational attainment variables are linearly interpolated. PTAs with labour provisions is instrumented using total number of PTAs.

Source: Authors' calculations on data from WDI and Engen (2017).

# Regression analysis: Inequality

Determinants of inequality, fixed effects regressions

	(1)	(2)	(3)	(4)
Model:	Base-line	Augmented	Base-line	Augmented
Inequality indicator:	Gini	Gini	UTIP-UNIDO	UTIP-UNIDO
GDP per capita	-0.98** [-2.14]	-1.01** [-2.19]	-0.00069 [-1.15]	-0.00040 [-0.63]
CPI	0.024 [0.55]	0.0093 [0.19]	0.00013 [0.44]	0.000031 [0.12]
Educational attainment	0.011 [0.13]	0.044 [0.52]	-0.0018*** [-4.05]	-0.0016*** [-3.33]
Urbanisation	-0.018 [-0.15]	0.019 [0.17]	0.00097 [1.40]	0.00090 [1.14]
Democracy	-0.013 [-0.21]	-0.023 [-0.31]	-0.00091** [-2.46]	-0.00088*** [-3.08]
Openness	0.011 [0.57]		0.00012 [1.18]	
PTAs		-0.069 [-0.31]		-0.00086 [-0.26]
PTAs w/ labour provisions		-0.78 [-1.52]		-0.0078 [-0.53]
Country & year FE?	Yes	Yes	Yes	Yes
Observations	216	216	254	254
R-squared	0.37	0.38	0.33	0.32
Number of countries	19	19	13	13

Notes: \*, \*\*, and \*\*\* denote statistical significance at the 10, 5 and 1 per cent levels, respectively. Robust t-statistics in brackets. Educational attainment and Gini Coefficients variables are linearly interpolated.

Source: Authors' calculations on data from WDI and Engen (2017).

# Regression analysis: Inequality II

Determinants of inequality, accounting for endogeneity with IV

	(1)	(2)
Inequality indicator:	Gini	UTIP-UNIDO
GDP per capita	-1.04*** [-4.46]	-0.00043 [-0.98]
CPI	-0.0030 [-0.10]	0.000057 [0.36]
Educational attainment	0.050 [1.04]	-0.0016*** [-6.44]
Urbanisation	0.018 [0.37]	0.00094** [2.33]
Democracy	-0.031 [-0.59]	-0.00092*** [-3.23]
Total PTAs w/ labour provisions	-1.23 [-1.57]	-0.014 [-1.29]
Country & year FE?	Yes	Yes
Observations	210	254
Number of countries	19	13
Kleibergen-Paap rk LM p-value	0.00030	0.00017
Kleibergen-Paap rk Wald F stat	15.5	22.7

Notes: \*, \*\*, and \*\*\* denote statistical significance at the 10, 5 and 1 per cent levels, respectively. Robust t-statistics in brackets. Child labour is defined as the per cent of girls or boys aged between 7 and 14 in employment. Child labour variables in Columns 1,3, 4 and 6 are linearly interpolated. Child labour variables in Columns 2 and 5 are five-year moving averages. Rule of law is never lagged.

# Conclusion: general

- Basic analysis reveals that better labour market outcomes are positively correlated with PTAs and PTAs w/ labour provisions.
- A closer look at the data, however, shows that PTAs and PTAs w/ labour provisions are unlikely to cause better labour market outcomes.

# Conclusion: Policy implications

- There are two reasons why countries may want to sign FTAs or PTAs with labour provisions after labour market outcomes have improved.
  1. To signal to other countries that their labour markets function well or are 'fair'.
  2. To pressure other nations to improve their labour markets.

# Conclusion: Policy implications II

- The first reason may be a good strategy for developing nations competing in a world where labour standards are both internationally visible and increasingly important, particularly to consumers.
- The second reason may be important for governments worried about the state of affairs in other nations or worried about unfair competition or a 'race to the bottom' of labour standards in globalised environments.

# Conclusion: final thoughts

- This highlights the complexity of the political economy of international trade and PTAs.
- PTAs with labour provisions are not necessarily tools to improve labour market outcomes.
- However, they may be useful **SIGNALLING** tools for economies dealing in modern competitive environments.

# Conclusion: Policy implications

- Governments interested in signalling are likely to continue to use these tools.
  - Economies should not ignore labour market issues and provisions because both civil society and consumers care!
  - There are good macro & micro-level policies that can go toward achieving better labour market outcomes (infrastructure, education, health, etc.).
- For provisions to actually improve conditions, however:
  - Better monitoring and evaluation.
  - Arbitration possibilities.



# Next steps

- Hunt for more data:
  - [www.designoftradeagreements.org](http://www.designoftradeagreements.org)
  - Create a composite social indicators index.
  - Include other indicators.
- Ranking countries.
- Run more regressions!

# Thank you very much!

**This is preliminary work, so I welcome and appreciate your feedback!**

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## Formal employment, robustness test with lags

	(1)	(2)	(3)	(4)
Formality indicator:	Women	Women	Men	Men
GDP per capita	-0.55*** [-5.18]	-0.47** [-2.29]	-0.24** [-2.26]	-0.35*** [-3.42]
Kucera-Sari Indicator	0.28** [2.51]	0.39*** [3.02]	0.00042 [0.0065]	0.072 [0.98]
5-year lag of FTA w/ labour prov.	-0.79 [ -1.27]	-0.99 [-1.52]	-0.75 [-0.62]	-0.54 [-0.85]
Country& year FE?	Yes	Yes	Yes	Yes
Observations	50	85	50	85
R-squared	0.81	0.64	0.69	0.67
Number of countries	17	21	17	21

Notes: Robust t-statistics in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

PTAs w/ labour provisions - A. Posso

## Inequality, robustness test with lags

	(1)	(2)
Inequality indicator:	Gini index	Theil index
GDP per capita	-0.83** [-2.16]	-0.00020 [-0.27]
Inflation	0.012 [0.22]	0.000045 [0.15]
Educational attainment	0.048 [0.62]	-0.0014*** [-3.33]
Urbanisation	0.029 [0.31]	0.00034 [0.65]
Democracy	-0.011 [-0.15]	-0.00085* [-1.95]
4-year lag of total FTAs	-0.39 [-1.23]	-0.014*** [-3.41]
4-year lag of FTAs w/ labour prov.	-1.25 [-1.44]	0.053** [2.19]
Country & year FE?	Yes	Yes
Observations	216	254
R-squared	0.42	0.41
Number of countries	19	13

Notes: Robust t-statistics in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

# Previous studies

- Giumelli & van Roozendall (2017) focus on legal changes, rather than labour market outcomes.
- Kamata (2015) look at regional trade agreements with labour provisions and its effect on average earnings, average work hours, fatal occupational injury rate, and the number of the ILO's fundamental conventions ratified. The empirical result indicates that RTAs with labour clauses do not differ from RTAs without labour clauses.
- Dewan and Ronconi (2014) focus on FTAs signed with the US and changes in the number of labour inspectors and inspections in latin America.