# PREFERENTIAL TRADE AGREEMENTS WITH LABOUR PROVISIONS AND CHILD LABOUR: EVIDENCE FROM ASIA AND THE PACIFIC

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***Many argue that the benefits of trade liberalization do not equitably accrue to everyone. To counter this trend, some governments have proposed adding labour provisions in preferential trade agreements. The eradication of child labour is included in most of those agreements. Using unique new data, the present study is an assessment on whether preferential trade agreements with labour provisions have resulted in less child labour in 18 developing economies in the Asia-Pacific region over the period 1997-2014. The analysis reveals that countries with more preferential trade agreements with labour provisions have lower incidences of child labour. Robustness exercises, however, show that those trade policies are unlikely to reduce child labour and that instead, improving educational access is likely to lower this phenomenon. Accordingly, governments tend to sign those agreements after labour market conditions improve. This is useful in that it signals to other countries their concern about labour standards, which have been found to increase foreign direct investment. Alternatively, signing those preferential trade agreements can protect their own labour markets from a potential race to the bottom.***

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# I. INTRODUCTION

Most economists agree that international trade provides opportunities for growth and employment generation. However, a growing consensus within the discipline and many segments of society highlight that the benefits of international trade are not accruing to everyone within economies with equity. In particular, competition from abroad can often hurt a number of domestic industries, which has prompted many firms to search for ways to save costs. In turn, this can result in significant downward pressure on wages and labour conditions. Consequently, a number of governments are attempting to ensure more equitable outcomes from trade liberalization. In particular, labour provisions in trade agreements have been offered as a solution.

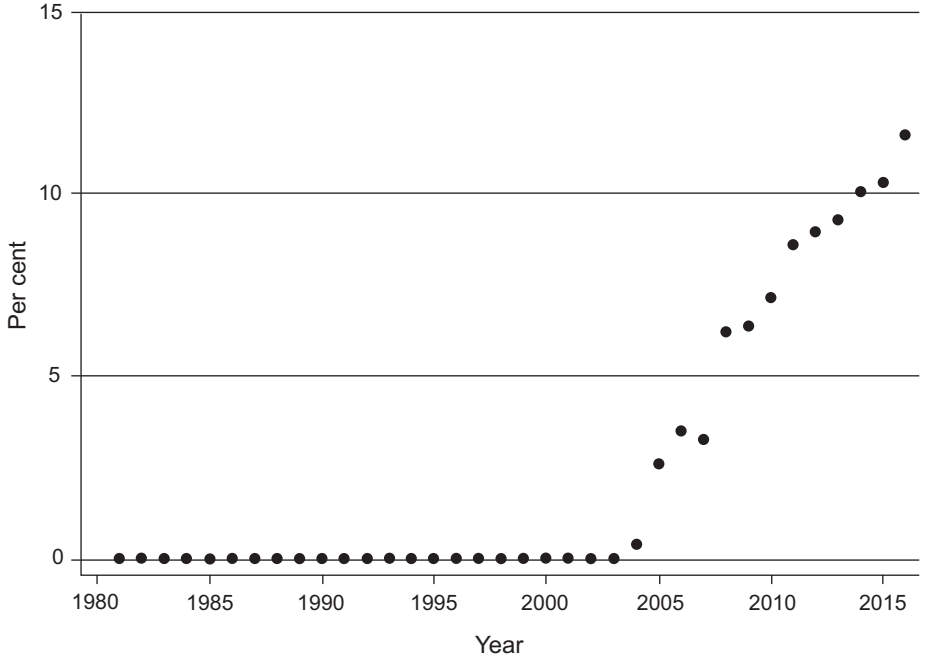
This is part of a growing trend that incorporates sustainable development into bilateral and regional trade agreements (Draper, Khumalo and Tigere, 2017). Thus, various trade agreements are now characterized by a wide scope of sustainable development provisions, many of which include measures promoting compliance with international or domestic environmental and labour laws, or regulatory commitments to advance social or environmental objectives (Draper, Khumalo and Tigere, 2017).

Efforts to introduce labour standards in trade policy have traditionally been met with opposition, particularly from developing economies, which have argued that high labour standards would erode their comparative advantage (Doumbia-Henry and Gravel, 2006). Generally, those in favour of labour standards argue that they can help avoid a race to the bottom, while addressing growing inequality concerns (Bhagwati, 1995; Chan and Ross, 2003). However, many argue that labour provisions either do not have the desired impact, or can possibly worsen key labour market outcomes, for example, by imposing trade sanctions on labour-intensive industries (Maskus, 2002).

Nevertheless, labour provisions are now part of an increasing number of preferential trade agreements (PTAs). In figure 1, data on the percentage of all preferential trade agreements with labour provisions in both developed and developing economies in the Asia-Pacific region are plotted, as determined by Engen (2017). The data show that labour provisions in preferential trade agreements have increased from around 1 per cent in 2005 to 10 per cent a decade after. Those provisions link labour standards with trade by demanding compliance with certain agreed upon base standards. The provisions added to various preferential trade agreements vary significantly from agreement to agreement. However, in most cases they tend to include the core International Labour Organization (ILO) labour standards (Engen, 2017). These are: (a) freedom of association and the effective recognition of the right to collective bargaining (Conventions No. 87 and No. 98); (b) the elimination of all forms of forced and compulsory labour (Conventions No. 29 and No. 105);

(c) the effective abolition of child labour (Conventions No. 138 and No. 182); and (d) the elimination of discrimination in respect of employment and occupation (Conventions No. 100 and No. 111). In most cases, labour provisions in preferential trade agreements are not supported by formal enforcement mechanisms, relying instead on self-compliance (Engen, 2017). However, this does not necessarily preclude those mechanisms from having a real effect on labour market outcomes.

Figure 1. Percentage of preferential trade agreements with labour provisions, 1980-2015




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

The limited empirical evidence on the nexus between preferential trade agreements with labour provisions and labour market outcomes is mixed. Bonnal (2010), for example, examines the impact of trade on frequency of strikes and lockouts as well as on cases of injury. He finds that the value of labour standards is positively associated with trade. On the other hand, Häberli, Jansen and Monteiro (2012) find that trade under preferential trade agreements lower labour standards, measured by notice periods, severance payments, and the gross replacement ratio, but only in agreements between developed economies.

For this paper, the impact of labour provisions in preferential trade agreements on child labour is empirically tested. Child labour is the focus of this study for two reasons: (a) it remains a prominent problem in most developing nations; and (b) it is the only labour standard for which there are adequate macroeconomic-level time-series data.[1] Even though child labour has been found to be a function of poverty (Krueger, 1997; Basu and Van, 1998), it is associated with worsening health outcomes (Roggero and others, 2007) and lower educational attainment (Akabayashi and Psacharopoulos, 1999; Zabaleta, 2011). As such, child labour is often perceived as having real and long-lasting effects on the economic prosperity of countries. It is, therefore, seen by many policymakers as robbing countries of their future. According to ILO, Asia and the Pacific is the region with the largest absolute number of child workers, estimated at 77 million children and amounting to more than half of the global total (ILO, 2013).

Labour provisions that aim to decrease child labour and improving other labour market outcomes are a relatively new feature in international trade. Accordingly, they remain in a phase of experimentation, lacking available information and evidence of how or if they work. For this paper, a unique new data set prepared by Engen (2017) on preferential trade agreements and preferential trade agreements with labour provisions signed in the Asia-Pacific region over the period 1997 to 2014 is used.

Insights from the Asia-Pacific region are useful to developing countries in other regions not only because preferential trade agreements with labour provisions are increasing in popularity, but also because this region is home to more than half of the global workforce. Accordingly, the quality of work in the Asia-Pacific region has implications for the state of total welfare of workers globally (Engen, 2017). Furthermore, because of its size, the region faces large labour market challenges. Indeed, while some countries have experienced significant improvements in labour regulations and conditions over the last decades, a large number of workers in this region face difficult, often hazardous, conditions and with very little protection (Engen, 2017).

Understanding the nexus between international trade policy and labour market outcomes, particularly child labour, is also of great importance given the current international policy climate. Proponents of the 2030 Agenda for Sustainable Development generally recognize that while trade promotion has been associated with higher levels of economic growth, not all segments of society have benefited from the new opportunities associated with it (ESCAP, 2017). In a world facing populist

[1] It is imperative that developing nations collect reliable statistical information on all labour standards to inform policy with more formal analyses.

backlashes against international trade and globalization, understanding the role, if any, international trade policy can have in improving the conditions of the segment of a population remaining at the margin of the economy is important.

The data of Engen (2017) are grouped with World Bank data to assess whether preferential trade agreements with labour provisions are likely to have resulted in a decline in child labour in 18 developing economies in the Asia-Pacific region. The empirical approach for determining this begins with a broad statistical analysis that focuses on existing correlations in order to reach preliminary conclusions. The results of that exercise are then tested for robustness by applying an econometric model that reviews the relationship between preferential trade agreements with labour provisions and child labour after controlling for other key factors that can influence child labour. This econometric analysis is then augmented with models that test causality between the trade policy initiative and the labour market outcomes.

The results of the correlation analysis suggest that countries that have signed preferential trade agreements with labour provisions have lower incidences of child labour. Similar findings are gathered from the simple econometric analysis. The models that aim to determine whether there is a causal linkage, however, suggest that preferential trade agreements with labour provision are unlikely to cause lower incidences of child labour. Instead, those models indicate that improving access to educational opportunities within countries is likely to significantly reduce child labour.

The remainder of the paper is structured as follows. The next section contains an introduction to the empirical approach. In section III the data are discussed, and in section IV the empirical results are presented. Section V includes policy implications, while the last section concludes.

## II. EMPIRICAL APPROACH

For the present study, a two-tiered empirical approach is used to examine the data. The study begins with a simple graphical analysis that discusses the correlations between preferential trade agreements and preferential trade agreements with labour provisions with child labour in order to highlight country-level trends in the data. This analysis relies on the calculation of average child labour for boys and girls, which is compared to the average number of treaties for each country in the sample. Average child labour and the number of treaties are calculated for each economy over the entire period for which data are available. This provides a *between* country analysis of the data to simply determine if countries with preferential trade agreements and preferential trade agreements with labour provisions exhibit lower or higher incidences of child labour.

Next, an econometric approach is adopted that takes advantage of repeated observations for each economy through time to estimate how preferential trade agreements and preferential trade agreements with labour provisions correlate with child labour *within* each country, on average. This econometric approach builds on macroeconomic studies that have looked at the nexus between trade and labour market outcomes in developing countries.[2] Most of the previous work on the determinants of child labour relies on microeconomic data, such as household surveys (Edmonds, 2008). The conceptual framework in this study builds on micro-level studies by using macroeconomic proxies for key household characteristics, namely income and educational attainment. Taking advantage of macro-level panel data also means that country characteristics can also be included in the model. The study estimates the following model:

$$CL_{i,t} = \alpha + \beta_1 T_{i,t} + \beta_2 PTA_{i,t} + \beta_3 PTA\_LP_{i,t} + \beta_4 X_{i,t} + \mu_{i,t} \quad (1)$$

where the subscripts denote country *i* at time *t*. *CL* is child labour (male, female or total), *T* is a vector of trade exposure variables (such as openness), *PTA* is the number of signed preferential trade agreements that country *i* has at time *t*, while *PTA_LP* is the number of preferential trade agreements with labour provisions that the country has at time *t*. The variable *X* is a vector of other factors that can potentially influence child labour at a macroeconomic level (discussed in the next section), while $\mu_{i,t}$ is the error term. It is important to test for the effect of *PTA_LP* after controlling for *PTA* in order to isolate the effect that *PTA_LP* potentially has more clearly.

Equation (1) is primarily estimated with a fixed effects model. Those models allow for the decomposition of the error term into:

$$\mu_{i,t} = \delta_i + \lambda_t + \varepsilon_{i,t} \quad (2)$$

where $\delta_i$ is a country-specific dummy variable used to control for unobserved, time-invariant characteristics. For example, $\delta_i$ controls for the legal origin in country *i*, which could potentially determine key labour market outcomes. Additionally, $\delta_i$ controls for geographical location and topography, which could influence the availability of opportunities for child work in an economy. The term $\lambda_t$ controls for omitted time-variant characteristics that affect all countries in a particular year. For example, $\lambda_t$ controls for unobserved labour market effects of the global financial crisis of 2008-2009. Finally, the term $\varepsilon_{i,t}$ is an idiosyncratic error term. Formal Hausman tests are used to ensure that fixed effects perform better than random effects estimators.

[2] Another strand of the literature focuses on the opposite relationship (see Kucera and Sarna, 2006).

Fixed effects regressions are useful to deal with omitted variable bias. However, the standard model does not deal well with endogeneity bias. This phenomenon is plausible here because countries with, for example, low rates of child labour may choose to adopt more stringent labour standards to show political willingness against this problem in the international arena. Developing countries with relatively stronger existing labour market outcomes may also sign a preferential free trade agreement with labour provisions to attract more international investment to the manufacturing sector. Multinational firms may then see this as a relatively safer option to do business in a world where production practices are increasingly under scrutiny from the global media and civil society. An instrumental variable (IV) approach is most often viewed as the best method to deal with endogeneity. IV regressions use a variable (or set of variables), *z*, that are correlated only with the dependent variable through its direct relationship with the endogenous variable. In practice, however, finding instruments that are intuitively pleasing can be difficult. Therefore, this study relies on two alternative techniques to account for endogeneity – lagged explanatory variables and Generalized Method of Moments.

The lagged explanatory variable approach simply fits the following model:

$$CL_{i,t} = \alpha + \beta_1 LS_{i,t-n} + \beta_2 T_{i,t-n} + \beta_3 PTA_{i,t-n} + \beta_4 PTA\_LP_{i,t-n} + \beta_5 X_{i,t-n} + \mu_{i,t} \quad (3)$$

In this case, for simplicity, all explanatory variables are lagged by *n* years. The number of lagged years can be determined by a number of criteria, however, in this situation, because of the limited availability of data, a lag of one year is employed. The intuition behind this approach is that movements in variables in period *t-1* are unlikely to be correlated with movements in period *t*. In practice, however, if the endogenous variable in period *t* is determined to some degree by itself in period *t-1*, then the said variable will remain correlated with the error term, thus endogenous.

Accordingly, a second, more comprehensive, technique is employed to account for endogeneity – Generalized Method of Moments. This technique relies on lags of the endogenous variables as instruments (Arellano and Bond, 1991). An advantage of Generalized Method of Moments is that it is designed with endogenous variables being potentially correlated with both past and present errors. Generalized Method of Moments uses first-differences to transform equation (1) into

$$\Delta CL_{i,t} = \beta_1 \Delta LS_{i,t} + \beta_2 \Delta T_{i,t} + \beta_3 \Delta PTA_{i,t} + \beta_4 \Delta PTA\_LP_{i,t} + \beta_5 \Delta X_{i,t} + \Delta\mu_{i,t} \quad (4)$$

In this case, transforming the regressors by first differencing removes the fixed country-specific effect as it does not vary with time, as shown in equation (5).

$$\Delta\mu_{i,t} = \Delta\delta_i + \Delta\lambda_t + \Delta\varepsilon_{i,t} = \Delta\lambda_t + \Delta\varepsilon_{i,t} \quad (5)$$

Equation (5) fits instruments for the differenced variables that are not strictly exogenous with differenced lags of one and two years. Arellano and Bond (1991) also have developed tests for autocorrelation, which, if present, can make some lags invalid as instruments. A problem, however, is that applying Generalized Method of Moments to small samples, as in this case, can lead to over rejection of the null hypotheses (Hansen, Heaton and Yaron, 1996). Consequently, those results must be interpreted with caution. Overall, however, using alternative techniques is important to obtain general inferences about the relationships evident from the data.

## III. DATA

The list of countries in the study is given in the appendix. The principal data requirement is some degree of time-variation to apply panel data techniques that control for unobserved, time-invariant characteristics, which could potentially explain labour market outcomes.[3] The data are available over the period 1997-2014 for 18 nations.

The data are obtained from internationally recognized data sources. The dependent variable, child labour (*CL*), is available from the World Bank's World Development Indicators and is measured by children in employment (male, female and total), as a proportion of children aged 7 to 14. The World Bank collates child labour data obtained from household surveys by ILO, the United Nations Children's Fund (UNICEF), the World Bank, and national statistical offices. It adheres to the definition of economic activity adopted by the 13th International Conference of Labour Statisticians, which classifies a person as employed if they have been engaged in at least one hour in any activity relating to the production of goods and services during the reference period.

Those data are generally available from 1997 for most developing countries. However, the household level surveys from which the data come from are generally conducted every five years, with gaps within some economies being larger. Standard multivariate econometric analysis generally requires a relatively large sample size. Presently, each economy has approximately two to three observations for the entire period, providing a total sample of approximately 45 observations. It is well understood that labour market outcomes move slowly within countries, therefore, linear interpolation is an acceptable technique used to maximize the number of

[3] Panel data are defined by multiple cases (countries) being observed at two or more time periods. The cross-sectional information (countries) is used to capture differences between economies, while the time-series or within-subject information reflects changes within countries over time. Panel data regression techniques allow the model to take advantage of those different types of information.

observations (Blanchard and Wolfers, 2000; Bertola, Blau and Kahn, 2001; Dreher and Gaston, 2008). The child labour variables are linearly interpolated under the assumption that they follow a constant trend between missing years.[4]

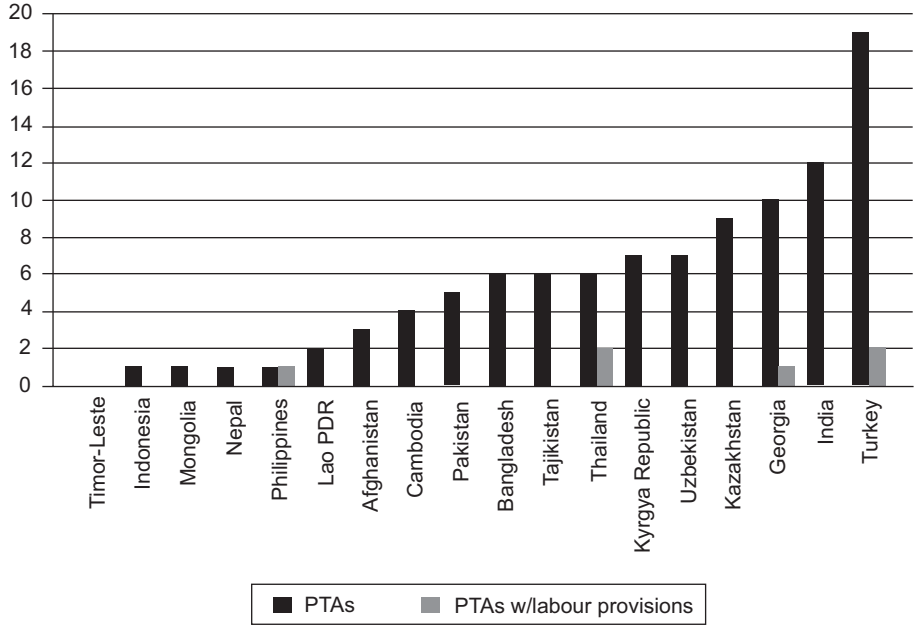
This technique allows the econometric models to capture changes in the dependent variable as shifts in overall trends between observed, rather than imputed, observations. Given that a shock in period *t* is only observed to affect a change in the dependent variable (and its trend) in period *t+1*, the econometric results can potentially undervalue the true relationship between the dependent and independent variables. In that regard, the results must be interpreted with caution.

Data on preferential trade agreements and preferential trade agreements with labour provisions are sourced from Engen (2017), who has created a data set containing the number of preferential trade agreements and preferential trade agreements with labour provisions for a selection of countries in the Asia-Pacific region. Out of 173 active preferential trade agreements in the region, Engen (2017) identifies that 34 have a labour provision, amounting to approximately 20 per cent of all agreements. However, Engen also notes that out of the agreements entered into force starting in 2004, the share of those having provisions is 33 per cent. Figure 2 gives a summary of the data on preferential trade agreements and preferential trade agreements with labour provisions for the countries used in the forthcoming analysis. The figure highlights that agreements with labour provisions are clustered around a number of countries. Thailand and Turkey, for example, have the most preferential trade agreements with labour provisions. The statistical analyses below use cumulative sums of each variable in year *t*.

The remaining macro-level explanatory variables used in the regressions build on studies focusing on the determinants of child labour (Chernichovsky, 1985; Patrinos and Psacharopoulos, 1997; Basu and Van, 1998; Ray, 2000; Edmonds, 2008; Edmonds and Pavcnik, 2005; Beegle, Dehejia and Gatti, 2006; Edmonds and Schady, 2008). As mentioned above, most previous studies on this topic find that child labour is a function of income and educational attainment. Income is proxied with gross domestic product (GDP) per capita, which is measured in thousands of 2010 United States dollars. Educational attainment is captured through primary and secondary enrolment rates. The latter variables capture the opportunity cost of child work and parent's level of education, given that higher current enrolment rates are associated with higher levels of parental educational attainment (Wilson, 2001). Enrolment rates are presented as percentages of the relevant age groups. The rule of law is also included because in most instances child labour is illegal. Accordingly, it is

[4] Interpolation uses the standard formula, relying on the *ipolate* command in STATA.

Figure 2. Asia-Pacific countries with preferential trade agreements and preferential trade agreements with labour provisions, 2016




*Source:* Calculations using data from Engen (2017).
*Note:* PTAs, preferential trade agreements.

assumed that the problem is more likely to be observed in the absence of the rule of law. According to the World Bank, the rule of law variable captures the extent to which people perceive confidence in and abide by the rules of their society. This measure focuses on indicators, such as the quality of contract enforcement, property rights, the police and the courts, as well as on the likelihood of crime and violence (Kaufmann, Kraay and Mastruzzi, 2011). The rule of law gives a country's score on an aggregate indicator ranging from approximately -2.5 to 2.5. Those data are available from the Worldwide Governance Indicator database. Finally, openness (trade as a share of GDP) is also included to control for trade exposure, which can potentially influence child labour opportunities (Edmonds and Pavcnik, 2005). Table 1 shows a highlight of the summary statistics.

**Table 1. Summary statistics**

| Variable | Observations | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| Child labour (male) | 127 | 18.44 | 14.16 | 1.9 | 52.4 |
| Child labour (female) | 127 | 17.01 | 15.68 | 1.6 | 52.4 |
| Child labour (total) | 127 | 17.75 | 14.72 | 1.7 | 52.3 |
| GDP per capita | 127 | 1.79 | 2.02 | 0.39 | 9.72 |
| Primary enrolment rate | 127 | 107.69 | 11.89 | 91.97 | 145.41 |
| Secondary enrolment rate | 127 | 66.44 | 19.91 | 18.87 | 99.38 |
| Rule of law | 127 | -0.69 | 0.46 | -1.94 | 0.28 |
| Openness | 127 | 81.10 | 39.77 | 25.55 | 201.80 |
| Total PTAs | 127 | 3.48 | 3.08 | 0 | 12 |
| Total PTAs w/ labour provisions | 127 | 0.05 | 0.28 | 0 | 2 |

*Source:* Authors calculations based on data from Engen (2017) and World Development Indicators.

*Notes:* PTAs, preferential trade agreements. Child labour, primary and secondary enrolment rates, and openness are measured as percentages. GDP per capita is measured in thousands of 2010 United States dollars. The rule of law gives a country's score on the aggregate indicator, in units of a standard normal distribution ranging from approximately -2.5 to 2.5. PTAs and PTAs with labour provisions are cumulative sums.

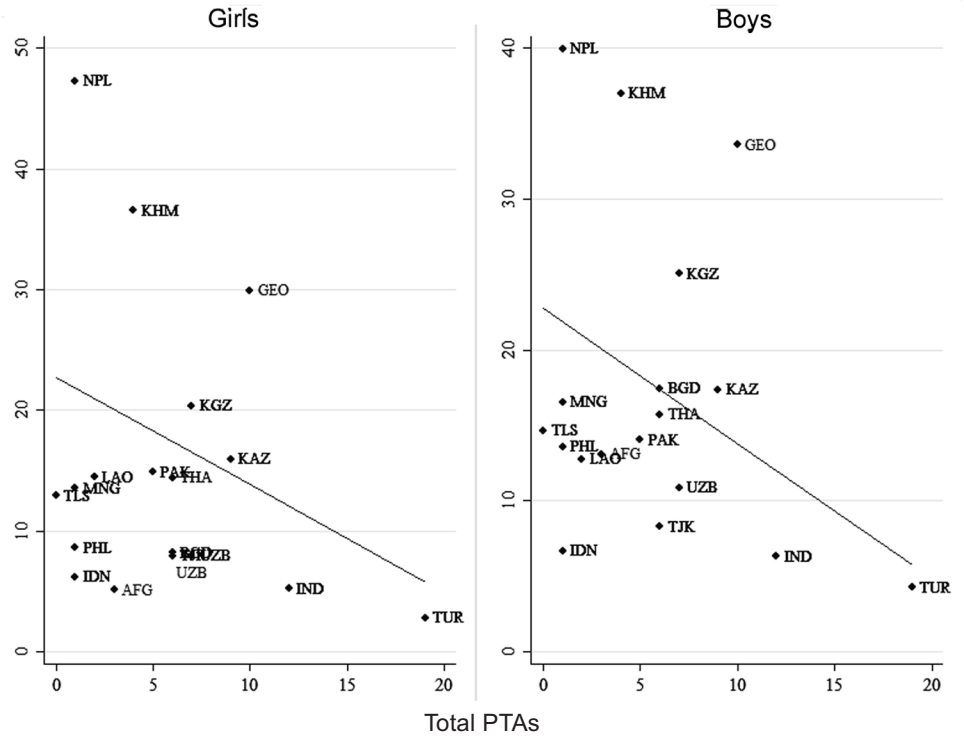
## IV. RESULTS

### Graphical analysis and preliminary results

In this section, the relationship between preferential trade agreements and preferential trade agreements with labour provisions with child labour are examined extensively. Figures 3 and 4 provide graphical information about the correlations between the variables of interest. The figures show encouraging results – the more preferential trade agreements and such agreements with labour provisions that an economy has, the lower its incidences of child labour for male and female children.

Nevertheless, both figures highlight that only a handful of economies have signed preferential trade agreements with labour provisions. Figure 4 shows that countries that have signed multiple preferential trade agreements with labour provisions have lower incidences of child labour. However, this may be because those provisions have a real effect on the economy or economies that have signed the provisions when child labour is already low. The remainder of the section contains a discussion of tests to determine whether this relationship is robust to the inclusion of other explanatory variables and panel data regression techniques that account for potential reverse causality.

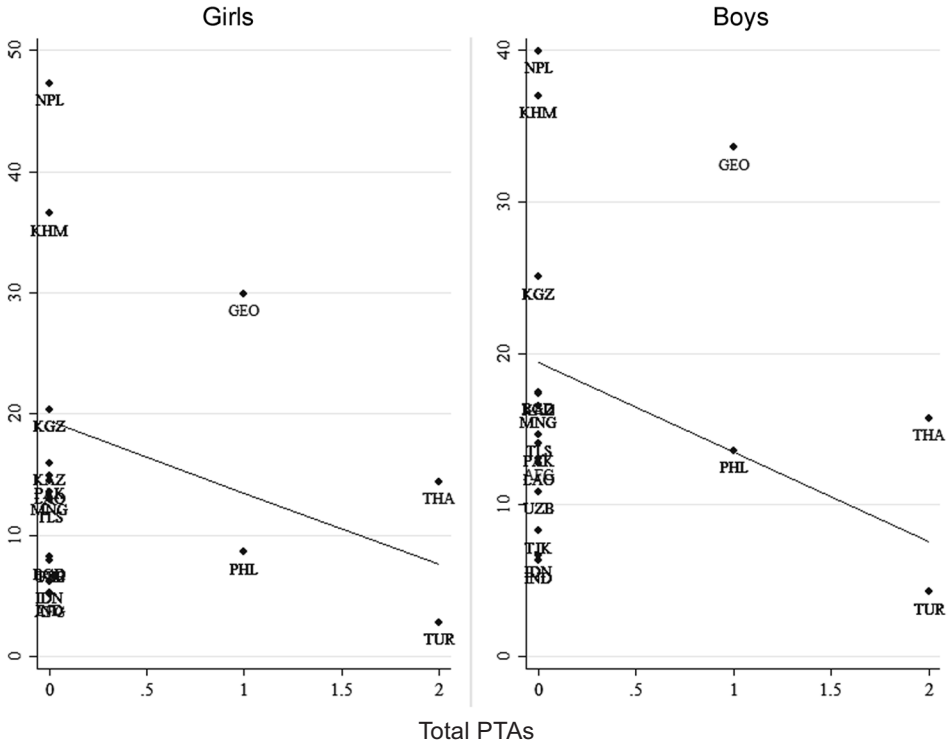
**Figure 3. Preferential trade agreements versus child labour**




*Source:* Calculations based on data from World Development Indicators and Engen (2017).

*Notes:* AFG, Afghanistan, BGD, Bangladesh; GEO, Georgia; IND, India; IDN, Indonesia; KAZ, Kazakhstan; KGZ, Kyrgyzstan; KHM, Cambodia; LAO, Lao People's Democratic Republic; MNG, Mongolia; NPL, Nepal; Pak, Pakistan; PHL, Philippines; TJK, Tajikistan; THA; Thailand; TLS, Timor-Leste; TUR, Turkey; and UZB, Uzbekistan.

**Figure 4. Preferential Trade Agreements with labour provisions versus child labour**




*Source:* Calculations based on data from the World Development Indicators and Engen (2017).

*Notes:* AFG, Afghanistan, BGD, Bangladesh; GEO, Georgia; IND, India; IDN, Indonesia; KAZ, Kazakhstan; KGZ, Krygyzstan; KHM, Cambodia; LAO, Lao People's Democratic Republic; MNG, Mongolia; NPL, Nepal; Pak, Pakistan; PHL, Philippines; TJK, Tajikistan; THA; Thailand; TLS, Timor-Leste; TUR, Turkey; and UZB, Uzbekistan.

## Econometric analysis and results

The results of the fixed effects regression analyses are presented in table 2. Column 1 uses female child labour as the dependent variable, column 2 focuses on its male counterpart, and column 3 uses total (female and male) child labour as the dependent variable. The findings in table 2 confirm a number of expectations. In particular, higher income is associated with lower child labour – an increase in GDP per capita by $1,000 (2010) is associated with a decline in child labour by approximately four percentage points. This is consistent with a number of previous empirical studies that find that child labour is a function of poverty (Ray, 2000).

Additionally, higher rates of secondary enrolment rates are found to be associated with lower incidences of child labour – an increase in the secondary enrolment rate by one percentage point is associated with approximately a one percentage point decline in child labour, with all other things being equal. This is also consistent with previous findings – child labour is, unsurprisingly, most prominent among older children (Ravallion and Wodon, 2000). As a result, if children are attending secondary school, they are probably less likely to be working.

**Table 2. Child labour regressions, fixed effects models**

| | (1) | (2) | (3) |
|---|---|---|---|
| Child labour indicator | Girls | Boys | Total |
| GDP per capita | -4.13** | -4.43*** | -4.28*** |
| | [-2.88] | [-3.01] | [-2.96] |
| Primary enrolment rate | -0.34 | -0.43 | -0.39 |
| | [-1.70] | [-1.69] | [-1.71] |
| Secondary enrolment rate | -0.76*** | -0.80*** | -0.79*** |
| | [-4.28] | [-3.44] | [-3.80] |
| Rule of law | -2.16 | -4.13 | -3.13 |
| | [-0.55] | [-0.79] | [-0.70] |
| Openness | 0.050 | 0.051 | 0.052 |
| | [0.85] | [0.76] | [0.82] |
| Total *preferential trade agreements* | -0.22 | -0.45 | -0.35 |
| | [-0.50] | [-0.81] | [-0.70] |
| Total *preferential trade agreements* with labour provisions | -5.74* | -8.34** | -7.15* |
| | [-1.83] | [-2.26] | [-2.08] |
| Country and year fixed effects? | Yes | Yes | Yes |
| Observations | 127 | 127 | 127 |
| R-squared | 0.58 | 0.53 | 0.56 |
| Number of countries | 18 | 18 | 18 |

*Source:* Authors' calculations on data from World Development Indicators, Worldwide Governance Indicators and Engen (2017).

*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 maximize the number of available observations. Child labour is defined as the per cent of girls, boys or total (girls and boys) aged between 7 and 14 in employment.

Turning to the trade related variables, while preferential trade agreements are found to have a statistically insignificant relationship with child labour, preferential trade agreements with labour provisions are found to be negatively and significantly associated with child labour. An increase in the number of signed preferential trade agreements with labour provisions by one is associated with a decline in female, male and total child labour by approximately six, eight and seven percentage points, respectively. This estimated relationship is akin to an economy doubling its GDP per capita.

This gives impetus to the notion that those policy initiatives are having a positive effect on this important phenomenon. However, it remains possible that economies with lower incidences of child labour are signing preferential trade agreements with labour provisions to signal to economic agents in other countries that they are actively engaged in fixing this problem. To begin to test whether this is the case, a Durbin-Wu-Hausman test for endogeneity is performed. The test marginally accepts the null hypothesis (p-value of 0.11) that preferential trade agreements with labour provisions can be treated as exogenous. Given the relatively low p-value, however, endogeneity remains potentially problematic.

In the rest of this section, the two techniques discussed above to address the potential endogeneity problem are adopted. Those techniques assume that all variables are potentially endogenous, with the exception of the rule of law. GDP per capita (income) is potentially endogenous if, as assumed in Basu and Van (1998), children are productive workers called upon when households want to increase total household income. Enrolment rates are endogenous if an increase in child labour pulls children out of school – a standard assumption. Finally, openness and total preferential trade agreements are potentially endogenous if developing countries are more likely to sign preferential trade agreements and engage in other trade-expanding policies when their existing labour market outcomes are healthier. The results are presented in table 3.

Overall, after accounting for endogeneity, only primary and secondary enrolment rates are found to decrease child labour. The lagged regressions show that primary enrolment rates in the previous year do not have a statistically significant relationship with child labour. However, the Generalized Method of Moments regressions show that an increase in primary enrolment rates by one percentage point leads to a decline in child labour by approximately 0.6 percentage points, all things held equal. Similarly, both the lagged and Generalized Method of Moments regressions show that an increase in secondary enrolment rates by one percentage point are associated with a decline in child labour by approximately 0.7 percentage points, all thing held equal. This suggests that access to education at the primary and

secondary levels is likely to increase the opportunity cost of child work, leading to more households opting to send their children to school rather than work. The implications for policy are that the provision of quality education is likely to lead to the desired labour market outcomes.

**Table 3. Child labour regressions, accounting for endogeneity**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Child labour indicator: | Girls | Girls | Boys | Boys | Total | Total |
| Model: | Lag | GMM | Lag | GMM | Lag | GMM |
| GDP per capita | 4.42 | 7.99 | 3.38 | 7.61 | 3.90 | 7.84 |
| | [0.87] | [1.43] | [0.67] | [0.87] | [0.77] | [1.10] |
| Primary enrolment rate | -0.085 | 0.58*** | -0.064 | 0.54*** | -0.076 | 0.56*** |
| | [-0.54] | [4.73] | [-0.35] | [4.59] | [-0.44] | [5.04] |
| Secondary enrolment rate | -0.62** | -0.73*** | -0.64** | -0.66* | -0.63** | -0.70*** |
| | [-2.46] | [-3.72] | [-2.29] | [-1.94] | [-2.37] | [-2.90] |
| Rule of law | -11.2 | -13.2 | -12.3 | -16.9 | -11.8 | -15.7 |
| | [-1.39] | [-0.66] | [-1.43] | [-0.63] | [-1.41] | [-0.69] |
| Openness | -0.067 | -0.19 | -0.084 | -0.20 | -0.075 | -0.19 |
| | [-1.18] | [-1.53] | [-1.26] | [-1.14] | [-1.22] | [-1.31] |
| Total *preferential trade agreements* | 0.63 | -1.06 | 0.88 | -1.36 | 0.76 | -1.21 |
| | [1.28] | [-0.76] | [1.67] | [-0.81] | [1.48] | [-0.83] |
| Total *preferential trade agreement* with labour provisions | 0.24 | -22.5 | -0.62 | -20.3 | -0.20 | -21.0 |
| | [0.096] | [-0.57] | [-0.21] | [-0.46] | [-0.072] | [-0.50] |
| Country and year controls? | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 93 | 127 | 93 | 127 | 93 | 127 |
| R-squared | 0.50 | | 0.45 | | 0.47 | |
| Number of countries | 18 | 18 | 18 | 18 | 18 | 18 |
| AR(1) p-value | | 0.53 | | 0.89 | | 0.71 |
| AR(2) p-value | | 0.44 | | 0.53 | | 0.48 |
| Hansen test p-value | | 0.88 | | 0.89 | | 0.89 |

*Source:* Authors' calculations on data from World Development Indicators, Worldwide Governance Indicators and Engen (2017).

*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, boys, or boys and girls (total) aged between 7 and 14 in employment. Child labour variables in columns 2, 4 and 6 are linearly interpolated. Child labour variables in columns 1, 3 and 5 are five-year moving averages. The rule of law is not lagged.

Table 3 also shows that preferential trade agreements and such agreements with labour provisions have a statistically insignificant effect on child labour when accounting for endogeneity. That is, the table shows that there is no evidence of a causal relationship between signing a preferential trade agreement with labour provisions and experiencing an improvement in child labour.

## V. POLICY IMPLICATIONS

The regression analyses above suggest that labour provisions in preferential trade agreements are unlikely to lead to significantly lower child labour. To many policymakers, this may not be surprising given the weak enforcement mechanisms in preferential trade agreements with labour provisions. Draper, Khumalo and Tigere (2017) discuss the heterogeneity of enforcement mechanisms of sustainable development in cooperation agreements, more generally. They highlight that while some economies or regional blocks maintain a soft approach to sustainable development provisions in agreements, others have incorporated stronger sustainable development obligations. The problem, however, is that developing economies, where child labour issues and other social problems are arguably worse, exhibit more apprehension about including sustainable development commitments in agreements.

Draper, Khumalo and Tigere (2017) suggest that one possible solution is multilateralism – the World Trade Organisation (WTO) could promote the extension of deep agreements containing sustainable development provisions. WTO members could potentially enable that process by facilitating adoption of clear accession mechanisms in preferential trade agreements and regional agreements to encourage the conversion of best endeavour provisions to mandatory provisions. This scenario is perhaps unlikely in a global setting. However, the Trans-Pacific Partnership was perhaps a good example on how regional trade agreements could be formulated to incorporate labour market and environmental provisions, as well as governance goals.

Nevertheless, even if provisions were to lead to legal changes, developing economies face significant capacity constraints that curtail their ability to implement the obligations (ILO, 1996). For a provision to be effective, developing countries need significant support to enhance existing monitoring processes. Importantly, enhanced monitoring processes must be implemented in all sectors, including the agricultural sector, where child labour is most prevalent.

The graphical correlation and simple econometric analyses reveal that countries with lower incidences of child labour are more likely to have signed preferential trade agreements with labour provisions. That is, there is a correlation between preferential trade agreements with labour provisions and less child labour,

but this relationship is unlikely to be causal. Those findings could be attributed to data quality issue; indeed, a significant degree of manipulation was undertaken prior to econometric modelling, suggesting that the results must be interpreted with caution. Intuitively, however, a hypothesis that can potentially reconcile those empirical findings may be related to governments signing preferential trade agreements with labour provisions after their labour market conditions have improved. There are two possible reasons why countries may want to do this.

The first one is to signal to other countries that their labour markets function well or are "fair". This may be a good strategy for developing nations competing in a market where labour standards are internationally visible and increasingly important, particularly to consumers. Indeed, empirical evidence shows that countries that adopt labour standards attract greater foreign direct investment (FDI) (Aggarwal,1995; Kucera, 2002). Kucera (2002) explains those findings by suggesting that while labour standards increase labour costs, the significance of labour costs in FDI decisions is marginally small, thus, outweighed by other positive impacts of labour standards, such as increased quality of labour or political stability. However, those findings can potentially vary within and between countries (or industries). Blanton and Blanton (2012), for example, find that higher labour standards are positively correlated with FDI in the manufacturing sector, while negatively correlated with FDI in the services sector. Nevertheless, this notion does present a viable strategy to developing nations that exhibit low incidences of child labour and/or compliance with the other ILO core labour standards. The second reason why nations may want to adopt labour standards in preferential trade agreements after their conditions have improved is to pressure other countries to improve their own labour markets. This may be an important strategy for governments concerned about the state of affairs in other countries or worried about unfair competition or a "race to the bottom" of labour standards in globalized environments. Indeed, many observers suggest that the latter is a prominent strategy employed by developed economies in order to deny developing countries the use of their comparative advantage (Bhagwati, 1995; Engen, 2017). Some developing economies may choose to also do this to mitigate against the possible negative labour market consequences of economies with lax labour market conditions entering the global economy. As argued in the introductory section, the entrance of economies with poorer labour standards into internationally competitive production networks is often perceived by political agents as putting downward pressure on existing labour market conditions.

The results also reveal that rather than using trade policy to lower child labour, improving access to educational opportunities is likely to significantly reduce this phenomenon. Increasing primary and secondary enrolment rates significantly reduces child labour. Intuitively, more and qualitative better educational opportunities should, therefore, lower incidences of child labour within countries.

## VI. CONCLUDING REMARKS

The present paper is centred on whether trade policy is an efficient conduit to lower child labour in some developing countries. The results reveal that a causal relationship between preferential trade agreements with labour provisions and child labour is unlikely – current agreements are possibly too soft, lacking enforcement mechanisms, making their effect void. Instead, improving educational access is likely to cause lower child labour incidences within economies. This suggests that, in that respect, policies aiming at improving child welfare directly are a better tool to lower child labour than trade policies. Rather, the signing of labour-friendly trade agreements is potentially a mechanism that governments use to signal to the international community that they care about labour issues.

Economies can potentially benefit from signing agreements after conditions improve in at least two ways. On the one hand, some developing economies may use this approach to signal to other nations that they care about labour standards, which has been found to increase FDI. On the other hand, those countries may choose to undertake those strategies in order to protect their own labour markets from a potential race to the bottom in labour standards. In either case, signing preferential trade agreements with labour provisions is a sensible strategy for economies with relatively better labour market conditions. To understand this issue comprehensively, future studies should include labour market outcomes as potential inputs into econometric functions explaining why countries sign preferential trade agreements and preferential trade agreements with labour provisions.

It is important to note that data limitations make a comprehensive analysis of child labour difficult. The available data from most economies are sourced from household surveys conducted every five years. As a result, applying standard econometric techniques to such data requires significant data manipulation and some important assumptions – namely that labour market movements are slow. This means that the results in this paper must be interpreted with caution.

Furthermore, current data availability does not allow for a robust analysis of other core labour standards. To test the effects of globalization, particularly trade and investment, on welfare outcomes, governments must actively collect time-series information on, for example, freedom of association, incidences of forced labour, and different types of discrimination. Future work needs to focus on the nexus between globalization, international legal agreements and labour market outcomes to understand the consequences of these economic shocks and provide policy initiatives that can adequately prepare segments of the population for, at least, the most common potential negative outcomes.

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# APPENDIX

## Country list

| | |
|---|---|
| Afghanistan | Mongolia |
| Bangladesh | Nepal |
| Cambodia | Pakistan |
| Georgia | Philippines |
| India | Tajikistan |
| Indonesia | Thailand |
| Kazakhstan | Timor-Leste |
| Kyrgyzstan | Turkey |
| Lao People's Democratic Republic | Uzbekistan |



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