The impact of trade on employment and wages in the manufacturing industry in Sri Lanka

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Abstract: This paper examines the impact of trade on employment and wages in the manufacturing industry in Sri Lanka. The study models the effects of trade on employment and wages in the manufacturing industry in a labour demand and a wages framework on an integrated panel dataset of trade, labour and manufacturing industries. The impact of trade on manufacturing employment and wages is empirically examined following the predictions of the Heckscher-Ohlin trade theorem. Empirical findings on the labour demand model suggest a positive and statistically significant impact of exports on manufacturing employment, confirming the Heckscher-Ohlin predictions. On the wages model, empirical results suggest a positive and a statistically significant impact of exports on manufacturing wages confirming the Stolper-Samuelson theorem. The empirical examination also controls for structural and policy effects in analysing the impact of trade on employment and wages in the manufacturing industry.

Key words: *Trade, factor endowments, Heckscher-Ohlin trade theory, Stolper-Samuelson theorem*

1. Introduction

At independence, Sri Lanka pursued an open economic model and the State remained confined to its functions before independence. With influence from the socialist bloc, in the late 1950's, it tilted towards a closed economic model. With this shift, the country embarked on a rigorous programme of import substitution and the State directly intervened in economic affairs by nationalising private ventures and opening up new public-sector enterprises. After a few years of experimenting with closed economic policies, the Government realised the futility of inward-oriented economic policies and their potency in delivering economic independence. Against this backdrop, Sri Lanka, together with many other developing economies embarked on a rigorous path of economic liberalisation, setting liberal policies aimed at reducing State intervention in the economy. This policy broke with the traditional restricted economies of South Asia and the economy was liberalised in 1977. Under the liberalised regime, the manufacturing industry was expected to play a leading role in contributing towards economic growth and labour market outcomes. Despite optimistic expectations, the impact of trade on employment and wages in the manufacturing industry has been quite depressing. At the time of independence, plantation agriculture dominated and fuelled economic growth. However, the share of agriculture continued to decline from 35.6 percent (1950) to 7.7 percent by 2017. This was in response to the liberal economic policies and the shift of emphasis to industrialisation. On the other hand, the share of manufacturing declined from 16.8 percent (1950) to 15.5 percent by 1977 reflective of the import-substitution policies. Policy reforms in 1977 were aimed at driving the manufacturing industry to play a leading role in the country's economic growth. As a result of these open economic policies, the share of manufacturing increased to 21 percent by 1996, led by the growth in readymade garments, while its share continued to decline to 17.7 percent by 2017. Along with this, the share of manufacturing employment that was 9.1 percent in 1963, settled at 21.3 percent by 2017. On wages, regardless of the nominal wage increases, real wages have continued to deteriorate or to be stagnant during 1994-2011.

While economic theory offers several explanations for the pattern of trade between developed and developing economies, the orthodox Heckscher-Ohlin trade theory is the most commonly invoked theory to explain the link between trade, employment and wages. Hence the main objective of this paper is to examine the impact of trade on employment and wages in the manufacturing industry as postulated by the Heckscher-Ohlin trade theory also known as the factor-endowment theory.

2. Theory and evidence

Heckscher (1919) and Ohlin (1933) extends the basic Ricardo (1963) model to include both labour and capital to isolate the differences in relative factor abundance among nations as the basic determinant of comparative advantage. The Heckscher-Ohlin model predicts that a country will export based on its abundant factor and will import based on its scarce factor of production. In other words, a capital-rich country will have a comparative advantage in the export of capital-intensive commodities, while a country abundant in labour, will be a net exporter of labour in terms of the amount of labour incorporated in its exports, compared to the amount of labour embodied in a representative bundle of import-competing commodities. Based on the Heckscher-Ohlin framework, Stolper and Samuelson (1941) argued that an increase in the relative price of one of the commodities will raise the real return of the factor used relatively intensively in the production of that commodity and decrease the real reward of the other factor.

Using a longitudinal dataset, Edin, Fredriksson, and Lundborg (2004) studied the effect of trade on wages in the Swedish labour market. Exports were found to be positive on wages. In another study, Gaston and Trefler (1994); Kravis (1956) find exports to be positive on manufacturing wages of workers in the United States. For the United Kingdom, Konings and Vandenbussche (1995) empirically verified the impact of foreign competition on employment and wages by means of a panel dataset covering the period 1982-1989. Findings indicated a negative effect of foreign competition on both employment and wages in the manufacturing sector, that was later confirmed by Greenaway, Hine, and Wright (1999); Greenaway, Wright, and Hine (2000); Hine and Wright (1998).

For Latin America, Revenga (1997) analysed the impact of trade liberalisation on employment and wages in the Mexican manufacturing industry. The study was based on plant-level data for the period 1984-90. Findings revealed a negative impact on employment and wages subsequent to the trade liberalisation episode; later to be confirmed by Cardero, Mantey, and Mendoza (2006). Extending this work, Cervantes and Fujii (2012) analysed the impact of trade liberalisation in Mexico on employment of skilled and unskilled workers in labour-intensive industries for the period 1998-2004 using an input-output approach. Findings revealed a positive impact of trade on unskilled workers and a negative effect on skilled workers. Further, Cragg and Epelbaum (1995) analysed wage dispersion between skilled and unskilled workers for Mexico subsequent to trade reforms in the mid 1980's. Their findings revealed; despite the magnitude of pace of liberalisation, industry specific effects had a negligible effect on wage dispersion, while the occupational effects explain wage dispersion to a great extent. Using growth accounting and factor content approaches, Moreira and Najberg (2000) investigated on the impact of liberalised trade on Brazilian manufacturing over the period 1990-97 and found a negative effect of liberalisation on employment in the short-term while a positive effect on employment in the longer-run. Arbache, Dickerson, and Green (2004) examined the impact of trade liberalisation on manufacturing wages for Brazil using cross-sectional household data since 1976 that revealed a negative effect of trade liberalisation on wages. Despite these findings, Pavcnik, Blom, Goldberg, and Schady (2004) confirmed that trade reforms in Brazil had not adversely affected industry wage differentials between skilled and unskilled workers. For Columbia, Kugler and Verhoogen (2009) found exports to have a positive impact on manufacturing wages.

In the Asian and African contexts, the impact of trade liberalisation on employment is clear, although its impact on wages is ambiguous. Using a panel of manufacturing industries over the period 1991-2010, Das, Raychudhuri, and Roy (2014) assessed the effect of trade liberalisation on Indian manufacturing employment. Their findings indicated a positive impact of exports on manufacturing employment as earlier confirmed by Banga (2005a, 2005b); Goldar (2009). Further, Hashim and Banga (2009); Krishna, Poole, and Senses (2012) find exports to be positive on manufacturing wages in the case of India. Although trade has had a positive effect on Indian manufacturing employment, its effect was minimal and not significant (Raj & Sen, 2012; Sen, 2008). Chamarbagwala (2006), investigated on the widening skills wage-gap in India using household level data for the period 1983-2000. Findings indicated that relative demand shifts resulted in relative wage shifts and the increase in the demand for skilled labour was due to skills upgrading within industries that occurred subsequent to trade liberalisation. In a contradicting argument, Mishra and Kumar (2005) found a decrease in wage inequality in India as a result of increased wages for unskilled workers following trade liberalisation in the 1990's, due to tariff reductions in industries where the unskilled were mostly employed. For Pakistan, Yasmin, Khan, and Ghani (2005) examined the impact of trade liberalisation on employment in the manufacturing industry using a panel dataset of manufacturing industries for the period 1971-96. She demonstrated a positive impact of trade reforms on employment levels. In a similar study from Vietnam, Ha and Tran (2017) found a positive effect of international trade on manufacturing employment due to abundantly available cheap labour. In the case of Morocco, Currie and Harrison (1997) analysed the impact of trade reforms on employment and wages using plant-level data from 1983. Findings showed that although employment in the private sector was unaffected, employment in export-oriented firms was drastically affected. For Mauritius, Milner and Wright (1998) discovers a positive impact of exports on their manufacturing employment. In line with empirical findings from other developing economies, Devadason (2006, 2007) also finds exports to be positive on manufacturing employment in the case of Malaysia. In the case of Indonesia, Amiti and Davis (2012) find both exports and imports to be positive on manufacturing wages.

3. Methodology

Data

Data for this research is captured from diverse sources. Manufacturing data is drawn from the Annual Survey of Industries conducted by the Department of Census and Statistics. The scope of the Annual Survey of Industries includes all industrial activity encompassing mining & quarry, manufacturing, electricity, gas and water supply. As the study is concerned with the manufacturing industry, data pertaining to manufacturing activity was carefully delineated using the manual on industrial classifications. A distinctive feature of this rich manufacturing dataset is the availability of data at the firm-level. This is a sample survey which supplements the industry census conducted once in every 10 years, providing a nationally representative sample of manufacturing industries. The survey takes the previous year as the reference period and includes all industrial establishments with 5 persons or more. The Industry Census frame is used to determine the sample of establishments to be surveyed each year. The Annual Survey of Industry sample includes 3500 to 4500 manufacturing firms each year. The geographical strata contain all 25 administrative districts of Sri Lanka.

Trade data is drawn from the United Nations Commodity Tarde database. This database includes import and export data for over 170 countries and is maintained by the United Nations Statistical Division. The database records imports and exports data using several commodity classification methods. For this study, the Standard Industry Trade Classification method at a 5-digit level was used to extract import and export data for Sri Lanka with the rest of the world. Exports are valued on free-on-board basis and imports are valued on cost-insurance-freight basis. Exports do not include re-exports.

The data on custom duties is captured using the Tariff Analysis Online database. The Tariff Analysis Online database is maintained by the World Trade Organisation. This database maintains customs duties for each commodity based on the Harmonised System of Coding at a 6-digit level. In addition to custom duties, the government of Sri Lanka also charges a variety of tariffs on imports. Since these charges are outside the scope of customs duties specified by the World Trade Organisation, these extra charges are commonly known as para-tariffs or other levies. They include charges such as National Security Levy, Road infrastructure Development Levy, Value Added Tax on imports, Excise duties, Ports Authority Levy etc. The tariff rates of these additional levies are captured from the Tariff Guides prepared by Sri Lanka Customs. Tariff guides by Sri Lanka Customs are maintained using HS Coding at a 6-digit and 8-digit level.

Conceptual framework

The conceptual framework for the analysis is based on the Neo-classical Heckscher-Ohlin trade theory aiming to examine the impact of trade on manufacturing employment and wages. Along Heckscher-Ohlin trade theorem predictions, an increase in the demand for labour and wages is predicted for a labour abundant developing economy following an increase in the demand for 'labour-intensive' commodities. Therefore, the hypotheses for empirical examination are as follows;

1. *Exports have a positive impact on manufacturing employment.*
2. *Exports have a positive impact on manufacturing wages.*

This study is an attempt to model manufacturing labour and wages in response to trade stimulus. Therefore, in the labour demand model, the dependent variable is manufacturing labour *(L).* Based on the hypothesis developed, exports based on factor endowments are captured by the key independent variable; export-intensity *(EI).* The analysis also controls for other factors that have a considerable impact on manufacturing employment. The study conceptualises the relationship between the independent variable and the control variables with the dependent variable in the following manner. In the labour demand model, the key independent variable *(EI)* and the dependent variable *(L)* is expected to be positively related. On the control variables, manufacturing output *(Q),* capital intensity *(KI),* skills intensity *(SKI),* four firm concentration ratio *(FFR)* and marginal efficiencies of production *(MEP)* is expected to be positively related to the dependent variable *(L),* while manufacturing wages *(W),* import penetration ratio *(IP),* custom duties (CD) and para tariffs *(PT)* are negatively related to the dependent variable *(L).* Similarly, on the wages model, the dependent variable is manufacturing wages (*W).* Based on the hypothesis developed, exports based on factor endowments are captured by the key independent variable; export-intensity *(EI).* The analysis also controls for other factors that have a considerable impact on manufacturing wages. The study conceptualises the relationship between the independent variable and the control variables and the dependent variable in the following manner. In the wages model, the key independent variable *(EI)* and the dependent variable *(W)* is expected to be positively related. On the control variables, manufacturing output *(Q),* skills intensity *(SKI),* four firm concentration ratio *(FFR)* and marginal efficiencies of production *(MEP)* is expected to be positively related to the dependent variable *(W),* while manufacturing labour *(L),* capital intensity *(KI),* import penetration ratio *(IP),* custom duties (CD) and para tariffs *(PT)* are negatively related to the dependent variable *(W).*

Modelling

Following Hine and Wright (1998) and Greenaway et al. (1999) Milner and Wright (1998), this paper uses the Cobb-Douglas production function of the following form, which serves as the core model in this analysis;

$$Q_{it} = A^{\gamma} K_{it}^{A} L_{it}^{\beta} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

where for the representative firm in industry *i* in period *t*; *Q* = real output; *K* = capital stock; *L*= units of labour utilised; *A* = technology and α, β represent the factor share coefficients while $^{\gamma}$ allows for factors changing the efficiency of the production process. Based on this, the following standard labour demand model equation (2) is derived, where *Lit* is total employment, *Wit* is average real wages, *Q*it is the real output and *K*it is real capital intensity in industry '*i*' at time '*t*' and *X*it is a vector of variables which affect the efficiency of production, so it is related to A$^{\gamma}$. The vector of variables includes the key independent variable and other control variables that impacts manufacturing employment. The *θ0* is the overall intercept and *θ1, θ2, θ3* and *θ4* are unknown slope parameters to be estimated and the error term u*it*. A profit maximising firm employs labour where the marginal revenue product of labour equals the wage (*W*).

$$\ln L_{it} = \theta_0 + \theta_1 \ln W_{it} + \theta_2 \ln Q_{it} + \theta_3 \ln K_{it} + \theta_4 \ln X_{it} + u_{it} \ldots\ldots\ldots\ldots\ldots(2)$$

Similarly, wages are determined by numerous factors, and following Greenaway et al. (1999); Hine and Wright (1998); Milner and Wright (1998), and the following wages equation is derived (3), where *Wit* is average real wages, *Lit* is total employment, *Q*it is the real output and *K*it is real capital intensity in industry '*i*' at time '*t*'. *Xit* represents a vector of variables that are engaged in the wage setting process and includes the key independent variable and other control variables that impacts wages. The *β0* is the overall intercept and *β1, β2, β3* and *β4* are unknown slope parameters to be estimated and the error term εit.

$$\ln W_{it} = \beta_0 + \beta_1 \ln L_{it} + \beta_2 \ln Q_{it} + \beta_3 \ln K_{it} + \beta_4 \ln X_{it} + \varepsilon_{it} \text{.....(3)}$$

Variables

In the labour demand model, manufacturing labour is the main outcome variable, while the key independent variable is export intensity. In the wages model, the main outcome variable is manufacturing wages and export intensity is the key independent variable. The operational definitions of the variable are presented accordingly in table 1.

Table 1: Variable definition

Variable	Definition
L	Labour is expressed in its natural logarithmic form. This includes all type of manufacturing labour.
Q	Real output is expressed in its natural logarithmic form.
W	Average real wages are expressed in its natural logarithmic form.
K	Capital intensity is the real output divided by real value of machinery, expressed in its natural logarithmic form.
EI	Export-intensity is the value of real exports expressed as a percentage of real output
IP	Import penetration is measured as the value of real imports expressed as a percentage of real consumption
SKI	Skills-intensity is estimated by expressing the share of skilled factory operatives as a percentage of total manufacturing workers
FFR	Four-firm concentration ratio is the total output of top four firms expressed as a percentage of the total industry output
MEP	Marginal efficiency of production is measured as the average plant size of the top fifty percent of firms expressed as a percentage of total output
CD	Industry structure variables Custom duties is estimated using the simple average tariff of all tariff lines for each four-digit manufacturing industry.
PT	Para-tariffs is estimated using the simple average of all para-tariff lines at each four-digit manufacturing industry level.

Analytical technique

Given that the research question is theory testing and the data is quantitative in nature, a quantitative method of analysis is adopted. Therefore, a multiple regression analysis technique is engaged to empirically analyse the impact of trade on employment and wages in the manufacturing industry. This study is based on a trade and industry panel data set covering the period 1994 to 2011. Given that the dataset is a panel, a panel data technique should be employed in the analysis of data. Initially, a pooled ordinary least squares regression was conducted. However, pooled regression biases the estimated results upwards when significant cross-section or time-fixed effects are present. Accordingly, a Breusch-Pagan Lagrangian multiplier test was conducted to determine whether the pooled regression was consistent or not. The estimated test results were significant, implying that pooled regression is not an appropriate method in this case. Given this, researchers often use a fixed effects model or a random effects model in analysing panel data. Following the Hausman (1978), the fixed effect estimation model is engaged.

Regression diagnostics

A preference for economic theory over method was followed as recommended strongly by Studenmund (2001) for selecting variables to the model. To complement, several alternative formal model specification tests such as the Akaike's Information Criteria (Akaike, 1973), Schwarz's Information criteria (Schwarz, 1978), and the Ramsey Regression Specification test (Ramsey, 1969) were performed. This study is based on a trade and industry panel data set covering the period 1994 to 2011 and is an unbalanced panel dataset with gaps. To avoid inflation leading to spurious correlation, all nominal values have been adjusted for inflation to be comparable across different time points. Spurious correlation is caused by nonstationary time series. Accordingly, both the Augmented Dickey Fuller test and the Phillips-Perron unit-root tests were conducted. The null hypothesis was rejected at less than 1 percent level of statistical significance. Several tests for multicollinearity such as the correlation matrix and the sensitivity of the model when adding and deleting independent variables were checked. When tested for multicollinearity, the variance of inflation factor was less than 1.5 except in the case of two variables yet, well below the standard. Models were also tested for heteroscedasticity. Since the dataset we have is a panel that is unbalanced and with gaps, there is no robust mechanism that tests for heteroscedasticity, when using a fixed effects model. Given the limited options, heteroscedasticity is tested using a graphical method of detection (Gujarati, 1998). The models were also tested for serial correlation. The DW statistics for both the labour demand and the wages model converges to 2, thereby indicating no serial correlation. Having conducted different tests and precautions in modelling for labour demand and wages, their robustness is also investigated. The estimated labour demand model is robust in conventional statistical terms. Drawing attention to the final labour demand model, the model is statistically significant at less than one percent as indicated by the F-statistics. It possesses a high level of explanatory power as indicated by the adjusted R-squared (0.8431). On the wages model, according to the conventional statistical measures, the estimated model is robust. The wages model is statistically significant at less than one percent as indicated by the F-statistics. It possesses a satisfactory level of explanatory power as indicated by the adjusted R-squared (0.4846).

4. Empirical results

The results of the labour demand model are presented in table 2, while those of the wages model is presented in table 3.

Labour demand model

The coefficient on export-intensity is positive and statistically significant on manufacturing employment as expected. Export-intensity is the key independent variable in this analysis and analyses the effect of trade on manufacturing employment. Heckscher-Ohlin predicts an increase in the demand for labour for a small developing economy abundant in labour and engaged in international trade. In other words, the comparative advantage for Sri Lanka lies with labour-intensive manufacturing exports. In a factor content analysis conducted for manufacturing exports covering the period 1962-1995, Athukorala and Rajapathirana (2000) corroborate these findings. They conclude that the labour-intensive factor content of manufacturing exports to have increased from 3 percent during (1962-77) to 58.6 percent (1990-1995). Therefore, our econometric findings of this study further extend the above findings for the period post 1994 that Sri Lankan manufacturing exports yet confirms the neo-classical Heckscher-Ohlin trade model.

The coefficient on manufacturing output is positive and statistically significant on manufacturing employment as expected. As the demand for labour is a derived demand, output increases are followed by corresponding increases in the demand for labour. The coefficient on manufacturing wages is negative and statistically significant on manufacturing employment as expected. It explains that firms and industries are sensitive to wage increases. The coefficient on capital-intensity is negative and statistically significant on manufacturing employment. These findings are consistent with the Heckscher-Ohlin model and its predictions in the context of a labour abundant developing economy. Hence mechanisation in a labour surplus economy leads to employment losses. The coefficient on import penetration ratio is positive and statistically significant on manufacturing employment. The effect of imports on employment depends on whether imports represent substitutes to domestically produced commodities or are complementary to production. Therefore, the positive coefficient explains that import inputs are complementary to the export manufacturing. Skills-intensity is positive and statistically significant on manufacturing employment as expected. It confirms that the use of skilled labour triggers a positive demand on the overall manufacturing employment. Four-firm concentration ratio is negative and statistically significant on manufacturing employment. Although against theoretical expectations, this is possible where changes in domestic competition generally have an impact on labour usage. The coefficient on marginal efficiency of production is negative and statistically significant on manufacturing employment. Theoretically, firms characterised by increasing returns to scale are expected to positively influence employment. However, the empirical findings indicate otherwise, and scale economies can be statistically significant and negative on the exports of developing economies. The coefficient on customs duties is negative on manufacturing employment as expected, although not statistically significant. Therefore, the effect of custom duties on manufacturing employment is inconclusive. The impact of para-tariffs on manufacturing employment is negative and statistically significant as expected. It explains that high tariffs have kept manufacturing employment inefficiently low.

Table: 2: Labour demand model

	1	2	3	4
Q	0.7082***	0.7188***	0.7058***	0.7086***
	(64.11)	(60.69)	(61.34)	(61.55)
W	-0.5527***	-0.555***	-0.5199***	-0.5406***
	(-16.49)	(-16.59)	(-15.96)	(-16.69)
K	-0.0741***	-0.0743***	-0.0780***	-0.0759***
	(-6.60)	(-6.63)	(-7.17)	(-6.95)
EI		0.00001**	0.00001**	0.00001***
		(2.41)	(2.07)	(2.55)
IP		0.00004c	0.00004**	0.00005***
		(1.71)	(2.04)	(2.08)
SKI			0.0035***	0.0037***
			(3.93)	(4.17)
FFR			-0.0090***	
			(-7.82)	
MEP				-0.0039***
				(-7.14)
CD			-0.0014	
			(-0.89)	
PT			-0.0054***	-0.0053***
			(-5.43)	(-5.38)
Constant	-0.9657***	-1.1612***	-0.5128	-0.9628***
	(-3.01)	(-3.52)	(-1.54)	(-2.98)
N	1327	1327	1327	1327
R2	0.8227	0.8229	0.8496	0.8450
F	21.29***	21.39***	15.31***	16.41***

t-values in parentheses. *** Significance at 1 percent, ** at 5 percent, * at 10 percent

Source; Authors calculations

Wages model

Export-intensity is positive and statistically significant on manufacturing wages as expected. This confirms the Stolper-Samuelson theorem in the Heckscher-Ohlin framework. However, export-intensity is statistically significant on manufacturing wages at 10 percent in equation 1, while its statistical significance has disappeared in equations 2 to 4 possibly due to market imperfections. Although, Stolper-Samuelson predicts an increase in wages following trade liberalisation, the theorem might not work fully due to market imperfections in developing economies. In other words, non-market factors are powerful enough to dilute the predictive ability of the Stolper-Samuelson theorem in developing economies (Konings & Vandenbussche, 1995).

Output is positive and statistically significant on manufacturing wages as expected. Output increases are followed by an increase in the demand for labour and hence an increase in wages. Labour is negative and statistically significant on contemporaneous manufacturing wages as expected. Capital-intensity on manufacturing wages is negative and statistically significant as expected in the case of a developing economy. Import penetration ratio is positive on manufacturing wages, though not statistically significant. Therefore, the effect of imports on manufacturing wages is inconclusive. Skills-intensity is positive and statistically significant on manufacturing wages as expected. Four-firm concentration ratio is positive on manufacturing wages, although not statistically significant. The coefficient for marginal efficiency of production is negative and statistically not significant on manufacturing wages. Therefore, the effect of marginal efficiencies in production on manufacturing wages in inconclusive. Customs duties are positive and statistically significant on manufacturing wages. The coefficient on para-tariffs is negative on manufacturing wages as expected, although statistically not significant.

Table 3: Wages Model

	1	2	3	4
Q	0.3550***	0.3621***	0.3632***	0.3677***
	(23.97)	(23.62)	(23.31)	(23.69)
L	-0.3327***	-0.3353***	-0.3368***	-0.3460***
	(-16.49)	(-16.59)	(-15.96)	(-16.59)
K	-0.0144	-0.0147*	-0.0161*	-0.0167*
	(-1.62)	(-1.66)	(-1.80)	(-1.88)
EI		0.00001*	0.00001	0.00001
		(1.68)	(1.55)	(1.64)
IP		0.00002	0.00002	0.00002
		(1.21)	(1.37)	(1.42)
SKI			0.0016**	0.0017**
			(2.21)	(2.35)
FFR			0.0006	
			(0.64)	
MEP				-0.0006
				(-1.38)
CD			0.0025**	0.0025**
			(2.00)	(1.95)
PT			-0.0010	-0.0012
			(-1.20)	(-1.46)
Constant	5.6877***	5.6877***	5.5298***	5.5937***
	(28.58)	(28.58)	(25.77)	(27.43)
N	1327	1327	1327	1327
R2	0.4900	0.4900	0.4774	0.4746
F	8.10***	8.10***	7.75***	7.83***

t-values in parentheses. *** Significance at 1 percent, ** at 5 percent, ** at 10 percent

Source: Authors calculations

5. Conclusions

The research objective of this paper focused on examining the impact of trade on manufacturing employment and wages. Accordingly, the empirical examination was conducted in the context of the Heckscher-Ohlin trade theory. Along these predictions, Sri Lanka being a labour abundant country should export using its abundant factor which is labour. Therefore, exports are expected to positively influence the manufacturing demand for labour. The empirical results on the labour demand model confirms these predictions. In other words, manufacturing exports are positive and statistically significant on manufacturing employment. Hence, the policy of export promotion has allowed the economy to exploit the comparative advantage of labour-intensive goods. Thereby the expansion of exports becomes an important factor in the growth of manufacturing employment in Sri Lanka. Therefore, the study confirms the predictions of the theory of factor endowments in the context of the manufacturing employment in Sri Lanka. Based on the Heckscher-Ohlin framework, the Stolper-Samuelson theorem established that an increase in the relative price of one of the goods increases the real reward of the factor used relatively intensively in the production of that good and decreases the real reward of the other factor. In other words, an increase in the price of the labour-intensive commodity

which the labour-rich country (Sri Lanka) exports will experience an increase in the price of labour. Given that exports are positive and statistically significant on manufacturing wages, the wages model confirms the Stolper-Samuelson theorem in the case of manufacturing wages in Sri Lanka. However, exports were positive and statistically significant on manufacturing wages at a level of 10 percent; a weaker link, while in some equations, the statistical significance is not consistent. This result is not surprising for Sri Lanka being a small developing economy. In developing economies, wages are unlikely to be a pure result of the interaction of the forces of demand and supply of labour. Many intervening factors work to influence the determination of wages in a developing country context.

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