THE IMPACT OF INTERNATIONAL TRADE ON EMPLOYMENT GENERATION

A SRI LANKAN EXPERIENCE

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Abstract

Unemployment is a common macroeconomic problem in developing countries. With lower per capita income and higher population growth, developing countries face a key issue of generating adequate employment opportunities to newly entered laborers to the labor force. The main objective of this study is to investigate the impact of trade openness on employment level of Sri Lanka. The study mainly used secondary data published by the Department of Census and Statistics and the Central Bank of Sri Lanka for the 1990 - 2012 time period and analyzed the behavior of key variables which impact on employment level quantitatively. The Ordinary Least Square method (OLS) in multiple regression is employed to achieve the research objective. Trade effect on employment is assessed by employing three independent variables, import penetration ratio, export intensity and weighted tariff rate, in the empirical model. In addition to that Gross domestic product, capital labor ratio, foreign direct investments and real wage rate are identified as the major control variables and included in the empirical model. The study found a positive association between export intensity and employment level indicating that higher export intensity increase the employment level of Sri Lanka. Import penetration ratio shows a significant negative effect on Sri Lankan's total employment during the study period.

Keywords: International Trade, Employment, Export Intensity, Import Penetration

INTRODUCTION

Sri Lanka entered to the free trade environment in 1978 after the severe closed economic period during the 1970 – 1977 period. Low economic performance during the closed economic era motivated to move the country for more liberalized economic environment. Average economic growth rate during that period was less than 3 percent and also the country experienced high unemployment level in this period. One of the major reasons for the civil unrest prevailed during this period was this high unemployment level of the country. Sri Lanka

experienced highest unemployment level which is 24 percent in 1972 and average rate was 17 percent during the 1970 -77 period. As a result, one of the major objectives of opening up the economy to world market is to generate more job opportunities to decrease the high level of unemployment in Sri Lanka.

Unemployment is a common and important issue to address in developing countries. With higher population growth, developing countries are facing a severe issue of generating employment opportunities to newly entered laborers to the labor force. Limited market size of these countries has become as the major barrier for domestic producers to expand their business and this may work as a key constraint to create new job opportunities in these countries. Therefore limited market size and less generation of employment opportunities are major problems to be solved by governments of developing countries. On the other hand, unemployment has become a major issue in the political scenario as well and policy makers are advocating to start export oriented industries (EOI) to generate more new employment opportunities to address the problem. With this backdrop, the primary objective of this study is to investigate the trade liberalization and its impact on Sri Lanka's employment generation in aggregate level during the post liberalization period.

LITERATURE REVIEW

Regarding the argument on free trade and employment linkage, the Hecksher – Ohlin model which is well popular trade theory in international trade provides a profound theoretical basis. According to the Hecksher-Ohlin theory, a nation exports the commodity whose production requires the intensive use of the nation's relatively abundant and cheap factor and imports the commodity whose production requires the intensive use of the nation's relatively scarce and expensive factor. In short, Hecksher-Ohlin theory demonstrates that the relatively labor-rich nations export relatively labor-intensive commodity and imports the relatively capital-intensive commodity. Also capital rich nation exports the relatively capital –intensive commodity an imports the relatively labor intensive commodity. Finally this can leads to optimum utilization of resources enabling countries to achieve full employment level. Therefore policy makers have given increasingly their interest on trade liberalization to enhance the economic performance. Theoretical explanations always support the statement that free trade increase aggregate production of economies. Further it explains that free trade enables world economies to consume beyond their production possibility frontiers. Moreover international trade enables economies to allocate their scarce resources more efficiently from non productive sectors to productive sectors.

International trade permits developing countries to increase the performance of not only their export sector but also the other non productive sectors of the country via the spread of

technology. In addition to the performance improvement in merchandise, services and agricultural sectors in countries, international trade has become a significant factor to improve the investment level of developing economies. One major barrier for developing countries to escape from the vicious cycle of poverty is the low level of investment. The low per capital income level of developing countries has led to significantly lower the savings and investment levels of these economies. As a result, economies which experience hardships due to lack of savings and investment are struggling to escape from the vicious circle of poverty. However, policy makers argue that export let growth may lead to developing countries to escape from this vicious cycle of poverty via increased income, savings, investment and productivity. Ultimately, increased output with trade liberalization can increase more job opportunities for people and increase the employment level of economies.

Literature provides numerous studies for investigating trade liberalization and employment linkage. However, those studies have not been able to produce clear linkage between trade liberalization and employment. While some studies provide evidence for the relationship between trade liberalization and employment other studies provide weak or no relationship between trade liberalization and employment. Sankaran, Abraham and Joseph (2010) argue that reason for mixed bag of results on the trade liberalization and employment relationship is due to country specific issues. Literature on trade and employment provides few ways which can affect international trade on employment of countries. First, employment can be affected by import changes through trade liberalization. This explains that trade liberalization can impact on importation of raw materials, intermediate and capital goods and can substitute labor (Rodric ,1997; Feenstra and Hasan,1996; Hasan, Mitra and Ramaswamy ,2007). However, this argument is challenged by some researchers and they explain that impacts on employment due to importation of inputs depend on the nature of imports (Davis and Mishra, 2007). In this case, if imports are not substitutes for domestic products but are complementary to them trade liberalization can enhance the employment in the domestic country. Based on the above facts, it can be argued that when imported inputs are largely substitutes to labor, trade can create negative impact on employment and if imported inputs are largely complements to domestically produced inputs trade can create positive impact on employment in home country.

Secondly, increased exports with trade liberalization can generate positive impact on employment and this is called as the "scale effect" of trade on employment. Since the demand for labor is derived demand, any increased demand for final goods can increase the demand for factors of production which are used to produce those goods. Hence labor intensive countries, particularly developing countries have an opportunity to specialize on labor intensive commodities and export the surplus of those with freer trade liberalization environment. In this context, since Sri Lanka is relatively labor abundant country she has an opportunity to specialize

on labor intensive commodities and exports the surplus to world market with trade liberalization. Ultimately, this can increase the employment level of the country.

Finally, employment level of trading countries can be affected via the changes of trade polices of those countries (LaRochelle,2007; Revenga, 1997; Brander, 1981;). In this context, trade barriers of home country and foreign countries can impact on employment level of them. Brander (1981) and LaRchelle (2007) explain that when the home country decreases tariffs or any trade barrier it would results to increase the sales of foreign firms in home market. On the other hand, any reduction of tariffs or any other trade barrier of foreign firms would result to increase sales of domestic firms in the foreign market. Also the opposite is true when home country and foreign countries increase the tariffs and other trade barriers on their traded commodities.

In *Impact of Trade Liberalization on Employment*, Sankaran, Abraham and Joseph (2010) have developed a model to disentangle substitution effect, scale effect and trade policy effect of trade liberalization on employment in India. Using several other indicator variables, capital labor ratio, real net value added, real emoluments per employee, man days lost per employee, they found that trade liberalization have created negative impact on employment of India. Further they argue that this result might be due to India's capital-intensive nature of the composition of trade.

In investigating the impact of substitution effect of trade liberalization or import penetration of trade reforms on employment, Feenstra and Hansam (1996) ; Qnaran (2008) have found a negative relationship with import penetration and employment. Feenstra and Hansam show that employment in United States of Americas has been decreased due to import penetration. Also, one of major findings of Onaran is that penetration has caused to lessen employment by 1.8 percent in Austrian manufacturing industries. In another study by Sen (2008) for identifying trade liberalization and employment relationship, it has been found that international trade has trivial positive impact on manufacturing employment in India, and concluded that trade liberalization is not the major source of job creation for India's large pools of surplus unskilled labor.

METHODOLOGY

In identifying the impacts of trade liberalization on employment, the study is mainly based on secondary data and data are collected on a specific time interval. The time period selected for the study is from 1990 to 2012. Major sources for secondary data on exports, imports, employment, gross domestic product, tariffs are annual reports of Central Bank of Sri Lanka (CBSL) and various annual and monthly reports issued by the Department of Census and Statistics of Sri Lanka. As the study is based on time series data for two decades, price effects

of variables are removed by using consumer price index (CPI). In this context, the price effects of Gross Domestic Product, total exports, total imports, foreign direct investment and fixed capital formation are adjusted to remove inflationary effects. The variables identified in the main objective of the study are tested by employing quantitative analytical methods to make accurate and reliable conclusions. Mainly regression analysis is employed to determine the linkage between employment and major determinants of employment level.

Specifications of Empirical Model

The study uses ordinary least square (OLS) method to derive multiple regression model which is used to analyze the impacts of trade liberalization on employment generation of Sri Lanka. Empirical model which is employed in the present study is presented in equation 1.

$$EMP_t = \beta_0 + \beta_1 XI_t + \beta_2 MPR_t + \beta_3 WTR_t + \beta_4 FDI_t + \beta_5 GDP_t + \beta_6 KLR_t + \beta_7 RWRI_t + e_t \quad \ldots (1)$$

Where,

EMP   =   Employment

XI   =   Export Intensity

MPR   =   Import Penetration Ratio

WTR   =   Weighted Tariff Rate

FDI   =   Foreign Direct Investment

GDP   =   Gross Domestic Product

KL   =   Capital Labor Ratio

RWRI =   Real Wage Rate Index

e   =   Error Term

In the empirical model two key independent variables have been included to analyze the trade and employment relationship. Accordingly, import penetration ratio and export intensity are employed to magnify the impact of trade liberalization on employment. Import penetration helps to evaluate the import competition of a country. Also this measure can be used to separate the effects of import competition from export orientation on the efficiency in use of labor (Sen, 2008). According to Sen (2008) import penetration can be computed by dividing the total import from the domestic demand and presented as a percentage (imports/ output+ imports-exports). Export intensity is calculated as a ratio of total exports to the value of total output (Exports/Output). The effect of export on employment depends on the nature of export (labor intensive or capital intensive) and the correlation can be negative or positive (Sankaran, Abraham and Joseph, 2010).

RESULTS

The study employed multiple regression analysis to disentangle the effect of trade liberalization on employment of Sri Lanka. Since the estimation of the empirical model is based on time series variables, all the variables were employed after making them stationary. Augmented Dicky fuller test confirms that all the variables of the empirical model are stationary with first deference of the variables concerned. The regression model is tested for autocorrelation by using Durbin's alternative test for autocorrelation and Breusch-Godfrey LM test and found that model is free from autocorrelation. In testing for heteroskedasticity, White's test is employed and it confirmed the homoskedasticity in the error term of empirical model. Finally, the model was tested for the multicollinearity with *estat vif* STATA command. The results proved that the model is free from multicollinearity since the maximum *vif* value of each variable is less than ten (Baum, 2006). The estimated multiple regression results are shown in Table 1.

Table 1: Multiple Regression Results

Dependent Variable : Employment						
Regressors	Coefficient	Std. Err.	t	p	(95% Conf. Interval)	
Constant	.0741553	.0148789	4.98	0.038	0.0101	0.1382
Ln_GDP	-1.328704	.3149132	-4.22	0.052	-2.6837	0.0263
LN_XI	.6142271	.1077962	5.70	0.029	0.1504	1.0780
LN_MPR	-.5234064	.0810305	-6.46	0.023	-0.8720	- 0.1748
LN_KLR	.4371235	.0894275	4.89	0.039	0.0523	0.8219
LN_FDI	-.0253739	.0087772	-2.89	0.102	-0.0631	0.0124
WTR	-.0001292	.0004048	-0.32	0.780	-0.0019	0.0016
RWRI	.0007696	.0031187	0.25	0.828	-0.0126	0.0142
Number of Obs = 22 F = 12.51 Prob > F = 0.0460						
R-squared = 0.9777 Adj R-squared = 0.8995 DW = 1.7234						

The results derived based on the OLS regression confirm that overall mode is significant at 5% level of significance. The adjusted R-square authenticate that almost 90 percent of the variation of dependent variable is explained by the OLS regression line. Each independent variable except FDI, WTR and RWRI are statistically significant. In this case all significant variables except GDP are significant at 5% level. One of the main independent variable of determining the employment level is the total value addition of output and the present study uses real gross domestic product to measure the aggregate output level of the country. The real GDP variable is statistically significant at 10 % significance level.

The result shows that important determinants which have been included in the regression model to capture trade effects on employment of Sri Lanka, that is, export intensity (XI) and import penetration ratio (MPR) are statistically significant at 5 % level of significance and shows expected signs of regression coefficients. The estimated OLS regression model indicates that export intensity has a significant positive effect on employment and one percent increase in export intensity leads to 0.614 percent increase of total employment. Also, import penetration ratio has a significant negative effect on Sri Lankan's total employment. This shows that one percent increase of import penetration leads to -.523 percent reduction of country's total employment. Statistically significant coefficient of capital-labor ratio indicates that it positively affects to employment generation and one percent increase in capital-labor ration is resulted to increase employment by 0.437 percent. This result is contrary to the one expected in theory. However, one explanation for the positive effect of capital labor ratio on employment is the relatively capital intensive production technique apply for new entries to industries. The regressor which is included to the model, weighted tariff rate, is not statistically significant and the reason might be the availability of few observations for the sample period. The sign of marginally significant coefficient of gross domestic product is contrary to the theoretical explanation of positive relationship between output and employment. However, the constructed confidence interval at 95% confidence level exhibits that this coefficient even can get a positive value up to 0.026 percent. The multiple regression result exhibits statistically insignificant results for foreign direct investment and real wage rate index. Also, these two regressors have not presented theoretical relationship with employment level.

CONCLUSION

The present study encompassed two decades which belong to the trade liberalization period of Sri Lanka. Findings of the present study are on the relationships between trade liberalization and employment level of Sri Lanka. In assessing the effects of trade liberalization, the empirical model of the study employed vital three variables, import penetration ratio, export intensity and weighted import tariff rates, which are important to determine employment level of a country due to trade effect with several other control variables. The major hypothesis of the study is to test the relationship between trade liberalization and the Sri Lanka's employment level and the findings of the study confirm that one percent increase of export intensity increases employment level by 0.61 percent. Also, import penetration ratio has a significant negative effect on Sri Lankan's total employment resulting one percent increase of import penetration ratio leading to decrease the country's total employment by 0.52 per cent.

Although the study does provide valuable information on the relationship between international trade and employment of Sri Lanka, it does possess a limitation. The study has incorporated only overall employment level of Sri Lanka and has not investigated trade effect on manufacturing, services and agricultural sectors individually. The sector wise study is more important since trade liberalization may affect in varying degree to each economic sector of a country. Therefore, future research needs to incorporate the impact of trade on employment generation of each economic sector of Sri Lanka.

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