Nexus between Corporate Tax Rate and Employment Growth: Empirical Evidence from Bangladesh

Muhammad Shajib Rahman
Lecturer
Department of AIS
Comilla University, Cumilla
shajibrahmancou@gmail.com

Md. Jahid Hasan
Lecturer
Department of Management Studies
Comilla University, Cumilla
letter2hasan@gmail.com

Md. Mominur Rahman
Research Associate
Department of AIS
Comilla University, Cumilla
mominurcou@gmail.com

Abstract

This study examines the relationship between corporate tax rate imposed on publicly traded companies and the corporate employment growth rate in Bangladesh. This paper will conceptualize the discernment that the corporate tax causes a shift to the corporate capital sector to the non-corporate sector that leads to a reduction in employment growth. This study employed Autoregressive Distributed Lag (ARDL) bounds testing methods for checking the cointegration among the variables using time series data from 1991-2018. The main purpose of the study is to investigate the long run and short-term relationship between publicly traded corporate tax rate and employment growth rates. The corporate tax imposed by the government to the publicly traded company has a negative and significant effect on employment growth rate of the corporation in both long run and short run. The estimated results of the model show that the corporate tax rate, population growth rate, and openness to market are the factors of employment growth in Bangladesh. The main outcomes of this study are that corporate tax rate, population growth rate, and market size are highly significant in the long run. Still, openness to market and inflation are insignificant in the long term. Error Correction Model (ECM) coefficient of corporate tax rate shows a 38 percent speed of adjustment in a year. The study recommends maintaining equitable and close linkage among corporate tax rates, population growth rate, and market size are essential to boost the employment growth rate in the publicly traded corporate sector in Bangladesh.

Keywords: Corporate tax rate; Employment growth rate; Population growth rate; Market size; ARDL.

1. Introduction

The corporate tax rate and the employment growth rate are now the most highly discussed phenomena in South Asia. In terms of economic planning and development, corporate taxes are the principal source of public income. Including economic policy based on expected tax revenue and fiscal policy as a fundamental component of the economic policy, each country is required to generate tax revenue to finance to maintain its global competitiveness and growth. But it is also mentionable that the great economic growth in Bangladesh over the last decade has not been capable of generating jobs proportionally, posing concerns about the value of development for a large part of the nation. The impact of corporate taxes on employment growth is a vehemently contested political and economic issue. Thus, this study is conducted to investigate the answer to the question, "Does the higher rate of corporate taxes decrease the employment growth rate?"

Some studies concluded that increasing rates of taxation result in less employment, reducing capital availability to invest in job-creation or reducing the amount of money that is available to consumers to buy goods and services, resulting in business loss to suppliers of such goods and services. Other studies suggest that higher taxes create greater employment, since governments employ government workers with tax revenue, then buy products or services from private companies, and government agencies themselves can act as consumers in the market.

Extra taxes were also attempted to claim to maximize external investors' confidence in government stability, willingness, and the ability of the government to pay its debts. On a regional basis, more corporate taxes in a region, state, or nation have also been reported to enable companies to relocate to other towns, counties, or lower-tax nations. However, it has been contended that some states and territories with a reasonably large tax burden have more jobs than certain cities and counties with relatively low tax burdens, based on infrastructure and services available to businesses operating there.

It is not only at a state level that corporation taxes impact jobs, but they can even be investigated at the state or even regional levels. The effects of non-federal taxes and the impact on local growth are analyzed by Mofidi and Stone (1990). To eradicate domestic patterns and market cycles, the object of the research carried out by Mofidi and Stone (1990) was to investigate the micro-level study of tax impact. Mofidi and Stone (1990) empire analyses review statistics from all fifty states over the period 1962 to 1982 on tax and spending, private revenues, industrial jobs, and personal income. The results show that the higher tax coefficients have significantly negative at the 5-percent level on employment growth. The study also indicates the significant positive effects on jobs and economic activity of public spending used for employment, health, and capital construction. The conclusion was that as Daveri and Tabellini (2000) suggest, taxes can lead to increased unemployment and decreased growth. However, public service and infrastructure government expenditure has a positive impact on jobs and growth.

Our study is aimed at analyzing the impact on employment of reforms in the corporate income tax in Bangladesh. Statutory corporate tax rates are manifold in Bangladesh. The corporate tax rates are different for banks, insurance companies, financial institutions, merchants bank, mobile phone operating companies, cigarette manufacturing companies, and other publicly traded companies. For simplicity, we consider only the "other publicly traded companies" (i.e., publicly traded companies other than banks, insurances, etc.) in this study. We employ employment growth rate as a proxy of employment status in the corporate sector as well as corporate tax rates of the publicly traded company, population growth rates, market size, inflation rates, and openness to market have been considered as independent variables to test the impact on employment status.

We collected secondary data containing annual observations of time series type for the period of 1991 to 2018 from the World Development Indicator (WDI) and National Board of Revenue of Bangladesh (NBR) and analyzed the data using the ARDL model. We also run the error correction model (ECM) to discover the relationship between the variables in the long-run with respect to the short-run. However, we find that a higher corporate tax rate significantly reduces the employment growth rate in the corporate sector. We also find that the population growth rate and market size have a positive impact on the employment growth rate. We further find that the effects of inflation and openness to the market on the employment growth rate is not significant across our study.

2. Literature Review

The consequences of an increase in the corporate tax rate on employment growth are unclear, at best, according to economic literature. This is because any impact felt is indirect and can flow through different channels. Thus, this paper is associated with the studies which investigate the relationship between corporate tax assessment and employment growth status.

In a Latin American tax study conducted by Lora and Fajardo (2012), an increase in corporate income tax may contribute to the transfer of capital from formal to informal economic sectors. Because the amount of capital leads to workers' productivity and salaries, higher-skilled employees who stay in the formal industry will be impacted negatively, and the informal sector could benefit from less qualified staff. Furthermore, in the public sector, where there are lower wages, for instance, because of a minimum wage, the unemployment rate will increase. A study by Zellner and Ngoie (2015) examines the effect of the change in corporate tax rates on growth in the United States. Although this study does not directly link corporate tax rates to growth for jobs, changes in GDP will likely be linked to growth in employment, so we can infer a link indirectly. They are predicting that a continuing reduction in tax rates will increase GDP growth using a Marshall macroeconomic model. The authors conclude that a 5% drop in personal and corporate taxes contributes to a 3% increase in gross domestic product (GDP). Again, the regression results of Shuai and Chmura (2013) prove the observation that less corporate tax rates have a significant and positive impact on employment growth.

But Feldmann (2011) addresses a two-stage least square assessment of corporate-tax effects on unemployment. He uses several tax schemes, most of which are effective tax rates. He is also concentrated on control variables, as it is especially troubling to research the prejudices that may result from their absence. In 1979–2005, it establishes a panel with 19 industrial countries and instruments their corporate tax fluctuations with lagging corporate tax fluctuations in the previous four years. The results of the study show that an increase in corporate tax rates of 10% is linked to an unemployment rate reduction of 2.1%. The author suggests that higher taxes are forcing labor-to-capital substitution, increasing labor demand. However, syndicates are cutting their pay requirements to deter multinationals from leaving the region. Finally, for more work-intensive work, the government can use the additional revenues from higher taxes to increase jobs, as usual.

There had also been an even greater impact on the supply of labor throughout the periods of intertemporal substitution of labor supply (Martinez et al., 2018). The proof, however, indicates that in practice, this replacement elasticity was at least low in the United States (Altonji, 1982; Ham, 1986; Mankiw et al., 1985). Labor taxes have had a detrimental impact on the return on human capital investments (Heckman, 1976). Still, the net return on human capital depends on the labor tax as well as on the effect of the tax system on the cost of investment in human capital (King and Rebelo, 1990).

Thus, the existing literature suggests that the relationship between corporate tax rate and employment growth rate is mixed. For exposition purposes, we reconsider the study to investigate the corporate tax rate effects on employment growth rate together with taking other variables like population growth rate, market size, inflation, openness to market. Methodologically, this study uses the ARDL model to analyze the time-series data of the 1991 to 2018 period, where the ECM model is also used to discover the long-run and short-run relationship between the variables.

3. The methodology of the study

3.1 Description of the Variables

The study is conducted based on secondary data containing annual observations on the Bangladesh economy for the yearly time series data for the period of 1991 to 2018. Data used in the study was collected from the world development indicators and national board of revenue. All variables, including the dependent variable, are converted in natural log form to reduce the non-stationary effects. The below table (1) is a complete description of the variables that we have used in our study.

Table-1: Description of the Variables

Variables	Symbol	Description	Sources of Variables
Dependent Variable:			
Employment Growth	EGR	Employers, total (% of total employment) in the corporate sector (modeled ILO estimate)	(Shuai and Chmura, 2013)
Independent Variables:			
Corporate Tax Rate	CTR	We use the statutory tax rate (or absolute tax rate) imposed on publicly traded company as the key independent variable. In Bangladesh, different corporate sectors have different tax rate. We consider only the publicly traded company to simplify our study.	Authors Idea
population growth rate	PGR	Annual population growth rate. The population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.	(Shuai and Chmura, 2013)
Market Size	MS	The annual percentage growth rate of GDP per capita based on constant local currency. The growth rate of per capita GDP, a proxy for market size.	(Demirhan and Masca, 2008)
Inflation	Inf	the rate of inflation used to measure economic stability by the annual percentage change of consumer prices.	(Demirhan and Masca, 2008)
Openness to Market	OMT	Degree of openness computed as the sum of nominal export and import divided by gross national income (GNI).	(Demirhan and Masca, 2008)

3.2 Specification of the model:

To conceptualize the relationship between corporate tax rate and employment growth, we need to apply the appropriate model for empirical analysis. Johansen-Juselius tests (Juselius, 1992), Engle and Granger test (Engle and Granger, 1987), Maximum likelihood-based Johansen tests and Johansen-Juselius tests are the most sophisticated cointegration methods used by the researchers to examine the cointegration between the variables in the long run (Johansen, 1988; Johansen, 1991; Johansen and Juselius, 1990). Johansen-Juselius renowned technique is employed by the authors to check for cointegration among the variables. Also, the ARDL technique is applied here to solve the issue of cointegration, which was conceptualized by Pesaran et al. (2001). ARDL technique, contrary to other methods, not required that the variables used in the study to integrated in the same order, i.e., I(1). ARDL technique is equally applicable in the model if variables are I(1) or I(0) both combinedly integrated (Pesaran and Pesaran, 1997). If the variables represent the cointegration, in the long run, the next step is to use the error correction mechanism for examining the short-run dynamics of the variables.

3.3 Econometric Model of the study:

We determine the following equation to investigate the effects of the corporate tax rate, population growth rate, market size, inflation, and openness to the market on employment growth. The null hypothesis of the study is that the corporate tax rate does not have a negative relationship with the employment growth rate.

$$EGR_t = \beta_0 + \beta_1 CTR_t + \beta_2 PG_t + \beta_3 MS_t + \beta_4 Inf_t + \beta_5 OMT_t + \varepsilon_t \quad (1)$$

Equation (1) can be represented as a log form as:

$$LnEGR_t = \beta_0 + \beta_1 LnCTR_t + \beta_2 LnPG_t + \beta_3 LnMS_t + \beta_4 LnInf_t + \beta_5 LnOMT_t + \varepsilon t \quad (2)$$

Where, EGRt, CTRt, PGt, MSt, Inft, OMTt represents employment growth, corporate tax rate, population growth, market size, inflation, and openness to market. Ln is the natural logarithmic form of the series. β_1, β_2, β_3, β_4, and β_5 are the long-run elasticities of EGR with respect to CTR, PGR, MS, Inf and OMT, respectively.

The null hypothesis of the above mention log form equation is conceptualized to equation (2.1) no long-run relationship:

$$H0 = \lambda 1 = \lambda 2 = \lambda 3 = \lambda 4 = \lambda 5 = 0 \quad (2.1)$$

Alternative hypothesis represents a long-run relationship:

$$H1 \neq \lambda 1 \neq \lambda 2 \neq \lambda 3 \neq \lambda 4 \neq \lambda 5 \neq 0 \quad (2.2)$$

Considering the ARDL approach to cointegration, we identify the following fundamental model of the study:

$$\Delta ln(EGR_t) = \beta_0 \sum_{i=1}^{N} \beta_{1i} \Delta ln(EGR_{t-i}) + \sum_{i=0}^{N} \beta_{2i} \Delta ln(CTR_{t-i}) + \sum_{i=0}^{N} \beta_{3i} \Delta ln(PGR_{t-i}) + \sum_{i=0}^{N} \beta_{4i} \Delta ln(MS_{t-i}) + \sum_{i=0}^{N} \beta_{5i} \Delta ln(Inf_{t-i}) + \sum_{i=0}^{N} \beta_{6i} \Delta ln(OMT_{t-i}) + \beta_7 ln(EGR_{t-1}) + \beta_8 ln(CTR_{t-1}) + \beta_9 ln(PGR_{t-1}) + \beta_{10} ln(MS_{t-1}) + \beta_{11} ln(Inf_{t-1}) + \beta_{12} ln(OTM_{t-1}) \quad (3)$$

Where Δ refers to the operator in the difference, q refers to the lag length, β_1, β_2, β_3, β_4, β_5, and β_6 shows the short-run parameters of the model as well as β_7, β_8, β_9, β_{10}, β_{11} and β_{12} are the elasticities in the long run. At first, we have to test the level of integration among the variables because if any variables belong to I(2) or above, then ARDL is not applicable. And that is why we use the Augmented Dickey-Fuller test (ADF) and Kwiatkowski–Phillips–Schmidt–Shin (KPSS). To identify the long-run relationship as a given equation (1), then bound test is conducted with the equation (3) using the F- statistic with upper bound and lower bound.

An error correction model in ARDL methodology is used to assess the short-term association amid employment growth rate, corporate tax rate, population growth rate, market size, inflation, and openness to market in equation (4).

$$\Delta ln(EGR_t) = \beta_0 \sum_{i=1}^{q_1} \beta_1 \Delta ln(EGR_{t=i}) + \sum_{i=0}^{q_2} \beta_{2i} \Delta ln(CTR_{t-i}) + \sum_{i=0}^{q_3} \beta_{3i} \Delta ln(PGR_{t-i}) + \sum_{i=0}^{q_4} \beta_{4i} \Delta ln(MS_{t-i}) + \sum_{i=0}^{q_5} \beta_{5i} \Delta ln(Inf_{t-i}) + \sum_{i=0}^{q_6} \beta_{6i} \Delta ln(OTM_{t-i}) + \gamma ECM_{t=1} + \boxtimes_t \quad (4)$$

Where q_1, q_2, q_3, q_4, q_5, and q_6 refers to the optimal lag length, λ represents the speed of Adjustment parameter and ECM refers to the error correction mechanism term that is derived in equation (3).

4. Empirical Results and Discussion

4.1 Statistical Analysis:

Descriptive statistical analysis is conducted before running the econometric analysis. The dataset under the study is 28 years of annual observations, including the period from 1991 to 2018. All the variables used in the study are right-skewed, which means they are positively skewed. Kurtosis of the variables presents that all variables under the investigation are platykurtic (short-tailed or lower peak) except EGR. Jarque–Bera test shows that the residuals of all variables under the study are normally distributed.

Table-2: Descriptive Statistics

	EGR	CTR	PGR	OMT	MS	Inf
Mean	0.780071	0.332143	1.597201	0.318703	3.920012	6.145460
Median	0.291500	0.300000	1.549971	0.320449	3.715931	6.150488
Maximum	4.465000	0.450000	2.325303	0.443570	6.737018	11.39517
Minimum	0.220000	0.250000	1.050045	0.184949	1.106644	2.007174
Std. Dev.	1.174114	0.070991	0.464171	0.075013	1.517019	2.357839
Skewness	2.433182	0.613972	0.157266	0.016859	0.030669	0.095817
Kurtosis	7.637071	1.899291	1.321419	1.927062	1.885878	2.705948
Jarque-Bera	52.71458	3.172640	3.402659	1.344388	1.452536	0.143722
Probability	0.060000	0.204677	0.182441	0.510587	0.483711	0.930660
Observations	28	28	28	28	28	28

Source: Authors' Calculation

4.2 Correlation Analysis:

Correlation matrix used under this study to assess the strength of the relationship among the variables. Table 2 represents that some variables are positively correlated, and some are negatively correlated with each other. The correlation matrix shows the employment growth rate is negatively correlated with all variables except openness to market (OMT) and market size (MS). Corporate tax rate (CTR) and Population growth rate (PGR) are negatively correlated with openness to market (OMT), inflation (Inf) and market size (MS).

Table-3: Correlation Matrix

	EGR	CTR	PGR	OMT	MS	Inf
EGR	1					
CTR	-0.4669	1				
PGR	-0.4808	0.9447	1			
OMT	0.2765	-0.8373	-0.9040	1		
MS	0.6150	-0.8372	-0.8979	0.8148	1	
Inf	-0.0586	-0.2886	-0.3999	0.4471	0.3748	1

Source: Authors' Calculation

4.3 Stationary Properties of the Variables and Analysis:

Unit roots of all the variables of series are tested by using ADF Test & KPSS Test to determine the stationarity, before applying the ARDL technique to cointegration. According to the Augmented Dickey-Fuller test results, the null hypothesis of unit root cannot be rejected at a 5% level of significance, variables except employment growth rate (EGR) and inflation (Inf). As per ADF results, EGR and Inf are stationarity at the order of I(0), and the remaining variables are stationarity at the order of I(1). But the KPSS results suggest that the null hypothesis of stationarity can be accepted for all variables at the order of I(0).

Table-4: Unit Root Test

	At Levels				First Difference	
Variables	**Lags**	**Test statistics ADF***	**KPSS****	**Lags**	**ADF***	**KPSS****
lnegr	6	-3.936194 (0.0073)	.424127 (.0001)	0	-1.807730	0.457079 (.0154)
lninf	6	-3.384473 (.0210)	.347278 (.000)	0	-6.392104 (.000)	.298166 (.9597)
lnctr	6	-0.978103 (.7463)	.641778 (.0000)	0	-6.164788 (.0000)	.396715 (.0256)
lnms	6	-2.881001 (.06608)	.666062 (.000)		-8.473809 (.000)	.500000 (.2578)
lnomt	6	-2.139932 (.2316)	.604821 (.000)	0	-5.093208 (.0004)	.196221 (.1857)
Lnpgr	6	1.988400 (.0467)	.632614 (.000)	0	-.840518 (.3413)	.632614 (.000)

* Critical Value: -3.012363, Null Hypothesis has a unit root,

** Critical value: .739000, Null Hypothesis: Variable is stationary.

Source: Authors' Calculation

Long-run relationship results and lag length selection are susceptible to the employment of the ARDL approach (Bahmani-Oskooee and Bohl, 2000). The table represents the computed f statistic to determine the optimal leg length under this study.

Pesaran et al. (2001) recommended that the leg of order one (1) the lower and upper bound values at a 95% level of significance are 2.39 and 3.38, respectively. The following table represents that the computed value of f statistic (9.99) is greater than the upper bound value (3.38), which supports reset the null hypothesis of the long relationship among the variables. Therefore, the authors suggest that there is an existence of a long-run relationship among the variables.

Table-5: F-statistic for Testing the Existence of Long-Run Relationship

Order of Lag	F- statistic
1	9.99

Source: Authors' Calculation

The lower and upper bound values (2.39 and 3.38 at 95 percent) for F-statistic are taken from **Table CI (iii)** Case III: Unrestricted intercept and no trend given in Pesaran et al. (2001). Under this study, Schwarz Bayesian Criterion (SBC) is used to select the optimal lag length of variables including in the ARDL technique. The following table represents the long-run relationship results of the selected ARDL approach (1, 0, 2, 0, 0, 0) using SBC. The estimated results show that the corporate tax rate (CTR), population growth rate (PGR), and Openness to Market (OMT) are the factors of employment growth in Bangladesh. The effect of the corporate tax rate (CTR) on employment growth is significant at one percent level of significance. The results of Table 6 represent that the corporate tax rate (CTR), population growth rate (PGR), market size (MS) are highly significant in the long run. On the other hand, Openness to Market (OMT) and Inflation (Inf) are not significant in the long run. The corporate tax rate (CTR) has a negative relationship with the employment growth rate (EGR) while the population growth rate (PGR) and market size (MS) are positively linked with the employment growth rate (EGR). Corporate tax rate (CTR) has a negative relationship with the employment growth rate that means the higher the corporate tax rates, the lower the employment growth rate because a higher tax rate directly reduces the business profit. Results indicate that the one percent increase in corporate tax rates (CTR), employment growth rate reduces by 3.28 percent in the long-run. One percent increase in population growth rate (PGR) contributes to a 2.19 percent increase in employment growth rate. In the same way, an increase in market size (MS) also leads to an increase in the employment growth rate. The results of the coefficients of constant show a highly significant relationship with a positive sign.

Table-6: Long-Run Coefficients of ARDL (1, 0, 2, 0, 0, 0) Model Dependent Variable ln EGR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNCTR	-3.287442	6.925669	0.474675	0.0411
LNPGR	2.193365	6.447106	0.340209	0.0379
LNOMT	1.546915	6.958136	0.222317	0.1267
LNMS	0.946696	2.445520	0.387114	0.0315
LNINF	0.422170	1.166092	0.362038	0.3218
C	4.760934	9.804127	-0.485605	0.0334

Source: Authors' Calculation

Table (7) represents the results of the Error Correction Model (ECM) based on the Akaike Information Criterion. Coefficients of the variables including Δ sign show the short-run elasticities. Short-run coefficient estimates show the dynamic adjustment of all variables. The short-run coefficient for ΔLnCTR, ΔLnPGR, and ΔLnOMT are statistically significant at a 5% level of significance. The coefficient of ECM is significant and has a correct negative sign. The value of the ECM coefficient is -0.383044, with a p-value 0.0255. The ECM coefficient shows the speed of adjustment and the long-run association between corporate tax rates and employment growth rates. ECM coefficient indicates that due to shock in the short-run, 0.38 percent adjustment would take place in long-run disequilibrium in a year.

Table-7: Error Correction Representation of the Selected ARDL (1, 0, 2, 0, 0, 0) Model Dependent Variable Δ ln (EGR)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.361461	0.881671	-0.409972	0.0369
LNTR	-0.249590	0.431402	-0.578556	0.0405
LNPGR	0.166525	0.394344	0.422284	0.0381
LNOMT	0.117445	0.423253	0.277483	0.0448
LNMS	0.071875	0.208015	0.345530	0.7339
LNINF	0.032052	0.072398	0.442723	0.6635
(ECM (-1))	-0.383044	0.319788	2.448639	0.0255

R2 = 0.885363, Adj. R2 = 0.869993, F- statistic= 153.59, Prob (F-stat) = 0.000, DW = 2.120

Source: Authors' Calculation

4.4 Diagnostic Test:

4.4.1 Serial Correlation

Here the Breusch-Godfrey serial correlation LM test reveals that the model is free from serial correlation, which means that the error terms are not auto-correlated. The null hypothesis in this case that there is no auto-correlation, while the alternative hypothesis is there is an auto-correlation. The observed R squared is equivalent to 3.639151, and its corresponding p-value is 0.1262, which is higher than the chosen significance level α of 0.05; hence the null hypothesis cannot be rejected, meaning that there is no serial correlation.

Table-8: Breusch-Godfrey Serial Correlation LM Test

F-statistic	**2.571872**	**Prob. F (2,15)**	**0.1096**
Obs. R-squared	3.639151	Prob. Chi-Square (2)	0.1262

Source: Authors' Calculation

4.4.2 Heteroscedasticity:

The null hypothesis is that the error terms are not heteroscedastic, i.e. (homoscedastic), meaning the variance if the error terms are constant and the alternative hypothesis is there is heteroscedasticity meaning that the error terms have different variation. The observed R-squared is 6.661514, and its corresponding p-value is 0.0358, which is lower than the 5% level of significance, so we reject the null hypothesis.

Table-9: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	6.382691	Prob. F (8,17)	0.0007
Obs*R-squared	9.50588	Prob. Chi-Square (8)	0.0124
Scaled explained SS	6.96017	Prob. Chi-Square (8)	0.0305

Source: Authors' Calculation

5. Limitations and Future Research Scope

This study examines that the higher the corporate tax rate, the lower the employment growth, and vice versa. Though these results contain robust evidence, there is a limitation in determining the corporate tax rate due to its multiplicity specific to various categories of companies and also for the status of a company being publicly traded (i.e., listed with any stock exchange) or not, the pervasive presence of tax holiday scheme and the provision of minimum tax irrespective of profit or loss. This study considers only the publicly traded companies other than banks, insurances, financial institutions, merchants banks, mobile phone operating companies, and cigarette manufacturing companies for the purpose of corporate tax rate. On that basis, it is found that the tax rate imposed on other publicly traded companies in Bangladesh significantly reduces the employment growth over the study period (from 1991 to 2018). Thus, future researchers should consider all publicly traded companies with multiple statutory tax rates. A comprehensive study is expected from future researchers to add an implication to the present study. Further, this study conducted research through secondary data only. Thus, future studies should use both primary and secondary data that is a mixed study, including the practitioners' perceptions.

6. Concluding Remarks and Policy Recommendation:

This research is primarily aimed at examining the association between the corporate tax rates and employment growth rates, particularly in the publicly-traded company in connection with the long run and short-run nature through time series analysis covering the period from 1991 to 2018. We employed five variables loading corporate tax rate, population growth rate, market size, inflation, and openness to market as the factors of employment growth rates in Bangladesh.

The corporate tax rate for the publicly-traded company has a negative and significant effect on the employment growth rate in the long run and short run. The main results of this study are corporate tax rate, population growth rate, and market size are highly significant in the long run; on the other hand, openness to market and inflation are not significant in the long run. ECM coefficient of corporate tax rate shows a 38 percent speed of adjustment in a year. Based on the findings of this, the current study recommends that maintaining equitable and close linkage among corporate tax rates, population growth rates, and the market size is essential to boost the employment growth rate in Bangladesh. Therefore, this study supports that there is a strong association between the corporate tax rate and the employment growth rate.

References:

ALTONJI, J. G. 1982. The intertemporal substitution model of labour market fluctuations: An empirical analysis. The Review of Economic Studies, 49, 783-824.

BAHMANI-OSKOOEE, M. & BOHL, M. T. 2000. German monetary unification and the stability of the German M3 money demand function. Economics letters, 66, 203-208.

DAVERI, F. & TABELLINI, G. 2000. Unemployment, growth and taxation in industrial countries. Economic policy, 15, 48-104.

DEMIRHAN, E. & MASCA, M. 2008. Determinants of foreign direct investment flows to developing countries: a cross-sectional analysis. Prague economic papers, 4, 356-369.

ENGLE, R. F. & GRANGER, C. W. 1987. Co-integration and error correction: representation, estimation, and testing. Econometrica: journal of the Econometric Society, 251-276.

FELDMANN, H. 2011. The unemployment puzzle of corporate taxation. Public Finance Review, 39, 743-769.

HAM, J. C. 1986. Testing whether unemployment represents intertemporal labour supply behaviour. The Review of Economic Studies, 53, 559-578.

HECKMAN, J. J. 1976. Estimates of a human capital production function embedded in a life-cycle model of labor supply. Household Production and Consumption. NBER.

JOHANSEN, S. 1988. Statistical analysis of cointegration vectors. Journal of economic dynamics control, 12, 231-254.

JOHANSEN, S. 1991. Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. Econometrica: journal of the Econometric Society, 1551-1580.

JOHANSEN, S. & JUSELIUS, K. 1990. Maximum likelihood estimation and inference on cointegration—with appucations to the demand for money. Oxford Bulletin of Economics statistics, 52, 169-210.

JUSELIUS, K. 1992. Testing structural hypotheses in a multivariate cointegration analysis of the PPP and the UIP for UK. Journal of econometrics, 53, 211-244.

KING, R. G. & REBELO, S. 1990. Public policy and economic growth: developing neoclassical implications. Journal of political Economy, 98, S126-S150.

LORA, E. A. & FAJARDO, D. J. 2012. Employment and taxes in Latin America: An empirical study of the effects of payroll, corporate income and value-added taxes on labor outcomes.

MANKIW, N. G., ROTEMBERG, J. J. & SUMMERS, L. H. 1985. Intertemporal substitution in macroeconomics. The Quarterly Journal of Economics, 100, 225-251.

MARTINEZ, I. Z., SAEZ, E. & SIEGENTHALER, M. 2018. Intertemporal labor supply substitution? Evidence from the swiss income tax holidays. National Bureau of Economic Research.

MOFIDI, A. & STONE, J. A. 1990. Do state and local taxes affect economic growth? The Review of Economics Statistics, 686-691.

PESARAN, M. H. & PESARAN, B. 1997. Working with Microfit 4.0: interactive econometric analysis;[Windows version], Oxford University Press.

PESARAN, M. H., SHIN, Y. & SMITH, R. J. 2001. Bounds testing approaches to the analysis of level relationships. Journal of applied econometrics, 16, 289-326.

SHUAI, X. & CHMURA, C. 2013. The effect of state corporate income tax rate cuts on job creation. Business Economics, 48, 183-193.

ZELLNER, A. & NGOIE, J. K. 2015. Evaluation of the effects of reduced personal and corporate tax rates on the growth rates of the US Economy. Econometric Reviews, 34, 56-81.