



## Original Article

## Corporate Income Taxation and Unemployment: A Case Study of Pakistan and India

Muhammad Amjad<sup>1</sup>, Nadeem Iqbal<sup>2</sup> & Aisha Rehman<sup>3</sup>

<sup>1</sup> MPhil Scholar, Department of Economics, University of Peshawar. Email: [amjadorakzai11@uop.edu.pk](mailto:amjadorakzai11@uop.edu.pk)

<sup>2</sup> Assistant Professor, Department of Economics, University of Peshawar Email: [nadeemiqbal@uop.edu.pk](mailto:nadeemiqbal@uop.edu.pk)

<sup>3</sup> PHD Scholar, Department of Economics, University of Peshawar. Email: [ayesharehman1995@gmail.com](mailto:ayesharehman1995@gmail.com)

### ARTICLE INFO

#### Key Words:

*Corporate Income Tax,  
Unemployment, Pakistan,  
India*

#### \*Corresponding Author:

Muhammad Amjad  
[amjadorakzai11@uop.edu.pk](mailto:amjadorakzai11@uop.edu.pk)

### ABSTRACT

Understanding the incidence of corporate taxation is important for a country in order to improve their policies to enhance business environment and job growth. The study is based on empirical investigation of corporate income tax and its impact on unemployment in case of Pakistan and India for period of 2000 to 2019. To find the appropriate results, the OLS regression technique has been utilized and the results are examined separately and comparatively. The results showed corporate income tax has insignificant effect on unemployment in both country Pakistan and India, except some control variables (working age population and urban population). Results further highlighted that still there is no significant impact of corporate income tax (CIT) on employment. The reason may be very little variation in the CIT and unemployment data of both countries from the assigned time and may the burden of corporate income tax may shift to the tertiary markets (consumers).

### Introduction

Corporate income tax was emerged in 1909 and is under a considerable debate between both policy and academic zones to provide support as an efficient source of government revenue. Policy makers and economic institutions have provided a substantial effort to understand the impact of corporate income taxes on firm decision as corporate income taxes directly monitor the investment decision of firms. Politician has suggested that lowering the corporate income taxes could be an engine for job growth. While economists suggested that the experience of this process will be indirect and may be through different channels. Lowering corporate income taxes may increase inward foreign direct investment, multinational and domestic corporate decisions to invest in that country and will be the driver for job growth. A western styled corporate sector (Pakistan Inc.) is introduced in 1984 as a policy measure programmed to promote economic

development of Pakistan. About 35% tax rates was adopted on all public and private large companies in 2007 and have gradually brought down to 29% in 2019 to attract foreign direct investment and job growth in the domestic country (FBR, 2019). The unemployment phenomenon of Pakistan constitutes rising curve and lose stem after 2011-12 which was 5.7% (PET, 2018).

Many developed countries have seen a consistent trend in decline a corporate income tax rate. US provided evidence of this conviction in December 2017; the corporate income taxes have been decreased to 21% from 35%. In 2017, eight Organizations for Economic Corporation and Development (OECD) countries reduced their corporate taxes rate, including Hungary where the cut rate was 9% noted. Many European countries over the past 20 years have reduced corporate income taxes including UK, where corporate tax rate is already 19%. Average corporate income taxes rate (CITR) has decline from 30% to 22.5% worldwide from 2003 to 2016 (Pomerleau & Potosky, 2016). Currently India has reduced corporate tax rate to 22% from 30% for existing manufacturing companies and decreased from 25% to 15% for new manufacturing companies. The aim is to attract multinational businesses and influence individual firm's decision to do business in the country, to increase inward FDI and employment growth in the domestic country. Government must provide favorable business and political climate to encourage investment.

The economic literature on corporate taxation is huge however maximum earlier studies give less attention to how the change in corporate tax rate affects aggregate labor supply. Moreover, the earlier studies which is supported by Broadford (1981), Jorgenson (1963), King and Fullerton (1984) determines the effects on capital gains and depreciation, dividends and investment incentives or factor inputs. But the change in corporate tax rate have significant effect on the country economic efficiency by effecting important variables such as, inward foreign direct investment, tax revenue, enhancing firms and their decisions to increase business activities in the country and to reduce overall unemployment level (Meyer, 2018; Asghar et al., 2024; Ishfaq et al., 2024).

Many factors that can be affected by corporate tax incidence but effect on unemployment are murky at best. Because any effect practiced may be through different channels and will be indirect. There is theory of profit maximization which defines that firms seek to minimize its cost and increase profit. Implementing high taxes on firms lead to additional costs to reduce firm's profitability and ability to invest more and hire more workers (Wu, 2010). And huge literature on corporate tax incidence reviewed by different authors such as, Devereux & Griffith (2002), De Mooji & Ederveen (2008), Becker et al. (2012), and Zeb et al. (2014) who analyze that rise in corporate tax rate will decrease inward FDI and capital formation which will lead to increase in unemployment level as national and international corporations leave the market. Meyer (2018) examined the impact of lowering the corporate income tax rate on unemployment level of the country by utilizing the data of 15 European Union member countries. His study finds the

positive sign of corporate tax variable means that there is significant relationship between unemployment and corporate income tax by employing ordinary least squares regression equation. Zirgulis and Sarapovas (2016) also studied corporate income tax and unemployment of 41 countries of over eleven-year data. They find that any change in average effective corporate income tax significantly related with change in unemployment level of the country by employing GMM method (system general method of moments). Their results also suggested that any change in corporate tax rate can affect international firm's choices which are directly related to employment changes. Zellner and Ngoie (2015) examined that how changes in corporate tax rate affect overall U.S growth level. This study did not find a direct relationship with unemployment but effects on GDP should be anticipated to have a relation with unemployment level. Moreover, they interpret that a reduction in personal and corporate taxes will increase GDP growth by using Marshallian macroeconomic model. They find that a 5 percent reduction in overall tax rate results in 3 percent rise in GDP. Similarly, Exbrayat and Geys (2015) examined the corporate income tax incidence in which they noted the persistent endogeneity problem in causal relationship between corporate tax rate and wages may be dual. They suggested that government should subsidize businesses for high labor cost by cutting in corporate taxes because when government implements high taxes the firms, they tries to shift their corporate tax burden to labor wages and labors may be harmed further the race to the bottom of standard tax competition hypothesis couldn't exist. This study also examines that from tax competition workers may be harmed or better off in the firm. Siegloch (2014) also studied the exact problem on local businesses by using data on 11,441 municipalities of Germany to find the impact of business taxes on unemployment level. He determines that 1 euro rise in business taxes of firms may result in 20-euro cents reduction in wages of workers over two years. According to this study the fact that any increase in business taxes may move the firms to other municipalities by decreasing the unemployment level and employment opportunities. Another same study of Fuest et al. (2015), from Germany examined from a design study on an event that workers bear more than 40% of at least all business tax burdens. They also highlighted that the firms operating in different municipalities may have zero tax burden because of profit shifting opportunities. Respectively Lora and Fajardo (2012) conducted a study in Latin America that any increase in corporate income taxes may cause capital moved to informal sector from formal sector of the country. A contribution of capital to the wages and productivity of labors could imply that the workers with higher skill of formal sector would be adversely affected while workers with low skilled of informal sector would be positively. As a result of downward rigidities or due to minimum wages the employment would be affected negatively. Another study by Romer and Romer (2010) examined effects of federal corporate taxes that any increase in taxes has negative statistically significant effect on output. Output was measured as GDP and find that high taxes decreased employment rate in the country. By using national time series data on federal taxes thus the study was not able to find the effect of state taxes.

Many attempts have been made by various researchers to investigate the impact of lowering corporate income taxes on various economic variables, such as investments (domestic

and FDI), influencing legality and formal sector, capital formation and on unemployment, but scarcely studied in the context of South Asia. Only few studies from other region directly examine the empirical relationship between corporate income taxes and unemployment such as Zirgulis and Sarapovas (2016), Meyer (2018), Wo (2010), Romer and Romer (2010) and Chen et al. (2017) suggested that huge tax rate on local and corporate businesses in developing countries can cause to economic deficiency and low employment level by effecting firms' decision and profitability or overall investment (domestic and foreign). So, first the relationship between corporate income taxes and unemployment should be analyzed in the context of Pakistan and two emerging countries. The present study will also try to explore the impact of corporate income tax on unemployment for the selected counties.

Corporate income tax rate in Pakistan is higher than other developing countries including India. Pakistan has decreased corporate income tax to 29% in 2019 which is higher than India corporate income tax (India has decreased CIT to 22% from 30% in 2019 to attract global businesses and job growth). India and Pakistan both are high population countries with higher natural resources and business opportunities. Pakistan CIT is also higher than global average corporate income tax rate of 22%. High corporate tax rate may affect different variables of the economy such as corporate firms can shift or exit from formal to informal market, from country to country due to low profitability or the firms will transfer their tax burden to labor wages by harming workers which can lead to make changes in employment level. High corporate taxes lead to lose the firm's ability and profitability to invest and hire more workers (Wo, 2010). There is also decreasing trend in overall production of large-scale manufacturing industries, especially in Pakistan. According to Quantum Index of Large-Scale Manufacturing Industries (LSMI) the overall output decreased by 5.93% for July-November 2019 compare to July-November 2018 in Pakistan which is reducing economic efficiency by distortion in firm's decision on investment, firing workers. Governments use tax incentives as a tool to promote industrial policies and to support economic activities specially increase in business activities and job growth, but desired increase has not observed yet. So, the relationship between corporate income taxes and unemployment should be analyzed in the context of South Asia. This study will also try to find the impact of corporate income tax rate on unemployment of Pakistan and India, as corporate sector is known as the driver for employment.

The voluminous economic literature is available on corporate taxation but scarcely studied with respect to south Asian countries. Corporate sector is crucial for economic efficiency and play a vital role in economic development. The effects of corporate tax rate can have on many important variables such as, FDI, dividends, wages of workers, legality of firms, firm's decision and influence towards increase in business activity which directly affect the macroeconomic variable (unemployment) of the country. In this study we will explore the impact of reduction in corporate income taxes on unemployment level of Pakistan.

Secondly, during the last decades many developed countries have seen a decline in corporate tax rate with specific goals of increasing business activities and to influence job growth except Asian countries. So, it is essential to estimate the impact of corporate tax rate on overall economic activity of the country and the region, specifically unemployment. Finally, the finding of this research may help policy makers to make potential policy to stabilize and competitive corporate income tax rate to control over employment issue of the country.

## Theoretical Framework and Econometric Methodology

The below frame illustrates the linkage between corporate taxation and unemployment such as many theories and literature have exemplified the relationship with evidence and arguments. This relationship is discussed with different direct indirect channels by different literature and theories. According to Keynes in his book the general theory of Employment, Interest and Money (1936) by changing main instruments taxes and expenditures of fiscal policy the government can achieve macroeconomic objectives of employment, investments and economic growth and can move towards economic development by measuring combined taxes and government expenditures. Trickle-Down theory by McCracken (1985) also highlighted that the financial and tax incentives should be accessible to large investment companies and entrepreneurs because they will influence business activities, investment for enterprises which will affect positively the employment level. Conduit theory of Degh (1997) suggested that corporate taxes on large investment firms should not be imposed in the same manner as regular firms because the large firms will further distribute its capital gains, interest and profit to its shareholders, customers and labors.

To measure the impact of corporate income taxation on unemployment, numerous researchers have employed different techniques; present study is based on the model as used by Meyer (2018). The model is estimated through ordinary least square technique.

$$UNEMP_t = \alpha_0 + \beta_1 CIT_t + \beta_2 GDP/Hour\ worked_t + \beta_3 GE_t + \beta_4 FDI\ inf_t + \beta_5 WAP_t + \beta_6 UP_t + \mu$$

Where, UNEMP = Unemployment, CIT = Corporate Income Tax, GDP/hour worked = Gross Domestic Product per Hour Worked, GE = Government Expenditure (as a Percentage of GDP), FDI = Foreign Direct Investment Inflow (as a Percentage of GDP), WAP = Working Age Population (as a Percentage of Total Population) and UP = Urban Population (as a Percentage of Total Population).

### Construction of Variables

The explanatory variables such as corporate income tax, government expenditure, labor productivity per hour and FDI inflows also affect the unemployment level directly and indirectly. The unemployment in the model is showing overall unemployment in the economies.

Corporate income tax is the tax on the net profits of all large public and private companies. Gross domestic product per hour worked shows the labor productivity of labor per hour worked in the economy which can be measured through dividing total output of the economy by total hours worked by labor in the economy.

Foreign direct investment inflows show the value or amount of amount of foreign direct investment inward to the concerned economy by abroad or non- residents investors as a percentage of GDP which includes investments, intra-company loans, reinvested earnings, repayment of loans and net foreign capital.

In the model, government expenditure is taken as a percentage of GDP shows the gross domestic spending of national income by government on the purchasing of goods and services including consumption goods and investments, transfer of payments (social benefits and pensions) and capital transfer.

In the model, the study also includes demographic variable which is working age population as a percentage of total population to show the population to employment ratio of the country and is defined those who are able and likely to work and also aged 16 to 64. Urban population as a percentage of total population which shows the people living in urban conditions or urban areas of the countries.

## Data Sources

Data is collected from the World Bank, International Labor Organization, Pakistan Bureau of Statistics, Ministry of Statistics and Programme Implementation India for a period of 2000 to 2022.

## Results and Discussions

First the study will discuss the results of Pakistan. In order to test the stationary of the variables, the ADF (unit root) test has been applied and the obtained results are presented in table 1. Table 1 indicates the results of ADF unit root test which is attempted to check the stationary of the variables. Results are concluded based on the probability value (5% confident interval). Probability is given below the significance level which reveals that the variables are stationary. According to the below table all the variables Unemployment, Corporate Income Tax, Government Expenditure, Gross Domestic Product per Hour Worked, FDI inflow, and Urban Population are stationary at 1st difference except Working Age Population.

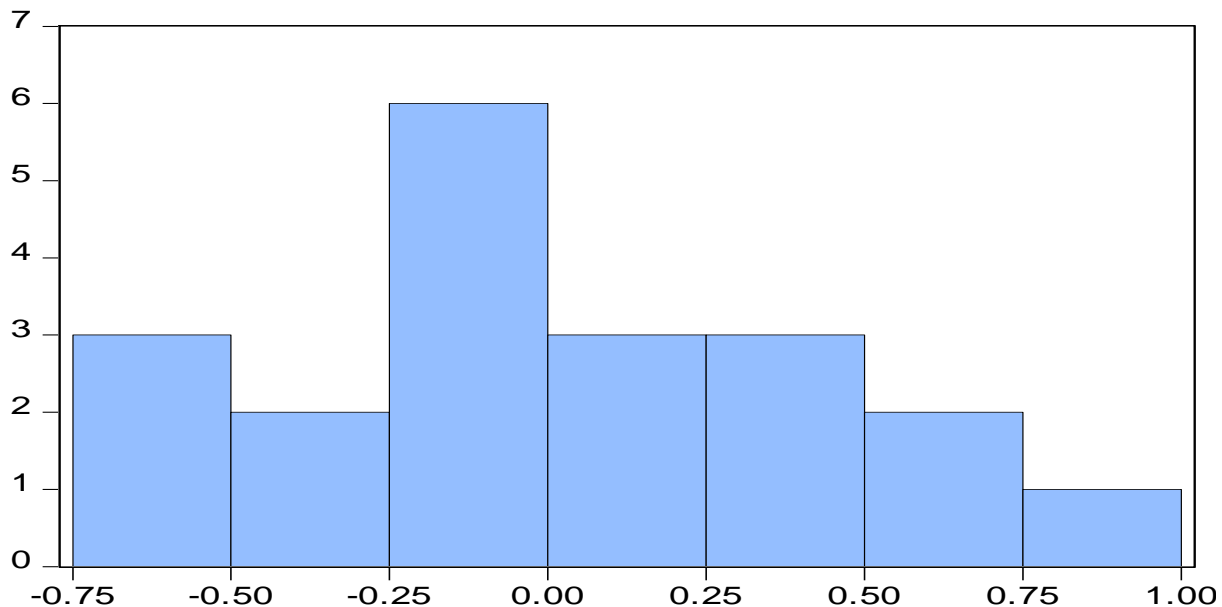
**Table 1: Results of Unit Root**

Variable	Level	1 <sup>st</sup> difference
Unemployment	0.99	0.00

Corporate Income Tax	0.99	0.04
Govt Exp	0.62	0.00
GDP/hour worked	0.35	0.00
FDI inflow	0.15	0.03
Working Age Pop	0.00	0.00
Urban Pop	0.85	0.00
5% level of significance		

In order to test the normality of the data for Pakistan the histogram has been graphed down below to show the desired result. The below graph is illustrating that the data is normally distributed among the variables.

**Figure 1: Histogram - Normality Test**



To detect the auto correlation in the model the study applied the 1<sup>st</sup> order serial autocorrelation on the model and found no autocorrelation as indicated in the result in table below the probability value is greater than 0.05, indicating that the error term of the variables are not correlated over different time periods.

**Table 2: Results of Serial Autocorrelation**

F-statistic	0.0633	Prob. F(1,12)	0.80
Obs*R-squared	0.1050	Prob. Chi-Square(1)	0.74
5% Level of Significance			

In order to check the strength of relationship between variables correlation test has been applied and obtained results shows that some of the variables have positive strong correlation with each other like GDP/Hour Worked, Government Expenditure, Working Age Population And Urban Population with Unemployment and between Government Expenditure, GDP/Hour Worked, Working Age Population And Urban Population and also some variables are negatively correlated such as Corporate Income Tax, FDI Inflow And Unemployment. The Working Age Population, Urban Population, Government Expenditure and GDP/Hour Worked with Corporate Income Tax and FDI Inflow. Below table 3 shows the results of correlation test.

**Table 3: Correlation Test Results**

	Unemployment	Corporate Income Tax	FDI inflow	GDP/hour worked	Govt Exp	Working Age Pop	Urban Pop
Unemployment	1						
Corporate Income Tax	-0.70	1					
FDI inflow	-0.41	0.05	1				
GDP/hour worked	0.71	-0.81	-0.04	1			
Govt Exp	0.56	-0.55	0.25	0.82	1		
Working Age Pop	0.82	-0.72	-0.19	0.90	0.80	1	
Urban Pop	0.86	-0.75	-0.20	0.91	0.79	0.99	1

The OLS model has been used to determine the impact of predicted variable (Unemployment) on explanatory variables (corporate income tax, government expenditure, FDI inflow, GDP/hour worked, working and urban population). Table 4 revealed the impact of unemployment on independent variables especially on the main variable (Corporate Income Tax). The result indicates that there is negative and statistically insignificant impact of Corporate Income Tax on Unemployment in Pakistan from the assigned period as shown in below table. According to result one unit increase in corporate income tax will decrease the unemployment rate by 0.017, accepting the null hypothesis at 5% level of significance. This point for Pakistan is contradicting at least all the available literature on justified topic such as Zirgulis & Sarapovas, 2017 and Meyer, 2018; they empirically evaluated the positive and significant impact of corporate income tax on unemployment level. But with reference to Pakistan the reason may be very little variation in data of both variables between the assigned time periods or the burden of corporate income tax may shift to the consumer in this case. In case of Pakistan government expenditure is also showing insignificant effect on unemployment with 30% significance level as it is known as major economic variable to control the unemployment level of the economies. FDI

inflow has negative and insignificant effect on unemployment indicating the country need to increase investments by enhancing business environment similarly, GDP/hour worked have negative and likely significant (prob\*=11%)effect on unemployment highlighting that any decline in unemployment level will increase labor productivity by 0.79. The demographic variable working age population has significant effect on unemployment level such as one unit increase in working age population will decline unemployment level by 1.09 percent in Pakistan and albeit negative coefficient. Urban population has positive and significant effect on unemployment level highlighting that urbanization in Pakistan can increase economic growth by declining unemployment as it may have positive impact on economic (Song, 2013; Adeem et al., 2019; Sibte-Ali et al., 2021).

**Table 4: OLS Results for Pakistan**

<b>Dependent Variable: Unemployment</b>			
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
C	-52.97	10.027	0.0001
Corporate Income Tax	-0.01	0.098	0.4630
Government Expenditure	-0.00	0.084	0.3093
FDI Inflow	-0.20	0.186	0.2916
GDP/Hour Worked	-0.79	0.468	0.1114
Working Age Population	-1.09	0.590	0.0035
Urban Population	2.20	1.172	0.0007
R-squared = 0.924717			
Adjusted R-squared = 0.889971			

Now the study will discuss the results for India. Table 5 indicates the results of ADF unit root test which is attempted to check the stationary of the variables. Results are concluded based on the probability value (5% confident interval). The given of probability is below the significance level which reveals that the variables are stationary. According to the below table all the variables Unemployment, Corporate Income Tax, Government Expenditure are stationary at 1<sup>st</sup> difference and Working age Population at 2<sup>nd</sup> difference and Gross Domestic Product per Hour Worked, FDI inflow, Urban Population are stationary at level for India.

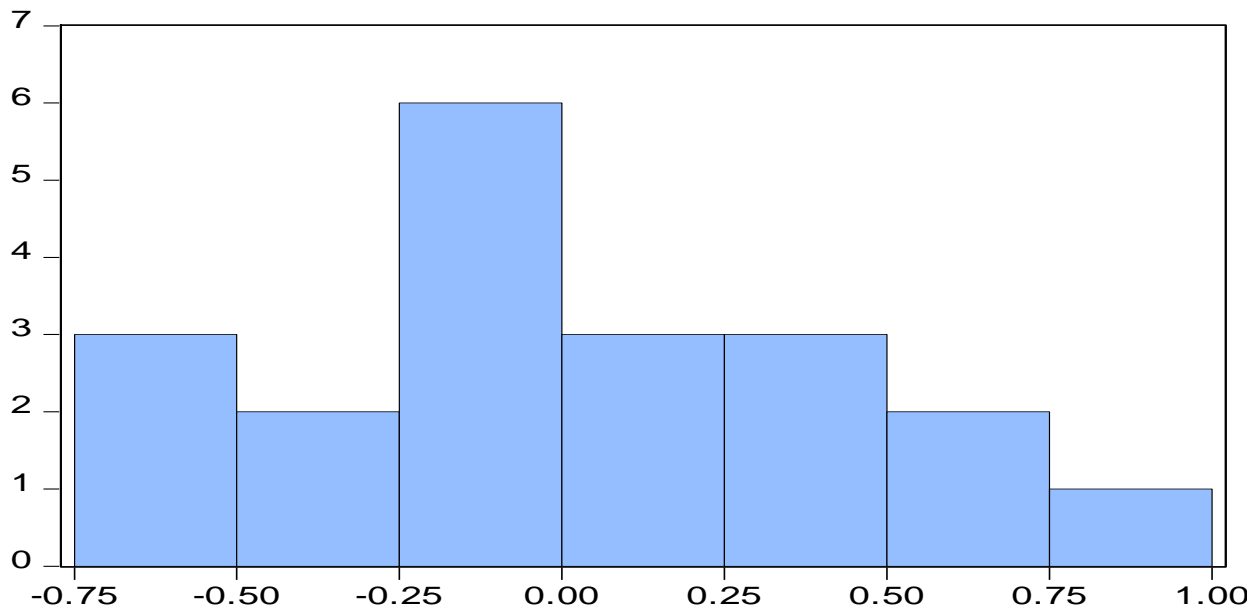
**Table 5: Unit Root Test**

<b>Variable</b>	<b>level</b>	<b>1<sup>st</sup> Difference</b>
Unemployment	0.1405	0.0145
Corp income tax	0.7552	0.0080

Govt exp	0.4402	0.0001
Gdp/hour worked	0.9998	0.0412
Fdi inflow	0.2053	0.0015
Working age pop	0.4228	0.0034
Urban pop	0.0194	1.0000
5% level of significance		

To test the normality of the data the histogram has been graphed down below to show the desired result. The below graph is illustrating that the data is normally distributed among the variables.

**Figure 2: Histogram - Normality Test**



To detect the auto correlation in the model the study applied the 1<sup>st</sup> order serial autocorrelation on the model and found no autocorrelation as indicated in the result in table below the probability value is greater than 0.05. The result shows that the error terms of all the variables are not correlated with each other over different assigned time periods.

**Table 6: Autocorrelation**

F-statistic	16.92	Prob. F(1,12)	0.09
Obs*R-squared	11.70	Prob. Chi-Square(1)	0.00
5% level of significance			

To check the strength of relationship between variables correlation test has been applied and obtained results shows that some of the variables have positive strong correlation with each other like GDP/Hour Worked, Government Expenditure, Working Age Population and Urban Population with Unemployment and between Government Expenditure, GDP/Hour Worked, Working Age Population And Urban Population and also some variables are negatively correlated such as Corporate Income Tax, FDI Inflow And Unemployment. The Working Age Population, Urban Population, Government Expenditure and GDP/Hour Worked with Corporate Income Tax and FDI Inflow. Below table 6 shows the results of correlation test for India.

**Table 7. Correlation Test Results**

	Unemploy ment	Corporate Income Tax	FDI inflow	GDP/hour worked	Govt Exp	Working Age Pop	Urban Pop
Unemploy ment	1						
Corporate Income Tax	0.451	1					
FDI inflow	-0.647	-0.401	1				
GDP/hour worked	-0.484	-0.639	0.295	1			
Govt Exp	-0.069	-0.112	0.315	-0.326	1		
Working Age Pop	-0.468	-0.650	0.357	0.984	-0.288	1	
Urban Pop	-0.492	-0.671	0.350	0.989	-0.294	0.998	1

The OLS model has been used to determine the impact of predicted variable (Unemployment) on explanatory variables (corporate income tax, government expenditure, FDI inflow, GDP/hour worked, working and urban population) in the below table. In table 8 the results showed the impact of unemployment on independent variables especially on the main variable (Corporate Income Tax) in case of India. The result shows that there is negative and statistically insignificant but nearly significant with 0.20 probability value, impact of corporate income Tax on unemployment in India meaning that also in India there is not much relationship between corporate income tax and unemployment as larger part of population is involved in private sector services but it may be because of high level of population which may hide the impact of assigned variables in the assigned time period in India as shown in below table. According to result one unit increase in corporate income tax will decrease the unemployment rate by 0.01 as shown insignificant in the result, so the study will accept the null hypothesis at 5% level of significance. This point for India is contradicting at least all the available literature on justified topic such as Zirgulis & Sarapovas, (2017) and Meyer, (2018), they empirically determined the positive impact of corporate income tax on unemployment level. But with reference to India the reason may be a little change in both variables' corporate income tax and

unemployment between the assigned time periods. Also, in case of India the government expenditure is showing insignificant result as it is major economic variable to tackle down the issue of unemployment in most of the economies, India needs to increase its expenditure as it has the highest unemployment level to minimize its effect on economic growth. FDI inflow has the statistically significant effect on Indian unemployment rate as India recently decreased corporate tax rate to 22% from 30% in 2019 to attract global businesses and increase employment. The result of GDP/hour worked has highly statistically insignificant value and may have negative effect on unemployment. The demographic variable working age population has significant effect on unemployment in India albeit negative coefficient and urban population has positive and significant effect on unemployment level as discussed by Song, (2013) that the urbanization may have positive effect on economic growth.

**Table 8: OLS Results for India**

<b>Dependent Variable = Unemployment</b>			
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
C	-14.80	6.30	0.03
Corporate Income Tax	-0.01	0.01	0.20
Govt Exp	-0.00	0.01	0.53
FDI inflow	-0.12	0.03	0.00
GDP/hour worked	-0.01	0.08	0.82
Working Age Pop	0.64	0.20	0.00
Urban Pop	-0.61	0.23	0.02
R-squared	0.73	Adjusted R-squared	0.61

Although OLS results of both countries indicates similar impact of predicted variable on explanatory variables. For more appropriate results the study utilized panel regression with fixed effect model. The result is shown in the below table 9. Also, the results of Fixed Effect model show insignificant relation between corporate income tax and unemployment as shown in above results indicating that there is no such relation between predicted variables in both countries from the selected time period. All the variables are showing insignificant results except demographic variables. There may be different reasons behind the insignificant results such as data unavailability, less variation in data of both countries of variables or it may be because of the burden of taxation may shift to consumers as highlighted by Roomer and Roomer, (2016). The adjusted R square with 0.98 value is showing that the model is good fit.

**Table 9: Fixed Effect Results**

Dependent Variable = Unemployment			
Variable	Coefficient	Std. Error	Prob.
C	165.257	36.04978	0.0005
Corporate Income Tax	-0.017	0.034479	0.6147
Govt Exp	0.070	0.038602	0.0897
GDP/hour worked	-0.277	0.213826	0.2164
FDI inflow	-0.096	0.123865	0.4476
Working Age Pop	-2.051	0.437265	0.0004
Urban Pop	-1.267	0.400871	0.0075
R-squared = 0.995527			
Adjusted R-squared = 0.986580			

To show more appropriately and comparatively the results of Ordinary Least Square (OLS) and Fixed Effect model of both countries Pakistan and India the table 10 is shown below.

**Table 10: Comparison of Results**

Dependent Variable: Unemployment						
Variable	Pakistan		India		Fixed Effect Results	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
C	-52.9	0.00	-14.8	0.03	1.65	0.00
Corporate Income Tax	-0.017	0.46	-0.01	0.20	-0.01	0.61
Government Expenditure	-0.009	0.30	-0.00	0.53	0.07	0.08
GDP/hour worked	-0.204	0.2916	-0.127	0.00	-0.277	0.2164
FDI inflow	-0.799	0.1114	-0.018	0.82	-0.09	0.44
Working Age Pop	-1.0	0.00	0.64	0.00	-2.01	0.00
Urban Pop	2.2	0.00	-0.61	0.02	-1.2	0.00

The study has concluded from the above table 10 that impact of corporate income tax has not significant effect in context of both India and Pakistan as their coefficients also showing

same relationship except demographic variables (working age population and urban population). Government expenditure has also significant relationship with unemployment with positive coefficient. It is concluded from above result corporate taxation does not have any effect on unemployment rate in Pakistan and India.

## Conclusions

The study concluded that corporate income tax has statistically insignificant effect on unemployment with negative coefficient for both countries Pakistan and India, while in developed countries it has meaning and significant relationship between corporate income tax and unemployment as empirically investigated by Zirgulis & Sarapovas, (2017) and Meyer, (2018). The optimal corporate taxation has crucial role in the development of the economies by contributing to the employment level as corporate sector is known for driver of job growth. The results of the study almost showed insignificant effect with negative coefficient further revealed that increase in government expenditure in both countries will decrease unemployment level as Meyer, 2018 has empirically proved. FDI inflow and GDP/hour worked also has adverse effect on both countries recognizing any rise in FDI inflow and labor productivity will decline unemployment. As Pakistan and India both are developing countries and having same results for most of the variables need to further improve their policy regarding justified variables. The reason of committed connection between two main variables is the less variation in data from the selected time period or the tax burden may have changed to other variables instead of corporate sector. The statistical insignificance of the variables except demographic variables is very difficult to conclude. There may be potential guideline as my result shows some different result from the literature albeit some results are coinciding with literature like FDI inflow, GDP/hour worked, government expenditure especially demographic variables working age population and urban population. Working age population has positive and significant impact on unemployment in Pakistan while negative and significant impact in India indicates highest population ratio in India is adversely affecting the unemployment level.

Study findings regarding Pakistan and India is rather mixed or partially contradict, as many authors found positive impact of corporate taxation on unemployment. So, it is recommended that the further research is important to find the more reliable results by increasing countries and decreasing observation to find the desired level of corporate income taxation. Also, government expenditure in both countries is higher than its revenue, the increase in government expenditure may decrease unemployment but it may negatively affect the economic growth in long term by decreasing the loan burdens of the economies.

It is concluded that statistically there is no causal relationship exists between corporate income taxation and unemployment for both countries. Understanding the incidence of corporate taxation is important for a country in order to improve their policies regarding favorable business environment and employment level. This study only lays groundwork for the future studies,

which may take the same topic with different reliable variables and techniques and apply it to even larger international panel.

Based on the results of the study, it is recommended that as unemployment is macroeconomic indicator of the economy, so the government of Pakistan and India should provide favorable environment to the foreign and domestic investors by optimal corporate taxation that the economic growth can be sustained. Government of both countries should focus on fiscal policy instruments and improve its implementations to obtain the desired level of employment. It is recommended to future researchers that further research is necessary with different reliable variables, econometric techniques and apply it to even large international panel.

## References

1. Adeem, M. A., Sibte-Ali, M., & Akhtar, R. (2019). Socio-Economic Determinants of Employment: A Case study of Pakistan. *Journal of Accounting and Finance in Emerging Economies*, 5(1), 71-82.
2. Asghar, M. M., Safdar, R., Zubair, M., & Hanif, M. (2024). Exploring the Influence of Financial Development, Institutional Quality and Trade Openness on Inclusive Growth in SAARC Countries. *Pakistan Journal of Humanities and Social Sciences*, 12(2), 1450-1461.
3. Babar, Z. A., Awan, M. S., & Nadeem, M. (2017). Relationship between corporate tax and private investment in Pakistan: an empirical analysis. *Pakistan Business Review*, 19(1), 157-175.
4. Becker, J., Fuest, C., & Riedel, N. (2012). Corporate tax effects on the quality and quantity of FDI. *European Economic Review*, 56(8), 1495-1511.
5. Bettendorf, L., Horst, A., & De Mooij, R. (2009). Corporate tax policy and unemployment in Europe: an applied general equilibrium analysis. *The World Economy*, 32(9), 1319–1347.
6. Böhringer, C., Boeters, S., & Feil, M. (2005). Taxation and unemployment: an applied general equilibrium approach. *Economic Modelling*, 22(1), 81-108.
7. Chen, D., Qi, S., & Schlagenhauf, D. (2017). Corporate Income Tax, Legal Form of Organization, and Employment. *Federal Reserve Bank of St. Louis, Working Papers*, 2017(021).
8. De Mooij, R., & Ederveen, S. (2003). Taxation and foreign direct investment: a synthesis of empirical research, *International Tax and Public Finance* 10(6), 673–693.
9. Economic Survey (2018). Ministry of Finance Pakistan. Retrieved from <http://www.finance.gov.pk/survey> dated 17/07/2019
10. Exbrayat, N., & Geys, B. 2015. Economic integration, corporate tax incidence and fiscal compensation. *Working paper GATE*, 2015-34.
11. Federal Board of Revenue, Government of Pakistan. Retrieved from <http://www.fbr.gov.pk> dated 04/12/2019

12. Feldmann, H. (2011). The Unemployment Puzzle of Corporate Taxation. *Public Finance Review*, 39(6), 743-769.
13. Fuest, C., Peichl, A., & Siegloch, S. 2015. Do higher corporate taxes reduce wages? Micro evidence from Germany: Micro Evidence from Germany. *ZEW-Centre for European Economic Research Discussion Paper* (16–003).
14. Herbertsson, T. T., Zoega, G., & Phelps, E. S. (2002). Demographics and unemployment. *University of Iceland Institute of Economic Studies Working Paper*, (W0109).
  - a. <http://www.pbs.gov.pk/survey> dated 13/08/2019
  - b. <http://www.pbs.gov.pk/survey> dated 26/09/2019
15. Ishfaq, M., Rasool, A., Asghar, M. M., Karim, S., & Ahmad, R. (2024). Impact of Natural, Physical and Human Capital Formation on Economic Growth in Pakistan: An ARDL Analysis. *Journal of Asian Development Studies*, 13(3), 222-233.
16. Khan, N. U., Jehan, Q. U. A. S., & Shah, A. (2017). Impact of taxation on dividends policy: Evidence from Pakistan. *Research in International Business and Finance*, 42 (2017), 365–375.
17. Labor survey (2018). Pakistan Bureau of Statistics. Retrieved from
18. 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. *Inter-American Development Bank, working paper no. IDB-WP-334*.
19. Meyer, K. (2018). Effect of corporate income taxation on unemployment levels in the european union. *The Park Place Economist*, 26(1), 88-95.
20. Pakistan employment trend (2018). Pakistan bureau of statistics. Retrieved from
21. Pissarides, C. A. (1998). The impact of employment tax cuts on unemployment and wages; the role of unemployment benefits and tax structure. *European Economic Review*, 42(1), 155-183.
22. Pohwani, P., Khoso, J. R., & Kumar, V. (2019). Impact of Taxes on Unemployment of Pakistan. *Journal of Public Value and Administrative Insight*, 2(4), 14-16.
23. Pomerleau, K., & E. Potosky. (2016). Corporate income tax rates around the World, 2016. *The Tax Foundation Fiscal Fact No. 525*.
24. Rendahl, P. (2016). Fiscal policy in an unemployment crisis. *The Review of Economic Studies*, 83(3), 1189-1224.
25. Riedl, A., & Van Winden, F. (2007). An experimental investigation of wage taxation and unemployment in closed and open economies. *European Economic Review*, 51(4), 871-900.
26. Romer, C. D., & Romer, D. H. (2010). The macroeconomic effects of tax changes: estimates based on a new measure of fiscal shocks. *American Economic Review*, 100(3), 763-801.

27. Sibte-e-Ali, M. S., Khan, U. U., & Parveen, S. (2021). The relationship between financial development and foreign direct investment and its impact on economic growth of Pakistan. *iRASD Journal of Economics*, 3(1), 27-37.
28. Siegloch, S. (2014). Employment effects of local business taxes, in Annual Conference 2014. *Evidence-based Economic Policy*, 7–10 September 2014, Hamburg, Germany.
29. Song, S. (2013). Demographic Changes and Economic Growth: Empirical Evidence from Asia. *Honors Projects*. Paper 121.
30. Wang, L. F. (1993). Sector-specific unemployment and corporate income tax incidence: A geometric exposition. *The American Economist*, 37(1), 64-67.
31. Waseem, M. (2018). Taxes, informality and income shifting: Evidence from a recent Pakistani tax reform. *Journal of public economics*, 157, 41-77.
32. Zeb, N., Qiang, F., & Sharif, M, S. (2014). Foreign Direct Investment and Unemployment Reduction in Pakistan. *International journal of economics*, 5(2), 10-17.
33. 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(2), 56–81.
34. Zirgulis, A., & Šarapovas, T. (2017). Impact of corporate taxation on unemployment. *Journal of Business Economics and Management*, 18(3), 412-426.