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## Supremacy of Value-Added Tax: A Perspective from South Asian Nations\*

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### Abstract

The study attempts to examine the relationship among revenue growth factors from different angles and provides a comprehensive overview of tax revenue collection for developing countries. The impact of income tax, customs duty, and value-added tax on the gross domestic product is examined using the ordinary least-square (OLS) multiple regression approach. To confirm the association, a multiple regression model is applied to time-series data. SPSS software, MS Excel, is used to draw the empirical results, trend analysis, and some graphical presentation to reach the study's objective. The findings show that while the value-added tax has a significant impact and the highest coefficient, regardless of country, income tax and customs duty may or may not be significant depending on the circumstances. It triggers effectual and efficacious economic growth. The paper has implications in policy-making areas where governments are seeking how to stimulate revenue growth effectively and efficiently. To promote economic growth, the tax net and tax rate on luxury goods should be increased along with human resources in the tax administration for the short term. But in the long term, decentralization & digitization of tax administration, dismantling the existing tax barriers and good governance are necessary.

**Keywords:** Tax Revenue, Economic Growth, Taxation, Developing Economies, Sales Tax

**JEL Classification Code:** H20, H71, O10

### 1. Introduction

The government is extremely concerned about the low tax revenue to gross domestic product (GDP) ratio

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in developing nations (Oz-Yalaman, 2019) because tax revenues are the main sources of economic sustainability (Basheer et al., 2019). Past studies revealed that the government of developed economies prefer direct taxation to raise substantial additional revenue, while the government of developing economies seek indirect ways (Kalaš et al., 2017; Moore & Prichard, 2020). But this statement is not true always. Aamir et al. (2011) showed that India is increasing revenue growth by increasing direct tax while Pakistan is seeking indirect tax, though both are developing countries. Previous studies are done based on the individual country. There is no comparative analysis among developing countries to show which common instrument triggers economic growth. There is a paucity of empirical literature that addresses income tax, customs duty, and value-added tax from the South Asian view. This study is motivated by the inconsistency of economic relationships among these growth factors. Therefore, this study attempts to accommodate this relationship from different angles based on different countries and bridge the knowledge gap.

This paper's primary objective is to find the preferred common ways to stimulate economic growth in developing economies. This paper discusses the following two important questions to examine the effect of tax revenue collection from internal and external sources on the economy:

1. Does the tax revenue affect the economic growth of developing countries?
2. What are the effects of Income Tax, Customs Duty, and Value-added Tax on economic growth separately, and which has more impact on the economy?

The rest of the paper is structured in the following ways. Section 2 is a critical review of the relevant literature regarding the relationship between tax revenue and economic growth in different countries. Section 3 describes the methodological approach and model function. Section 4 presents the empirical results of the effect of income tax, customs duty, and value-added tax. The countries' revenue generation flow and tax collection patterns with comparative views are described in section 5. Finally, the conclusion part summarises the findings and provides some guidelines to these governments for generating more revenue on a short-term and long-term basis.

## 2. Literature Review

Gross Domestic Product (GDP) is an effective tool for measuring economic growth because it is a monetary measure of all finished goods and services produced in a particular period (Basheer et al., 2019; Salma et al., 2020). Smith (1976) described this economic growth in his famous book *The Wealth of Nations* (1776), arguing that one of the parameters of this economic growth is gross domestic product (GDP). The government imposes levies and taxes on final goods and services for expanding public expenditure & financial development which accelerates economic growth and achieves macroeconomic goals (Andrejovská, A., & Puliková, V.; Gurdal et al., 2021; Nguyen & Duong, 2021; Fathima & Mohamed, 2021). So, the contribution of tax revenue to GDP provides an idea of how well the government controls and distributes a country's economic resources (Modica et al., 2018). However, this contribution or ratio differs over the period and from country to country.

Akitoby (2018) found the contribution of tax to GDP is comparatively low in developing countries than in developed countries. This lower ratio is observed in South Asian countries as well. The tax-to-GDP ratio of India and Pakistan are 18% and 14%, respectively, while Bangladesh holds the lowest rate, 8.5%, among the listed countries (Nasir et al., 2020; Ovi, 2018; Rahman, 2019). The lower tax-GDP ratio leads to budget deficits and is followed by shrinkage of development (Chaudhry & Munir, 2010; Hossain et al., 2009; Pasha, 2010).

Oz-Yalaman (2019) argued that the way of increasing tax collection is a matter of contention for the government. Before adopting the policy, the government should know how tax revenue reacts to GDP. There is a strong correlation and positive impact between tax revenue and economic

growth (Arowoshegbe et al., 2017; Eneche & Stephen, 2020; Kalaš et al., 2017; Nguyen, 2019; Stoilova & Patonov, 2013). However, some studies have shown a negative or zero correlation between tax revenue and economic growth in some countries (Dladla & Khobai, 2018). In South Africa, for example, taxation has a negative relationship with economic growth, while in the USA, direct tax and indirect tax have a strong and positive correlation (Dladla & Khobai, 2018; Kalaš et al., 2017). It means that tax and non-tax revenue are not always blessings to stimulate the economy. But researchers agreed that the tax revenue has a long-term relationship with GDP rather than short-term (Al-Abbadi & Abdul-Khaliq, 2017; Palaniappan Shanmugam, 2021).

Some studies measure relationships in terms of time series (long-run and short-run). Edewusi and Ajayi (2019) tested the influence of tax revenue (Petroleum Profit Tax (PPT), Company Income Tax (CIT), Value Added Tax (VAT)) on the national output level from 1995 to 2015 in Nigeria and showed a short-run and long-run positive effect. For the same period, from 1980 to 2013, Onakoya and Afintinni (2016) studied but did not find any short-run relationship. So, they suggested institutional reforms of the Nigerian customs department due to the negative relation with Customs & Excise Duty (CED). Ihendinihu et al. (2014) added federal government independent revenue (FGIR) and other tax revenue (OTR). They ran the long-run equilibrium relationship between tax revenue and economic growth in Nigeria for the period 1986 to 2012. Their analysis demonstrated a long-term relationship for the CIT, Education Tax (EDT), and OTR and a short-term relationship for CED, TGIR, and OTR, while PPT and VAT are insignificant.

Some researchers also observed positive and long-run relationships based on the 1980 to 2018 data (Etim et al., 2020). However, others unveiled the inverse relationship for the same period of data from 1980 to 2019 (Adegboyo, 2020). Adegboyo (2020) advised less concentration on PPT as it hinders economic growth of the volatile nature of the oil sector and encourages human capital development as personal income tax (PIT) and VAT promote economic growth. Some researchers analyzed this relationship differently. They argued that a positive link between GDP and tax does not indicate a significant relationship. It means that the factor of GDP growth could be positive but not enough to affect strongly. For instance, Abomaye-Nimenibo et al. (2018) discovered a positive relationship between PPT, CIT, and CED with GDP, but these elements are not significant in generating revenue. However, Yahaya and Bakare (2018) and Edame and Okoi (2014) also found a positive and significant relationship with Nigerian GDP.

Only a few studies explored this effect in other countries (Iqbal et al., 2015; Kalaš et al., 2017; Riba, 2017). Kalaš et al. (2017) analyzed the USA data for the 1996 to 2016 period and pointed out a high correlation for CIT but a weak

correlation for PIT. Iqbal et al. (2015) studied Pakistan from 1979 to 2010 and empirically established that the Pakistan economy is influenced by all types of direct and indirect taxes except the workers' welfare tax (WWT). Among all revenue sources, excise duty and sales tax have a high coefficient and trigger greater revenue. The authors concluded that Pakistan's economy is less affected by customs duty. Riba (2017) examined the effect of PIT, CIT, and VAT on the South African economy. The results showed a positive relationship and emphasized that VAT should be used to increase the tax income rather than PIT & CIT. A summary of the findings of relevant literature is provided in Table 1.

### 3. Research Methodology

Bangladesh, India, and Pakistan have experienced low tax-to-GDP ratios (Nasir et al., 2020; Ovi, 2018; Rahman, 2019). Among these three countries, India has good progress on this index, and Bangladesh is one of the least developed countries. Nevertheless, Nobel Laureate Professor Amartya Sen stated that Bangladesh is comparatively well ahead in some social indexes than India (The Daily Star, 2015). However, the trend of revenue collection policy from external and internal sources is different for each of these countries and relies on their economic policy. As these three

**Table 1:** Summary of the Current Study on PPT, CIT, VAT, CED, and Many More

Existing Study	Area of Study	Time Period	Nature of Tax	Effect on Economic Growth
Adegbite (2020)	Nigeria	1970 to 2018	PPT, CIT, VAT, CED	PPT, CIT & VAT has positive and significant relation, but CED is insignificant
Adegboyo (2020)	Nigeria	1980 to 2019	CIT, PPT, PIT, VAT	CIT and PPT have a negative effect but PIT & VAT promote economic growth
Etim et al. (2020)	Nigeria	1980 to 2018	PPT, CIT	The positive and long-run relationship
Edewusi and Ajayi (2019)	Nigeria	1995 to 2015	PPT, CIT, VAT	All have short-run and long-run relationship
Abomaye-Nimenibo et al. (2018)	Nigeria	1980 to 2015	PPT, CIT, CED	All elements have a positive impact but not significant
Yahaya and Bakare (2018)	Nigeria	1981 to 2014	PPT, CIT	Positive and significant effect
Riba (2017)	South Africa	2003 to 2016	PIT, CIT, VAT	Positive relationship
Arowoshegbe et al. (2017)	Nigeria	1995 to 2015	PPT, CIT, VAT, EDT	PPT & CIT are significant except VAT & EDT
Kalaš et al. (2017)	USA	1996 to 2016	PIT, CIT, SSC, TRG	TRG & CIT has a high correlation and PIT & SSC has a weak correlation
Ogundana et al. (2017)	Nigeria	1994 to 2013	CIT, PPT, CED, VAT	Overall positive impact
Ojong et al. (2016)	Nigeria	1986 to 2010	PPT, CIT, NOR	NOR has a positive impact and PPT is significant, but CIT is not significant
Onakoya and Afintinni (2016)	Nigeria	1980 to 2013	PPT, CIT, CED	PPT & CIT have positive relationships and CED has negative relation
Iqbal et al. (2015)	Pakistan	1979 to 2010	IT, WWT, CD, ED, ST	Overall positive impact except for WWT
Edame and Okoi (2014)	Nigeria	1980 to 2010	CIT, PIT	All are significant
Ihendinihu et al. (2014)	Nigeria	1986 to 2012	PPT, CIT, VAT, CED, EDT, FGIR, OTR	PPT & VAT are significant. CED, EDT, TGIR, and OTR have short-run relation whereas CIT, EDT & OTR have a long-run relationship
Okafor (2012)	Nigeria	1981 to 2007	PPT, CIT, CED, VAT	Positive effect

PPT: Petroleum Profit Tax; CIT: Company Income Tax; VAT: Value Added Tax; EDT: Education Tax; PIT: Personal Income Tax; SSC: Social Security Contributions; TRG: Tax Revenue Growth; CED: Customs and Excise Duty; IT: Income Tax; WWT: Workers Welfare Tax; CD: Customs Duty; ED: Excise Duty; ST: Sales Tax; FGIR: Federal Government Independent Revenue; OTR: Other Tax Revenue; NOR: Non-Oil Revenue.

countries experienced economic correlation (Hossain & Hossain, 2012), this paper considers these three countries and examines the effect of tax revenue on GDP in-depth and gives comprehensive and comparative views to understand the developing economy.

This study adopts the ordinary least-square (OLS) multiple regression method to analyze the effect of income tax, customs duty, and value-added tax on GDP (Edame & Okoi, 2014; Nguyen, 2019; Ogundana et al., 2017; Ojong et al., 2016). The OLS statistical technique is popular for its simplicity and for estimating coefficients with minimum variance. This paper uses time-series data for each country's 2000–01 FY to 2019–20 FY to maintain the similarities and comparisons from secondary sources. A multiple regression model deploys to verify the relationship between one dependent and three independent variables. The sample size is 20 in total and four variables (gross domestic product, income tax, customs duty, and value-added tax). SPSS software, MS Excel, is used to draw the empirical results, trend analysis, and some graphical presentation to reach the study's objective.

For Bangladesh, data was collected from the authenticated website of the Bangladesh Bank (the central bank of Bangladesh), the Bangladesh Bureau of Statistics, and the National Board of Revenue (NBR). Revenue data was collected from the annual reports published by NBR. For India, data is composed of the Reserve Bank of India (Central bank of India) and the Ministry of Statistics and Programme Implementation (MoSPI). Data was also acquired from the handbook of statistics on the Indian economy. For Pakistan, data was collected from the FBR yearbook published by the Federal Board of Revenue (FBR) and data from the State Bank of Pakistan (The Central bank of Pakistan) and the Pakistan Bureau of Statistics. Some data was taken from the handbook of statistics on the Pakistan economy. This study considered the central revenue rather than the local government's revenue. Because, the local government's fiscal policy has less contribution to economic growth (Basuki et al., 2020).

This study is based on secondary data. So, statistical results depend on the reliability and validity of the collected data. The authenticated government websites, along with published statistics and documents of the central bank, the revenue board, and the bureau of statistics, are only used to maximize reliability and validity.

This paper used a quantitative method to solve the research problem, and the researchers developed a multiple regression model to test the hypotheses. A total of four hypotheses are taken to test the effectiveness of tax revenues on economic growth. The regression equation model is designed as follows:

$$GDP = F(X_1, X_2, X_3)$$

and the regression model is,

$$GDP = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where,

GDP = Gross Domestic Product

$\beta_0$  = Regression constant

$\beta_1$  = Slope or the coefficient of income taxes

$X_1$  = Income Tax

$\beta_2$  = Slope or the coefficient of customs duty

$X_2$  = Customs Duty

$\beta_3$  = Slope or the coefficient of Value-added tax

$X_3$  = Value-added Tax

$\varepsilon$  = Error variable

The hypotheses are as follows:

**H1:** The population regression function is significant or not.

**H2:** The income tax has an effect on GDP or not.

**H3:** The customs duty has an effect on GDP or not.

**H4:** The value-added tax has an effect on GDP or not.

## 4. Results

As noted earlier this study focuses on three South Asian countries, the regression summary for each country is described in the following three Tables (Tables 2, 3, and 4):

**Hypothesis 1: The population regression function is significant or not. The function will be significant if any coefficient, at least, is not zero.**

H0:  $\beta_1 = \beta_2 = \beta_3 = 0$  (The population regression function is not significant)

H1: At least one of the three coefficient is not zero (The population regression function is significant).

$F$ -test is done to verify this hypothesis. Here, the total number of variables ( $k$ ) = 4 and total observations ( $n$ ) = 20. The critical value of  $F$  for a 0.05 confidence level is 3.239 with (3, 16) degrees of freedom where  $F_{\alpha}(k-1, n-k)$ .

For Bangladesh, the obtained value of  $F$  is larger than the critical  $F$  value of  $559.086 > 3.239$ . As such, H0 is invalid and H1 is valid. The global null hypothesis is rejected, and we can conclude that GDP is strongly affected by income tax, customs duty, value-added tax, or all of the factors. As the null hypothesis is rejected, tax revenue collected by the National Board of Revenue positively contributes to Bangladesh's economy. In regression analysis, we found that  $R$ -squared is 0.991. It means that these three variables are taken into account for 99.1% of the variance of GDP, and the remaining very insignificant portion (0.9%) is explained by other factors.

**Table 2:** Empirical Results for Bangladesh

Dependent Variable: GDP Independent Variable: $X_1, X_2, X_3$ Sample: 2000–01 to 2019–20 Sample size: 20					
Model	Unstandardized Coefficients		Standardized Coefficient	t-statistic	Sig.
	$\beta$	Std. Error	Beta		
(Constant)	159289.925	94822.788		1.680	0.112
$X_1$	-0.219	6.648	-0.007	-0.033	0.974
$X_2$	-3.626	11.163	-0.082	-0.325	0.750
$X_3$	31.204	10.781	1.084	2.894	0.011
R-squared		0.991			
Adjusted R-squared		0.989			
Std. Error of the estimate		84326.761			
F-statistic		559.086			

The result of the model is  $GDP = 159289.925 - 0.219 X_1 - 3.626 X_2 + 31.204 X_3$ . The constant coefficient is 159289.925.

**Table 3:** Empirical Results for India

Dependent Variable: GDP Independent Variable: $X_1, X_2, X_3$ Sample: 2000–01 to 2019–20 Sample size: 20					
Model	Unstandardized Coefficients		Standardized Coefficient	t-statistic	Sig.
	$\beta$	Std. Error	Beta		
(Constant)	42016.415	440428.484		0.095	0.925
$X_1$	22.522	1.761	0.813	12.789	0.000
$X_2$	-24.981	7.109	-0.151	-3.514	0.003
$X_3$	27.296	5.785	0.309	4.718	0.000
R-squared		0.986			
Adjusted R-squared		0.983			
Std. Error of the estimate		763023.402			
F-statistic		373.128			

The result of the model is  $GDP = 42016.415 + 22.522 X_1 - 24.981 X_2 + 27.296 X_3$ . The constant coefficient is 42016.415.

For India, the obtained value of  $F$  is larger than the critical  $F$  value of  $373.128 > 3.239$ . So,  $H_0$  is invalid and  $H_1$  is valid. The global null hypothesis is rejected, and we can conclude that GDP is strongly affected by income tax, import-export duty, value-added tax, or all of the factors. In regression analysis, we found that  $R$ -squared is 0.986. The GDP value is well-explained, about 98.6% by the three independent variables, and the remaining very insignificant portion (1.4%) is explained by other factors.

For Pakistan, the obtained value of  $F$  is larger than the critical  $F$  value of  $379.983 > 3.239$ . So,  $H_0$  is invalid and  $H_1$  is valid. The global null hypothesis is rejected, and we can conclude that GDP is strongly affected by income tax or import-export duty, value-added tax, or all of the factors. As the null hypothesis is rejected, tax revenue collected positively contributes to Pakistan's economy. In regression analysis, we found that  $R$ -squared is 0.986. It means that the GDP value is well-explained, about 98.6% by the three



**Table 4:** Empirical Results for Pakistan

Dependent Variable: GDP Independent Variable: $X_1, X_2, X_3$ Sample: 2000–01 to 2019–20 Sample size: 20					
Model	Unstandardized Coefficients		Standardized Coefficient	t-statistic	Sig.
	$\beta$	Std. Error	Beta		
(Constant)	64916.626	91691.248		0.708	0.489
$X_1$	-8.294	10.252	-0.351	-0.809	0.430
$X_2$	4.792	6.905	0.080	0.694	0.498
$X_3$	26.584	8.078	1.267	3.291	0.005
R-squared		0.986			
Adjusted R-squared		0.984			
Std. Error of the estimate		153336.578			
F-statistic		379.983			

The result of the model is  $GDP = 64916.626 - 8.294 X_1 + 4.792 X_2 + 26.584 X_3$ . The constant coefficient is 64916.626.

independent variables, and the remaining very insignificant portion (1.4%) is explained by other factors very similar to India's scenario.

#### **Hypothesis 2: The income tax has an effect on GDP or not**

H0:  $\beta_1 = 0$  (The income tax has no effect on GDP)

H1:  $\beta_1 \neq 0$  (The income tax has an effect on GDP)

A *T*-test is done to verify this hypothesis. For the total number of variables ( $k$ ) = 4 and total observations ( $n$ ) = 20, the *t*-value is 2.120 at 0.05 confidence level with ( $n-k$ ).

In the context of Bangladesh, for  $X_1$  variable, our obtained result is -0.033, which is less than 2.131 (-0.033 < 2.131). The *p*-value (0.974) is larger than 0.05. Overall, it indicates that H0 is not rejected and  $X_1$  variable is not significant. That means income tax has no strong effect on Bangladesh's GDP. The coefficient is -0.219, which means that one taka of income tax has a negative growth on GDP by -0.219 takas.

In India, our obtained result is 12.789 which is larger than 2.120 (12.789 > 2.120). The value (0.000) is smaller than 0.05. Overall, it indicates that H0 is rejected and  $X_1$  variable is significant. That means income tax has an enormous impact on the Indian economy. The coefficient is 22.522, which means that the revenue of one rupee income tax generates an economic upturn of 20.840 rupees.

In Pakistan, our obtained result is -0.809 which is less than 2.120 (-0.809 < 2.120). The *p*-value (0.430) is larger than 0.05. Overall, it indicates that H0 is not rejected and  $X_1$  variable is not significant. That means income tax does not play a crucial role in Pakistan's economy. The coefficient

is -8.294 which means that one rupee of income tax affects negatively GDP by 8.294 rupees.

#### **Hypothesis 3: The customs duty affects GDP or not**

H0:  $\beta_2 = 0$  (The customs duty does not affect GDP)

H1:  $\beta_2 \neq 0$  (The customs duty affects GDP)

A *T*-test is done to verify this hypothesis. For the total number of variables ( $k$ ) = 4 and total observations ( $n$ ) = 20, the *t*-value is 2.120 at 0.05 confidence level with ( $n-k$ ).

In Bangladesh, for  $X_2$  variable, our obtained result is -0.325 which is less than 2.120 (-0.325 < 2.120). The *p*-value (0.750) is larger than 0.05. Overall, it indicates that H0 is not rejected and  $X_2$  variable is not significant. That means customs duty has less effect on Bangladesh's GDP. The coefficient figure is -3.626, which indicates that one taka of customs duty pushed down the GDP by 3.626 takas.

In India, our obtained result is -3.514, which is smaller than 2.120 (-3.514 < 2.120). The *p*-value (0.003) is smaller than 0.05. Overall, it indicates that H0 is not rejected but  $X_2$  variable is significant. That means customs duty has no intense effect on the Indian economy despite its significance. The coefficient figure is -24.981, which indicates that one rupee of customs duty pushed down the GDP by 14.752 rupees.

In Pakistan, our obtained result is 0.694, which is smaller than 2.120 (0.694 < 2.120). The *p*-value (0.498) is larger than 0.05. Overall, it indicates that H0 is not rejected and  $X_2$  variable is not significant. That means customs duty has less effect on Pakistan's economy. The coefficient figure is 4.792,

which indicates that one rupee of customs duty pushed up the GDP by 1.085 rupees though it has no significance.

**Hypothesis 4: The value-added tax has an effect on GDP or not**

H0:  $\beta_1 = 0$  (The value-added tax has no effect on GDP)

H0:  $\beta_3 \neq 0$  (The value-added tax has an effect on GDP)

A *T*-test is done to verify this hypothesis. For the total number of variables (*k*) = 4 and total observations (*n*) = 20, the *t*-value is 2.120 at 0.05 confidence level with (*n-k*).

In Bangladesh, for  $X_3$  variable, our obtained result is 2.894 which is larger than 2.120 ( $2.894 > 2.120$ ). The *p*-value (0.011) is smaller than 0.05. Overall, it indicates that H0 is rejected and/or the variable is significant. That means value-added tax has a very strong effect on Bangladesh’s GDP. The coefficient is 31.204, which reveals that government collection of one taka value-added tax expedites GDP by 11.156 takas.

In India, our obtained result is 4.718, which is larger than 2.120 ( $4.718 > 2.120$ ). The *p*-value (0.000) is smaller than 0.05. Overall, it indicates that H0 is rejected and/or the variable is significant. That means value-added tax has a positive contribution to boosting the Indian economy. The coefficient is 27.296, which reveals that one taka of value-added tax increase has profound significance on GDP by 25.299 rupees.

In Pakistan, our obtained result is 3.291, which is larger than 2.120 ( $3.291 > 2.120$ ). The *p*-value (0.005) is smaller than 0.05. Overall, it indicates that H0 is rejected and/or is a powerful variable. That means value-added tax is very useful for the government to boost Pakistan’s economy. The coefficient is 26.584, which reveals that one rupee of value-added tax increase has a positive effect on GDP by 26.584 rupees.

In a nutshell, tax revenue has a positive and strong influence on the GDP of every country. Income tax and customs duty (Hypothesis 2 & 3) might have some effect, but it is not everlasting. Rather, the empirical result shows that VAT has a strong relationship always, no matter what country it is. The summary of empirical results is presented in the following table (Table 5).

**5. Discussion**

Throughout history, Bangladesh, India, and Pakistan have been geopolitically dependent on each other and play a vital role in the South Asian economy. These three countries are members of the South Asian Association for Regional Cooperation (SAARC) which integrates regional economic development. Last few years, the Indian subcontinent experienced major changes in tax structures. In Bangladesh, the new VAT and Supplementary Act of 2012 were adopted and implemented at the field level in 2019 (Ahmed, 2019; Ahmed & Heady, 2020). However, the goods and service taxes (GST) was adopted in India to replace all indirect taxes levied and implemented in 2017 (Cnossen, 2013; Lourunathan & Xavier, 2017; Nayyar & Singh, 2018; Vasanthagopal, 2011). This tax reformation has a long-run relationship with economic growth rather than short-run (Sethi et al., 2020), but the progress of long-run sustainability of development could be threatened due to the absence of significant & effective tax reforms (Ahmed & Heady, 2020). The findings are discussed in three different contexts, which are presented in the following three sections.

**5.1. Bangladesh**

Bangladesh’s economy is the 41st largest in the world and the second largest in South Asia (Hossain & Wadood, 2020). It is an emerging tiger among South Asian countries because of consistent economic growth (Hussain & Haque, 2017), nearly 6% to 8% over the past decade. However, the contribution of tax revenue to GDP is not remarkable. It is below 10% and has one of the lowest tax-to-GDP ratios in the world (Nurunnabi, 2019). The Value Added Tax (VAT) was introduced in 1991 in Bangladesh. However, after the major reformation, it is now operated as Value-added Tax (VAT) and Supplementary Duty (SD) Act, 2012. In the last few years, implementing the new VAT and SD Act, 2012 has been the topmost discussion among economists, policymakers, and print and electronic media. It urges researchers’ concern that the government is showing huge interest in earning more tax revenue from domestic taxes,

**Table 5:** Summary of Results

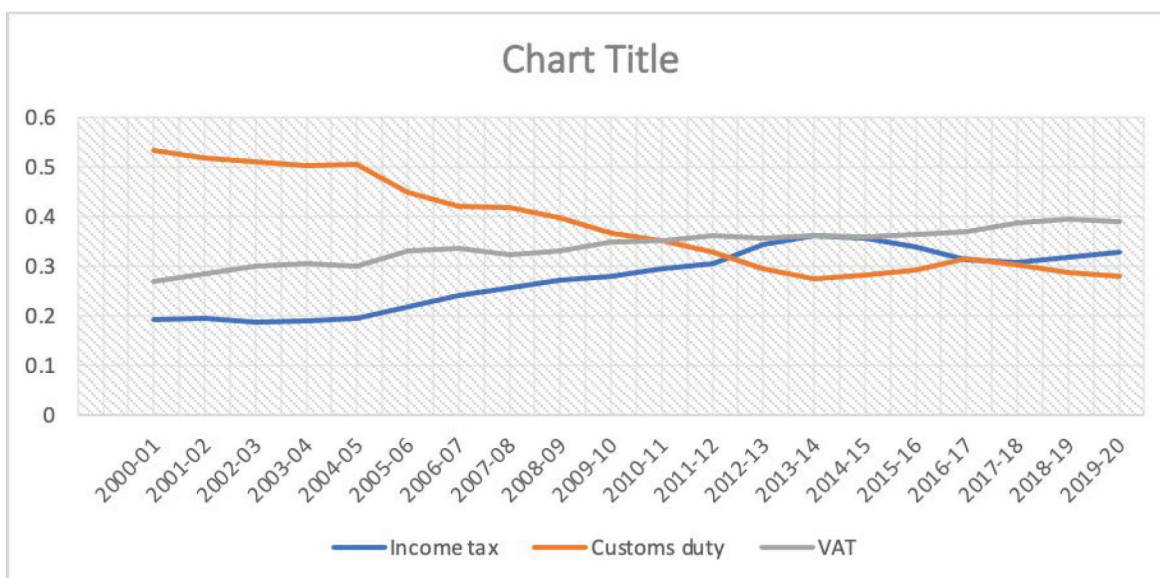
Hypothesis	Bangladesh	India	Pakistan
Hypo 1	Valid	Valid	Valid
Hypo 2	Not rejected & not significant	Reject & significant	Not rejected & not significant
Hypo 3	Not rejected & not significant	Not rejected but significant	Not rejected & not significant
Hypo 4	Reject and significant	Reject and significant	Reject & significant

locally called VAT. Other statistics said the individual registered taxpayers are 3.5 million, whereas Bangladesh currently has 164 million people (Bangladesh Statistics, 2019; Nobil & Waheeduzzaman, 2016). This shows the vulnerability of the tax culture in Bangladesh.

The National Board of Revenue (NBR) is a pioneer body in collecting all types of government revenue in Bangladesh. NBR collects income tax as direct taxation according to Income Tax Ordinance, 1984. These income taxes are collected mainly from individuals and corporate bodies. NBR also collects customs duties at the import-export stage and value-added tax on goods and services. The collection of these customs duties is guided by the rules of the Customs Act, 1969, and value-added tax as per the ‘Value-Added Tax and Supplementary Duty Act, 2012’. Islam (2016) analyzed indirect tax from 2001–02 to 2013–14 and found that VAT had huge growth after 2010 than customs duty, while customs duty was the main revenue source in 2001–02. This result is very similar to this paper’s findings. Figure 1 shows that in 2000–01, custom duty was more than 50% of total tax revenue while income tax was 20% and VAT 30%. Currently, NBR is collecting more revenue from the VAT than income tax and customs duty (Sarkar et al., 2015) though Bangladesh faces a narrow tax base than other developing countries (Ahmed, 2019). In 2019–20 FY, the contribution of VAT is almost 40%, while the other two have around 30% individually.

## 5.2. India

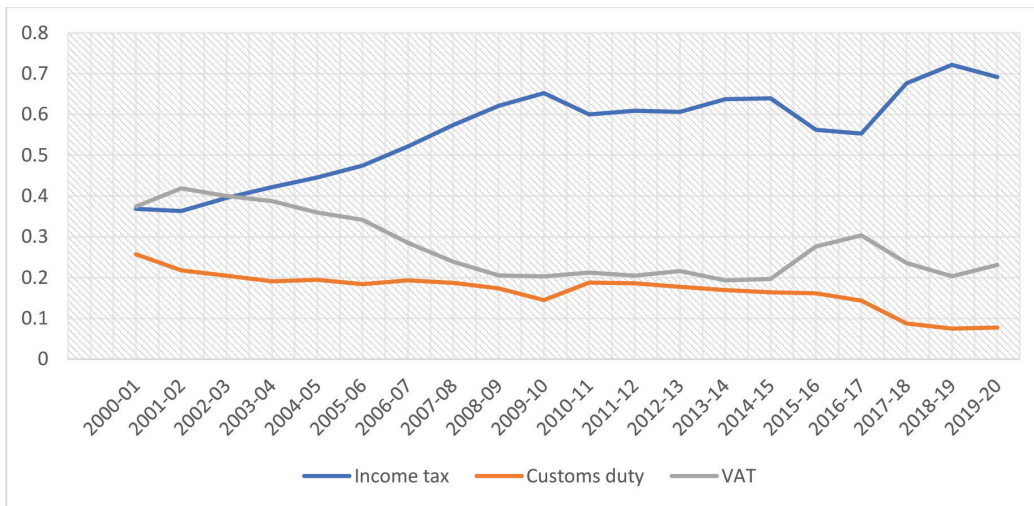
India’s tax system is comparatively complex. The central government and state government collect the whole government revenue. The Ministry of Finance (MoF) Department of Revenue is solely responsible for collecting all types of taxes in India. However, as the revenue collected by central governments is a major part, it focuses only on central government revenue receipts. The Department of Revenue collects different types of taxes from internal and external sources. Since 1947, indirect taxes have been categorized into many forms. Nevertheless, recently, the Indian government introduced the Goods and Services Tax (GST) to ease the tax complexity. The GST was introduced in 2017, combining excise duty, service tax, sales tax, and VAT (Barot, 2021; Khurana & Sharma, 2016; Mukherjee, 2015; Nayyar & Singh, 2018). Figure 2 shows the collection of tax revenue by the government of India during the study period. It indicates that income tax and VAT (excise duty) reached 40% in 2002–03, and after that period, the income tax slope moved upward, and excise duty moved downward. The biggest jump in income tax was in the 2018–19 FY (70%). Conversely, VAT/excise duty reached 20% in the same period. In 2000–01 FY, the contribution of customs duty was about 25% and then decreased to 9% in 2019–20FY. These results show that the Indian economy mostly depends on direct tax rather than an indirect tax.



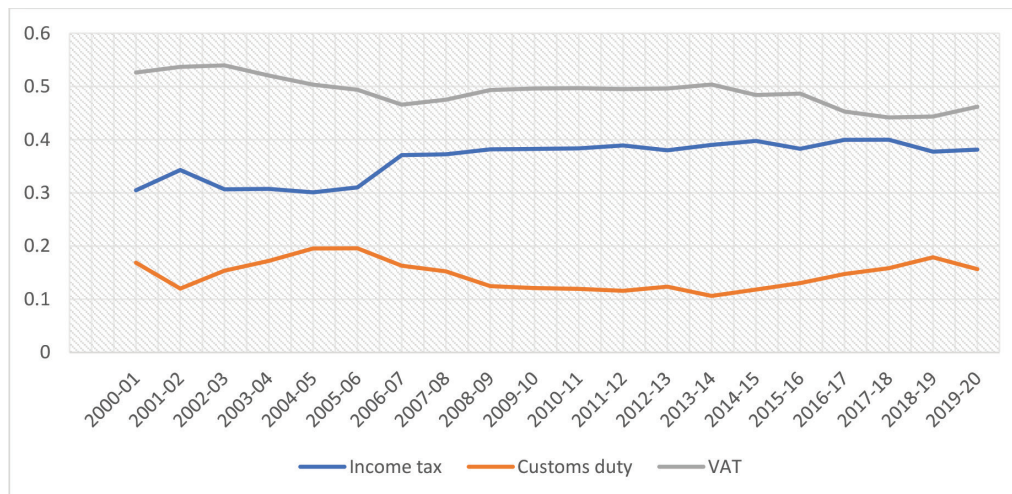
**Figure 1:** Contribution of Different Tax Wings from 2000-01 FY to 2019-20 FY

(Source: Author’s calculation and data taken from Annual Report 2018–19 published by NBR)





**Figure 2:** Collection of Tax Revenue (by Central Government) from 2000–01FY to 2019–20 FY  
 (Source: Author’s Own Calculation and Data Taken from ‘Handbook of Statistics on Indian Economy 2021’)



**Figure 3:** Contribution of Tax Revenue in Pakistan Economy from 2000–01 FY to 2018–19FY  
 (Source: Author’s Own Calculation and Data Taken from ‘Handbook of Statistics on Pakistan Economy 2020’)

### 5.3. Pakistan

Like India, Pakistani’s total government revenue is collected by two governing bodies; the federal government and the provincial government. This total revenue is further segregated into tax revenue and non-tax revenue. However, tax revenue is a major part of the economy because it is 5 to 7 times larger than non-tax revenue. The Federal Board of Revenue (FBR) collects the tax revenue directly from individuals or corporate bodies as direct tax in the form of income tax, wealth tax, workers’ welfare tax, and capital

value tax. It also collects customs duty, excise duty, and sales tax as indirect tax. Customs duties are collected from external sources, and sales and excise duties are collected from domestic sources. Figure 3 shows the contribution of tax revenue for Pakistan from 2000–01 FY to 2019–20 FY. It indicates that sales and excise duties (VAT) held the top position throughout the period, 2000–01 FY to 2019–20 FY, followed by income tax and customs duties, respectively. In 2000–01 FY, there are large gaps among these three sources of revenue collection. These gaps are shrinkage between sales & excise and income tax from 2006–07 FY to 2019–20 FY.

**Table 6:** Short-Term and Long-Term Ways to Collect More Revenue

Main Focus	Instruments	Short-Term Way	Long Term Way
More collection of tax revenue	Income tax (Direct tax) Customs duty (Indirect tax) Ad-valorem tax (Indirect tax)	<ul style="list-style-type: none"> <li>• Expanding tax base</li> <li>• The increasing tax rate on luxury goods</li> <li>• Reduce the loopholes in tax laws</li> <li>• Increasing human resources</li> </ul>	<ul style="list-style-type: none"> <li>• Good governance</li> <li>• Dismantle the existing tax barriers</li> <li>• Focus on direct taxation</li> <li>• Decentralization and Digitising the tax administration</li> </ul>

Customs duties are always below 20%. These results indicate that Pakistan's economy is mostly dependent on its internal sources rather than external sources.

In a nutshell, the tax rate, tax net, and nature of collection depend on government policy. In economics, it is established that more direct tax is inevitable for reducing income and social inequalities. But the result of this paper suggests that value-added tax is an effective and efficient instrument for the government to collect tax revenue in the short and long term. In a 2018 report, the World Bank revealed that BDT 171 billion in revenue was foregone as customs duties in FY16, which is nearly 1% of GDP and 11.7% of total tax collection by NBR. This foregone revenue is measured by the difference between benchmark revenue and actual revenue collection. So, policymakers should be careful about tax collection policy. The findings of this study suggest that India always holds a better position than Pakistan and Bangladesh. In 2000–01 FY, India had around a 40:60 (direct tax: indirect tax) ratio, whereas it was 30:70 for Pakistan and 20:80 for Bangladesh. In 2006–07 FY, India's revenue from income tax surpassed indirect tax. At that time, Pakistan and Bangladesh tried to reduce their ratio differences, which were insignificant. The direct and indirect tax ratio reversed (60:40) for India in 2009–10 FY, but Pakistan and Bangladesh remained in the same position. The 2013–14 FY was significant for Bangladesh specifically due to the 40:60 ratio. This discrepancy again rose for Bangladesh in the 2016–17 FY. At this time, in India, revenue from income tax fell suddenly, but for Pakistan, it was similar to previous years. In 2019–20, for India, the direct tax contribution was proportionately higher (55:45). For Pakistan, the ratio was 40:60, and 30:70 for Bangladesh.

## 6. Conclusion and Policy Recommendations

The study examined the contribution of income tax, customs duty, and value-added tax on economic growth. It provides a comparative tax collection view in the context of South Asia from 2000–01 to 2019–20. The standard least-square method was used, and multiple regression analysis was done for the dependent and independent variables. In summary, tax collection has a positive role in the economy. Income tax and customs duty may or may not have

significance, but it has been proved that value-added tax has supremacy over other tax collection instruments.

India's economy is proven to be better and stronger than Bangladesh and Pakistan. In Pakistan, excise and sales tax influenced the tax revenue dominantly. Customs duty has the least contribution despite some ups and downs. India's central excise and income tax contributions were unchanged in the FY 2000–01, but after that, direct tax contributions increased. India continues to depend less on domestic taxes and customs duties. The situation is reversed for Bangladesh in 2000–01 FY. It collected the most revenue from international trade. It indicates that the economy was not so strong and mainly depended on external situations. However, in 2012–13 and onward, this ratio reduced significantly. The next year (2013–14), the income tax contribution was similar to VAT and excise duties. At the latest, policymakers focus on VAT to collect tax revenue.

Based on the findings of this study, the following policy recommendations can be provided to policymakers for short-term and sustainable economic development (long term) which is shown in the following Table (Table 6).

This study explores only the South Asian view of tax collection policy. Other countries' tax nature would be different. The social norms and political agenda might affect this paper's findings. This paper will encourage future researchers to dig up the socio-economic and geo-political index and inter-relation among developing economies.

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