



A LEGAL AND ECONOMIC ANALYSIS ON EFFECT OF CORPORATE INCOME TAX AND DOUBLE TAXATION: A CASE STUDY OF RWANDA (2015-2019)

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Abstract: *The main objective of this study was analyzing the legal and economic analysis on effect of corporate income tax and double Taxation in Rwanda. This study was survey, descriptive, qualitative, quantitative, and correlative design. The study was used both primary and secondary data, 72 staffs of RRA was sampled to fill questionnaire purposively. Data analyses were presented as descriptive and inferential statistics (correlation analysis). The study findings have shown that, corporate income tax contribute 99.6% to the national GDP while only 0.4% explained by other factors not covered by this analysis. And this contribution (tax to GDP) is statistically significant. As that called double taxation is associated or may be considered as a tool for increasing tax which later contribute to the increase of national GDP. This confirms that the legal and economic determinants of taxes are statistically significant to double taxation in Rwanda. However, the analysis of correlation between Legal and Economic analysis of corporate income tax and double taxation and has resulted lower contribution (20.1%) and remaining 79.9% is associated to other non-covered factors within this study. Based on findings, it is confirmed that, there is significant relationship between a legal and economic determinants and double taxation of corporate income tax in Rwanda. Thus, corporate companies are recommended to reinvest income which supposed to be distributed to shareholders (loan of company to shareholders) and ensure that all taxes paid twice was claimed from RRA for reimbursement (mainly those from both materials, goods and services already taxed before).*

Keywords: *Legal & Economic; Analysis; effect; corporate Income Tax; Double Taxation.*

1. Introduction

Learning from the report made by Joseph (2018) announce that, income that is earned by corporations in the United States is currently subject to two levels of tax. Corporate profits are subject to the corporate income tax. When these profits are distributed to the shareholders who own the corporations, these distributions are also included in the shareholders' taxable income. The consequence of this system is that the return on equity investments in corporate activities is taxed twice (Joseph, 2018).

Often, however, there is not a second level of tax. Many shareholders of corporate stock, such as retirement accounts, educational institutions, and religious organizations, are exempt from income tax. US domestic law imposes a 30 percent withholding tax on dividends distributed to foreign shareholders, but many are exempted from this tax under bilateral tax treaties. The earnings distributed to these shareholders are therefore not double-taxed. By some recent estimates, the share of U.S. corporate stock held in taxable accounts has fallen from more than 80 percent in 1965 to about 25 percent today (Rosenthal, 2016).

In the assessment made by OECD (2020), the corporate income tax is levied on distributed profit and find that: From January 1st, 2018, the new tax rate for companies who distribute profits regularly was introduced. The rate falls to 14% in three years. The first year with lower rate was in 2019, when 2/3 of the distributed profits was taxed with 20% and 1/3 with 14%. In 2020 1/3 is taxed with 20% and 2/3 with 14%. In 2021 all with 14%. The lower rate in 2019 was applied only on the amount which did not exceed the amount distributed in 2018. The 14% in 2021 is applied on the lowest amount of distributed profits in the four-year period 2018-2021. For example, if the distributed profits are 2018-30 mil, 2019-31 mil, 2020-18 mil, 2021-40 mil, then the rate of 14% in 2021 is applied on 18 mil (OECD, 2020).

This is, linked to Rwanda where today for each corporate company profit is taxed and once it decided to distribute annual profit to shareholders also the tax system is applied.

2. Statement of the problem

Corporate income taxation influences the quantity and type of entrepreneurship, which in turn affects economic development. Empirical evidence shows that higher corporate income tax rates reduce business density and entrepreneurship entry rates and increase

the capital size of new firms. The progressivity of tax rates increases entrepreneurship entry rates, while extraordinarily complex tax codes reduce them. Policymakers should understand the effects and underlying mechanisms that decide how corporate income taxation influences economy to provide a favorable business environment (Block, 2016).

In Rwanda Taxes gives government the means to provide public goods for their citizens and can be used to redistribute income from wealthy to poor citizens. Aside from these roles, taxes can have strong effects on economic behavior (Charles, 2013). Rwanda operates both a source and residence-based taxation system. This means that any income that is from sources within Rwanda will be liable to tax in Rwanda. In addition, resident entities are taxed on their worldwide income. However, where such income is taxed in another country, a tax credit is allowed, which does not exceed the tax that would have been payable on the same income in Rwanda.

Non-resident entities are taxed on income sourced in Rwanda through a permanent establishment (PE). The standard corporate income tax (CIT) rate is 30% (Harelimana, 2018). However, micro-enterprise companies (with turnover of less than 12 million Rwandan francs in a tax period) pay flat tax amounts, and small businesses (whose turnover is between RWF 12 million and RWF 20 million in a tax period) pay a lump sum tax at the rate of 3% of turnover (RRA, 2019).

Rwanda has double taxation (DTAs) agreements with Belgium, Jersey, Mauritius, Singapore, and South Africa (RRA, 2011). And for all corporates operating in Rwanda income tax is applied and dividend tax also for the corporates which decide to deposit dividends to shareholders. Corporates companies are not happy with this double taxation, and they are not aware on its effects or contribution in the economy once it is reducing their income. It is in that regard; this study intends to establish a legal and economic analysis on effect of corporate income tax and double Taxation in Rwanda.

3. Empirical Studies

Djankov *et al* (2008) studied the effects of corporate taxes on investment and entrepreneurship with focus on how well Finland performs in high growth entrepreneurship and uses data from the Global Entrepreneurship monitor to benchmark Finland against other European countries. It is found that Finland's prevalence rate of high growth entrepreneurial activity lags significantly behind most of its European and all its Scandinavian peers. That this weak performance in high-growth entrepreneurship goes hand in hand with Finland being a world leader in per capita investment in R&D may be described as a paradox. The reasons underlying the underperformance of Finland remain however unclear. At this point, explanations should be sought in culture, industrial traditions, and systemic experience in high growth entrepreneurship (Djankov *et al.*, 2008).

The paper made by Forbin (2011), examines the empirical effect of corporate Income tax on GDP growth rate using historical data from 1951-2010 for Sweden. Economic theory postulates that corporate tax rates should significantly negatively affect GDP growth rate. Some past empirical works on cross-country panel data also supports this significantly negative correlation between growth rate and corporate tax. However, empirical works using country specific time series data show deviations and contradictions to this conventional wisdom. Using time series data, study find that corporate income tax rates have no significant effect on Swedish economic growth (Forbin, 2011).

Devereux *et al.* (2016), discussed the future of the corporate income tax in an integrating world economy. In discussing options for fundamental reform, two sets of concerns were addressed. The first represents the traditional aims of a tax on corporate income. Essentially the traditional aim has been to design a tax system which raises revenue as efficiently as possible that is, which minimizes distortions to the location and scale of investment, to the sources and uses of finance, and to the choice of legal form.

These distortions have been the subject of study for many years, and many proposals for reform have been made. One of the most popular and enduring ideas has been to tax only economic rent: in a traditional framework such a tax would not be expected to have any effect on investment or financing decisions. There is also a second set of concerns. Part of this concern has also been the subject of study for many years - the relationship between the personal and corporate sectors, and in particular, the possibility of tax avoidance by shifting income between the two sectors (Devereux *et al.*, 2016).

Zagler *et al.* (2014), conducted An Economic Perspective on Double Tax Treaties within Developing Countries. There are about 2,600 double tax treaties in the world, some 500 among industrialized economies, approximately 800 among developing economies and about 1,300 between industrialized and developing economies. Whereas the prior two categories are symmetric, the latter is asymmetric, as capital flows predominantly from industrialized to developing economies, and capital income the other way around. This analysis asks which developing countries have double tax treaties, whether with other developing countries or with industrialized countries. The results of the econometric analysis suggest that geography, size (GDP) and openness matter. Finally, political variables, such as colonial status, political similarity, and most strikingly development aid are correlated with the existence of a double tax treaty (Zagler *et al.*, 2014).

Braun (2014), analyze the Austrian tax treaty policy. Combining legal and economic perspectives, the analysis finds that developing countries are likely to expect both positive and negative impacts from signing a double tax treaty (DTT) with Austria. On the one hand, the results of the employed econometric analysis suggest that middle-income countries that sign a DTT with Austria may expect an increased number of foreign direct investment projects from Austrian companies. On the other hand, the signatory states may suffer from limited withholding taxation rights established in the DTTs for the source country, which could lead to reduced tax revenues in the developing countries (Braun *et al.*, 2014).

4. Conceptual framework of the study

Figure 1 is describing the conceptual framework of the study. For this research, the study has selected Substantive Tax Laws; Procedural tax laws; Investment Code; Company Code and Complexity of the laws as indicators for analysis of independent variable (Legal and Economic analysis corporate income tax and double taxation) while for assessment of dependent variable (Corporate Income Tax and double taxation) the study chose Tax rate; Tax on capital gains; Dividends; Royalties; and Double taxation agreement as indicators.

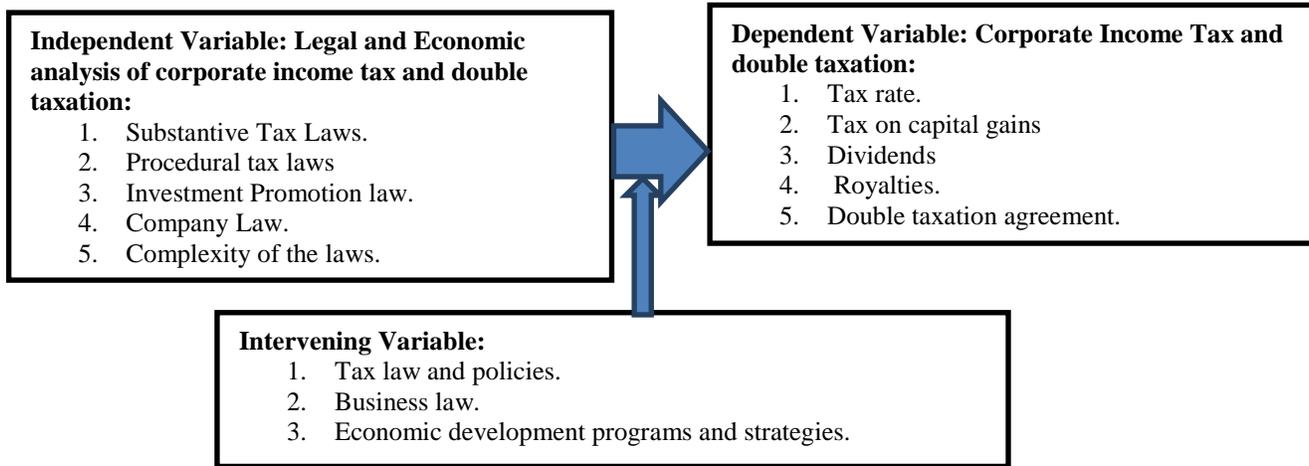


Figure 1: Conceptual framework adapted from the self-interest model theory

In other words, it is based on laws (substantive, and procedural tax), laws (investments, company and complexity of law where tax rate is determined, tax structure (example tax on Income, dividends, and royalty) based on understanding or applicability it may be called double taxation mainly when a corporate company paid tax on income earned and on dividends paid to the shareholders.

Overall, intervening variables lay joining role for economic regularization to maintain both sides' interests (public or government and private or company's interests). In Rwanda both legal and economic analysis and Corporate Income Tax and double taxation are under the guidelines of tax laws and policies, business law and economic development strategies (mainly NST1: National Strategy for Transformation).

5. Methodology of the study

This section gives in details methods and techniques which used to achieve study objectives and testing validity of the study hypothesis. It shows study design, population and sample size, sampling techniques, data collection tools, methods for data processing and data analysis. Here below are details:

5.1 Research design

Research design is defined as the plan of conditions for collection and analysis of data in a manner that is in the context to achieve the research aim with economy in the procedure. A research design is the set of methods and procedures used in collecting and analyzing measures of the variables specified in the research problem (Akhtar, 2016).

This study adopts both descriptive and correlative designs. Descriptive research studies are studies concerned with describing the characteristics of an individual, or of a group, on the other hand diagnostic research studies determine the frequency with which something occurs or its association with something else (Andrzej, 2014). This study intends to describe legal determinants and associated economic determinants on corporate income tax and double taxation based on the case of RRA employees. To achieve the objectives of the study, I decided to choose to collect and analyze both primary and secondary data, qualitative and quantitative where at the end the correlation (linear regression model) was used for testing the correlation between variables.

5.2 Instrument of data collection

Quantitative data was collected using questionnaire. The questionnaire comprised of closed ended questions. These types of questions were adopted since they are easy and clearly displayed allowing the respondents to answer questions in an easiest manner. The questionnaire was administered to the staffs of RRA working in targeted departments. On completion of filling questionnaires, they were collected back to for data analysis. Questionnaires were designed according to Likert Scale: "Strongly disagree (1), Disagree (2), Agree (3) and strongly agree (4)" to discover a legal and economic analysis on effect of corporate income tax and double taxation: case study of Rwanda.

Table 1: Mean Range of Likert Scale

Scale	Response Rating	Mean Range	Interpretation
4	Strongly agree	3.28-4.00	Strong
3	Agree	2.52-3.27	Moderate
2	Disagree	1.76-2.51	Low
1	Strongly disagree	1.00-1.75	Very Low

Source: (Akhtar, 2016)

Secondary data were collected using documentary review. The main report used are RRA annual reports, NISR and BNR reports mainly focusing on tax law, corporate income tax and national economic development indicators.

5.3 Population of the study

Population is all items which fulfill the described criteria for selection of a study group concerned by the study (Akhtar, 2016). The target population of the study was all employees of RRA (1888 staffs for the year 2019). But from the total RRA employees, only the study is interested to employees working at RRA headquarters in four departments, such as: Taxpayer Services Department, Legal and Board Secretariat Department, Corporate Risk Management & Modernization Department and Planning and Research Department with number of staffs 72; 143; 25 and 13 respectively in each department. This gives a total population of 253 RRA staffs at head office distributed in the above 4 departments. As population seems to be large, the study adopts for calculation of sample size.

5.4 Sample size

The study did not assess the entire RRA employees (working in whole departments or to all RRA staffs in country wide), but it takes a focus to RRA employees at headquarters and working in 4 departments only (listed in the table 2). Here also the method used in this study was intended by reducing the population size from 253 to $n = N / (1 + (N * (e)^2)) = 253 / (1 + (253 * (0.1)^2)) = 71.67$ rounded to 72 RRA staffs as sample size.

Table 2: Population and sample distribution

RRA departments	Population (RRA Staffs)	Sample size	Percentage
Taxpayer Services Department	72	20	27.78
Legal and Board Secretariat Department	143	41	56.94
Corporate Risk Management & Modernization Department	25	7	9.72
Planning and Research Department with number of staffs	13	4	5.56
Total	253	72	100

Source: RRA, 2020

Thus, with n (sample size), N (population), e (Level of significance which is 10%), the sample size is 72 RRA staffs distributed proportionally to corresponding departments.

5.5 Data Analysis

Data collected was entered into the Statistical Package for the Social Sciences (SPSS) Version: 21.0 for statistical analysis. Descriptive analysis is the process in which data collected are converted into statistical information which is used in an empirical study (Akhtar, 2016). In this study data collected are displayed and represented in the frequency and percentage tables according to the scale of measurement used which are nominal and ordinal scales.

The inferential statistical analysis was done to test hypothesis about the possible association between independent and dependent variable. Significance level was set at $p < 0.05$ with 95% of confidence interval. To establish the relationship between the legal and economic determinants of corporate income tax and double taxation. The empirical model estimated for the purpose of this study is written as follows:

$$\begin{aligned}
 Y_1 &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \\
 Y_2 &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \\
 Y_3 &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \\
 Y_4 &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \\
 Y_5 &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon
 \end{aligned}$$

Where: Y_1 is Tax rate; Y_2 Is Tax on capital gains, Y_3 is Dividends, Y_4 Is Royalties, Y_5 is Double taxation agreement x_1 Is Substantive Tax Laws, x_2 Is Procedural tax laws; x_3 Is Investment promotional law; x_4 Is Company law, x_5 Is Complexity of the laws, ε Is the error term which reflects that the relationship between the explanatory variables and a response variable is not deterministic; β_0 Is the coefficient corresponding to corporate income tax and double taxation without the influence of independent variables expressed in the model; $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are coefficients of the corresponding independent variables. Correlation coefficients between legal and economic determinants of corporate income tax and double taxation tax compliance were also analyzed to assess the strength of their linear relationship. Correlation coefficient (r) is given by the following formula.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

5.6 Specific objectives

The specific objectives concerned by this study were:

1. To assess the determinants of a legal and economic analysis in Rwanda tax system.
2. To establish the level of double taxation of corporate income tax in Rwanda.
3. To establish the relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda.

5.7 Research hypothesis

The research hypotheses of this study were:

H₁: The Substantive Tax Laws, Procedural tax laws, Investment Promotional law; Company Law; Complexity of the laws; are not the determinants of a legal and economic analysis in Rwanda tax system.

H₂: The level of double taxation of corporate income tax in Rwanda is not clear.

H₃: There is no significant relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda.

6. Findings

Test of study hypothesis was made to all 3 hypotheses stated as follows: H₁: The Substantive Tax Laws, Procedural tax laws, Investment promotional law; Company Law; Complexity of the laws; are not the determinants of a legal and economic analysis in Rwanda tax system, H₂: The level of double taxation of corporate income tax in Rwanda is not clear and H₃: There is no significant relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda.

6.1 Test of Hypothesis one (H₁)

The first hypotheses were designed and linked to the first objective of the study “To assess the determinants of a legal and economic analysis in Rwanda tax system” and the first research question “What are the determinants of a legal and economic analysis in Rwanda tax system?” Here below is the model:

Model 1:

$$Y_{1;2;3;4;5} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

H₁: The Substantive Tax Laws, Procedural tax laws, Investment promotional Law; Company Law; Complexity of the laws; are not the determinants of a legal and economic analysis in Rwanda tax system.

Table 3: Model Summary of the 1st hypothesis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.367 ^a	.134	.69	.21968715

a. Predictors: (Constant), x_1 Is Substantive Tax Laws, x_2 Is Procedural tax laws; x_3 Is Investment promotional law; x_4 Is Company Law, x_5 Is Complexity of the laws.

b. Dependent Variable: Y_1 Is Tax rate; Y_2 Is Tax on capital gains, Y_3 is Dividends, Y_4 Is Royalties, Y_5 is Double taxation agreement

As seen from table 3, the model had Adjusted R² of 0.69, implies that Substantive Tax Laws, Procedural tax laws; Investment promotional Law; Company Law and Complexity of the laws explain 69% of Tax rate; Tax on capital gains, Dividends, Royalties and Double taxation agreement. While the remaining 31% (determinant) of Legal and Economic analysis of corporate income tax and double taxation are resulted from other factors that have not been captured in the model.

Table 4: Analysis of Variance (ANOVA) of the 1st hypothesis

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.495	5	.099	2.050	.003 ^b
1 Residual	3.185	66	.048		
Total	4.680	71			

a. Dependent Variables: Y_1 Is Tax rate; Y_2 Is Tax on capital gains, Y_3 is Dividends, Y_4 Is Royalties, Y_5 is Double taxation agreement.

b. Predictors: (Constant), x_1 Is Substantive Tax Laws, x_2 Is Procedural tax laws; x_3 Is Investment promotional Law; x_4 Is Company Law, x_5 Is Complexity of the Laws.

As seen from table 4, the results show that the model had an F ratio of 2.050 and the P value was $0.003 < 0.05$, signifying that the F ratio was statistically significant, therefore the overall regression model for all the variables tested were all statistically significant for prediction at 5% significant level. This further indicate that the predictors variables x_1 Is Substantive Tax Laws, x_2 Is Procedural tax laws; x_3 Is Investment promotional Law; x_4 Is Company Law, x_5 Is Complexity of the laws used in this study are all statistically significant to Y_1 Is Tax rate; Y_2 Is Tax on capital gains, Y_3 is Dividends, Y_4 Is Royalties, Y_5 is Double taxation agreement. Therefore, the formulated H_1 starting that the Substantive Tax Laws, Procedural tax laws, Investment promotional Law; Company Law; Complexity of the laws; are not the determinants of a legal and economic analysis in Rwanda tax system was not accepted.

Table 5: Summary of coefficients of the 1st hypothesis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.823	0.369		10.363	0.000
Substantive Tax Laws (STL)	0.087	0.049	0.215	1.76	0.013
Procedural tax laws (PTL)	0.004	0.048	0.01	0.081	0.036
Investment promotional law (IPL)	-0.084	0.049	-0.207	-1.71	0.032
Company Law (CL)	0.109	0.084	0.329	1.308	0.005
Complexity of the laws (CLs)	-0.158	0.077	-0.512	-2.062	0.043

a. *Dependent Variable:* Legal and Economic analysis of corporate income tax and double taxation (a combination of Y_1 Is Tax rate (TR); Y_2 Is Tax on capital gains (TCG), Y_3 is Dividends (D), Y_4 Is Royalties (R), Y_5 is Double taxation agreement (DTA).

As seen from Table 5, the beta (β) sign shows the positive effect of the independent variable's coefficients over the dependent variable except for Investment promotional law (IPL) and Complexity of the Laws (CLs). Table above shows that, beta values for all independent variables are positive meaning positive effect on the predicted dependent variable except IPL and CLs. $\beta_1=0.087$, $t=1.76$, $p=0.013 > 0.05$; $\beta_2=0.004$, $t=0.081$, $p=0.036 > 0.05$; $\beta_3=-0.084$, $t=-1.71$, $p=0.032 > 0.05$; $\beta_4=0.109$, $t=1.308$, $p=0.005 > 0.05$ and $\beta_5=-0.158$, $t=-2.062$, $p=0.043 > 0.05$.

That means, any increase in the independent variables lead to increase in the dependent variable and vice versa except for variables which shows negative relationship. The regression model become as follows:

$$TR; TCG; D; R \text{ and } DTA = 3.823 + 0.087STL + 0.004PTL - 0.084IC + 0.109CC - 0.158CL + \epsilon$$

Thus, the study concluded that Substantive Tax Laws (STL), Procedural tax laws (PTL) and Company Law (CL) are positive determinants of Tax rate (TR), Tax on capital gains (TCG), Dividends (D), Royalties (R), Double taxation agreement (DTA). While Investment promotional Law (IPL) and Complexity of the laws (CLs) shows negative relationship to Tax rate (TR), Tax on capital gains (TCG), Dividends (D), Royalties (R), Double taxation agreement (DTA). And for all variables, the relationship is statistically significant.

As resulted from the test of first hypothesis, the study findings also are linked or complementary to the findings of Karpowicz (2014), starting that tax rate and double taxation are the outcomes of entity economic guiding laws (domestic) and laws guiding international corporations among nations or international companies and organizations (Karpowicz, 2014). Study findings shows that Substantive Tax Laws (STL), Procedural tax laws (PTL) and Company Law (CL) are positive determinants of Tax rate (TR), Tax on capital gains (TCG), Dividends (D), Royalties (R), Double taxation agreement (DTA). While Investment promotional Law (IPL) and Complexity of the laws (CLs) shows negative relationship to Tax rate (TR), Tax on capital gains (TCG), Dividends (D), Royalties (R), Double taxation agreement (DTA). This could be understood once analysis of a single factor held other factors constant to achieve its full meaning and later make a combination.

6.2 Test of Hypothesis two (H_2)

The second study hypothesis was developed in line with the second study objective "to establish the level of double taxation of corporate income tax in Rwanda" and referred to the second research question "what is the level of double taxation of corporate income tax in Rwanda?" and here below is the model for the second study hypothesis:

Model 2: $Y = a + bx$ where "y" shows corporate income tax and "x" shows double taxation.

H_2 : The level of double taxation of corporate income tax in Rwanda is not clear.

Table 6: Model Summary of the 2nd hypothesis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073 ^a	.005	-.009	.491

a. Predictor: (Constant), Double Taxation.
b. Dependent Variable: Corporate Income Tax

As seen from table 6, the model had Adjusted R² of -0.009, implies that double taxation explains 0.9% of Corporate Income Tax. Negative Adjusted R² means insignificance of explanatory variables. Meaning that, the principle of double taxation in Rwanda is not affecting the corporate income tax.

Table 7: Analysis of Variance (ANOVA) of the 2nd hypothesis

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	0.90	1	.090	0.372	.544 ^b
1 Residual	16.986	70	.241		
Total	16.986	71			

a. Dependent Variables: Corporate Income Tax.

b. Predictors: (Constant), Double Taxation.

As seen from table 7, the results show that the model had an F ratio of 0.372 and the P value was 0.544 > 0.05, signifying that the F ratio was not statistically significant meaning that, the regression model for tested variable was not statistically significant for prediction at 5% significant level. This further indicates that the predictor variable Double taxation is not statistically significant to double taxation in Rwanda. Therefore, the formulated H₂ starting that the level of double taxation of corporate income tax in Rwanda is not clear was not accepted.

Table 8: Summary of coefficients of the 2nd hypothesis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.926	0.272		14.434	0.000
Double Taxation	-0.048	0.079	-0.073	-0.610	0.544

a. Dependent Variable: Corporate Income Tax.

As seen from table 8, the beta (β) sign shows the negative relationship between tested variables however the relationship is not statistically significant. $\beta_1 = -0.048$, $t = -0.610$, $p = 0.544 > 0.05$. That means, any increase in the independent variables lead to decrease in the dependent variable and vice versa. The regression model become as follows:

Corporate Income Tax = 3.926 – 0.048 *Double taxation* Meaning that implication of double taxation in corporate income tax is not significance it affects 0.048 change times of corporate income tax. As a conclusion the level of double taxation on corporate income tax in Rwanda is incredibly low and is not significant.

Mark *et al.* (2014) from their assessment on the reforms needed to United States (U.S) corporate income tax has found that, taxpayers claim the removal of double tax. Corporate tax as a federal revenue source has declined over time, post 2nd World War two peak in 1952, the corporate tax generated 32.1% of all federal tax revenue. In 2013, accounted for 9.9% of federal tax revenue. The decline in corporate revenues is a combination of decreasing effective tax rates, an increasing fraction of business activity that is being carried out by pass-through entities, and a decline in corporate sector profitability. The current U.S. corporate income tax system generally taxes corporate income at a rate of 35%. This tax is applied to income earned domestically and abroad (Mark *et al.*, 2014). As corporate companies pay tax abroad and inside the country, and pay tax on dividends shared, always they claim double taxation. This is the same results obtained for this study where the model shows that one unit increase of double taxation led to corporate income tax change 0.048 times reduction of corporate income.

6.3 Test of Hypothesis three (H₃)

The test of the 3rd study hypothesis was made with reference to the third research objective “to establish the relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda” and third research question “is there any relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda?” and here below is the model used for testing the third study hypothesis:

Model 3: $Y = a + bx$ where “y” shows Legal and Economic analysis of corporate income tax and double taxation, and “x” shows Corporate Income Tax and double taxation.

H₃: There is no significant relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda.

Table 9: Table of correlation made using Bivariate Correlation Analysis

Tested Variables/ Level of measurement		Legal and Economic analysis of corporate income tax and double taxation	Corporate Income Tax and double taxation
Legal and Economic analysis of corporate income tax and double taxation	Pearson Correlation	1	.201
	Sig. (2-tailed)		.040
	N	72	72
Corporate Income Tax and double taxation	Pearson Correlation	.201	1
	Sig. (2-tailed)	.040	
	N	72	72

** . Correlation is significant at the 0.05 level (2-tailed).

The analysis with bivariate correlations has been resulted Pearson Correlation which is positive (0.201) and Sig. (2-tailed) which is less than 0.05 as it is 0.040. This imply or signify that there is positive (weak) correlation between Legal and Economic analysis of corporate income tax and double taxation and Corporate Income Tax and double taxation, and this correlation is statistically significant.

Table 10: Analysis of Variance (ANOVA) of the 3rd hypothesis

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.115	1	.115	2.955	.040 ^b
Residual	2.725	70	.039		
Total	2.840	71			

a. *Dependent Variables*: Corporate Income Tax and double taxation.

b. *Predictor*: (Constant), Legal and Economic analysis of corporate income tax and double taxation.

As seen from table 10, the results show that the model had an F ratio of 2.955 and the P value was 0.040 < 0.05, signifying that the F ratio was statistically significant, therefore the Legal and Economic analysis of corporate income tax and double taxation and Corporate Income Tax and double taxation are statistically significant for prediction at 5% significant level. Therefore, the formulated H₃ There is no significant relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda was not accepted.

Table 11: Summary of coefficients of the 3rd hypothesis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.002	.331		9.069	.000
Double Taxation	.158	.092	.201	1.719	.040

a. *Dependent Variable*: Corporate Income Tax and double taxation.

As seen from table 11, the beta (β) sign shows the positive relationship between tested variables and the relationship is statistically significant. β₁=0.158, t=0.201, p=0.040 < 0.05. That means, any increase in the independent variables lead to increase in the dependent variable and vice versa. The regression model become as follows:

$$\begin{aligned} & \text{Corporate Income Tax and double taxation} \\ & = 3.002 + 0.158 \text{ Legal and Economic analysis of corporate income tax and double taxation} \end{aligned}$$

Meaning that one-unit change in Legal and Economic analysis of corporate income tax and double taxation lead to 0.158 change times (increase or decrease) of Corporate Income Tax and double taxation.

Greg *et al.* (2018), concluded that, the tools of economic analysis can be applied to proposed tax regulations to determine the likely effects of the regulations and to help identify and contextualize the tradeoffs involved. However, judging the merits of the regulation requires taking a normative stance on highly controversial issues: the value of revenues and the appropriate distribution of the tax burden. Rather than suggest that there exists a political answer to these questions, the economic analysis of tax regulations should be structured to provide transparency into the relevant economic tradeoffs and thereby provide policymakers the information they need to make informed decisions. It is also noted that there is a need to a legal and economic analysis of tax regulations that provides useful information to regulators and the public (Greg *et al.*, 2018). This study completes this by confirming that, there is positive correlation between Legal and Economic analysis of corporate income tax and double taxation lead where one-unit change of the 1st lead to 0.158 change times (increase or decrease) of Corporate Income Tax and double taxation.

6.4 Significance of corporate income tax to national GDP

The sources of government revenue are individual income taxes, payroll taxes, and corporate income taxes. Other sources of tax revenue include excise taxes, the property (estate) tax, and other taxes and fees. In this study, the researcher has examined the correlation and significance of tax (representing corporate income tax) and national GDP for 7 years (2013/14-2019/20).



Figure 2: Rwanda GDP and Tax revenues since 2013/14 to 2019/20

Source: NISR, 2020 and RRA, 2020

As seen from the above figure, there an increase of 12.5% GDP to 9.3% growth rate of tax in 2013/14 to 2014/15 while this changes to 13.6% growth of GDP to 10.7% growth of tax for the years of 2016/17 to 2017/18 and by 2019/20 from 2018/19 the GDP growth rate was 12.9% to 7.9% of tax revenues. This confirms the same proportion of changes in Tax revenues and GDP.

Table 12: Correlation between Tax Revenue in Billion (Rwfs) and GDP in Billion (Rwfs)

Correlations		Tax Revenue in Billion (Rwfs)	GDP in Billion (Rwfs)
Tax Revenue in Billion (Rwfs)	Pearson Correlation	1	.996**
	Sig. (2-tailed)		.000
	N	7	7
GDP in Billion (Rwfs)	Pearson Correlation	.996**	1
	Sig. (2-tailed)	.000	
	N	7	7

** . Correlation is significant at the 0.05 level (2-tailed).

The analysis of correlation between Tax Revenue in Billion (Rwfs) and GDP in Billion (Rwfs) in Rwanda, has resulted that corporate income tax contribute 99.6% to the national GDP and this contribution is statistically significant. Meaning that, if double taxation is associated or a tool for increasing tax, it is also positive to the national GDP and could be stimulated (r or Pearson correlation is 0.996 while Sig. (2-tailed) is 0.000 less than 0.05 or 5% level of significance). These confirm that the legal and economic determinants are statistically significant to double taxation in Rwanda. Double taxation occurs when a corporation pays the corporate tax rate on earnings or profits, then pays dividends from those profits to shareholders who are again taxed on the money at their personal rates. Thus, the study analysis shows that all are required none could be stopped as they are legally and economically significant.

As seen in the paper of Forbin (2011), there is a contradiction where using time series data, study find that corporate income tax rates have no significant effect on Swedish economic growth. This study shows that tax (including corporate income tax) positively contributes to the growth of government revenues and GDP (Forbin, 2011). As corporate companies requested to pay tax, also work hard for having more income or higher added values it is in that context GDP increase was counted from previous years not the GDP supposed to be available before tax.

7. Conclusion

In Rwanda double taxation is attributed to tax on corporate income tax and tax on dividends distributed to shareholders as well as tax accrued in corporate business transactions. The study findings have shown that corporate income tax contribute 99.6% to the national GDP while only 0.4% explained by other factors not covered by this analysis. And this contribution (tax to GDP) is statistically significant. As that called double taxation is associated or may be considered as a tool for increasing tax which later contribute to the increase of national GDP. This confirm that these legal and economic determinants are statistically significant to double taxation in Rwanda. However, the analysis of correlation between Legal and Economic analysis of corporate income tax and double taxation and Corporate Income Tax and double taxation has resulted lower contribution (20.1%) and remaining 79.9% is associated to other non-covered factors within this study. And this correlation is statistically significant. Thus, there is a confirmation that, there is significant relationship between a legal and economic analysis and double taxation of corporate income tax in Rwanda.

REFERENCES

- [1] Abiola, J., & Asiweh, M. (2012). Impact of Tax administration on Government Revenue. *International Journal of Business and Social Science*, 3(8), 99-113.
- [2] African Economic Outlook. (2015). *Rwanda Economy*. AFDB, OECD, UNDP.
- [3] Akhtar, M. (2016). *Research in Social Science: Interdisciplinary Perspectives (pp.17)*. Edition: 1stChapter: Research Design.
- [4] Andrzej, K. (2014). *Determinants of Corporate Income Tax Revenues of European Union Member States*.
- [5] Block, J. (2016). *Corporate income taxes and entrepreneurship*. Institute for the Study of Labor (IZA), Bonn, Iss. 257, <http://dx.doi.org/10.15185/izawol.257>: IZA – Institute of Labor Economics: ISSN 2054-9571.
- [6] Braun J. & Fuentes D., (2014). *A Legal and Economic Analysis of Austria's Double Tax Treaty Network with Developing Countries*. WU International Taxation Research Paper Series No. 2014 - 13.
- [7] Charles, E. (2013). Taxation," The Benefit Principle, Encyclopædia Britannica. *Benefit Principle*.
- [8] Cordes, J. (2005). Taxation that comes about in the U.S. tax system because corporate profits are taxed once by the corporate income tax and then again when these profits are distributed to shareholders. *Dividends, double taxation of*, 95.
- [9] Cung, N. (2015). *Corporate Income Tax Burden and its Determinants: Evidence from Vietnam*. Management and Applied Economics, SCIENPRESS Ltd, vol. 5(3), pages 1-8.
- [10] Devereux P. Michael & Peter Birch Sørensen. (2016). *The Corporate Income Tax: International Trends and Options for Fundamental Reforms*. University of Oxford and University of Copenhagen.
- [11] Djankov S. & Ganser T., (2008, January). The Effect of Corporate Taxes on Investment and Entrepreneurship. *NBER Working paper*.
- [12] Fisher, I. (2018). *The Income Concept in Light of Experience*, p. 6.
- [13] Forbin, E. (2011). *Effects of corporate taxes on economic growth: the case of Sweden*.
- [14] Furman, J. (2008). *The Concept of Neutrality in Tax Policy*. The Brookings Institution: Testimony Before the U.S. Senate Committee on Finance Hearing on "Tax: Fundamentals in Advance of Reform," April 15, 2008.
- [15] Government of Rwanda. (2018). *Official Gazette n°16 of 16/04/2018*. Kigali: <https://www.rra.gov.rw/index.php?id=68/> Retrieved on 19 December 2020.
- [16] Greg L. & Adam L., (2018). *A Framework for Economic Analysis of Tax Regulations*. Washington DC: Washington Center for Equitable Growth.
- [17] Harelimana, B. (2018). The role of taxation on resilient economy and development of Rwanda. *Journal of Finance and Marketing*.
- [18] Heiner, J. (2007). *Measurement: Reliability and Validity measure*. United States: Johns Hopkins University publisher.
- [19] IRS. (2020). "Publication 542 Corporation," Page 17. Accessed March 7, 2020.
- [20] Jensen, P. &. (2009). The taxman tools up: An event history study of the introduction of the personal income tax. *Journal of Public Economics*, 160-175.
- [21] Jilcha, K. .. (2019). *Research Design and Methodology*. Reserach Design and Methodology (pp.27)Publisher: Intechopen.
- [22] Joshua, A. (2008). The collection efficiency of the value added tax: Theory and international evidence. *The Journal of International Trade and Economic Development*, 391-410.
- [23] Kagan, J. (2020). *Double Taxation*. Investopedia.
- [24] Karpowicz. (2014). *Has tax and accounting relationship come to nothing? An investigation into the decision usefulness of financial information disclosure*. Iowa corporation.
- [25] Katamba, P., & Nsubuga, T. (2014). *Basic Research*. Kampala, Uganda: MK Publisher.

- [26] KPMG. (2019). *Rwanda Fiscal Guide 2019*. Kigali: <https://assets.kpmg/content/dam/kpmg/za/pdf/pdf2020/rwanda-fiscal-guide-2019.pdf>.
- [27] Mark P. Keightley and Molly F. Sherlock . (2014). *The Corporate Income Tax System: Overview and Options for Reform*. Congressional Research Service 7-5700 www.crs.gov R42726.
- [28] Musimenta, D. (2020). Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda. *Cogent Business & Management*, 5-6.
- [29] Mwai, C. (2019). *Five highlights in Rwanda's new investment code*. Kigali City: New Times.
- [30] Nobes, G. J. (1992). *The Economics of Taxation (London: Prentice-Hall, 1992)*.
- [31] OECD. (2020). *Revenue Statistics in Africa 2019-Rwanda*. Kigali: <https://www.oecd.org/countries/rwanda/revenue-statistics-africa-rwanda.pdf>.
- [32] Rachel E. P., Shanna L. & Meinzer M. (2019). *Corporate income taxation in the digital age: Africa in the Corporate Tax Haven Index 2019*. African Tax Research Network Congress.
- [33] Republic of Rwanda. (2018). *Official Gazette n°16 of 16/04/2018*. Kigali: <https://taxinsights.ey.com/archive/archive-news/rwanda-enacts-new-income-tax-law.aspx>.
- [34] Rosenthal, S. M. (2016). *The Dwindling Taxable Share of U.S Corporate Stock*. Brookings: Urban- Brookings Tax Policy Center.
- [35] Roswell, F. (1936). *Taxable Income (New York: The Ronald Press Company, 1945), p.443 and Chp. 12 generally. (Originally published in 1936.)*
- [36] RRA. (2011). Annual Report 2010: Rwanda Revenue Authority.
- [37] RRA. (2019). Kigali City: Annual report 2018: Rwanda Revenue Authority.
- [38] RRA. (2020). RRA Department's missions, objectives and core functions: <https://www.rra.gov.rw/index.php?id=87&L=374/> Retrieved on 20 December 2020.
- [39] Sandford, C. (1992). *Economics of Public Finance (Oxford: Pergamon Press, 1992)*.
- [40] Tahlova, S. (2019). Assessment of Corporate Income Tax Revenues in the Light of Their Current Determinants. *MANTENEGRIN Journal of Economics*, 88.
- [41] Tax Foundation. (2020). *Tax Trends at the Dawn of 2020*.
- [42] Zagler, M. (2014). An Economic Perspective on Double Tax Treaties with(in) Developing Countries. *World Tax Journal*, 242.
- [43] Zhengwen, S. (2017). Substantive Taxation Principle and the Improvement on Chinese Taxation System. *Journal of IFA*.

