Measuring the Characteristics of Tax Evasion Behaviour

A Case Study: COCA-COLA Company (1998-2018)

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قياس خصائص سلوك التهرب الضريبي

دراسة حالة شركة COCA-COLA (1998-2018)

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Abstract:

Because of its negative influence on financial strategy and the company's reputation on the financial market, this study aims to measure tax evasion behavior in the entreprise and identify the most significant characteristics. Thus, the company COCA-COLA was chosen as a case study during the period (1998-2018), particularly after being subjected to high tax penalties as a result of a lack of fiscal responsibility during the year 2018 by US tax authorities. The study relied on the accountant's tax rate (CETR) as a dependent variable to measure tax evasion and nine independent variables to explain the firm's financial behavior. The significance of independent variables was not revealed by the model's estimation using the least squares ordinary method. The variables in the main component analysis that was used were divided into two groups. The first factor has statistical significance in interpreting the behavior of the dependent variable. The second factor (return of assets, financial leverage, intangible assets, and size) revealed that the company engages in tax evasion in its investment operations. In addition, the relationship between tax payments for subsequent years is reversed.

Keywords: Tax evasion; characteristics; measure; economic institution.

JEL Classification: M40; M41

ملخص:

تهدف هذه الدراسة قياس خصائص سلوك التهرب الضريبي في المؤسسة الاقتصادية، ومعرفة أهم خصائصه، باعتبار أثره السّلبي على إستراتيجيتها المالية وسمعتها في السوق المالي، لذلك ركزنا على شركةCOCA COLA كدراسة حالة. اعتمدت الدراسة على معدل الضريبة النقدي (CETR) كمتغير تابع لقياس التهرب الضريبي، وتسعة (09) متغيرات مستقلة مفسرة للسلوك المالي للشركة. تقدير النّموذج بطريقة المربعات الصغرى العادية لم يظهر معنوية المتغيرات المستقلة؛ باستخدام طريقة التحليل إلى مركبات أساسيّة، تم تجميع المتغيرات في عاملينِ، لأحدهما دلالة احصائية في تفسير سلوك المتغير التابع، تبيّن أن الشركة تمارس سلوك التّهرب الضريبي في عملياتها الإستثمارية بواسطة العامل الثاني. كذلك عكسيّة العلاقة بين مدفوعات الضريبة للسنوات المتتالية.

الكلمات مفتاحية: تهرب ضريبي؛ خصائص ؛ قياس؛ مؤسسة إقتصادية.

الترميز الاقتصادي (JEL): M40؛ M41.

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I- Introduction :

In a report by the European Parliament (2019) of fluctuations in global profits and associated tax revenue losses, long-run approximate estimates are $400 billion for OECD countries (1% of their GDP) and $200 billion for lower-income countries (1.3%) of their GDP (Cobham, A., & Janský, P, 2017).

Also, Patrick cannon (2018) estimated the tax gap at 5.3 billion pounds in Britain due to tax evasion, where approximately 70 billion pounds of revenue is lost due to tax evasion (Patrick Cannon, 2020).In July 2018, HMRC stated that the total tax gap reached 33 billion pounds for the 2016/2017 year, which represents 5.7% of the total tax obligations (HM Revenue & Customs, 2018). According to a report issued by Fortunly (2019) Interested in the News, Reviews and Market Analysis, Internal Revenue Service collectors manage to recover only about one-ninth of that amount ($52 billion), according to tax fraud statistics published by the IRS (Julija A,2020).

However, Researchers sees that Even though penalties and audits exist, tax evasion continues to pose a significant threat to countries' economies by placing a strain on a country's budget through lost revenues (Tsakumis, G. T., & al, 2007).

According to a report by The British Magazine Ethical Consumer (2018) about tax concessions for Coca-Cola, it achieved the worst rating using tax evasion strategies in the European Union such as tax evasion in Luxembourg (Moriti Neto & Guilherme Zocchio, 2018). Also, the measurement of tax evasion in the economic institution is one of the most important issues that concern researchers, due to the multiplicity of methods used and measuring tools. Therefore, the research problem is as follows:

What are the characteristics of tax evasion behavior In the Coca-Cola Company (1998-2018)?

To answer the question, we will test the following hypotheses:

H1: There are latent factors that influence a company's financial behavior.

H2: There are latent factors that influence the company's tax evasion behavior.

H3: The decrease in tax payments for the current year is related to taxes paid in the past year.

1. Diagnosing the reality of tax evasion behavior in the companies :

Corporate tax avoidance has received considerable attention from both academics and policymakers. Researchers Hanlon and Heitzman (2010) believe that most of the recent interest is related to the negative effects that tax evasion has on countries (Francis, B, et al, 2013). The classic definition is that tax avoidance is the "reduction of explicit taxes" (Barros, V., & Sarmento, J. M, 2020). Also, called by many terms such as 'noncompliance,' 'evasion,' 'aggressiveness,' and 'sheltering' (Zhang, C et al., 2019). In addition, Tax avoidance defined as the reduction or minimization of a person's tax liability by carefully arranging one's affairs in such a way as to take advantage of loopholes in the tax law provisions (Francis, N. C., & Okoh, U. K., 2017). Then, tax avoidance is an art of winning games without actually cheating (OBAFEMI, 2014).

Based on research conducted by the Association of Certified Fraud Examiners (ACFE) in 2014, the most fraud cases in a row is a statement of financial fraud by 73% (Tarjo, & Herawati, N, 2015). Besides, many researchers conducted a study on the reality of evasion and tax fraud in Norwegian companies, when the government forced high-income individuals to disclose their assets

abroad, it increased their taxes by 30%, and thus researchers believe that raising taxes on the wealthy enhances the state's tax revenues (Alstadsæter, A, 2018).

In addition, many Researchers studied the reality of evasion in companies that can participate in tax evasion over periods of up to ten years, and they found that 22% of the companies in the study sample were able to maintain a cash tax rate is less than 20% during a period of ten years, and they gather somewhat in some industries such as oil and gas extraction (Scott Dyreng et al, 2008).

Martin Thomsena & Christoph Watrin (2018) compared and diagnosed tax evasion to a sample of American and European companies. One of the most important results of the study is that the gap between the average legal tax rate (STR) and the actual (ETR) decreases significantly in the EU, indicating that tax evasion decreased during the period 2005-2016, unlike the USA (Martin Thomsen, 2018). Also, Alex Cobham, Petr Janský (2018), attempted to estimate the global distribution of tax evasion that causes the loss of revenues from the corporate tax, the results they reached that global revenue losses are estimated at 500 billion USD annually and these results indicate that the losses can be severe in low-income countries, and sub-Saharan Africa, Latin America, and the Caribbean and South Asia (Cobham, A., & Janský, P., 2017).

2. Indicators for measuring tax evasion in the companies:

Markus Sebastian Gebhart (2017) sees there are many indicators to measure the most important tax evasion:

2-1 Effective Tax Rate Based Measures: The Effective Tax Rate is calculated average tax rate a corporation pays on its pre-tax profits and is calculated by dividing a measure of tax liability by a measure of pre-tax income, as follows:

$$ETR = \frac{measure - tax - liability}{pre - tax - income} \text{ ..…..... (1)}$$

Also, one of the types of Effective Tax Rate is the Cash Effective Tax Rate, which is given by the following formula:

$$CashETR = \frac{cash\_taxes\_paid}{pre - tax - income} \text{ ……... (2)}$$

2-2 method Henry and Sansing's (HS):

Referred to as this measure HS, which is based on the Cash ETR and taking into account corporate losses and tax preferences, is calculated as follows:

τ: the hypothetical case of a firm with no book-tax differences facing only one tax rate.

$$\text{Cash taxes paid} = \tau * (\text{pre} - \text{tax income}) + \Delta \text{..... (3)}$$

This can be solved for Δ, yielding the tax preferences of a firm:

$$\Delta = \text{cash taxes paid} - \tau * (\text{pre} - \text{tax income}) \text{..... (4)}$$

$$\text{Pre} - \text{tax income} = \text{MVA} * \text{ROA} \text{..... (5)}$$

MVA = book value of assets + (market value of equity –book value of equity) = BVA+ (MVE – BVE).....(6)

They scale corporate tax avoidance as the tax preferences, Δ, scaled by size (MVA) :

$$Hs = \frac{\Delta}{MVA} \frac{cashtaxespaid - \tau * (pre - taxincome)}{MVA} \text{ ..... (7)}$$

Thus it can be said that companies without tax preference if the cash taxes paid equals the expected tax payment. And the company has a tax preference if the cash taxes paid is greater than the expected tax payment. (Gebhart, 2017).

2-3 the differences between accounting and tax income (BTD):

Many researchers, including Hanlon (2005) & Al Phillips (2003) see the gap between tax and financial income as not reflecting how aggressive the tax is being run, but rather it should be calculated as part of profit management. Desai & Dharmapala (2006) adjusted the difference book-tax difference in the framework of managing profits with dues to isolate the gap, and the remaining differences (DDBTD), equal to the remainder of the following regression effects:

$$BTDi,t = B1TACCi,t + Ui + \varepsilon i,t \text{ ..... (8)}$$

It is calculated as the sum of the differences between tax and financial income and total TACC receivables, weighted by total assets, and therefore in the search for abnormal behaviors from total differences, using the model Manzon & Plesko (2002).

2-4 unrecognized tax benefits (UTB)

Uncertain tax benefits are used in tax management by taking benefits of tax laws and investment encouragement laws. Lisowsky & al (2013) found that there was a positive correlation between uncertain tax benefits and tax havens activities. And used unrecognized tax concessions, and the amount of tax reserves disclosed in accordance with FIN48 law in the United States of America, through the predictability by the following form: (Lietz G , 2013)

$$UTB = \alpha 0 + \alpha 1PT\_ROA + \alpha 2SIZE + \alpha 3FOR\_SALES + \alpha 4RD + \alpha 5LEV + \alpha 6DISC\_ACCR + \alpha 7SG\&A + \alpha 8MTB + \alpha 9SALES\_GR \text{ ... (9)}$$

2-5 TAX SHELTERS:

It represents a measure of the institution's ability to participate in tax paradise, as prepared by Wilson (2009). It gives the following formula: (Bill Francis I. H., 2014)

$$sheltering = -4.86 + 5.20 \times BT + 4.08 \times |DAP| - 1{,}41 \times LEV + 0.76 \times SIZE + 3.51 \times ROE + 1.72 \times Foreign\_income + 2.43 \times RD \text{ ....(10)}$$

II– Methods and Materials:

In this section, we try to measure the characteristics of tax evasion in the Coca-Cola Company during the period (1998-2018) by extracting factors, knowing their nature and their relationship to tax evasion.

The company was founded in the year 1886 and is active in Europe, the Middle East, Africa, Latin America, North America, and Asia. The company produces and sells non-alcoholic drinks, in addition to juice, dairy products, vegetable drinks, tea and coffee, carbonated water, and is aimed at athletes … etc (www.cocacola.com).

The total assets of the Corporation increased during the period (1998 – 2018) from about: 19.4 to 83.21 million dollars, with an estimated growth rate of 334.7%. Likewise, the volume of sales increased during the same period from about: 18.81 to $ 31.85 million, i.e. an estimated growth rate

of 69.32%. Figure (01) display also the statutory US federal rate (STFR) that the company pays during the period from (1998-2017) is 35% annually, and then decreased in 2018 To 21%, while the effective tax rate witnessed the lowest rate in 2010 at 16.7%, while the highest rate in 2017 was 82.5%.

In 2015, a fine of $ 3.3 billion was imposed by the tax authorities to the company due to back taxes, for the years (2007-2009), which caused the corporation to enter into a legal dispute regarding transfer pricing. It was mentioned in the (international tax review) that this dispute is one of the biggest tax disputes in 2018 (Kevin Drawbaugh, 2018).

To estimate the study model, we determined the independent variables specified in Table (01). and we use one of the measures of tax evasion is the cash effective tax rate (CETR), which represents the amount of the tax income of the company is actually paying, and as one of the most important indicators that measure tax evasion.

Initially, we tried to create a statistical model to study the relationship between the independent variables and the dependent variable(CETR) specified in the table(01) but did not give us clear and significant results. In this work we used the factor analysis method (Principal Components Analysis) was used to find the most important independent variables with the same characteristics, resulting in two factors.

Table (02) summarizes the descriptive cash effective tax rate Where the lowest year value was in 1.14$ million year 2003 and the highest value is a year 5.56$ million year 2017. Also the statutory tax federal rate (STFR), the lowest year rate was 21% and it was constant during the period of (1998-2018) at a rate of 35%.

III- Results and discussion :

The results of the study found that the independent variables that explain the financial behaviour of the company were concentrated in two factors that explain the phenomenon, as each factor contains a set of variables with similar characteristics, through the use of factor analysis.

Table (03) shows two tests about the suitability of data for structure detection. The Kaiser-Meyer-Olkin test and Bartlett's test.

We notice from table (03) that the value (KMO >0.5) is greater than and thus it can be said that the results of the factor analysis probably won be very useful, as the value of the index 0.537. As a result of the Bartlett test shows a function, this is an indication of the correlation matrix differing from the unit matrix, meaning that there is a common variance between the study variables that make up a set of hidden factors, which is what we seek to reveal.

We obtain common contrast ratios between study variables through values from the Anti-Image Matrix, which are described in (table 4). This useful for verifying the hypothesis of the adequacy of the sample for each of the study variables, and if we follow the numbers indicated by the letter (a) in the main diameter of the matrix of mock parameters we find 50% of the variables with a picture correlation coefficient equal to or greater than 0.50, which indicates that this ratio is fulfilled From the variables of the hypothesis of the adequacy of the sample for each variable.

Table (05) summarizes the descriptive Total Variance Explained, and Initial Eigenvalues. The table shows that there are two factors (components) that explain the results of the study and explain

the study at a rate 82.029%. It is a high and acceptable rate to take these axes as factors explaining the company's financial behavior.

These ratios are distributed among these factors as follows:

- The first component Explains 42.3% Of total Variance, and corresponds to the highest Initial Eigenvalues which is 3.80 ;
- The second component Explains 39.72% of total Variance, and corresponds to the highest Initial Eigenvalues which is 3.57.

Table (06) show the first factor contains: ROE, FI, PPE, MTB, and TACC. It is described Market and reputation factors. While the second factor contains: ROA, LEV, INTANG, and SIZE. It is described Investment factors.

Table (08) describes use the multiple linear regression models were to estimate any factors affecting to tax evasion. The results of the model indicated that the first factor was not statistically significant (sig=0.7736> 0.5), While the second factor was A positive and significant relationship (sig=0.0006< 0.5).

The Estimated regression model equation is written as:

$$CETR_t = 2.037143 - 0.046654 * FAC1_t + 0.666386 * FAC2_t + e_t \text{.....(11)}$$

Adjusted R-squared value indicates that 43.64% of the changes that occur on the dependent variable are due to the changes that occur on the variables explained in the model, and the rest 56.36% are caused by other factors.

- **Estimated regression model :**

Its equation is written as:

CETR = 2.855152 + 0.154087*FAC1 + 0.909299*FAC2 – 0.421404*CETR (-1)..... (12)

Where:

e denote the remainder of the difference between the real value and the estimated value, while CETR (-1) denotes the variable of the previous year,

FAC1: for the second latent (factor) variable, FAC2: for the second latent (factor) variable.

- **Explanatory power of the model :**

Adjusted R-squared value indicates that 53.92% of the changes that occur on the dependent variable are due to the changes that occur on the variables explained in the model, and the rest 46.08% are caused by other factors.

- **The overall significance of the statistical model :**

The null hypothesis accompanying the statistical hypothesis, that all estimated regression coefficients do not differ from zero, and therefore the regression model is not significant.

The alternative hypothesis is that at least one of the estimated regression coefficients is significant different from zero, and therefore the regression model is significant.

The value of the associated probability is indicated by the calculated Fischer statistic value, where Prob (F-statistic) = 0.00119 <∝ = 0.05. Thus we reject the null hypothesis that the regression model is not significant, and therefore at least one of the regression coefficients differs from zero.

- **Partial significance of a model:**

To determine significant regression coefficients, we use a t-test, where:

Zero hypothesis: that the coefficient$\propto_i = 0$; the alternative hypothesis: that the coefficient $\propto_i \neq 0$

From the estimation results table (09), given the value of the probability associated with the value of the estimated parameter, it is shown that:

- The significance of the constant indicates that other factors influence the CETR increase,
- FAC1 lack of significance does not mean neglecting the model because it reduces the overall significance of the estimated model,
- The significance of the second factor FAC2 indicates that there are other factors that positively affect the CETR, where every increase in the value of this factor in monetary unit leads to an increase of CETR by 90.93%,
- The variable significance of CETR (-1) indicates that taxes paid in the past year reduce the value of taxes paid in the current year by the negative sign of the estimated parameter, where every monetary unit paid as tax in the previous year CETR (t-1) leads to a reduction in Payments from this year's CETR (t) taxes are 42.14%.

This model can be accepted to track the behavior of the tax payments phenomenon of a company that has the benefit of the tax benefit paid during previous years in addition to its ability to control its behavior effectively through the variables generating factors.

IV- Conclusion:

We found that Coca-Cola is tax-evading through the variables that represent the company's ability to invest, as the increase in the value of the variables leads to an increase in tax evasion. This is perhaps evidence that the investment activity carried out by the company makes it benefit from tax benefits, which may raise the tax rate at a managed rate.

Therefore, Tax management by legal means during investment operations carried out by the company is considered important to ensure that the company is not accused of tax evasion as it happened in 2017 and allows it to control tax risks.

References:

Alstadsæter, A., Johannesen, N., & Zucman, G. (2018). Tax evasion and tax avoidance. NBER working paper, 23772.p:01.

Barros, V., & Sarmento, J. M. (2020). Board meeting attendance and corporate tax avoidance: Evidence from the UK. Business Perspectives and Research, 8(1), p:01. doi: 10.1177/2278533719860021.

Francis, B. B., Hasan, I., Wu, Q., & Yan, M. (2014). Are female CFOs less tax aggressive? Evidence from tax aggressiveness. The Journal of the American Taxation Association, 36(2), 171-202. ,p: 45. https://doi.org/10.2308/atax-50819

Cobham, A., & Janský, P. (2017). Measurement of illicit financial flows. UNODC-UNCTAD expert consultation on the SDG Indicator on illicit financial flows: Background paper prepared for UNCTAD: Benefits and Costs of the IFF Targets,p: 19.

Cobham, A., & Janský, P. (2018). Global distribution of revenue loss from corporate tax avoidance: re-estimation and country results. Journal of International Development, 30(2), p:01. https://doi.org/10.1002/jid.3348

Francis, B., Sun, X., Weng, C. H., & Wu, Q. (2013). Managerial ability and tax aggressiveness. Available at SSRN 2348695.p:02.

Francis, N. C., & Okoh, U. K. (2017). Effect of tax avoidance and tax evasion on economic growth and development in nigeria (2006–2016). International Journal in Management & Social Science, 5(3), p:02..

Gebhart, M. S. (2017). Measuring Corporate Tax Avoidance – An Analysis of Different Measures. junior Management Science , 1-6. https://doi.org/10.5282/jums/v2i2pp43-60

Tarjo, & Herawati, N. (2015). Application of Beneish M-Score models and data mining to detect financial fraud. Procedia-Social and Behavioral Sciences, 211, p:02. https://doi.org/10.1016/j.sbspro.2015.11.122

Lietz, G. (2013). Tax Avoidance vs. Tax Aggressiveness,A Unifying Conceptual Framework,,P33. University of Münster,Working Paper,Current draft: 12,p:33. http://dx.doi.org/10.2139/ssrn.2363828

Martin Thomsen, C. W. (2018). TAX AVOIDANCE OVER TIME: A COMPARISON OF EUROPEAN AND U.S. FIRMS. Journal of International Accounting, Auditing and Taxation ,p: 38. https://doi.org/10.1016/j.intaccaudtax.2018.11.002

McIntyre, R. S., Phillips, R., & Baxandall, P. (2015). Offshore shell games 2015: The use of offshore tax havens by Fortune 500 companies. US PIRG Education Fund and Citizens for Tax Justice.,p:03.

Obafemi, F. J. (2014). An empirical study of tax evasion and tax avoidance: A critical issue in Nigeria economic development. Journal of Economics and Sustainable Development, 5(18), p:01.

Dyreng, S. D., Hanlon, M., & Maydew, E. L. (2008). Long-run corporate tax avoidance. The accounting review, 83(1), 61-82. https://doi.org/10.2308/accr.2008.83.1.61

Sebastian, & Markus, G. (2017). Measuring Corporate Tax Avoidance – An Analysis of Different Measures. Junior Management Science , p:1-6. https://doi.org/10.5282/jums/v2i2pp43-60

Tsakumis, G. T., Curatola, A. P., & Porcano, T. M. (2007). The relation between national cultural dimensions and tax evasion. Journal of international accounting, auditing and taxation, 16(2), p:02. https://doi.org/10.1016/j.intaccaudtax.2007.06.004

Zhang, C., Rasiah, R., & Cheong, K. C. (2019). Governing corporate tax management. Springer Singapore.p:12.

Julija A, (2020). Tax Evasion Statistics: Just How Damaging Is it to Not Pay Your Taxes.https://fortunly.com/statistics/tax-evasion-statistics/#gref. Consult (02/ 03/ 2020)

HM Revenue & Customs(2018). Policy paper Issue briefing: calculating the 2016 to 2017 tax gap.https://www.gov.uk/government/publications/issue-briefing-calculating-the-2016-to-2017-tax-gap. Consult (03 /01, 2020)

ITR(2018). The top US tax controversies in 2018.www.internationaltaxreview.com/article/b1f7n0dhjtlv7d/the-top-us-tax-controversies-in-2018. Consult (02/02/ 2020)

Kevin Drawbaugh(2018).As corporate-government tax pacts falter, Coca-Cola challenges huge U.S. bill.https://www.reuters.com/article/us-usa-tax-corporate/as-corporate-government-tax-pacts-falter-coca-cola-challenges-huge-u-s-bill-idUSKCN1H8191. Consult (02/ 03/ 2020)

Patrick Cannon (2020).UK Tax Evasion Statistics 2020. Consulté le (02 15, 2020), sur https://www.patrickcannon.net/insights/uk-tax-evasion-statistics/

Moriti Neto & Guilherme Zocchio(2018).Coca-Cola´s tax planning is international.https://ojoioeotrigo.com.br/2018/10/coca-colas-tax-planning-is-international/. Consulte le (23/02/2020)

www.cocacola.com. Consulté le(01 /02/ 2020)

- Appendices:

Table (1): Definition of Firm Proxies and Variables

code	
INTANG	assets Intangible assets for firm i, year t scaled by lagged assets
LEV	Leverage for firm i, year t, measured as /lagged
PPE	PPE for firm i, year t scaled by lagged assets
TACC	Total accrual for firm i, year t, measured as lagged
FI	Foreign income for firm i, year t scaled by lagged assets
MTB	Market to book ratio for firm i, at the beginning of year t
SIZE	Natural logarithm of the market value of equity for firm i, at the beginning of year t
ROE	Return on equity for firm i, year t, measured as lagged
ROA	Return on assets for firm i, year t, measured as lagged
CETR	cash effective tax rate

Table (2) :Descriptive Statistics CETR and STFR

N=21	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
CETR	4,42	1,14	5,56	2,0371	0,20765	0,95159	0,906
STFR	0,14	0,21	0,35	0,3433	0,00667	0,03055	0,001

Source : SPSS 25

Table (3) KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,537
Bartlett's Test of Sphericity	Approx. Chi-Square	204,242
	df	36
	Sig.	0,000

Source : SPSS N^0 25

Table (4) Anti-image Matrices

		ROA	ROE	LEV	FI	PPE	INTANG	SIZE	MTB	TACC
Anti-image Covariance	ROA	,064	-,028	,012	-,020	-,017	,045	,006	-,036	,046
	ROE	-,028	,091	-,044	-,056	-,031	,015	,021	,077	,051
	LEV	,012	-,044	,039	,036	,030	-,016	-,019	-,049	-,030
	FI	-,020	-,056	,036	,076	,037	-,047	-,025	-,040	-,072
	PPE	-,017	-,031	,030	,037	,065	-,053	-,022	-,026	-,047
	INTANG	,045	,015	-,016	-,047	-,053	,088	,016	-,014	,076
	SIZE	,006	,021	-,019	-,025	-,022	,016	,012	,024	,026
	MTB	-,036	,077	-,049	-,040	-,026	-,014	,024	,141	-,002
	TACC	,046	,051	-,030	-,072	-,047	,076	,026	-,002	,155
Anti-image Correlation	ROA	,635[a]	-,366	,240	-,282	-,266	,595	,211	-,379	,460
	ROE	-,366	,406[a]	-,748	-,673	-,403	,163	,642	,677	,426
	LEV	,240	-,748	,467[a]	,672	,599	-,267	-,859	-,667	-,388
	FI	-,282	-,673	,672	,465[a]	,523	-,575	-,815	-,385	-,667
	PPE	-,266	-,403	,599	,523	,607[a]	-,698	-,765	-,269	-,472
	INTANG	,595	,163	-,267	-,575	-,698	,614[a]	,485	-,122	,650
	SIZE	,211	,642	-,859	-,815	-,765	,485	,530[a]	,585	,600
	MTB	-,379	,677	-,667	-,385	-,269	-,122	,585	,602[a]	-,015
	TACC	,460	,426	-,388	-,667	-,472	,650	,600	-,015	,540[a]

a. Measures of Sampling Adequacy(MSA) **Source** : SPSS N^0 25

Table (5) Total Variance xplained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**5,222**	**58,025**	**58,025**	**5,222**	**58,025**	**58,025**	**3,807**	**42,303**	**42,303**
2	**2,160**	**24,004**	**82,029**	**2,160**	**24,004**	**82,029**	**3,575**	**39,726**	**82,029**
3	0,650	7,225	89,254						
4	0,385	4,280	93,534						
5	0,288	3,203	96,737						
6	0,131	1,460	98,196						
7	0,122	1,350	99,547						
8	0,033	0,369	99,916						
9	0,008	0,084	100,000						

Extraction Method: Principal Component Analysis. **Source** : SPSS N^0 25

Table (6) Rotated Component Matrix[a]

	Component	
	1	2
ROA	0.180	**-0.961**
ROE	0.899	-0.267
LEV	0.144	**0.908**
FI	0.839	0.204
PPE	0.682	0.612
INTANG	0.539	**0.696**
SIZE	0.514	**0.835**
MTB	-0.734	-0.352
TACC	-0.827	-0.191

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.
Source : SPSS N^0 25

Table (7) : Results of the study model's outputs

Dependent Variable : CETR
Method : Least Squares
Date : 03/01/20 Time : 19 :01
Sample : 1998 2018
Included observations : 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.037143	0.155885	13.06823	**0.0000**
FAC1	-0.046654	0.159735	-0.292070	0.7736
FAC2	0.666386	0.159735	4.171832	**0.0006**

R-squared	0.492807	Mean dependent var	2.037143
Adjusted R-squared	0.436453	S.D. dependent var	0.951589
S.E. of regression	0.714356	Akaike info criterion	2.296692
Sum squared resid	9.185474	Schwarz criterion	2.445910
Log likelihood	-21.11527	Hannan-Quinn criter.	2.329076
F-statistic	**8.744742**	Durbin-Watson stat	**2.416613**
Prob(F-statistic)	**0.002221**		

Source : eviews 10

Table (08) : A model that takes into account tax payments in the past year

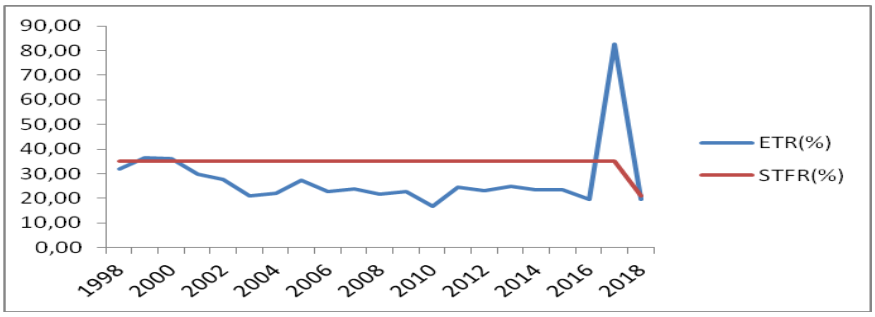
Dependent Variable : CETR
Method : Least Squares
Date : 03/01/20 Time : 19 :14
Sample (adjusted) : 1999 2018
Included observations : 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.855152	0.418096	6.828931	0.0000
FAC1	0.154087	0.175028	0.880356	0.3917
FAC2	0.909299	0.183389	4.958312	0.0001
CETR(-1)	-0.421404	0.195618	-2.154216	0.0468

R-squared	0.611961	Mean dependent var	2.056000
Adjusted R-squared	0.539204	S.D. dependent var	0.972276
S.E. of regression	0.660000	Akaike info criterion	2.183702
Sum squared resid	6.969593	Schwarz criterion	2.382848
Log likelihood	-17.83702	Hannan-Quinn criter.	2.222577
F-statistic	**8.411003**	Durbin-Watson stat	**1.916131**
Prob(F-statistic)	**0.001388**		

Source : eviews 10

Figuer (01) : CETR COCA-COLA company(1998-2018)



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