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A Comprehensive Analysis of the Drivers Behind the Effective Tax Rate of Financial Times Stock Exchange (FTSE) in Malaysia

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Abstract: This study examines corporate effective tax rates (ETR) of Malaysian multinational corporations (MNC) listed in the Financial Times Stock Exchange (FTSE) Bursa Malaysia Kuala Lumpur Composite Index (KLCI) and FTSE Bursa Malaysia Mid 70 Index. The main objective of this study is to examine the relationship between the ETR of MNCs with subsidiaries in tax haven countries, and selected corporate characteristics such as firm size, leverage, capital intensity, return on assets, inventory intensity, profit margin, and foreign directors. Using a multiple linear regression approach on a balanced panel sample of 68 companies (321 firm-years) spanning 2017 to 2021, the study provides evidence for the variability of corporate ETRs in which the average corporate ETRs falls below the STR for the financial year 2021 of 24%. The statistical results also reveal that lower ETRs are associated with highly leveraged companies, and greater investments in fixed assets. Further, a negative coefficient for return on assets and profit margin suggests that companies have benefited from tax incentives provided by the government. Hence, this study contributes to tax literature and policymakers on factors that influence the corporate ETR, especially MNC with subsidiaries in tax haven countries. Tax authorities should implement tight monitoring to avoid these MNCs extensively engaging in tax planning which will result in revenue loss to the Malaysian income tax collection.

Keywords: effective tax rates, statutory tax rate, tax haven, tax incentives, tax planning.

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INTRODUCTION

Tax havens have always been associated with tax avoidance and tax evasion (Menkhoff & Miethe, 2019). Desai et al., (2006) stated that tax havens provide investors opportunities to practice tax planning. Tax havens are jurisdiction that impose no or very low corporate taxes and hence offer firms the ability to reduce their overall

tax burdens in their home country (Jaafar & Thornton, 2015). Due to the mismatch of tax jurisdictions, MNCs are taking the opportunity to reduce their tax expenses by shifting profits to their subsidiaries in tax haven or low tax rate countries (Abdallah, 2013; Janský & Prats, 2013; Liao & Acharya, 2011; Sullivan & Smith, 2011). According to Mara (2015), high population countries cannot afford to lose their ability to collect taxes, hence they cannot afford to become tax havens. This is because taxation is viewed as the principal source of income by almost all governments worldwide (Supriyati & Anggraini, 2021). Policy makers and international organizations such as Organization for Economic Co-operation and Development (OECD) have voiced concern that tax planning and tax evasion by multinationals through profit shifting lead to the distortion of investment decisions as well as posing issues of fairness (Schindler & Schjelderup, 2013). The tax planning practices of the MNCs lead to huge amounts of revenue losses to the nation, (Omar & Zolkaflil, 2015).

Effective tax rates are used as a proxy for tax planning success, which are essential efforts to avoid tax. Drake et al. (2020) finds that ETRs are often used to compare tax avoidance across firms and time. Policy makers also use effective tax rates to set taxation levels in order to ensure equity in paying taxes (Górecki & Letki, 2021). Equity in taxation is important since it affects decisions to do with location of firms, foreign direct investment (FDI) and industry level taxation policies to ensure economic goals of the country are met. Unfortunately, Ault et al. (2014) indicate an abundance of evidence suggesting that many MNCs have successfully achieved ETR well below the nominal rate in residence countries. It is corroborated by Dias & Reis (2018) research, which discovered evidence of a positive association between the effective tax rate and the nominal rate. International profit shifting, and base erosion engaged by MNC are pronounce in the tax haven countries (Fatica & Gregori, 2020). Thus far, empirical studies on determinants of ETR and tax haven have been conducted in developed countries such as United State, Europe, and Australia. However, there is a lack of comprehensive study, especially from Malaysia, which investigate the attributes of ETR involving MNC with subsidiaries in tax haven countries (Omar & Zolkaflil, 2015; Jaafar & Thornton, 2015; Janský & Prats, 2013).

Therefore, the goal of this study is to address the shortcoming. This study examines corporate income tax planning, known explicitly as corporate effective tax rates and provides evidence for factors that cause corporate ETRs to diverge from the statutory tax rate for the financial year 2021 of 24%. Using a balanced panel data of 68 listed multinational corporation with subsidiaries in tax haven countries which are listed in FTSE Bursa Malaysia KLCI Index and FTSE Bursa Malaysia Mid 70 Index (321 firm-years) for the years from 2017 to 2021, the objectives of this study are: 1) to examine the level of corporate ETRs of MNCs' having subsidiaries in tax haven countries; and 2) to examine the determinants of corporate ETRs, i.e., the relationship between corporate ETRs and their attributes.

This study makes use of the financial data collected from the identified MNCs annual report to estimate ETRs and their attributes for the firm year period 2017 to 2021 and achieve four key findings. First, this study provides evidence for the variability of corporate ETRs for the MNC with tax haven subsidiaries which the average corporate ETRs falls below the STR for financial year 2021 of 24% with ETR1 (17.73%) and ETR2 (18.32%). This indicates that tax planning does exist. Second, the results show that MNCs with tax haven subsidiaries report low return on assets (10.72%) and pay less taxes (17.73%). This indicates that MNCs with tax haven subsidiaries have a more intensive profit shifting strategy. Third, the statistical results indicate significant and positive coefficient for leverage and significant and negative coefficient for capital intensity for ETR1. Thus, indicate that highly leveraged companies will face higher income tax burdens. On the other hand, investments in tax credit and capital allowance will reduce companies' ETR. The statistical result also suggests that larger companies will have higher gain from their revenue and maximize the utilization of assets for better return. Lastly, evidence from the results of test assumptions which did not support the relationship between firm size, leverage, return

on assets, inventory intensity and foreign directors with ETR shows the intensity of tax planning by MNCs. It can be argued that larger firms have greater resources to influence the political process in their favor, engage in tax planning, and organize their activities to achieve optimal tax savings. On the other hand, leverage which is considered one form of tax shield appears otherwise in this study.

The research outcome adds to both the existing literature and theoretical development in various ways. Since there is a lack of studies, especially from Malaysia's MNC, which investigate the attributes of ETR involving MNCs with subsidiaries in tax haven countries. Hence, this study contributes to tax literature the factors influence the corporate ETR especially MNCs with subsidiaries in tax haven countries. The empirical results provide evidence of excessive tax planning by MNCs with subsidiaries in tax haven countries. It is clear that these companies use international operations to reduce their income tax burdens. The findings were consistent with the motivation and approach of tax planning activities. Hence, this study has proved and supported the concepts and principles of tax planning theories. It is also anticipated that the findings documented in this study will be a steppingstone for more studies in the future. It is clearly evidence that tax authorities should implement tight monitoring to avoid these MNCs from practicing profit shifting to lower tax jurisdiction which result to revenue loss to the Malaysian income tax collection. This study has provided at least a partial explanation as to the attributes of companies that systematically avoid taxes for the period from 2017 to 2021. Therefore, the findings from this study can provide important risk assessment tools to tax authorities for tax audit and investigation exercise, and hopefully may be able to assist the government in designing tax laws that would minimize undue tax avoidance.

METHODS

The study includes top 100 companies listed under Bursa Malaysia as of 31st December 2021. The top 100 companies covered in this study were listed in Financial Times Stock Exchange (FTSE) Bursa Malaysia Kuala Lumpur Composite Index (KLCI) and FTSE Bursa Malaysia Mid 70 Index. The data are collected from the firm year period 2017 to 2021. In this study, MNCs is defined as companies with subsidiaries in at least two different countries (Janský & Prats, 2013). The sample consists of companies from twelve sectors listed on the main and second board of Bursa Malaysia, which includes industrial products, trading and services, consumer products, properties, plantation, construction, technology, infrastructure, health care, energy, telecommunication and utilities sectors. Companies with non-industrial templates are removed because of the difference in rules and regulations. These include banks, insurance companies, trust and other financial companies.

As a result of the exclusion, 75 multinational corporations were identified which consists of 68 companies with tax haven subsidiaries and 7 companies without tax haven subsidiaries. To satisfy the focus of this study, the 7 companies without tax haven subsidiaries were also excluded. Further, to create the 2017-2021's panel data, companies must have non-missing financial information for all the five years of the investigation periods. The short length of the panel reduces the chance of survivorship bias affecting the results (Gillman et al., 2002). Thus, the exclusion of companies with insufficient data resulted in a final sample of 68 companies (321 firm-years) used in this study. Table 1 describes the sample selection process of this study. As the tax data is not available in machine readable format, it is collected from annual reports. The use of panel data is important in this study, as it allows for the simultaneous conditioning of the observed and unobserved company characteristics which also affect the variations in corporate ETRs (Gillman et al., 2002). Examples of companies' unobserved characteristics are management strategy, tax specific effects and corporate culture.

Table 1 Samples Selection

Details	n
Top companies listed in Financial Times Stock Exchange (FTSE) Bursa Malaysia Kuala Lumpur Composite Index (KLCI) and FTSE Bursa Malaysia Mid 70 Index	100
Non-industry template	-25
Non-tax haven	-7
Initial samples	68
Firm year (68 x 5 years)	340
Missing/insufficient data	-19
Actual firm year	321

Previous studies have used various methods for measuring corporate effective tax rate (ETR), where the numerator is the measure of a company's tax liability, and the denominator is the measure of its income (Plesko, 2003). However, this study adopted by Md Noor et al. (2008) uses a micro backward-looking approach to examine the variability of corporate ETRs. Thus, the financial statements-based ETR is measured using company-level data. In other words, the numerator is the tax expense, a proxy for income tax burdens paid or payable by the company; and the denominator is pre-tax income, a proxy for the company's taxable income. Two ETR measures are used as a dependent variable to improve robustness of the empirical results (Kim & Limpaphayom, 1998). The first measure is ETR1, defined as the ratio of current income tax expense divided by income before interest and taxes. The second measure is ETR2, defined as the ratio of total income tax expense (current tax expense plus deferred tax expense) divided by income before interest and taxes. Hence, ETR2 measure considers future tax liability arising due to temporary difference between financial accounting income and taxable income.

The ETR model is estimated for ETR1 and ETR2.

$$ETR1_t = \beta_0 + \beta_1 SIZE_t + \beta_2 LEV_t + \beta_3 CAPINT_t + \beta_4 ROA_t + \beta_5 INVINT_t + \beta_6 PROMAR_t + \beta_7 FORDIR_t + \varepsilon_t$$

$$ETR2_t = \beta_0 + \beta_1 SIZE_t + \beta_2 LEV_t + \beta_3 CAPINT_t + \beta_4 ROA_t + \beta_5 INVINT_t + \beta_6 PROMAR_t + \beta_7 FORDIR_t + \varepsilon_t$$

where ETR refers to ETR1, measured as current income tax expense divided by income before interest and taxes, and ETR2, measured as total tax expense (current income tax expense plus deferred tax expense) divided by income before interest and taxes; β0 is the constant; β1SIZE is a firm size measured as log of total assets; β2LEV is a firm leverage measured as long-term debts divided by total assets; β3CAPINT is capital intensity measured as fixed assets divided by total assets; β4ROA is return on assets measured as pre-tax income divided by total assets; β5INVINT is inventory intensity measured as inventory divided by total assets; β6PROMAR is profit margin measured as pre-tax income divided by revenue. and 0 otherwise; β7FORDIR is foreign directors, dummy variable that is 1 when a firm has foreign directors and 0 otherwise; ε, is an Error term; t is the firm-years between 2017 to 2021.

RESULTS AND DISCUSSION

Table 2 presents the descriptive statistics for both corporate ETR measures and its determinants. The mean for ETR1 and ETR2 is 17.73% and 18.32% respectively, while the median derived to 17.42% and 18.15% respectively. Both the mean and median for ETR2 are higher than ETR1 which is caused by the deferred tax adjustment included in the total tax expenses for ETR2 as numerator. The findings also highlight that the average ETRs were below the statutory tax rate of 24%. The standard deviation for ETR1 and ETR2 of 13.5 and 12.87 shows considerable variation in ETR of MNCs in the samples.

Table 2 also tabulates various determinants of corporate ETRs. Foreign directors (FORDIR) are omitted from the table due to its nominal or categorical scale which the result will not be meaningful. Capital intensity, profit margin, leverage and return on assets shows higher central tendency with mean and median recorded for 30.19% and 28.89%; 15.93% and 13.15%; 14.43% and 9.22%; and 10.72% and 7.65% respectively. All data sets show dispersion of data except for assets size where the standard deviation is 0.71, distribution is symmetrical with skewness of 0.16 and kurtosis of -0.46 which indicates that distribution is less peaked in the mean and thinner tails as compared to normal distribution.

Table 2 Descriptive Statistics for ETR Measures and Determinants

Variables	N	Mean	Median	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
ETR1	321	17.73	17.42	13.502	0	100	2.487	14.59
ETR2	321	18.32	18.15	12.865	0	100	2.67	121.2
SIZE	321	6.78	6.79	0.707	5	9	0.162	-0.41
LEV	321	14.43	9.22	21.527	0	317	8.915	121.2
CAPINT	321	30.19	28.89	20.052	1	164	1.058	4.822
ROA	321	10.72	7.65	12.223	-2	103	3.421	16.02
INVINT	321	9.96	8.73	9.749	0	55	1.622	3.774
PROMAR	321	15.93	13.15	13.604	-7	162	4.591	42.12

Note:
Variable definitions are as follows: ETR1 is measured as current income tax expense divided by income before interest and taxes; ETR2 is measured as total tax expense (current income tax expense plus deferred tax expense) divided by income before interest and taxes; SIZE is a firm size measured as log of total assets; LEV is a firm leverage measured as long-term debts divided by total assets; CAPINT is capital intensity measured as fixed assets divided by total assets; ROA is return on assets measured as pre-tax income divided by total assets; INVINT is inventory intensity measured as inventory divided by total assets; PROMAR is profit margin measured as pre-tax income divided by revenue; FORDIR is foreign directors, dummy variable that is 1 when a firm has foreign directors and 0 otherwise; Sample period is the firm-years between 2017 to 2021.

Table 3 presents the Pearson correlation coefficient between the explanatory variables. The Pearson correlation results produce considerable correlations between seven explanatory variables. Most of the explanatory variables are significantly correlated and the highest correlation is reported between return on assets and profit margin followed by return on assets and size. Thus, the univariate results indicate that larger companies will have higher gain from its revenue and maximize the utilization of assets for better return.

Table 3 Pearson Correlation for ETR Determinants

	ETR1	ETR2	SIZE	LEV	CAPINT	ROA	INVINT	PROMAR	FORDIR
ETR1	1								
ETR2	0.868**	1							
SIZE	-0.093	-0.115*	1						
LEV	0.158**	0.128*	0.262**	1					
CAPINT	-0.157**	-0.047	0.145**	0.222**	1				
ROA	-0.104	-0.113*	-0.518**	-0.266**	-0.007	1			
INVINT	0.047	0.066	-0.221	-0.314**	-0.112*	0.213**	1		
PROMAR	-0.349**	-0.401**	-0.175**	-0.202**	-0.073	0.653**	-0.099	1	
FORDIR	-0.04	0.03	-0.144**	-0.135*	-0.089	0.153**	-0.067	0.128*	1
N=321									

Note:

** Correlation is significant at the 0.01 level (2-tailed).

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

Variable definitions are as follows:
ETR1 is measured as current income tax expense divided by income before interest and taxes; ETR2 is counted as a total tax expense (current income tax expense plus deferred tax expense) divided by income before interest and taxes; SIZE is a firm size measured as log of total assets; LEV is substantial leverage measured as long-term debts divided by total assets; CAPINT is capital intensity measured as fixed assets divided by total assets; ROA is the return on assets measured as pre-tax income divided by total assets; INVINT is inventory intensity measured as inventory divided by total assets; PROMAR is profit margin calculated as pre-tax income divided by revenue; FORDIR is foreign directors, dummy variable 1 when a firm has foreign directors and 0 otherwise; Sample period is the firm years between 2017 to 2021.

Table 4 summarizes the regression model results for ETR1 and ETR2. The results indicate that the overall explanatory powers for both measures are statistically significant at the 1% level. ETR1's measure provides explanations to the variation in corporate ETRs with an adjusted R-squared of 20.4%, while ETR2 with an adjusted R-squared of 19.4%. The statistical results indicate significant and positive coefficient for leverage and significant and negative coefficient for capital intensity for ETR1. Thus, indicate that highly leveraged companies will face higher income tax burdens. On the other hand, investments in tax credit and capital allowance will reduce companies' ETR. Further, the statistical results provide a significant and positive relationship between return on assets and ETRs. The negative coefficient for return on assets indicates that highly profitable companies face higher income tax burdens. This also indicates that when return on assets increase by 1%, the ETR1 will increase by 0.47%. However, for profit margin, the ETR1 will decrease by 1.12% whenever there is an increment by 1% of profit margin. Whilst profit margin has a significant and negative coefficient which suggest that many profitable companies benefited from non-operational income such as asset disposal, return from investment, special allowances, government incentives and etcetera resulting in lower income tax burdens.

Table 4 Regression Results

Model:

$$ETR_t = \beta_0 + \beta_1 SIZE_t + \beta_2 LEV_t + \beta_3 CAPINT_t + \beta_4 ROA_t + \beta_5 INVINT_t + {}_6 PROMAR_t + \beta_7 FORDIR_t + \varepsilon_t$$

Variables	ETR 1 Coefficient (t-stat)	ETR 2 Coefficient (t-stat)
C	2.37 ***[15.479]	2.421 ***[21.475]
SIZE	-0.083 [-1.350]	-0.119 [-1.966]
LEV	0.194 ***[3.376]	0.088 [1.701]
CAPINT	-0.008 ***[-4.513]	-0.088 [-1.742]
ROA	0.468 ***[4.069]	0.392 ***[3.896]
INVINT	-0.041 [-0.718]	-0.054 [-0.987]
PROMAR	-1.117 ***[-7.688]	-1.111 ***[-8.596]
FORDIR	-0.013 [-0.259]	0.065 [1.289]
Adjusted R-Squared	0.204	0.194
F-Statistic (P-value)	21.457(0.000)	39.505 (0.000)
MNC (Firm Year)	68 (321)	68 (321)

Note:

*** Significant at the 1%-level; ** Significant at the 5%-level; and * Significant at the 10%-level. Standard errors are white heteroskedasticity consistent.

Variable definitions are as follows:
ETR1 is measured as current income tax expense divided by income before interest and taxes; ETR2 is measured as total tax expense (current income tax expense plus deferred tax expense) divided by income before interest and taxes; β0 is the constant; β1SIZE is a firm size measured as log of total assets; β2LEV is a firm leverage measured as long-term debts divided by total assets; β3CAPINT is capital intensity measured as fixed assets divided by total assets; β4ROA is return on assets measured as pre-tax income divided by total assets; β5INVINT is inventory intensity measured as inventory divided by total assets; β6PROMAR is profit margin measured as pre-tax income divided by revenue; β7FORDIR is foreign directors, dummy variable that is 1 when a firm has foreign directors and 0 otherwise; ε, is an Error term; t is the firm-years between 2017 to 2021.

Table 5 presents the result of seven hypothesis testing towards ETR. Hypothesis 2, Hypothesis 3 and Hypothesis 6 show a significant relationship with ETR1 which has a positive relationship with leverage and has a negative relationship between capital intensity and profit margin. The results also indicate that ETR2 has a significant negative relationship with the profit margin.

Table 5 Explanatory variables relationship towards ETR Determinants

	Hypotheses	ETR 1	ETR 2
H1:	Firm size positively influences the ETR among MNCs in Malaysia.	Not supported (-0.093)	Not supported (-0.115*)
H2:	Leverage negatively influences the ETR among MNCs in Malaysia.	Not supported (0.158**)	Not supported (0.128*)
H3:	Capital intensity negatively influences the ETR among MNCs in Malaysia.	Supported (-0.157**)	Supported (-0.047)
H4:	Return on assets positively influences the ETR among MNCs in Malaysia.	Not supported (-0.104)	Not supported (-0.113*)
H5:	Inventory intensity positively influences the ETR among MNCs in Malaysia.	Not supported (-0.047)	Not supported -0.066
H6:	Profit margin negatively influences the ETR among MNCs in Malaysia.	Supported (-0.349**)	Supported (-0.401**)
H7:	Foreign directors positively influences the ETR among MNCs in Malaysia.	Not supported (-0.040)	Not supported (-0.03)

Note:

** Correlation is significant at the 0.01 level (2-tailed).

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

Table 5 also provides the evidence of test assumptions which did not support the relationship between firm size, leverage, return on assets, inventory intensity and foreign directors with ETR shows the intensity of tax planning by MNCs. It can be argued that larger firms have greater resources to influence the political process in their favor, engage in tax planning, and organize their activities to achieve optimal tax savings. On the other hand, leverage which is considered one form of tax shield appears otherwise in this study. Consistent with Hamzah et al. (2021) that found ROA is positively associated with ETR which indicates that the efficiency for the firm to sustain a decent performance and report sound financial income has led to the rise of ETR gradually. Consistent with Gupta & Newberry (1997); Fernández-Rodríguez et al. (2021) study, inventory intensity is a variable that has been little used in the literature, the results show a positive relation with ETR. That is, companies that have higher levels of stocks are subject to greater tax pressure. The foreign directors present in the board composition have an influence in the investment decisions of MNCs which have an impact on ETRs.

CONCLUSION

This study examines corporate effective tax rates of Malaysian multinational corporations with subsidiaries in tax haven countries which are listed in FTSE Bursa Malaysia KLCI Index and FTSE Bursa Malaysia Mid 70 Index. The study further investigates the relationship between corporate ETRs and their attributes. Using a multiple regression approach from a balanced panel sample of 68 companies (321 firm-years) for the years 2017 to 2021, the study provides evidence for the variability of corporate ETRs for the MNCs with subsidiaries in tax haven countries. The result shows that the average corporate ETRs falls below the STR for the financial year 2021 by 24%. The MNCs with tax haven subsidiaries also report low return on assets of 10.72% and pay less taxes of 17.73%. This indicates that MNCs with tax haven subsidiaries have a more intensive tax planning strategy.

The statistical results also reveal that lower ETRs are associated with highly leveraged companies, and greater investments in fixed assets. It also suggested that larger companies will have higher gain from their revenue and maximize the utilization of assets for better return. Further, a negative coefficient for profit margin suggests that companies have benefited from tax incentives provided by the tax haven countries. This research can elicit significant implications from both practical and academic implications. The research outcome adds to both the existing literature and theoretical development in various ways. Since there is a lack of studies, especially from Malaysia's MNC, which investigate the attributes of ETR involving MNC with subsidiaries in tax haven countries. Hence, this study contributes to tax literature the factors influence the corporate ETR especially MNC with subsidiaries in tax haven countries. In term of practical perspective, tight monitoring should be implemented by tax authorities to avoid these MNCs from practicing profit shifting to lower tax jurisdiction which result to revenue loss to the Malaysian income tax collection. This study has provided at least a partial explanation as to the attributes of companies that systematically avoid taxes for the period from 2017 to 2021. Therefore, the findings from this study can provide important risk assessment tools to tax authorities for tax audit and investigation exercise, and hopefully may be able to assist the government in designing tax laws that would minimize undue tax avoidance. Since the tax system is used as a mechanism to achieve the country's economic growth. The changes in tax laws and provision of tax incentives in the form of reduction in the statutory tax rate, exemptions, deductions, and exclusions are reflected in corporate tax burdens. Special tax incentives and tax treatments to selected industries create inequity and non-neutrality in the tax system and need to carefully plan to avoid manipulation from the corporations. Therefore, the inequity of tax benefits and allowance can be reduced. There are some limitations to the current study even though the main objectives have been achieved. The first limitation is the study sample is limited to the top 100 companies listed under Bursa Malaysia. The sample data is only observed and collected from the firm year period 2017 to 2021. It is interesting for future research to expand the sample size including all the corporations listed under Bursa Malaysia and extend the firm year for better generalization of the result. Secondly, our ETR measures were collected from the financial statements which were prepared for the investors and not for the tax authorities. Since the actual tax payment data was confidential and unavailable. Therefore, these results should be interpreted with some caution. It is suggested that future research could include the actual tax payment data for better economic reflection of the tax burden by corporations. Lastly it is interesting to know that other corporate attributes such ownership structure, gender of Board composition, other financial indicators and etcetera can be included in the future research.

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