Revenue and Cost Analysis for Unhealthy Commodity (Tobacco Products): Comparative Study Among Indonesia and Some ASEAN Countries

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Article Info

Abstract

This research aims to analyze aspects of demand, costs and benefits of tobacco products in Indonesia and several other ASEAN countries (such as: Brunei, Cambodia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam). The research approach used is descriptive comparative analysis and quantitative analysis to examine the relationship between demand factors and cost factors with explanatory variables, namely: price level, amount of excise, government revenue and cross-country specific factors. The descriptive approach is carried out by analyzing secondary data from the results of previous research studies. While the quantitative approach is done using standard regression analysis and instrument variable approach. The results of the study indicate that among ASEAN countries, Indonesia is known as the country with the highest rate of smoking prevalence for adult men (67 percent). The results showed that a one percent price increase would reduce the prevalence to around 0.27 percent (significance at 1%). Meanwhile the increase in prevalence will increase costs by an average of 14.71 million US dollars (significance at 5%). That is, the higher the state revenue from cigarette excise, the higher the costs to be borne. These results further strengthen the urgency of tobacco control in Indonesia.

INTRODUCTION

One of the major global issues highlighted in regional and international trade is the rise of illicit trade (Hsu, 2014; ITIC, 2013). The phenomenon is related to certain product characteristics categorized as sin commodity considering the serious consequences to health problems. Indonesia's Government imposes special taxes in the form of excise taxes on ethyl alcohol or ethanol products, ethyl alcoholic beverages and tobacco products including cigarettes. Among the taxable products, cigarettes contribute substantially for central government revenues (Ayomi, 2014). In addition, the cigarette industry also has an important role in employment.

Despite having a positive macroeconomic contribution, cigarette products are also known to have negative effects on health (Beladenta, et al., 2018). Therefore, smoking bans in public areas (such as schools, public transport, hospitals, etc.) are widely applied. The Government Regulation of the Republic of Indonesia Number 109 of 2012 on "Security of Materials Containing Addictive Substances in the form of Tobacco Products" clearly states in Article 24 paragraph (1) that every producer is prohibited to include any misleading information or signs or words, promotive words. In article 24 paragraph (2) it is explained that in addition to the violations as referred to in paragraph (1), any manufacturer is

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prohibited to include the words "light", "ultra-light", "mild", "extra mild", "low tar", "slim", "Special", "full flavor", "premium" or other words that indicate quality, superiority, sense of security, imaging, personality, or words with the same meaning.

Characteristics of typical tobacco consumption has become a special study of experts. As with other commodities in general, the consumer's decision to smoke is determined by cost and benefit considerations. The basic principle applies equally, i.e. consumers will smoke if the enjoyment of smoking exceeds the costs to be incurred, including the health costs of smoking. Consumers are also assumed to be aware that smoking will bring the consequences of addiction (Ekpu, et al., 2015). Given its peculiar nature, cigarette consumption is one of the activities that must be regulated by the state. One form of government regulation is the imposition of taxes or excise duty for every cigarette purchase. Justification of the imposition of excise duty for cigarette consumption is the existence of high enough externalities potential of the activity. For example, smoking has a negative effect on passive smoking in the form of high health costs (the health costs of secondhand smoke) (Edward, 2016). Another example, smoking can have mild implications for fetal health both in the short and long term (Brun, et al., 2010). Externality in the form of health implications for passive and fetal smokers is debated because the type of externality should be considered in individual decisions in smoking. In other words, the implications of externality that appear may not be as large as expected (Shang, et al., 2019).

Conventional approaches on smoking behavior may not be enough to justify cigarette regulation. First, the assumption that consumers have full informed information is doubtful. Young people as novice smokers may have obtained considerable information about the dangers of smoking. But most are still less aware of the consequences of "addiction" due to smoking. A survey from U.S. Department of Health and Human Services (Wamamili & Garrow, 2017) showed that among 56 percent of teens who say they will not smoke in the next five years, only 31 percent of teenagers quit smoking five years after the first survey. In contrast, as many as 72 percent of teenagers who previously claimed to be smokers, in fact it is 74 percent who become active smokers (Lauterstrein, et al., 2014). Secondly, active smokers in practice find it difficult to quit smoking even though they really want to stop the habit. Numerous studies (Choi, et al., 2019) show that it is very easy for smokers to say that it is not why they smoke "today" with the promise of stopping "tomorrow". But "tomorrow" never came. After tomorrow comes into being today, smokers return to old habits. This case

may be the same as the promise of a diet that always fails to be realized. It takes self-control for smokers to really control smoking habits. From this then the excise argument as price regulation finds its theoretical grounding. Through the rules of cigarette taxes, smoking activity in the view of consumers is something that is costly. Excise instrument is not the best tools because its use can trigger smuggling of cigarettes, forgery of excise and others. However, this control is necessary (Nor, et al., 2013).

Both the conventional approach and the new approach to cigarette consumption both support the government's role in regulating cigarette prices. However, the arguments raised may be different. The old approach puts more importance on the externalities of smoking, while the new approach emphasizes the importance of excise instruments as a control tool for smokers to better control smoking. For poor household groups, the price elasticity of cigarettes tends to be higher than for rich households. That is, a price increase will reduce cigarette consumption significantly for poor households. Similarly, the price elasticity of cigarettes is relatively higher for adolescent smokers compared with adult groups. If judging from an old perspective, the imposition of excise will cause smokers to become worse-offs. Conversely from a new perspective (excise as controller), the imposition of excise has a positive implication to smokers. Experts also specifically examine excise functions as controlling consumption for sin commodities (Nor, et al., 2013; Nasser, et al., 2018). Consistent research results indicate that the excise device is still the most effective tool for holding back the consumption of cigarettes (as well as other sin commodities). Even so, the role of law enforcement will also greatly help the effectiveness of the policy of limiting cigarette consumption. Using a laboratory experimentation approach, Susilowati (2010) found empirical evidence that appropriate action would reduce optimally fraud cases in the application of excise ribbons including the existence of excise and avoidance of excise (Susilowati, 2010). This research is a follow-up of a study of the implications of duty-free policy in special areas (Susilowati, 2010; Tandilitin & Luetge, 2013). Without adequate monitoring, excise policies aimed at controlling consumption are not effective enough.

In addition to using a partial approach, empirical studies of cigarette commodities are also carried out with diverse topics with complex methodologies. Ekpu et al (2015) used a meta-analysis approach to test smoking behavior in several developed countries during the period 1992 to 2014 by summarizing several scientific journals, medical reports and medical journals. The results of the study show that about 15 percent of aggregate expenditure

in the health sector of developed countries is caused by smoking habits. Even so, it cannot be denied that besides the costs that arise, the cigarette industry gives a considerable amount of economic benefits. The economic benefits are not only in the form of tax revenues but also in the form of employment. The complexity of cigarette problems discussed by experts seems to be able to form new branches in economic disciplines, namely tobacco economics (Chavez, 2015). The study is not only limited to the analysis of the cost of economic benefits of cigarettes, but also impact of cigarettes on health, environmental and other related aspects (Wibowo, 2017).

One of the regions in the world that has a relatively high number of smokers is in the South Asian region which is incorporated in ASEAN (Hsu, 2014; Assunta & Dorotheo, 2016). The ASEAN region has almost 9 percent of the world's population and it is estimated that as many as 30 percent of the adult population are active smokers (Assunta & Dorotheo, 2016). Among the ten ASEAN countries, Indonesia accounts for more than half of active smokers. The rest, spread among several other ASEAN countries. Indonesia is the only ASEAN country that has not ratified the Framework Convention on Tobacco Control (FCTC) initiated by the WHO (Amul & Pang, 2017). As an area that drives the importance of development in the health sector (Chavez, 2015). Indonesia's position is quite strategic. However, as a country that does not sign the FCTC, the prospect of controlling tobacco in Indonesia is certainly somewhat hampered.

The map of tobacco control in the ASEAN region is divided into two: Indonesia which accounts for more than half of active smokers versus other ASEAN countries (nine other countries) that have ratified FCTC (Berteletti, 2018). It was noted that five ASEAN countries (Brunei, Myanmar, Singapore, Thailand and Vietnam) have ratified since 2004. Followed by Cambodia, Malaysia and the Philippines ratified the 2005 FCTC and Lao in 2006 (Assunta & Dorotheo, 2016). Until now, Indonesia as the biggest smoker in ASEAN has not ratified FCTC. With this background, this study aims to compare the performance of tobacco control among ASEAN countries. The benefit of the expected research is to provide input to policy makers in Indonesia regarding the importance of developing a tobacco control roadmap based on global agreement. Furthermore, it is hoped that health development in the ASEAN region can be further improved. The purpose of this study is to provide an overview of the prevalence of smoking in Indonesia. In addition, this study also discusses some aspects that affect the prevalence of smoking in Indonesia as well as several other countries in the ASEAN region.

METHODS

The data used in this research is the result of SEATCA publication 2000-2014 with focus of publication in 2014. Beside that other data is used as supporting analysis. The regression equation model used in this research is as follows:

$$Prev = a0 + a1Price + a2Tax + a3Revenue + a4Region + \varepsilon \quad (1)$$

In this case Prev is the prevalence of smoking, Price is the price of cigarette, Tax is the excise rate, Revenue is government revenue from tobacco, Region is dummy countries and ε is the error term, a0 is the constant, a1, a2, a3, a4 is the coefficient of regression slope. The estimated problem with the Ordinary Least Square (OLS) approach is the potential for standard in-efficiency errors due to heteroscedasticity problems. To overcome this problem, the Generalize Least Square (GLS) estimation approaches using the robust standard error approach introduced by White. This approach has become the standard in the estimation of the basic regression model.

In accordance with the objectives of the study, an alternative model was used in this paper to examine the relationship between health costs from smoking and consumption levels, state revenues and other factors involved. The regression model in question is:

$$Cost = b0 + b1Prev + b2Tax + b3Revenue + b4Region + \varepsilon \quad (2)$$

In this case Cost is the cost of smoking, Prev is prevalence or cigarette consumption rate, Tax is the excise rate, Revenue is government revenue from tobacco, Region is dummy countries and ε is the error term, b0 is the constant, b1, b2, b3, b4 is the slope coefficient of regression that related to each independent variables.

Another problem that becomes a serious problem in regression analysis is the potential feedback. In this case the nature of the independent variable may reverse direction into the variable described. The existence of feedback causes OLS estimators to be no longer valid. A variety of approaches are suggested by experts. One way to overcome feedback problems is to apply the two steps least square (2SLS) method. The first stage, endogenous variables are estimated with all exogenous variables. Furthermore, in the second stage, estimates of endogenous variables are re-incorporated into the main model. A more complete explanation regarding this method can be considered in Chen (2012).

RESULTS AND DISCUSSION

The facts show that the prevalence rate of cigarettes in Indonesia is still relatively high (even the

highest in the ASEAN Region). The 2014 South-East Asia Tobacco Control Alliance (SEATCA) report states that the prevalence of adult male smoking in Indonesia is 67 percent, while the prevalence of adult female smoking is as much as 2.7 percent. The prevalence of adult smoking in Indonesia therefore is 34.8 percent (SEATCA, 2014). In other words, more than half of adult males in Indonesia are active smokers (Tandilitin & Luetge, 2013).

The report from SEATCA in Figure 1 above shows that active smokers are predominantly male.

Female adult smokers in Indonesia are relatively low compared to other countries. In some countries, such as Laos and Philippine, the prevalence rate for adult female smoking is quite high although it does not exceed 10 percent. The high prevalence of smoking is somewhat related to the price of cigarettes in each country (Assunta & Dorotheo, 2016). There is a general trend that the lower the price of cigarettes, the lower the prevalence of smoking. The findings from the International Tax and Investment Center (ITIC) in collaboration with Oxford Economics
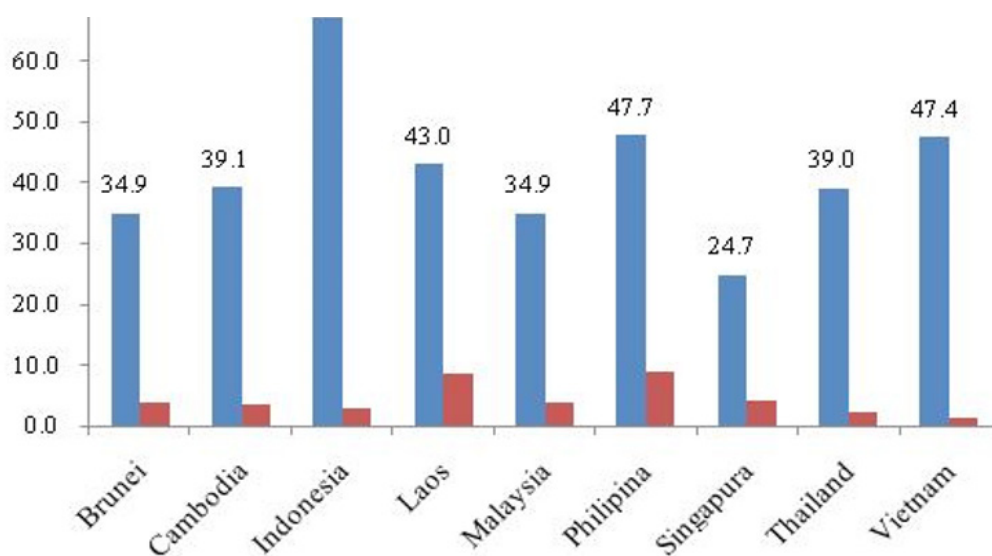

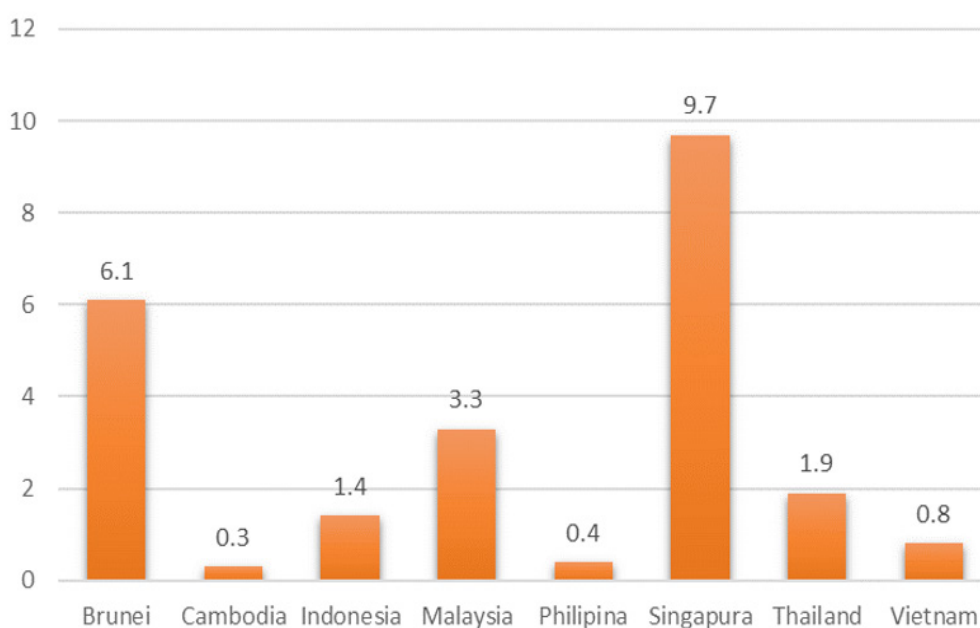Figure 1. Prevalence of ASEAN Smoking
Source: SEACTA, 2014

Figure 2. Average Price of Cigarettes per pack in ASEAN (US $)
Source: ITIC, 2013

Table 1. Cost Revenue Ratio from Tobacco

Country	Estimate Health Cost (US$ million)	Average Tax Revenue (US$ million)	Cost/Revenue Ratio
Indonesia	13.900	1.800	7.72
Philippine	2.860	442	6.47
Malaysia	1.338	1.107	1.21
Laos	3,34	4.9	0.68
Vietnam	143,7	395.6	0.36
Myanmar	13,2	41.74	0.32
Thailand	220	1.080	0.20

Source: SEATCA, 2014

(OE) show that the average price of 20 packets of cigarettes per pack in Singapore in 2012 was $ 9.7. The price of cigarettes in Singapore is almost seven times higher than the price of cigarettes (with the same type) in Indonesia. More data on the price of cigarettes in several ASEAN countries in full can be considered in the graphics as follows:

The average cigarette price in Indonesia is 1.4 US $. This price is not the cheapest in ASEAN, but it is very low compared to Singapore and Brunei. When used by the same cigarette brand, the Marlboro cigarettes, then the price of a Marlboro packet in Singapore reaches US $ 9.6; in Brunei reached US $ 6.47; in Thailand US $ 2.06; The Philippines reached US $ 1.6 and in Indonesia the cigarette brand is "only" sold for US $ 1.3. This information confirms that the price of cigarettes in Indonesia is relatively cheap.

That there is an inverse relationship between the price level and consumption has been described in many publication (Amul & Pang, 2017). As already mentioned, the main problem of cigarette consumption is the potential health problems that are not light. In the release of 2013, SEATCA presents data on cigarette excise revenue in Indonesia could reach an average of US $ 1,800 per year. Meanwhile, health costs (health costs) to be borne ranged estimated to be US $ 13,900. With a position like this then this commodity even aggregate disadvantage. The ratio of estimated health costs to tax revenue could reach 7.72 percent. That is, the total revenue of cigarette excise is almost seven times lower than the estimated health cost value incurred. Compared to other countries in the ASEAN region, the ratio of health costs to excise taxes for cigarette commodities in Indonesia is highest.

The data in Table 1 confirms that the problem of smoking in Indonesia is quite a dilemma. On the one hand, tax revenue from cigarettes is relatively large but on the other hand the estimated health
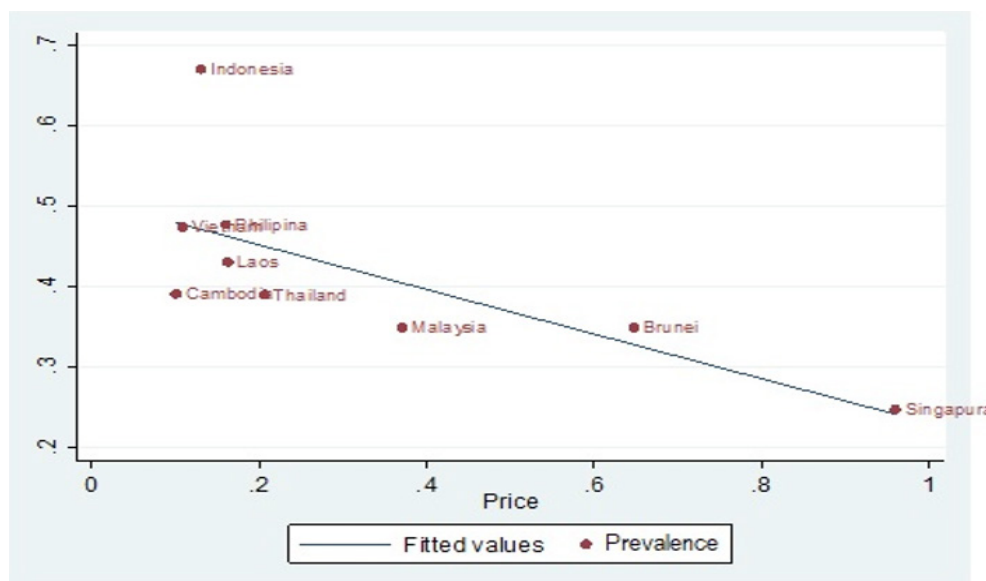

Figure 3. Scatterplot Prevalence versus Price
Source: author calculation

costs incurred are much greater. For that we need a comprehensive study to photograph the behavior of cigarette consumption in Indonesia to be taken into consideration in the policy of cigarette excise in the long term.

Although the revenue from cigarette taxes in Indonesia is relatively high, but the cost to be incurred due to smoking is also still very large. Almost more than seven times the cost of smoking beyond excise taxes. Similar problems are also found in the Philippines. Furthermore, other countries in ASEAN do not experience problems in the ratio of cost and tax revenue of cigarettes. In some countries even the cost of smoking is lower than the total cigarette receipts (Amul & Pang, 2017). Although this data still needs to be re-verified to ensure its validity, it is logical to conclude that the high prevalence of smoking is associated with high costs.

Based on previous data it can be predicted that high prevalence of smoking may be related to price factor, excise and tax revenue. In theory, the cheaper the price of cigarettes then there is a tendency that the prevalence of smoking will be higher. This is in accordance with the basic theory of demand which shows an inverse relationship between the price level and the level of consumption.

Figure 3 above shows a plot between the prevalence rate of adult smoking and the price level. The vertical axis is the prevalence level expressed on a scale of 0 to 1, the closer to 1 means that the larger the active smoker portion (100%). As in the flat axis is the price variable which is also expressed on a sca-le of 0 to 1. Scale 1 shows the price per pack rate of 10 USD. By plotting as Figure 3, the position of Indonesian cigarette consumption within the scope of ASEAN countries can be mapped more clearly. Mapping shows that Indonesia and Singapore are at each end of the spectrum. Indonesia represents a country with a very high prevalence of adult smoking with a very low price of cigarettes. The other end of the spectrum represents the country with the most expensive price of cigarettes with the lowest smoking prevalence rate. If carefully observed, Indonesia's position on the "prevalence vs price" map can be regarded as an outlier. The average price of cigarettes in Indonesia is quite cheap, but not the cheapest in the ASEAN region. Although not the cheapest, but the level of cigarette consumption in Indonesia is among the highest. Some countries, such as Vietnam and Cambodia have cheaper rates of cigarettes, but with lower smoking prevalence rates.

The cigarette demand model that includes all relevant independent variables can be considered in Table 2 as follows. Table 2 presents the results of data processing from the model (1) on the methods section.

The variable of interest in the model estimation in Table 2 is the Price that shows the relationship between the price level and the level of cigarette consumption (prevalence). Table 2 presents two columns of regression results. The first column presents the basic OLS estimation, while the second column presents the basic regression estimation by adding three control variables, namely Region, Tax

Table 2. Estimation of Prevalence Model (Model 1)

VARIABLES	(OLS) Prevalence	(OLS) Prevalence
Price	-0.277***	-0.283*
	(0.0690)	(0.106)
Region	-	-0.0241
		(0.0213)
Tax	-	0.133
		(0.214)
Revenue	-	0.445
		(0.380)
Constant	0.507***	0.194
	(0.0504)	(0.243)
R-squared	0.495	0.707

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3. Estimation of Cost-Revenue Model (Model 2)

VARIABLES	(OLS) Cost	(OLS) Cost	(2SLS) Cost
Prevalence	19.52***	14.71**	11.88*
	(4.600)	(4.016)	(7.190)
Region	-	-0.577**	-0.642***
		(0.178)	(0.208)
Tax	-	4.218	3.640
		(2.307)	(2.543)
Revenue	-	11.82***	13.70***
		(2.565)	(4.043)
Constant	-6.242**	-13.25**	-13.03***
	(1.862)	(2.879)	(2.096)
R-squared	0.605	0.807	0.800

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

and Revenue. Estimation results consistently show that the relationship between smoking consumption level and price level is negative. Addition of control variables does not alter the estimation results significantly. An increase in price of 1% implies a decrease in smoking prevalence by 0.28%. Significance is achieved at a significant level of 10%.

The results in Table 2 show that around 50 percent of the variation in the price variable can explain the variation in the prevalence rate of smoking. Additional independent variables increase the

R square coefficient to 70 percent, but simultaneously the effect is not significant. The demand for cigarettes is relatively inelastic so that an increase in prices will reduce consumption of cigarettes in fewer portions. However, the price variable remains an important factor in efforts to limit cigarette consumption. The higher the price of cigarettes, the less consumption of cigarettes. The tax excise variable (tax) in this case is not significant enough. However, as a component forming prices, this variable should have an important role. The correlation between pri-
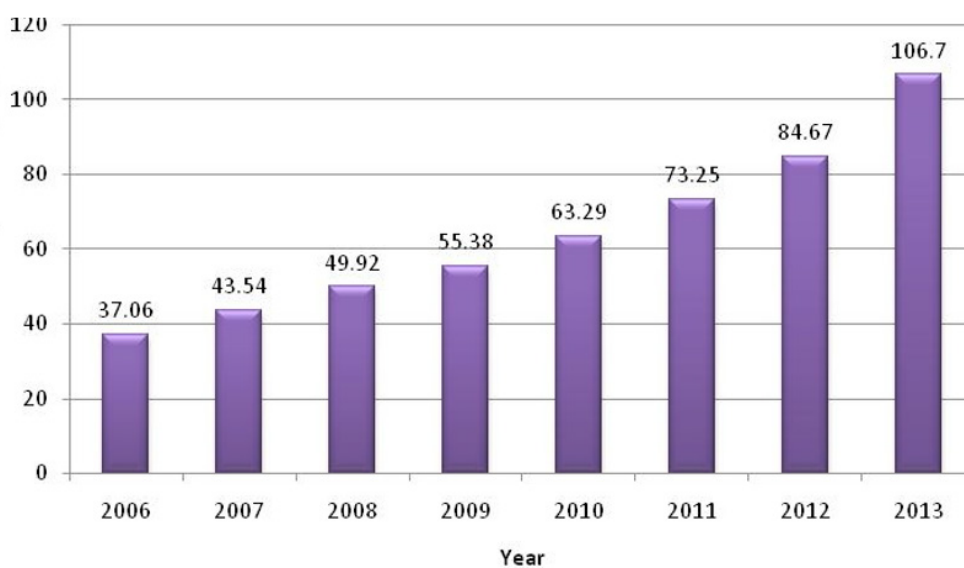

Figure 4. Tax Revenue from Tobacco in Indonesia (bil.Rp)
Source: Finance Ministry of Indonesia, 2013

ces and excise causes a low significance of tax variables. In econometric analysis, this case is known as the multicollinearity problem (Chen, 2012).

The purpose of the next research is to analyze the relationship between costs and the benefits of smoking. The analysis model used is Model 2 in the method section. The estimation results of these models can be considered in the following table:

The estimation results shown in Table 3 are the main results of this study. Table 3 consists of three columns that show different estimation models and techniques. The leftmost column shows basic estimates between Cost variables with one explanatory variable, Prevalence. Basically, it is found that there is a positive relationship between the level of consumption and the costs incurred. This basic model is of course only used as a basis for analysis because the resulting coefficient has the potential to be biased because of the neglect of other relevant factors. Several other factors are included in the model, such as differences in state conditions (Region), amount of excise (Tax) and the amount of revenue from cigarettes (Revenue).

Country variations and state revenues have a significant relationship (at 1% level of significance) to health costs. The Prevalence variable remains significantly positive but with a lower coefficient and significance level. This shows that the problem of bias due to the neglect of other relevant independent variables has been slightly overcome. Before interpreting the estimation results further in the second column in Table 3, a discussion on estimation methods is needed first.

The relationship between Cost and Prevalence can be feedback. A high prevalence rate is believed to increase the cost or cost of smoking. Instead, the level of consumption can also be determined by consideration of the cost of smoking. This potential unidirectional relationship has the potential to produce a biased coefficient. For this reason, an instrumental variables approach is needed to ensure the direction of the relationship is not two-way. The first step, regression between endogenous variables (i.e., Prevalence) with all exogenous variables. The results of the first step regression can be noted in Table 2 of the right column.

Furthermore, the estimation results of endogenous variables in the first step are used as variables in the second phase model. The final estimation results can be considered in Table 3 at the end of the column (2SLS). In this study, the variable used as an instrument of prevalence is the price level. The selection of price variables as instruments is carried out with the consideration that the prevalence rate of smoking is largely determined by the price level. In addition, in the economic literature it is often stated that prices are exogenous. Thus, in terms of relevance, the selection of this variable is relatively appropriate.

The results showed that using the 2SLS approach the Prevalence coefficient remained positive but with a relatively small level of significance. High consumption levels turned out to have a positive relationship with the level of costs. In addition, the results of the study that must also be noted are that the state revenue variable also has a significant positive relationship with the cost of smoking. The higher the level of state revenues from cigarette excise, the higher the potential costs of smoking. The government should not be too proud of the high sta-
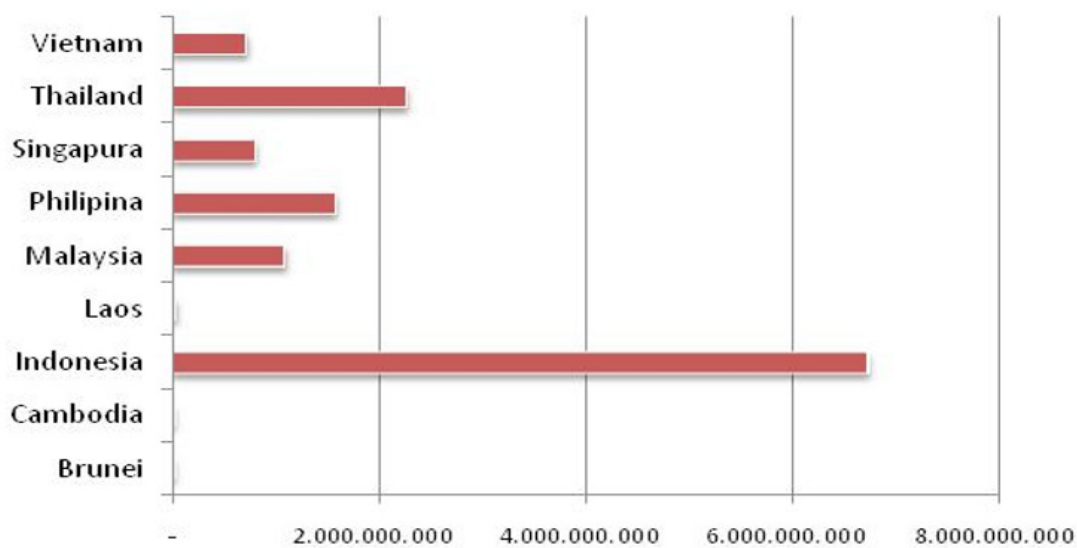

Figure 5. Tax Revenue from Tobacco ASEAN 2014 (USD)
Source: SEACTA, 2014

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te revenues from cigarette excise. Behind it all, the high acceptance of cigarettes has a close relationship with the potential for high health outcomes due to smoking.

Based on the results of the analysis in Table 2, the price variable is the only significant independent variable, while the other explanatory variables are not significant. Technically, this can be explained by several arguments as follows. First, the relative magnitude of the coefficient of determination (about 80%) indicates that the variation of the independent variables together contributes substantially to the prevalence variation. Second, the price variable is a variable of interest in this research so that the existence of other independent variables may not be too crucial. The third argument, the residual test with the Shapiro-Wilk approach shows that the residual distribution is nearly normal. Thus, the residual in this study meets the classical model assumption, that is random and normal distribution. Based on this discussion, the regression model used is good enough to be used as the basis of analysis. After the model analysis is done, substantive analysis is then performed. The high consumption of cigarettes on the one hand does provide a profit in the form of revenue of the state in substantial amounts.

Figure 4 shows the cigarette excise revenue in Indonesia during 2006-2013. Cigarette tax revenue over the last few years has increased sharply. If in 2006 the excise revenue is still around Rp37 Trillion, then in the year 2013 has reached Rp106 Trillion (Kementerian Keuangan RI, 2013). Indonesian cigarette excise revenue is even the highest in ASEAN region. Consider the graphics as follows:

Figure 5 above clearly shows that the country's revenue from cigarette taxes in Indonesia is the largest in the whole ASEAN region. The achievement of substantial state revenue is contributed by the number of smokers who are still very large. If traced back, the amount of cigarette consumption certainly has a positive correlation with the development of the cigarette industry in the country. The development of the cigarette industry would be good news for workers in the tobacco industry and for tobacco farmers as the main cigarette providers (Shang, et al., 2019). Nevertheless, cigarette consumption has a consequence that is not light to health problems. Table 1 already confirms that the estimated health costs go far beyond the amount of cigarette excise tax receipts. Thus, it can be said that the considerable state revenue from cigarette taxes in the end is not enough to cover the health costs incurred due to smoking.

CONCLUSION

The results showed that the problem of tobac-co or cigarette products is still a quite dilemmatic phenomenon in Indonesia. On the one hand, cigarette taxes contribute to a large amount of state revenues. On the other hand, the health costs incurred by smoking are also very large. Quantitative analysis shows that the magnitude of smokers or the prevalence of adult smoking is due to the relatively cheap price of cigarettes in Indonesia compared to other countries in the ASEAN region. Space to raise the price of cigarettes through the increase of excise tariffs is still wide open. However, of course the policy of excise increase must be done carefully not only in terms of magnitude but also the timing of its implementation. During intensifying the issue of strengthening competitiveness among countries in the ASEAN region, Indonesia is a champion in cigarette production and excise revenue. An important result of the study is that the level of cigarette consumption always increases health risks as indicated by the amount of costs arising from smoking. Besides that, government revenues from high cigarettes also have a positive correlation with the cost of smoking. Between revenue and the cost of cigarettes there is a positive and significant relationship. This shows that the amount of revenue from cigarettes should not need to be addressed positively given the large potential costs that are also borne as its consequence.

REFERENCES

Amul, G. G. H. & Pang, T. 2017. The State of Tobacco Control in ASEAN: Framing the Implementation of The FCTC from a Health System Prospective. *Asia & Pacific Policy Studies,* 5(1): 47-64.

Assunta, M. & Dorotheo, U. 2016. SEACTA Tobacco Industry Interference Index: A Tool for Measuring Implementation of WHO Framework Convention on Tobacco Control Article 5.3. *Tobacco Control,* 25(4): 313-318.

Ayomi, M. 2014. Tobacco Industry and Sustainability: A Case of Indonesia Cigarettes Company. *Asia Pacific Management and Business Aplication,* 2(2):132-143.

Beladenta, A., Filippidis, F. & Cadoga, S. 2018. The Impact of Indonesia's Tobacco Control Policy on Cigarette Smoking Among Indonesian Adults: A Longitudinal Study. *Tobacco Prevention and Cessation,* 4(2): 1-8.

Berteletti, F. 2018. Reaching Outside the Comfort Zone: Realising the FCTC's Potential for Public Health Governance and Regulation in the European Union. *International Journal of Health Policy and Management,* 7(5): 459-462.

Brun, J. E., Gerstein, H. C. & Holloway, A. C. 2010. Long-term Consequences of Fetal and Neonatal Nicotine Exposure: A Critical Review. *Toxicological Sciences,* 116(2): 364-374.

Chavez, J. J. 2015. Economic Policy - Public Health Linkage and the Importance of Regional Platform: The Case of Tobacco. *Global Social Policy,* 15(3): 351-354.

Chen, G. J. 2012. A Simple Way to Deal With Multicollinearity. *Journal of Applied Statistics,* 39 (9): 1893 - 1909.

Choi, K. et al. 2019. Receipt of Tobacco Direct Mail/ E-mail Discount Coupons and Trajectories of Cigarette Smoking Behaviours in A Nationally Representative Longitudinal Cohort of US Adults. *Tobacco Control,* 28: 282-288.

Edward, R. 2016. New Research on Secondhand Smoke: Implication for Research and Practice. *Nicotine & Tobacco Research,* 18(11): 2045-2047.

Ekpu, V., Brown & K., A. 2015. The Economic Impact of Smooking and Reducing Smoking Prevalence: Review of Evidence. *Tobacco Use Insight,* 8:1-35.

Finance Ministry of Indonesia [Kementerian Keuangan RI]. 2013. *Data Pokok APBN 2007 - 2013.* Jakarta: Kementerian Keuangan RI.

Hsu, L. 2014. Tobacco Control in ASEAN. *Global Tobacco Epidemic and The Law,* 10(3): 142-165.

ITIC. 2013. *Asia-11 Illicit Tobacco Indicator 2012,* Washington DC: International Tax and Ivenstment Center.

Lauterstrein, D., Hoshino, R., Gordon, T. & Zelikoff, J. 2014. The Canging Face of Tobacco Use Among United States Youth. *Current Drug Abuse Review,* 7(1): 29-43.

Nasser, A., Salah, B. & Regasa, L. 2018. Smoking Prevalence Attitude and Associated Factors Among Students in Helath-Related Departement of Commodity Collage in Rural Yemen. *Juornal Tobacco Induced Diseases,* 16(2): 1-7.

Nor, N. M., Abdullah, N. M. & Rampal, L. 2013. An Optimal Cgarette Tax in Malaysia. *International Journal of Economic and Management,* 7(2): 205-220.

SEATCA. 2014. *ASEAN Tobacco Tax Report Card: Excecutive Summary,* Bangkok: South East Asia Tobacco Control Alliance.

Shang, C. et al. 2019. Assosiation Between Tax Structure and Cigarette Consumption: Finding From The International Tobacco Control Policy Evaluation Project. *Tobacco Control,* 28: 31-36.

Susilowati, D. 2010. Indonesia Youth and Cigarette Smoking. *Bulletin of Health System Reseach,* 13(3): 237-246.

Tandilitin, H. & Luetge, C. 2013. Civil Society and Tobacco Control in Indonesia: The Last Resort. *The Open Ethics Journal,* 7: 11-13.

Wamamili, B. M. & Garrow, A. 2017. Have Higher Cigarette Taxes in the United States Discouraged Smoking? A Review of Data From 1999 - 2013. *Tobacco Prevention & Cessation,* 3(2): 1-7.

Wibowo, M. 2017. Perspektif Hambatan Terhadap Kemungkinan Remaja Berhenti Merokok. *Unnes Journal of Public Health,* 6(2): 137 - 140.