

# The Design of Tobacco Tax Collecting System for Smoking Cessation

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## Abstract

Many countries have been implementing a pricing policy that significantly increases tobacco tax to lower the smoking rate. However, there is criticism that the corrective function of the tobacco tax does not work properly, and that only opportunistic behavior of tobacco manufacturers or distributors occurred. Therefore, the purpose of this study is to design a tobacco tax collecting system to enhance the corrective function of tobacco tax and to propose its effect. The study aims to design a tobacco tax collecting system and proposes a design of the process flow among the servers of the governmental tax authority, the servers of the credit card company and the terminal of the retailer, and the design of a credit card for tobacco purchase. In addition, the system design drawing is presented as a research methodology and the procedure of the work process of this system is presented. The tobacco tax collecting system can be expected to have the effect of correcting taxes and preventing the purchase of tobacco by adolescents. This study provides the policy implication of designing the tobacco tax collecting system and suggesting the effect of this system. Such a system can be said to be effective in countries around the world, to control tobacco consumption and to regulate and correct addictive drugs such as narcotics.

**Keywords:** Tobacco tax; Corrective tax; Pigovian tax; Tax collecting system; Smoking cessation.

## INTRODUCTION

Many countries have considered how to reduce or stop tobacco consumption, and raising tobacco taxes has been used as a potential strategy to achieve this goal [1,2]. To lower the smoking rate, the Korean government has also raised tobacco tax significantly to improve public health in 2015, but the size of tobacco sales is on the rise again in 2016, a year later (While in Korea, taxes like excise tax, tobacco tax and value added tax as well as health promotion fund and charges are

imposed on tobacco, this study intends to express it as tobacco tax.). This shows that the increase of the tobacco tax only adds to the tax burden of the tobacco purchaser, and it means that its effect is limited in the realization of the fundamental policy objective of lowering the smoking rate [3]. Imposing a high rate of tobacco tax to secure tax revenue also has taxpayers' negative criticisms in that it secures tax revenue from consumption of harmful and addictive goods [4]. The reason why the effect of the tobacco tax increase on the smoking cessation is less than expected, is because cigarettes are highly addictive products, and unlike general economic theory, long-term demand for tobacco can be inelastic [5].

Recently, Korea is estimated to have about 9 trillion KRW (Korea won) in health and social loss due to smoking, and if the smoking cessation policy is not promoted strongly, the accumulation of health and social loss due to smoking will gradually increase [2,6]. While some studies have claimed that the net estimated expenses of smoking per cigarette and the consumption tax and the sales tax burden imposed on tobacco are almost the same [6,7], other studies also found that the burden of tobacco tax was higher than the social cost of smoking [3,8]. In order to prevent various harms caused by smoking, efforts to lower the smoking rate through pricing policies using tax policies (tobacco tax policy) have continued, such as tobacco tax and value added tax, or levying various fees such as health promotion fund, but they have not been very effective [1,9].

A tobacco tax collecting system which focuses on the corrective function needs to be introduced in order for the tobacco price policy to be effective to lower the smoking rate of the public. Tobacco tax burden is higher than external cost for this corrective function to be effective because smokers smoke relatively more than the amount they desire because of the loss of self-control [10,11]. Therefore, the purpose of this study is to design a tobacco tax collecting system that can enhance the corrective function and enable efficient collecting of tobacco tax. The methodology of this study is to design a

tax collecting system to enhance the corrective function of tobacco tax and to present the effect of this system through simulation [12-14].

## LIMITATION OF CONTROL FOR THE TOBACCO PRICE POLICY IN KOREA

### A. Ineffectiveness of Corrective Tax Function

The tobacco tax, which was 641 KRW before the reorganization of the tobacco tax in 2014, had a tobacco pricing policy that increased to 1,007 KRW from 2015 [15,16]. In addition, the health promotion fund and waste charge, which are quasi-tax related to tobacco, increased significantly from 354 KRW and 7 KRW per 20 cigarettes to 841 KRW and 24 KRW, respectively, and according to the increase of the tobacco tax, the factory price of the cigarette increased greatly, and the value added tax to be collected based on the cigarette factory price also increased from 227 KRW to 409 KRW.

Meanwhile, in 2014, the government announced a dramatic increase in tobacco tax, and predicted that the smoking rate of Korean adults would fall from 43.1% at the end of 2014 to 29% by 2020, and emphasized that the purpose of the tobacco tax increase is not to increase the financial income, but to raise the public health through decreasing the smoking rate and to reduce the social cost due to smoking [14]. It can be interpreted that the increase in the tobacco tax, which was strongly promoted by the Korean government, was not intended to increase the financial income, but expressed its intention to strengthen the corrective function of tax (including quasi-tax) to improve the effectiveness of the policy [11].

### B. Inequality of Tobacco Tax the Opportunistic Behavior of Tobacco Manufacturer or Seller

Consumption of tobacco and alcohol accounts for 1.9% of the consumption of first income households, which has the lowest income brackets and senior citizens, much higher than other income brackets [17], and also in household trends in the second quarter of 2016 published by the National Statistical Office, the real income growth rate has been on track, but spending on alcohol and tobacco has increased by 7.1% from 2015 [18].

In particular, tobacco consumption increased 10.9% year-on-year, the highest growth rate among consumption expenditure items. In addition, the National Health Insurance Corporation in Korea, analyzed 2,650,000 health care costs for males aged 19 years or older in 2014, and it was reported that smokers with lower monthly income of less than 1,270,000 KRW consume a total of 653 more packs of cigarettes than smokers of middle and high income brackets with an average monthly income of 3,910,000 KRW.

### C. The Opportunistic Behavior of Tobacco Manufacturer (Seller)

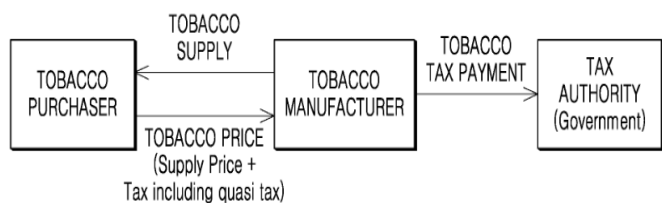
In general, when a tobacco-related provider releases or sells tobacco or declares an import, before the tax burden of tobacco tax is raised, related taxes are paid, and it is held in inventory until the tax rate or charge rate is applied. However, it is unclear in the Korean tobacco tax law about the arbitrage (hereinafter referred to as gain from inventories) that arise when selling to tobacco purchasers after the time of applying the tax rate or the rate of increase for the tobacco tax [16]. Nevertheless, in Korea's "Price Stabilization Act", when the government recognizes that there is a risk of harming the stability of the price of buying or selling goods for the purpose of taking profits, it is prohibited as act of cornering and hoarding, and if the act of cornering and hoarding is detected, it is possible to be punished by imprisonment for not more than three years or a fine not exceeding 50 million KRW.

However, in the case of tobacco, since the sales price of the taxed tobacco before the applicable tax rate or the imposition rate of the related tobacco tax is raised is generally lower than the selling price using the tax rate raised, tobacco manufacturers and wholesalers have incentives to hold as much inventories as possible before the tobacco tax rate or charge rate is increased [13]. That is, after the tax rate or the rate of increase of tobacco tax is noted in advance, tobacco manufacturers and wholesalers engage in cornering and hoarding for the gains from inventories, or avoid sales to increase inventory [2,16].

## DESIGN OF THE TOBACCO TAX COLLECTING SYSTEM

### A. Comparison of Current and New Tobacco Tax Collecting Systems

Figure 1 shows the existing method of imposing taxes related to tobacco. For current tobacco tax, tobacco manufacturers report the amount of tobacco to be exported to the relevant government agency and pay to the tax authority [19,20]. In other words, the tax on tobacco products is collected by proxy and paid every month by the tobacco manufacturers at the stage of exporting the tobacco. Tobacco purchasers pay tobacco manufacturers or tobacco distributors (such as wholesalers or retailers) for the cost of the tobacco purchase price, and these tobacco purchase prices include the tobacco tax and the supply price of tobacco itself. In other words, the tobacco purchaser actually pays the tobacco tax for the cost of the cigarette (supply price plus tobacco tax) when purchasing tobacco, but the tobacco tax to the actual tax authority uses the indirect collecting method, which is tobacco supplier [20].



**Figure 1:** Current Tobacco Tax Collecting System

In contrast, the collecting system proposed in this study, as shown in Figure 2, requires that a consumer holding a card for tobacco purchase pays the tobacco tax at the purchasing stage of the tobacco by settling the amount of tobacco tax on the statutory payment deadline.

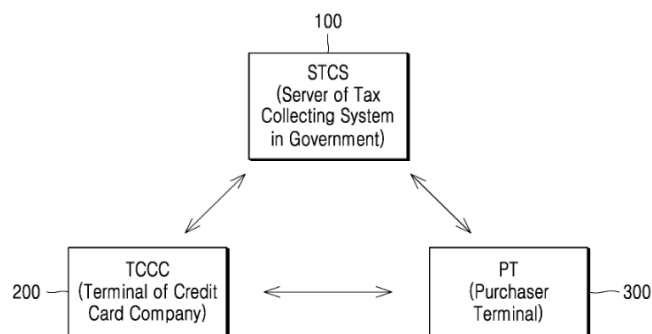
It is possible to convert the tobacco tax from the indirect collecting method to the direct collecting method (Indirect collecting method is the current way tobacco manufacturers or tobacco vendors collect tobacco consumption tax from tobacco purchaser and pay to the government, and direct collecting method means that the tobacco purchaser directly pays tobacco tax to the government.), and in this way, conversion to direct collecting system can increase the effect of correction of tobacco tax, which can enhance the effect of promoting smoking cessation [21]. In addition, by introducing the progressive taxation system in the process of settlement of the tobacco tax, it is possible to secure finances. Also, in the process of increasing the tobacco tax due to policy decisions, it is effective to prevent the tobacco manufacturers from taking unfair advantage of gain from inventories. In addition, since the distribution process of tobacco is clearly identified by the card for tobacco purchase, the tobacco tax can be managed transparently.

According to the tobacco tax collecting system, the tobacco purchaser can purchase the cigarette using the card for tobacco purchase, not cash, and of course, a plurality of servers or terminals can be used by the tobacco purchaser. This is characterized by the tobacco tax settlement by the tobacco purchaser. The settlement of tobacco related taxes can be carried out directly by the tax office at the request of the tobacco purchaser, and alternatively, the tobacco purchaser may allow the credit card company that has paid the tobacco tax to keep the tobacco tax through the card company's own system until the due date, and then pay through settlement and confirmation of the tobacco purchaser.

Thus, through the tobacco tax collecting system, the tobacco purchaser will directly pay his or her tobacco tax except the VAT, and the card issuer who issues the card for tobacco purchase has the obligation to pay the tobacco tax paid by the tobacco purchaser in accordance with the tax law and to submit various data necessary for the settlement of the tax amount.

Figure 2 shows a business flow diagram between a server (100) of a tobacco tax collecting system, a server (200) of a

credit card company, and a server (300) of a tobacco purchaser. The server (100) includes a credit card profile department (CCPD) (101), a tax decision department (TDD) (102) and a tax reconciliation department (TRD), and The Terminal of Credit Card Company (TCCC) (200) includes a Credit Card Issue Department (CCID) (201), a Requisition Assessment Department (RAD) (202), and a TDD (203). The tobacco tax collecting system of this study will be described with reference to Figure 3, focusing on each internal structure of STCS (100) and TCCC (200).



**Figure 2:** New Tobacco Tax Collecting System

Note 1) Terminologies and Abbreviations are as follows; TCCC: Terminal of Credit Card Company; STCS: Server of Tax Collecting System in Government; PT: Purchaser Terminal

### B. Design and Flow of Tobacco Tax Collecting System

#### • Credit Card Profile Department in System Server

In figure 3, the CCPD (101) of the server (100) may approve issuance of the tobacco purchase card based on the personal information of the tobacco purchaser and manage the issue status of the tobacco purchase card. Also, the CCID (201) of TCCC (200) may transmit a Requisition of Authorization for Credit Card Issue including personal information of the tobacco purchaser to the server (100), and decide the issuance of the card through approval of issuance. For this, CCID (201) of TCCC (200) receives a card issuance request from the purchaser terminal (PT) (300), and CCPD (101) of the server (100) receives a Request for Authorization for Credit Card Issue from TCCC (200) and approves issuance of the card.

Tobacco purchasers can purchase cigarettes using a card for tobacco purchase. For this, CCPD (101) can authorize issuance of a card based on the personal information of the tobacco purchaser. Also, CCPD (101) can manage the issue status of cards corresponding to a plurality of card holders. In other words, the personal information of tobacco purchaser can include basic personal information such as name, resident registration number, and information necessary for tax calculation such as income level. In particular, the personal

information of the tobacco purchaser may include information about which type of income the tobacco purchaser belongs to as listed in the Income Tax Act, such as employees, self-employed person, pensioners, or non-income earners. The personal information of the tobacco purchaser is stored in the database of TCCC (200) and the server (100), or can be obtained from the PT (300) if necessary. The CCPD (101) may refuse to issue the card if it does not satisfy the issuance approval requirement such as a request for card issuance by a person other than an adult.

In order to utilize the collecting system, the tobacco purchasers are required to purchase the tobacco using the issued card for tobacco purchase. In other words, a card for tobacco purchase can be the only means of payment that a tobacco purchaser can use to purchase tobacco. At this time, the card for tobacco purchase may be issued as a separate card or may be issued by adding an exclusive function of consuming tobacco to an existing credit card. This is to allow consumers of tobacco to directly pay the tax bills and pay taxes on tobacco related taxes through settlement. At this time, the card for tobacco consumption is issued only to adult smokers and cash transaction is prohibited, so that after the card for tobacco purchase is issued to smokers, systematic management of smokers can be made possible.

The CCPD (101) may authorize a single card for tobacco purchase to be issued only to a tobacco purchaser who is a smoker and a taxpayer. Also, the CCPD (101) does not issue a card for tobacco purchase by collectively unifying all smokers, and it can approve the issuance of different types of card for tobacco purchases, depending on the type of income listed in the Income Tax Act, such as income earners, business income earners, pension earners, and those without income.

The CCPD (101) may authorize the card issuer to issue a card for tobacco purchase in the form of a credit card or debit card in conjunction with the payroll account in the case of earned income earners. If the earned income earner is unable to obtain a credit card because the credit rating is below a certain level, or if the credit card has been suspended due to delinquent credit card payment, it can authorize the issuance of a prepaid card for tobacco purchase (PCTP) so that the user can use the PCTP through charging cash. Or, if the applicant for the card issuance is the business income earner (including the business income earner paying the comprehensive income tax) to whom the card issuer wishes to pay the business income tax, and if the business account is already registered and the business credit card linked to the business account is also issued, it is possible to authorize the issuance of a card for tobacco purchase by attaching it to a credit card that is linked to an existing business account. On the other hand, if there is a specific reason such as stopping the use of business credit card with the card for tobacco purchase function of the business income earner, the PCTP can be approved to be charged in cash as in the case of the earned income earner.

If the card issuer is a temporary worker, the issuer can approve issuance only when he / she visits the financial institution designated by the card issuer and requests the card issuance under PCTP. At this time, the CCPD (101) may issue a card with limited charging or purchase amount. In addition, if the card issuer is a pensioner with no other income, the card for tobacco purchase function can be added to the credit card or debit card associated with the designated account to which the pension income is to be paid, and if the taxpayer needs and requests it, it can approve the issuance of card for tobacco purchase, and like other income earners, it is possible to visit a designated financial institution and authorize the issuance of a PCTP in real name.

Or the CCPD (101) may authorize a PCTP to be issued in the name of a direct family in the case of a person without income, and in the case of an adult with no income, it can authorize the card for tobacco purchase of his or her name through the consent of the main income earner. Alternatively, the CCPD (101), for a foreigner entering the country who wishes to apply for a card and who is a smoker who does not satisfy the residents' requirements under the taxation law, may authorize a prepaid card for tobacco purchase to be issued when he or she enter Korea.

Next, the RAD (202) of TCCC (200) generates the tobacco purchase information of the tobacco purchaser and can determine the card charge payable to the tobacco purchaser based on the tobacco purchase information. That is, when the consumer purchases the tobacco and then uses the card for tobacco purchase to settle the cigarette price, the RAD (202) receives the settlement information through the VAN companies, and generates the tobacco purchase information. The tobacco purchase information may include time of purchase, number of purchases, and card information, and may include basic personal information of the tobacco purchaser matching the card information. Based on the one or more card purchase information, the RAD (202) may determine the charge for card use of the card for tobacco purchase to the consumer, and notify the PT (300) of the determined charge amount.

At this time, when the card company for issuing the card for tobacco purchase sends the card usage statement in which the bill amount of each month is written to the PT (300), it is possible to calculate and notify the tobacco purchaser's monthly smoking amount and the expected amount of tax paid to the tobacco purchaser together. Also, consumers who are notified of the charge can also pay the charge. At this time, the charge amount is the sum of the cigarette values, and the cigarette price can consist of the price and the tobacco tax. In other words, the charges charged to the tobacco purchaser may have consisted of tobacco goods and tobacco tax, and the tobacco purchaser would be paying the tobacco tax directly by paying the bill.

• *Tax Reconciliation Department in System Server*

The Tax Decision Department (TDD) (102) of the server (100) can determine the tobacco tax to be charged to the card company based on the tobacco purchase information generated using the tobacco purchase card. In addition, the TDD (203) of TCCC (200) determines a tobacco tax to be paid to the tax authority based on the tobacco purchase information, and pays the determined tobacco tax. In addition to the tobacco supply price, the card charge charged to the tobacco purchaser includes the tobacco tax. The credit card company pays the tobacco tax paid by the consumer to the tax authority. For this, TDD (203) may determine a tobacco tax to be paid to the tax authority based on the tobacco purchase information. In this regard, the tax authority may obtain the tobacco purchase information and determine the tobacco tax to be charged to the card company. In other words, the TDD (102) may obtain the tobacco purchase information from TCCC (200), and determine, based on the tobacco purchase information, a tobacco tax to be charged by the card company to the tobacco purchaser to the card company. Alternatively, TDD (102) may require the tobacco purchaser to have the designated credit card company to keep the tobacco tax on the card company's own system until the due date, and charge the settled tobacco tax after settlement and confirmation by the tobacco purchaser.

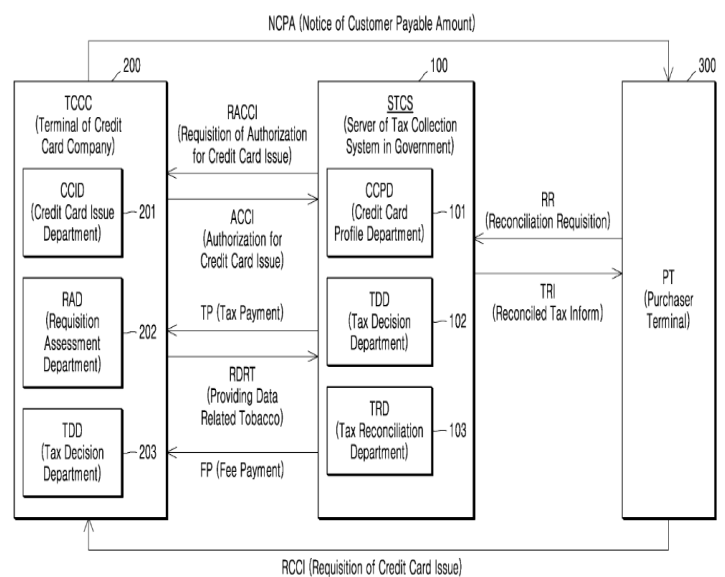
In other words, tobacco suppliers such as tobacco manufacturers and importers will supply tobacco at prices excluding tobacco tax, but when the tobacco purchaser purchases the tobacco at an amount that includes the tobacco tax at the time the purchaser purchases the tobacco, the defray charge can be paid back to the tax authority by the credit card operator. In other words, the card company of card for tobacco purchase becomes a tax partner for tobacco tax payment. In this case, the card company can pay the tax co-operating expense only by the funds from the card for tobacco purchase, but if necessary, the TDD (102) may decide that the tax authority pays the card company a certain fee.

• *Tax Reconciliation Department in System Server*

In figure 3, the Tax Reconciliation Department (TRD) (103) of the server (100) determines tobacco-related Reconciled Tax of the tobacco purchaser based on the personal information of the tobacco purchaser and the tobacco purchase information according to Reconciliation Requisition from the PT (300), and the tax amount can be notified to the PT (300). That is, the tobacco tax paid by the tobacco purchaser will be settled later by the tax authority based on the tobacco purchase information. The TRD (103) can receive the tobacco purchase information from TCCC (200) and the consumer settlement information from the PT (300). That is, the TRD (103) can settle the tobacco tax according to the amount of tobacco consumption accumulated in the card for tobacco purchase. When the tax payment of tobacco tax is settled, the taxpayers must pay their tobacco tax according to the accumulated amount of tobacco consumed in their card for tobacco

purchase. In particular, it is possible to confirm the tax amount calculated by applying the progressive tax rate based on cumulative smoking amount of the taxpayer, and to determine the additional payment or the tax amount to be refunded. For tobacco tax settlement, the designated credit card company can store the tobacco tax through the credit card company's own system until the due date, and the tax settlement amount can be confirmed after the settlement of the tobacco purchaser is completed. By allowing the tobacco purchaser, who is a taxpayer and smoker, to settle the direct payment of tax through the card for tobacco purchase, it is possible to realize the fairness of tax and to maximize the corrective function inherent in tobacco tax by matching smokers to their tobacco consumption and the corresponding tax burden.

A system can be assumed where, when a smoker buys tobacco through the card for tobacco purchase, the annual consumption of tobacco is accumulated, and the tobacco tax is paid at the end of the year. In the case of conventional tobacco tax, because the tax to be paid is calculated by applying the imputed tax rate, which does not consider the tax-bearing capacity of the smokers, for the same tobacco consumption behavior, there was a problem that the tax burden was regressive according to income level. In view of the need for progressive taxation and the primary purpose of the tobacco tax being strengthening the corrective function of the tax on smoking cessation or smoking reduction, the Reconciled Tax is determined in the Server (100) so that it can use the progressive taxation method instead of the cumulative taxation. If progressive taxation period according to the amount of smoking is reasonably set when the tax amount is settled, the effect can be expected where the burden level of the tobacco tax of the smoker can be reduced with reduced amount of smoking.



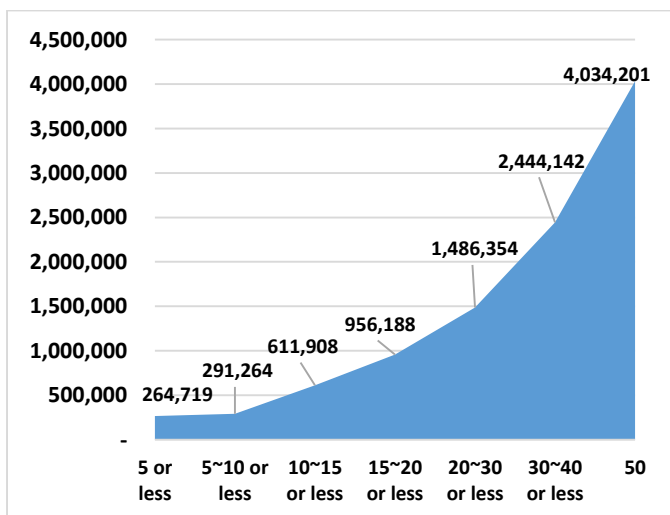
**Figure 3:** System Process Flow of Server of Tobacco Tax Collection System in Government (100), Terminal of Credit Card Company (200) and Purchaser Terminal (300) Flow.

Note 1) Terminologies and Abbreviations are as follows; TCCC: Terminal of Credit Card Company; CCID: Credit Card Issue Department; RAD: Requisition Assessment Department; TDD: Tax Decision Department; STCS: Server of Tax Collection System in Government; CCPD: Credit Card Profile Department; TDD: Tax Decision Department; TRD: Tax Reconciliation Department; RACCI: Requisition of Authorization for Credit Card Issue; ACCI: Authorization for Credit Card Issue; TP: Tax Payment; RDRT: Providing Data Related Tobacco; FP: Fee Payment; PT: Purchaser Terminal; RR: Reconciliation Requisition; TRI: Reconciled Tax Inform; RCCI: Requisition of Credit Card Issue; NCPA: Notice of Customer Payable Amount.

**EFFECTS AND GOVERNMENT’S ROLE OF THE TOBACCO TAX COLLECTING SYSTEM**

**A. Effects of the Tobacco Tax Collecting System**

Figure 4 shows the progressive structure set by tobacco smoking amount assuming that the flat rate of tobacco tax is maintained and the price elasticity of tobacco demand is maximized at 1 pack per day (20 packs). Based on the progressive tax rate structure, smokers who smoke one pack of tobacco per day will be burdened with an additional tax of about 160,000 KRW per year compared to applying current tax rate, and in the case of smokers who exceed 1 pack per day, as the smoking amount increases, the progression rate also increases so that smokers who smoke two or three packs of tobacco per day will be charged additional charges of 850,000 KRW and 1,910,000 KRW per year, respectively.



**Figure 4:** The Progressive Effect of Tobacco Tax by Smoking Quantities

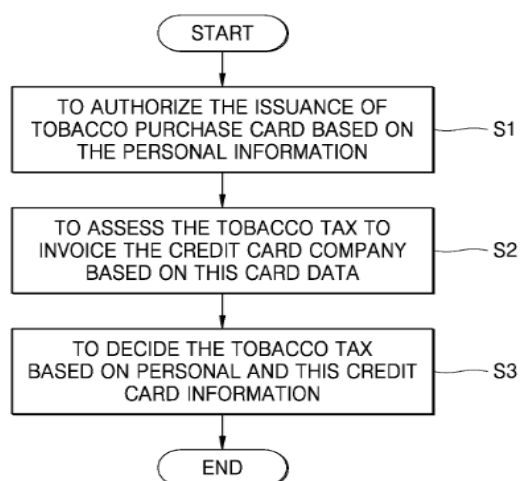
**B. Flow of Government’s Collecting Tobacco Tax in New System**

In order to collect the tobacco tax by the progressive taxation method, information on the tobacco consumption of the smoker is required. Therefore, it is first necessary to prohibit the cash purchase of the tobacco and to have a system for purchasing the tobacco only with the card for tobacco purchase [12]. Therefore, this study assumes a situation where tobacco can only be purchased using a cashless card for tobacco purchase.

In addition, the TRD (103) may differently select the timing of the tax settlement according to the tobacco purchaser. In the case of the earned income earner, for settlement of the tobacco tax, all of the credit card usage information is provided when the earned income earner makes year-end settlement, and TRD (103) allows taxpayers to make tax settlements at the time of year-end settlement of the employment income tax. If the tobacco tax is settled once a year like this, since smokers may not recognize the burden of their tobacco tax, they may face economic difficulties due to an unexpected tax burden at the time of year - end settlement or the payment of final tax return, and while it is possible to maximize the corrective function by paying the tobacco tax once a year, it may be settled and paid once a year or twice a year, or once a quarter. In addition, if the tobacco purchaser has a business income or comprehensive income tax, the tobacco tax will be settled when reporting the comprehensive income tax, and in the case of business income earners, the amount of tobacco-related consumption and related taxes cannot be recognized as necessary expense as business unrelated household expenses when calculating business income. This is to prevent the paradoxical situation in which the tobacco tax is heavily taxed by regulating the smoking behavior of the business earner, while the income tax law recognizes it as a necessary expense and indirectly supports smoking [14].

And for smokers who need to use PCTP rather than card for tobacco purchase due to temporary employee or bad credit, when tobacco is purchased after charging cash in PCTP, the card company may withhold the tobacco tax from the balance of the card and pay it to the dedicated treasury account. In this case, no separate settlement process is required, and in order to enhance the correction effect of the tobacco tax, as in the case of the card for tobacco purchase, the TRD (103) can notify the temporary employees of the accumulation of the tobacco tax up to the date of filling up. In other words, like a credit card receipt, it is obligatory to issue a charge statement after charge and the cumulative amount of tobacco tax up to the charge date can be written in the statement. In addition, the TRD (103) manages the sum of the income tax with the tobacco tax of the income earner at the year-end settlement of the employment income tax, for those who have no income and living with a family member that is the main income earner.

Figure 5 shows the process flow of the collecting system. First, based on the personal information of the tobacco purchaser, it approves issuance of the tobacco purchase card (S1). Next, a tobacco tax to be charged to the card company is determined based on the tobacco purchase information generated by using the tobacco purchase card (S2). Also, based on the personal information of tobacco purchaser and tobacco purchase information, the tobacco purchaser's tobacco related settlement amount is determined (S3).



**Figure 5:** Flow of Government's Collecting Tobacco Tax in New System

## CONCLUSION

The tobacco tax collecting system of this study is based on the personal information of tobacco purchaser and is composed of CCPD that approves the issuance of card for tobacco purchase, TDD for determining a tobacco tax to be charged to the card company based on the tobacco purchase information generated using the card for tobacco purchase, and TRD for determining the tobacco related settlement amount of the tobacco purchaser based on the personal information of the tobacco purchaser and the tobacco purchase information. In order to operate this system, the precondition must be satisfied that only tobacco can be purchased through the card for tobacco purchase. In addition, depending on the income type of the tobacco purchaser, the tobacco tax will be collected as follows.

First, by allowing the tobacco purchaser, who is a taxpayer and smoker, to settle the direct payment of tax through the card for tobacco purchase, it is possible to realize the fairness of tax and to maximize the corrective function inherent in tobacco tax by matching smokers to their tobacco consumption and the corresponding tax burden. Second, if the tobacco purchaser has a business income or comprehensive income tax, the tobacco tax will be settled when reporting the comprehensive income tax, and in the case of business income earners, the amount of tobacco-related consumption and

related taxes cannot be recognized as necessary expense as business unrelated household expenses when calculating business income. Third, for smokers who need to use PCTP rather than card for tobacco purchase due to temporary employee or bad credit, when tobacco is purchased after charging cash in PCTP, the card company may withhold the tobacco tax from the balance of the card and pay it to the dedicated treasury account. Fourth, in the case of a person without income living with a family member who is the main income earner, the management is done together with the tobacco tax of the income earner at the employment income tax year end settlement. Especially, in the case of a person without income, as with temporary workers, it is necessary to be issued a PCTP.

This study suggests the design of a tobacco tax collecting system to lower the smoking rate. In addition, the collecting system of this study can be linked to health promotion vouchers to induce smoking cessation. The National Health Insurance Management Corporation in Korea is implementing various policies to induce smoking cessation such as smoking cessation counseling and prescription of smoking cessation assistance. Thus, smoking cessation policies can be effectively implemented through sharing information on years of smoking, smoking amount, and effects after smoking cessation of tobacco purchasers.

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