

Study on Stars' Tax Evasion Behavior Based on A-S Model

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Abstract: In recent years, many stars have ruined their reputation because of tax evasion, which has become the focus of social attention. This paper first expounds the public's view on the phenomenon of stars' tax evasion, and then makes an in-depth analysis of the causes of stars' tax evasion and the factors affecting tax evasion, and makes a quantitative analysis based on the A-S tax evasion model. The results show that according to the public will, it is imperative to improve the inspection system, increase the intensity of inspection, increase the multiple of fines and strengthen the severity of punishment. This can not only effectively reduce the probability of tax evasion of celebrities and the negative impact, but also bring good demonstration effect to the public.

Keywords: A-S tax evasion model, Reasons for tax avoidance, Tax evasion control.

1. Research Background

1.1. Research background

Tax is the main source of national fiscal revenue, and tax payment is the basic duty of every citizen. Tax is not only one of the important levers for the state to regulate the economy, but also has the function of safeguarding the state power. Without taxes, the machinery of the state cannot function efficiently.

But in recent years, many public stars frequently appear tax evasion chaos. No matter Fan Bingbing, Zheng Shuang or Deng Lun, although they wear the gorgeous crown, they do not take the responsibility of demonstrating for the public. Instead, they walk in the gray area of tax law, ignoring the bottom line of law time and time again. They must therefore be condemned by the public and society, and severely punished by the legal system.

Although the law makes the tax evasion behavior of stars be severely punished, the insufficient inspection force, the imperfect inspection system, the insufficient multiple of fines and the insufficient punishment force will make some people continue to ignore the bottom line of the law to seek their own maximum interests. The tax evasion of celebrities not only causes a large loss of tax revenue to the country and damages the interests of the masses, but also brings wrong examples to the public. Therefore, the problem of star tax evasion has become the focus of the whole society.

At present, many scholars at home and abroad have conducted in-depth research on the phenomenon of tax evasion. American economist P.Kagan[6] used the cash ratio method for the first time to estimate the "underground economic transactions" and tax evasion of taxpayers in the United States. M.C.Allingham and A.Alandmo[7] established the A-S model to study whether taxpayers choose to truthfully declare tax or underdeclare part of income tax in order to maximize utility under the probability of being caught and fined. In 1973, T.N.Sinivasan[8] established the expected income tax maximization model under a series of assumptions. In 1995, Wang Lujin[9] showed in his research that simplifying the tax law and procedures, strengthening the public tax education and publicity, and improving the relevant

effective measures of tax authorities were all conducive to reducing or even preventing tax evasion. In 2003, Yang Biyun et al. summarized the evolution of the theory of individual tax evasion in foreign countries, and put forward relevant suggestions on how to deal with tax evasion. In 2010, Wang Yuxia and Longitudinal Kai better explained the phenomenon of tax evasion based on the A-S classic model and combined with the national conditions of China and put forward policy suggestions on the treatment of tax evasion.

1.2. Research purpose of this paper

This paper systematically expounds the reasons leading to the stars' tax evasion, such as the imperfect tax system, the tax department's punishment for tax evasion is not strong enough, the tax department's inspection intensity is not enough. Furthermore, the paper combs and analyzes the influence of stars' tax evasion, establishes an A-S tax evasion model, and carries out extended analysis, and studies issues such as perfecting the inspection system, intensifying the inspection, increasing the multiple of fines and intensifying the punishment. Finally, some effective suggestions are put forward for the existing problems.

2. A-S Tax Evasion Model

2.1. Classic A-S tax evasion model

2.1.1. Mathematical principles of classic A-S tax evasion model

The classic "A -- S" tax evasion model was first proposed by Allingham.M.G and Sandmo in 1972. The hypothesis of this model is the "rational man" hypothesis commonly used in economics, that is, taxpayers have absolute rationality and always adhere to the principle of maximizing benefits. As a "rational" taxpayer, how to reduce their tax burden and achieve maximum benefits is their primary consideration. For taxpayers, reasonable and legal tax avoidance reduces their tax burden, which is obviously not satisfactory. Therefore, more high-value taxpayers will choose whether to risk both material and spiritual punishment for illegal tax evasion by weighing the loss caused by risks and the profit brought by tax evasion.

To sum up, the classic "A -- S" tax evasion model has the

following assumptions: "rational" taxpayers; Benefit maximization -- utility function is a function that takes disposable income as a single variable, and taxpayers take utility maximization as their fundamental goal. Risk avoiders - Taxpayers as risk avoiders, tax levy and implement proportional tax rate. Relevant parameters of model establishment are as follows: The probability of audit and inspection is P ($0 \leq P \leq 1$), the penalty multiple is F (F is the value specified by the relevant national tax authorities, which is an important deterrent parameter to avoid tax evasion), the taxpayer's total contractual income is W (W is the value known to the taxpayer), the tax rate is t (t is the value specified by the relevant national tax authorities), the tax evasion is E (E is the value known to the taxpayer, The value depends on whether the taxpayer underreports or hides the total income). Suppose that in the above quantitative values, tax evasion E is a variable determined by individuals, utility function is a dependent variable, and other values can be regarded as fixed.

Under the above assumptions, the influence of penalty multiple and inspection rate on taxpayers is studied.

The utility function when tax evasion is not detected is:

$$Y = (1 - t)W + tE,$$

The utility function when tax evasion is detected is

$$Z = (1 - t)W - FtE + tE,$$

Then the taxpayer's utility function is:

$$U_1 = (1 - P)Y + PZ,$$

In this case, take the derivative of the utility function:

$$\frac{dU_1}{dE} = (1 - P)t + Pt - PFt = t(1 - PF). \quad (1)$$

2.1.2. Mathematical analysis of Classic A-S tax evasion model

In equation (1), t is always greater than zero. First, the value of $1 - PF$ is classified and discussed.

(1) If $1 - PF > 0$, it will increase with the increase of E , which means that the higher the tax evasion is, the more utility the tax evader will get. At this time, $PF < 1$ indicates that either the inspection probability is too small or the penalty multiple is too small to effectively deter high taxpayers and restrain tax evasion.

(2) If $1 - PF < 0$, it means that the utility function decreases with the increase of tax evasion E , which is what we hope to see. In this case, $PF > 1$ means that the inspection probability is relatively large or the penalty multiple is relatively high, and tax evasion can be well controlled at this time.

(3) If $1 - pf = 0$, that is, $P = 1/F$, then the utility function reaches the extreme value, and the inspection probability is negatively correlated with the penalty multiple. This means that while the intensity of the inspection is increased, the allowable penalty multiple can be reduced. The specific implementation still needs the analysis of decision makers, in order to choose the most reasonable, the least cost scheme.

Every taxpayer is a "rational" economic man, but while pursuing tax avoidance and profit maximization, they are still a risk avoider. They need to make risk judgment on the present and future situation, try their best to avoid risks and reduce losses. Therefore, there is no definite value of inspection probability P , which varies from person to person. Different people naturally have different estimates of P , which depends on individual assessment of risk. Other conditions are the same, if the taxpayer is a risk preference, $1 - PF > 0$ is more likely, under the temptation of interests will know the law and break the law, choose to tax evasion; For risk avoiders,

$1 - PF < 0$ is more likely and they will continue to abide by the law and pay taxes in time or avoid taxes reasonably.

2.2. Extended A-S tax evasion model

2.2.1. Mathematical principle of extended A-S tax evasion model

In order to further improve the traditional "A -- S" model, expand the scope of application of the model and improve the accuracy of model analysis, we add A variable U_2 (U_2 is a credit loss function, the value of U_2 is related to the star's reputation and social trust and other factors) on the basis of the traditional "A -- S" model. Where P is the probability of the taxpayer being audited by the tax bureau; β is a maximum value; Q is a special function similar to Dirichlet function added for star taxpayers. When the model is applied to stars or public figures, $Q = 1$; When the model is applied to ordinary people, $Q = 0$, there is no such credit loss.

In summary, the general expected utility function for non-star taxpayers is as follows:

$$\begin{aligned} U_1 &= (1 - P)Y + PZ \\ &= (1 - P)[(1 - t)W + tE] \\ &\quad + P[(1 - t)W - FtE + tE], \end{aligned}$$

Total expected utility function:

$$U = U_1 + U_2,$$

$$U_2 = -P\beta Q$$

Utility function is obtained after integration of $U_1 U_2$:

$$U = U_1 + U_2$$

$$U = [(1 - P)Y + PZ] - P\beta Q$$

namely

$$U = \{(1 - P)[(1 - t)W + tE] + P[(1 - t)W - FtE + tE]\} - P\beta Q$$

$$\begin{aligned} U &= (1 - P)[(1 - t)W + tE] \\ &\quad + P[(1 - t)W - FtE + tE - \beta Q]. \end{aligned}$$

Then, by differentiating the utility function, we can get:

$$\frac{dU}{dE} = (1 - P)t + Pt - PFt = t(1 - PF)$$

2.2.2. Mathematical analysis of extended A-S tax evasion model

Similar to the traditional "A -- S" model analysis, t is always greater than zero in the formula. First, the value of $(1 - PF)$ is classified and discussed.

(1) If $1 - PF > 0$, $PF < 1$ means that the inspection probability is too small or the penalty multiple is too small, and the taxpayer believes that the tax evasion inspection has little risk and low loss, so the inspection cannot play a substantial role.

(2) If $1 - PF < 0$, $PF > 1$ at this time, it indicates that the inspection probability is relatively large or the penalty multiple is relatively high, and the deterrent force is strong. Taxpayers will fully consider the high risk and huge loss from tax evasion inspection and prudently avoid tax.

(3) If $1 - pf = 0$, that is, $P = 1/F$, then the utility function reaches the extreme value, and the inspection probability is negatively correlated with the penalty multiple. The increased intensity of the inspection, the allowable penalty multiple can be reduced. However, this case is relatively rare, which is only for the reference of analysis and decision-making under ideal circumstances. The specific implementation should consider the influence of other factors as needed.

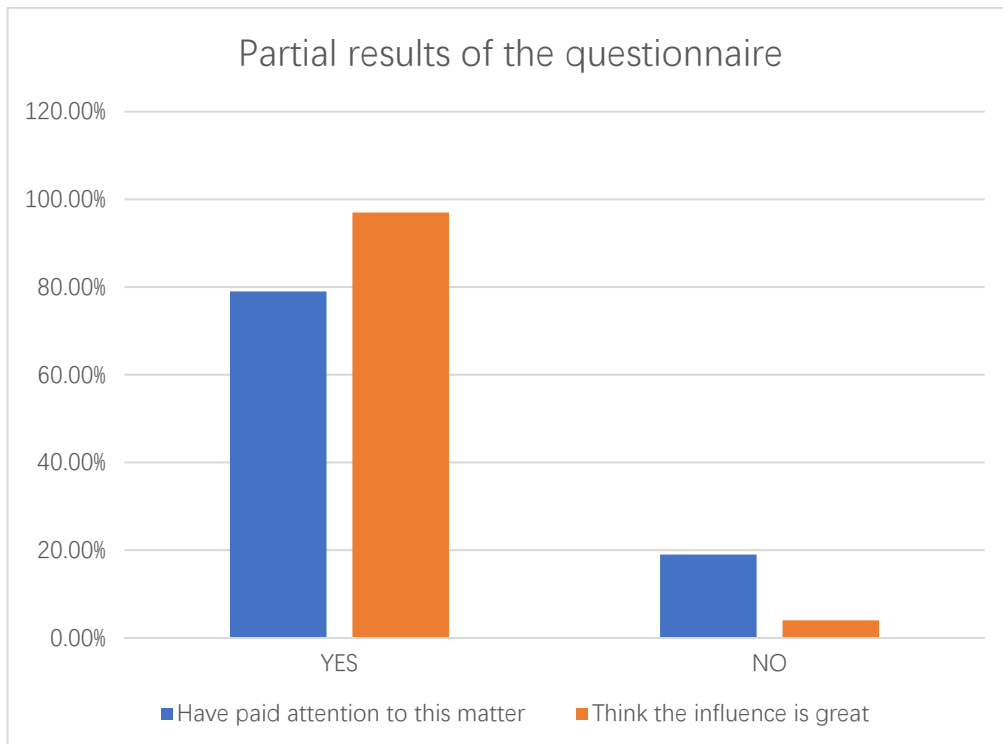
The analysis of P still depends on the judgment of

individual taxpayer characteristics.

To sum up, the extended "A -- S" tax evasion model more fully reflects the benefit function of taxpayers with different incomes, which is helpful for personalized judgment of tax evasion behaviors for tax groups with different incomes. However, through the analysis of relevant parameters, both the extended and classical models show the importance of improving the inspection system, increasing the intensity of inspection, increasing the multiple of fines, and enhancing the intensity of punishment. This can not only give a warning to stars (such as high-income tax groups) with lucky intentions, effectively reduce the probability of tax evasion and adverse effects, but also give a good demonstration effect to the public.

3. Case Analysis

According to the survey data, nearly 80% of the respondents expressed concern about the "Deng Theory tax evasion incident" disclosed recently, which shows that this incident has aroused high public opinion attention. At the same time, nearly 95 percent of the respondents said the negative impact of tax evasion by celebrities was greater than that of ordinary people under the same conditions. In addition, once the star's tax evasion is exposed, the star himself will be severely condemned by the public, and thus produce a huge credit loss. We refer to the loss of the star's product advertising endorsement, variety shows, film and television works and other income as star credit loss. In other words, this case analysis is fully applicable to the extended A-S tax evasion model.



Further research found that in terms of punishment for tax evasion, respondents were more inclined to "more than three years and less than seven years in prison". As for the causes of celebrity tax evasion, respondents generally agree that "the tax system is not perfect", "the punishment of tax evasion is not strong enough", "the intensity of tax inspection is not strong enough", "the cost of tax evasion is not high enough for tax evaders", "low tax awareness of taxpayers", "the temptation of money" and other reasons. On the other hand, "the cost of the psychological burden that tax evaders have to bear is not high" and "the oppression of rights" were less recognized. At the same time, nearly 70 percent of respondents said the negative impact of celebrities' tax evasion is mainly reflected in "destroying the economic order of the socialist market" and "bringing about a bad demonstration effect", while the remaining 30 percent of respondents said its impact is mainly in "causing bad competition among enterprises" and "leading to a decrease in national tax revenue".

Nearly 80 percent of respondents said they should "raise their tax awareness" on the most effective measures to curb tax evasion (at the personal level), while the rest of the

respondents preferred "refusing the temptation of money" and "fighting against the oppression of power." As for the most effective measures to curb tax evasion (government and social level), the majority of respondents said they should "strengthen inspection efforts to expand social exposure, and open channels for reporting, to form a social supervision network".

Comprehensive investigation data and according to the extended A-S tax evasion model of $1-PF > 0$, $1-PF < 0$, $PF = 0$ analysis of three different cases, improve the inspection system, increase the intensity of inspection, increase the penalty multiple, strengthen the punishment is imperative.

4. Countermeasures

Tax is the main form and tool of national organization of fiscal revenue, which plays an important role in ensuring and realizing fiscal revenue. Because the tax is mandatory, free and fixed, it can ensure the stability of income. Therefore, the importance of each and every one of us paying our taxes on time and on schedule is self-evident. To this end, we put forward the following different levels of recommendations.

4.1. Individual level

4.1.1. Enhance the awareness of tax payment

Due to many historical factors, people have more or less resistance to tax payment, so there is not active tax payment, and even tax evasion phenomenon. In view of this, it is particularly important to improve tax awareness, which can be said to solve the root cause of tax evasion. The most effective way is for everyone to start from their own consciousness, to resolutely say "no" to tax evasion, and to create a good social atmosphere of conscious tax payment.

4.1.2. Mutual supervision, enhance the sense of responsibility

Every citizen should have the consciousness and responsibility of building a beautiful country, actively report the existence of tax evasion around, supervise each other, and jointly resist tax evasion.

4.2. Social level

4.2.1. Encourage whistleblowing

People from all walks of life should be encouraged to report and expose, and zero tolerance of "tax evasion" should be advocated in the whole society.

4.2.2. Intensify publicity and education

Relevant platforms, media and other publicity agencies should strengthen publicity of law and raise residents' awareness of tax payment. Schools at all levels and other educational institutions should also carry out education activities, cultivate tax awareness from an early age, and form a good social atmosphere.

4.3. Government level

4.3.1. Legislation and law enforcement

(1) Improve and perfect the tax judicial guarantee system

We can further raise the legislative level of the tax law and promulgate relevant basic laws so that there will be no escape for tax evasion.

(2) Strengthen the punishment mechanism, strengthen the intensity of punishment

There is no tolerance for tax evasion. If there is connivance, it will not only damage the rights and interests of citizens who pay taxes according to law, but also aggravate the chaos of people with fluke mentality to evade taxes. We can start from the two aspects of increasing the penalty multiple or strengthening the inspection, weighing the cost and developing more efficient programs.

4.3.2. Environmental management level

(1) Optimize and popularize relevant reasonable tax avoidance measures

We can provide some reasonable tax avoidance methods for individuals, enterprises and other tax paying groups, and implement incentives such as rewards and praise for individuals or enterprises that actively pay taxes to stimulate people's awareness of voluntary tax payment.

(2) Improve the level of tax inspection, expand the audit

group and strength

For enterprises with large scale and abundant funds, we should strengthen audit management and efforts to ensure that no one escapes the net.

4.3.3. Education and publicity level

(1) Vigorously carry out publicity and education activities

To popularize the importance of tax obligation in various ways, such as public service films, posters, leaflets and network broadcast, so that tax publicity and education will be deeply rooted in people's hearts.

(2) Get tax law into the classroom

Incorporating tax-related knowledge into textbooks and encouraging schools to actively carry out "tax law class" can not only enhance the tax awareness of primary and middle school students, but also lay a foundation for creating a lively and clean social atmosphere in the future. Moreover, it will subtly supervise whether parents pay taxes in time. Therefore, tax awareness should be started from an early age.

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