Tax Planning Analysis from a Game Theory Perspective under the New Normal

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Abstract. With P.E.S.T. method, the paper analyses the external environment that enterprises face and clarifies the necessity of tax planning under the New Normal and, with variables, in the model, deduces and calculates all factors that are involved in enterprises’ tax planning, by using principles and models of Game Theory and methods of mathematical analysis, also analyses the tax planning game between enterprises, between enterprises and tax department, between enterprises and external environment under the New Normal and economically explains the result and discovers factors that affect enterprises’ tax planning from the perspective of economics, discusses the best strategy of tax planning the enterprise should reasonably take under different circumstances and suggests how an enterprise should scientifically conduct tax planning under the New Normal.

Introduction

Under the New Normal, the outer environment of enterprises have been deeply changed. Competitions among enterprises have been more and more intense. The speed of economic growth has obviously been slowed down. The law and policy have been better executed. Hence, analyzing the features of the outer environment of enterprises under the New Normal, actively conducting tax planning, maximizing the net profit of enterprises and enhancing enterprises’ competitiveness are significant problems faced by enterprises.

With PEST method, the outer environment of enterprises can be easily and clearly recognized. The PEST method is an effective tool to analyze outer space of enterprises and adjust development strategy. This method analyzes political/legal environment, economical environment, social and cultural environment and technological environment, four aspects of outer environment of enterprises.

From the point of political and legal environment, the 4th plenary session of the 18th Central Committee of CCP has decided to build a socialist legal system with Chinese characters so as to build a socialist legal country, which starts a new journey of legalization and marks the new period of legalization. China has entered the New Normal of law. The New Normal of Law is required to develop economics of our society. The Committee has very clear requirements on executive branches: Lawful duties shall be done, nothing unauthorized should be done. Under the New Normal of Law, the policy and law system will becoming more and more complete the level of monitoring and management will be improved and all enterprise-related laws will be more and more perfect. Enterprises must pay tax by the law and follow the professional morality. Meanwhile, the cost of violating the law is also increasing.

From the point of economic environment, the situation under the New Normal enterprises
are facing has following features: the economy of our country is developing to one that has a higher level, more diversity and a structure that is more reasonable. The development of the economy is getting into the New Normal. Its speed is changing into mid-high speed from high speed. The way of its developing is transforming from massive, fast extensive growth to quality, efficient intensive growth. Its structure is changing from focusing on increasing the quantity and expanding capacity to adjusting saving and improving adding. The motive of economic development is changing to the new growth points from the old ones.

Under the New Normal, the social and cultural environment the enterprises are facing is changing too. Enterprises should not only regulate its operation accordingly and lawfully but also follow the market rules and professional ethnics. The harmonious development of men and enterprises and enterprises and nature is significant.

The Necessity of Tax Planning under the New Normal

Tax Planning is also known as tax payment plan which refers to, legally, a kind of financial management activity enterprises conduct to maximize the value of enterprise or stockholders’ equity by managing or planning operation, investment and financing in advance, making the most of the convenience of Tax Law to select the best option from a group of tax payment plans.

This definition indicates that the condition of tax planning is being legal. The way of tax planning should follow the lead of latest tax law. Tax planning must be designed and conducted before producing, selling, investing and financing. The goal of tax planning is maximizing the interest of tax payers, which means more than paying the least tax but also achieving highest post-tax profit and maximizing the value of enterprises.

According to the related tax law, enterprises have many types of tax to pay, including circulation tax (added-value tax, business tax, consumption tax), income tax (corporate income tax, foreign enterprise income tax, personal income tax), resource tax, objective tax (Urban construction tax, farmland occupancy tax, fixed asset investment regulation tax, land value increment tax), property tax (house property tax, urban real estate tax, vehicle and vessel use tax, license tax of vehicle and vessels), conduct tax (stamp tax, deed tax), agricultural tax and customs duties. In conclusion, through the whole process of business running, tax and tax planning is involved. Thus, under the New Normal, strengthening the management, reducing the necessary cost, legally paying the tax but legally minimizing the tax to the lowest so that the post-tax profit can be maximized, became extremely significant.

<table>
<thead>
<tr>
<th>Enterprise A</th>
<th>Tax planning conducted</th>
<th>Tax Planning not conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>conducted</td>
<td>X, X</td>
<td>Y,0</td>
</tr>
<tr>
<td>Not conducted</td>
<td>0, Y</td>
<td>0,0</td>
</tr>
</tbody>
</table>

In all, under the New Normal of Law and Economics, the speed of economic development has been slow down and the competition among enterprises became more severe, legal system is more and more completed and the execution of law is more and more regulated. As self-running and self-risk-taking corporates, it is very necessary to adjust management principles, get to know the New Normal and adjust to the New Normal and the way of
management should be adjusted from extensive management into intensive management so that enterprises can legally minimize the tax and maximize the profit, which is the point of corporate tax planning.

**Game Analysis of corporate tax planning**

With principles of Game theory, with the model of Game Theory and mathematical analysis method, dividing all sorts of elements to do the reckoning and then explain the result economically, searching for economic factors that affect enterprises’ tax planning and provide advice on tax planning allows the enterprise to choose the best financial strategy and strengthen the competitiveness.

**Gaming Analysis among Enterprises**

**Gaming Factors**

Game participants: Assuming Corporation A and B, same industry and same strength, both are rational-economic men that aim to maximize their interest.

Information: The Process of tax planning is a process of selecting based on known information. The enterprise has full information about its own financial state, developing strategy and plans and is familiar with tax law and policy. However, an enterprise is not familiar with its competitor’s business state, financial state or developing strategy. Thus, the information they have about each other is not equal, which makes them two participants in one game.

Action strategy: Both enterprises have conducting tax planning and not conducting tax planning two options. Enterprise A&B do tax planning with the rate of PA & PB.

**Matrix of Payment and Analysis of Profit**

Assuming the profit enterprises get by doing tax planning is X, then the profit they get without doing tax planning would be 0. If A did tax planning and B didn't, then the tax planning part of A is Y and B's tax-saving profit would be 0. So Y>X. Because A does not only lower its tax paying but also gets more market share because of the lower cost. Same if it's the other way round.

Below is the matrix:

The form shows the income get from tax planning with certain strategy. The first digit of each number stands for the tax-saved earnings of A and the second stand for the one of B.

The expected earnings after tax planning of A:

$$EUA=XPB+Y(1-PB) > 0;$$

The earnings without tax planning is 0

In all, no matter which strategy B takes, A will get a higher earning. Thus tax planning is necessary technique A should take. Same with the other way round.

Tax planning can bring not only earnings from tax saving but also can improve the post-tax profit, better the overall competitive power. All reasonable enterprises should actively do tax planning.
The Game Analysis of Enterprise and the Tax Authority

Game Factors

Participants: enterprises and tax authorities. Both sides are rational economic men, enterprises should actively implementing tax planning to reduce the tax expenditure, tax authorities through the strict law enforcement, fulfill their duties, guaranteeing the tax revenue as the principle, both sides are to maximize their own interests as the principle to select the optimal strategies.

Information: information is asymmetric between the enterprise and the tax authority, the tax authority as tax policy makers and practitioners, the tax policy to master more comprehensive, at the same time, due to the imperfect tax policies in our country, on the same tax matters, publicans understanding between the two sides will have deviation. Due to the tax authorities’ understanding of the enterprise information is incomplete, and the level of tax inspectors is uneven and is not the same as the Angle of viewing the situation will lead to the deviation of tax administrative execution. So even if the enterprise tax planning is completely in conformity with the national policy, tax authorities may also be considered malicious tax avoidance and tax evasion or to investigate and punish them. All this information is not symmetrical, for the business enterprise can't determine the tax authority to the definition of tax planning and tax personnel's quality, can predict whether the tax authorities for tax planning behavior was recognized as legitimate, but the reason should be to reduce the tax burden of enterprises and actively carry out tax planning. At the same time, the tax authorities can't fully grasp the enterprise tax information. This leads to information asymmetry between enterprises and the tax authorities, which causes two game bodies.

Strategies: strategies of enterprises are planning and not planning; the strategy is maintained through inspection of the taxation authority enterprise tax planning for legal and illegal.

Matrix of Enterprises and Taxation Authority

<table>
<thead>
<tr>
<th></th>
<th>TA Enterprises</th>
<th>legal</th>
<th>illegal</th>
</tr>
</thead>
<tbody>
<tr>
<td>conducted</td>
<td>Y - C + M, T</td>
<td>Y - C - F, T+ F</td>
<td></td>
</tr>
<tr>
<td>Not conducted</td>
<td>Y, T</td>
<td>Y - F, T+F</td>
<td></td>
</tr>
</tbody>
</table>

Meaning of variable in the form above: Y means the post-tax income without tax planning. T stands for the part taxation authority takes. C is the cost enterprises have to pay for tax planning. F stands for fine from Taxation Authorities. M stands for the cost that is saved by tax planning.

Game Model of Enterprises and Tax Authorities

P stands for the possibility that tax authority identify tax planning as illegal

Expected profit with Tax planning conducted and without conducted:

$$EU_1 = (1 - P)(Y - C + M) + P(Y - C - F)$$
EU2=(1 - P)Y + P(Y - F)

If EU1= EU2, then P* = \(1 - \frac{C}{M}\),

When \(P = P^*\), the enterprise to carry out or not to carry out the tax planning have the same expected return;
When \(P < P^*\), the enterprise's optimal strategy is to carry out the tax planning;
When \(P > P^*\), the optimal strategy of enterprise is not to carry out the tax planning.

According to the analysis above, whether enterprises carry out tax planning is related to if authority judge it as legal and the higher cost of tax planning is, the lower the possibility enterprises choose to do tax planning. The higher the profit enterprises can get from tax planning, the more possible they would choose to do it.

Enterprise and External Environment of Game Analysis

Game Essentials
Game participants: Enterprise and external environment. Enterprise and external environment have a significant impact on production and management, legal and policy environment directly determine corporate tax policy of enterprise, Economic environment, social and cultural environment product sales play a decisive role of the enterprise. Therefore, Enterprises must consider the impact of changes in the external environment caused by develop out tax plan. Develop tax plan costs include direct costs, opportunity costs and risk costs.

Information: the change of exterior market environment for enterprise causes information asymmetry, enterprises cannot accurately predict market changes in time, direction, and how to change. Also, in terms of external market environment, it is composed of numerous enterprises, including specific enterprise information for it is also not symmetrical, so the enterprise and the external market environment, make up an incomplete information of game participants on both sides.

Operation strategy: corporate strategies are planning and not planning; the strategies of the external environment are changing and not changing.

Payment Matrix of Enterprises and Outer Environment

<table>
<thead>
<tr>
<th>O.E.</th>
<th>changing</th>
<th>Not changing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted</td>
<td>(- C_1 - C_2 - C_3)</td>
<td>(T - C_1 - C_2)</td>
</tr>
<tr>
<td>Not Conducted</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Meanings: C1 stands for direct cost and C2 means opportunity cost. C3 stands for risk cost caused by outer environment changing. T is profit from tax planning and stands for the possibility of outer environment changing.

Meanings: C1 stands for direct cost and C2 means opportunity cost. C3 stands for risk cost caused by outer environment changing. T is profit from tax planning and P stands for the possibility of outer environment changing.
Numbers in each blank stands for profit under the strategy combination. Enterprises get incomplete information so enterprises cannot make sure the possibility of outer environment changing. The Possibility is P and the possibility of not changing is 1-P.

Expected profit of enterprises when tax planning is done.

\[ EU1 = P(-C1 - C2 - C3) + (1 - P)(T - C1 - C2) \]

When it’s not done

\[ EU2 = 0 \]

Only when \( EU1 > 0 \), AKA when \( P < \frac{(T - C1 - C2)}{(C3 + T)} \), corporate tax planning is the best strategy, meanwhile \( U = T - C1 - C2 \)

**Analysis of Corporate Tax Planning**

**Being Legal is the Principle**

Tax planning is carried out within the scope of the law. Tax planning based on tax law. By the variety of taxable programs, can be made the decision to pay the lowest tax burden. Therefore, tax planning must be carried out according to the law. Law tax planning and enterprise tax planning are different to tax evasion. Tax is an important economic lever of the government’s macroeconomic regulation and control. The State's industrial policy, production planning and layout are all reflected in the specific provisions of the tax law. According to State's decision, taxes are paid less or more, but taxes have limitations. Tax planning is a tax policy of guiding and encouraging. For example, China’s asset investment in regular tax, designed to implement the national industrial policy, control the scale of investment and guide the direction of investment to strengthen investment in key construction. Taxpayers through tax planning and decisions giving up fixed investment projects. It can reduce the tax liability and in accordance with government, this is in line with the government’s policy guidance. Therefore, enterprises should strengthen tax law learning, train specialized personnel and under the new state of the rule of law, actively carry out tax planning.

**Tax Planning Must be Conducted Pre-tax**

It is the simplest premise for enterprise tax burden. Tax planning is made before establishing tax liability to arrange investment operations and financial planning. It has taken place in economic behavior. After a foregone conclusion of tax items, base and rate, tax planning can be realized. Therefore, enterprises must be forward-looking, adhere to pre-tax planning. By tax obligation lag can judge whether the enterprise can make a foresee arrangement for its own taxable economic behavior, take advantage of preferential tax incentives, tax declaration and under different economic behavior of tax burden, take maximum benefit on it.

**Insisting Risk Control**

When enterprises carry out tax planning, they often lead to risks of failure of tax planning, tax target falling, identification of illegal activities because of uncertainty factors like economic environment, national policies and understanding of legal policies, etc. Therefore, we must take risk into consideration when carrying out tax planning. For example, over a long period of time, the nation may modify the tax law, begin to collect new taxes and reduce part of tax
preferences, etc. So enterprises must get the balance between risks and incoming, take risk control actions and maximize the profit. Meanwhile, they should consider the cost of tax planning, including time, vigor and financial resources which spent of planning tax. Only when tax planning cost is lower than planning incomings, the tax planning is workable. Otherwise, the tax planning should be abandoned.

**Conclusion**

First, tax planning is subjective. The correction of subjective judgment is directly related to tax planning's selection and implementation. The failure of tax planning is risk to taxpayer. Secondly, tax planning has identity differences between tax collector and taxpayer. Technically tax planning should be legal and meet legislator's intension. However, this kind of legitimacy also needs the confirmation of the administrative department of taxation. It means even legal tax planning activities will not work in practice due to deviation of tax administration law enforcement, and make the tax planning activities useless or be regarded as tax envision or avoidance behavior to investigate malicious. The enterprises can employ specialized planning agency or develop/import professional to carry out tax planning in order to avoid the risk.

**References**


