The Relationship between Corporate Social Responsibility and Corporate Value Using the Game Theory

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Abstract

The relationship between corporate social responsibility and corporate value cause the attention of theory circle increasingly. This paper analyzes the mechanism of the corporate social responsibility to corporate value, introducing the game model to justify the legitimacy of corporate social responsibility and demonstrate its function to corporate value. At last, the corresponding countermeasures are put forward.

Keywords: Game theory, Corporate social responsibility, Corporate value

1. The mechanism of corporate social responsibility to corporate value

To stakeholders, the corporate perform corporate social responsibility for their interests and maintenance, and the expected returns of the stakeholders made them pay more attentions and do their own efforts to the long-term financial targets in some unique ways, thereby the enterprise obtain long-term, stable cash inflow, together with stakeholders' assists, both the operating risk and the financial risk are at low level, and comprehensive cost of capital is corresponding low, thus after the discount, the cash inflow(corporate value) increase accordingly, namely that the financial goals of the maximization of enterprise value is realized. Performance for the following aspects help to understand what is said above specifically:

1.1 Reduce the financing costs

The action that enterprise performs its responsibility for investors can help the enterprise get funding from the investors continuously, thus the enterprise's financing cost reduced and the enterprise value improved. The investor of the enterprise includes shareholders and creditors, so the responsibility for the investors mainly includes distribute the dividends, principal and interest fully and timely. If the enterprise does perform like that, the investors prefer to put money into the enterprise, not only reduce the financial risks, but also cut down the financial cost, therefore the corporate value is increased.

1.2 Reduce the cost of human resources

The action that the enterprise performs its responsibility for the employees can help to improve their loyalty, make them work efficiency and reduce the cost of human resources, so as to improve the corporate value. The responsibilities include providing full salary on time and follow-up education, stimulating the employees in accordance with the characteristics of wisdom and design the career planning for the employees, etc. If the enterprise perform this responsibility, not only can mobilize the enthusiasm of employees, improve work efficiency, but also can improve the loyalty of employees of enterprises, to avoid the "job-hopping", disclose the confidentiality of the enterprise, all those above can improve the corporate value.

1.3 Reduce operating costs

The action that the enterprise performs its responsibility for suppliers, can make full use of the commercial credit, reduce the cost of management, so as to improve the corporate value. Enterprise's responsibility for the suppliers mainly refers to do not violate the commercial contract, return the accounts payable timely, etc. If the enterprise performs responsibility for suppliers, it can attract more suppliers. on one hand, the fact that the suppliers compete intensely reduce the cost of raw materials, on the other hand, the supplier can accept more advantageous credit conditions to the enterprise, improve the efficiency of funds, and thus enhance the enterprise value.

1.4 Enjoy the preferential provision from the government

The action that the enterprise perform responsibility for the government, on one hand, can reduce expenditure from the government, on the other hand, it can fully enjoy preferential policies of the government, thus improve corporate value. The relationship between the government and the enterprises mainly reflects in: the enterprises must pay taxes to the government fully and timely; the government establish various preferential policies for the specific enterprises according to the macro-control goal and industry characteristics, while punish the enterprises which do not abide by the laws and regulations. Therefore, if the enterprise performs responsibility for the government, it can benefit from the government policy and reduce their cost, and then, the corporate value is improved.

1.5 Promote the enterprise competitiveness

The action that the enterprises perform responsibility for the community and environment can strengthen the brand effect of the product, and improve the competitiveness of enterprises in market, thus enhance the corporate value. This kind of action is a long-term and sustainable development strategy itself, besides it can improve the brand effect. These are the important factors to improve corporate value.

2. The game analysis of social responsibility

Suppose there is an enterprise with its stakeholders, such as stockholders, creditors, etc. The enterprise has two possible conditions: one is that the enterprise's prospects is dimmed, which is formulated $\theta = -1$, Another possibility is that the case with bright prospect, which is formulated $\theta = 1$ .The stakeholders do not know the specific condition, and they judge a enterprise's prospects with equal probability. But the enterprise itself knows their type. According to the definition of corporate value theoretically, this paper argues that the enterprise with dim prospects undertake more business risks, and therefore with less corporate value, while the enterprise with bright prospects can get more future cash flow, so with great corporate value. In order to facilitate the game analysis, this paper argues that the enterprise with dim prospects equates to the enterprise with less corporate value while the enterprise with bright prospects equates to the enterprise with more corporate value. it is generally agreed that the enterprise with bright prospects and more corporate value has a long-term business plan and a goal like "century-old shop", so they pay more attention to the interest of the stakeholders. For example, this kind of enterprise will make sure certain profit level for the stockholders, pay the loan and commercial credit in time, supply the well-qualified commodity, etc. But for the enterprise with dim prospects and less corporate value, they can hardly survive in a certain region for a long time, so they pay less attention to the interest of the stakeholders. The stakeholders are not fools of course, they think a lot before they make decisions. The corporate social responsibility can be seen as a signal which transmits from the enterprise. If they make the affirmative decisions, the utility for the stakeholders can be formulated $V = W(\theta) - P$, the utility for the enterprise can be formulated $U = P - \theta$ ($P \succ \theta$); If they make the negative decisions, the utility for both the stakeholders and the enterprise is 0.

In the symmetric information situation, stakeholder will make correct decisions in connection with the enterprise's prospects: the utility for the enterprise with bright prospect can be formulated $U = P - \theta$, while the the utility for the enterprise with dim prospect is 0. Because $P \succ \theta$, the enterprise with bright prospect will gain more social resources, while the enterprise with dim prospect will be eliminated. At the same time, the distribution of resources gets optimized, and the social welfare got increased. But this kind of Pareto Opitmal can not be realised under the condition of information asymmetry.

In the asymmetric information situation, the stakeholder can hardly obtain information about the enterprises' prospects. This will produce adverse selection problem. And the methods to solve adverse selection problem is that the enterprise release the signal that can hardly be simulated to the stakeholders, and let the stakeholders know the prospect of the enterprise, while performing corporate social responsibilities is considered to be the perfect signal. In order to facilitate the analysis, the paper suppose that the enterprise perform social responsibilities equals to that the enterprise concerned undertakings. $s = 0$ is on behalf of that the enterprise do not concern, while $s = 1$ is on behalf of that the enterprise concern undertakings. The stakeholders can only observe S while they do not know θ , so whether the stakeholders make the affirmative decisions depends on the posterior probability of S . The posterior probability that the enterprise do not concern the public welfare undertakings and the stakeholders consider the enterprise' prospects is dim is formulated $\mu(\theta = -1/s)$. Perfect Bayesian equilibrium means that: (1) the enterprise choose $s(\theta)$, (2)the stakeholders make decision using the posterior probability $\mu(\theta = -1/s)$. Given that: ①according to the type of attitude of the stakeholders, $s(\theta)$ is the optimal choice of enterprise, ② $s(\theta)$ is given, $\mu(\theta = -1/s)$ is consistent with the Bayesian laws.

The equilibrium has two types: confused equilibrium and balanced equilibrium. First of all, we consider the confused equilibrium. The confused equilibrium means different types of enterprise choose to do the same public welfare undertakings, here the stakeholders can not distinguish the types of enterprise, they select the specific enterprise randomly,that means they may make the affirmative decisions or the opposite way.when $s(\theta) \equiv 0$:

$$(PE)\,confused \quad equilibrium \begin{cases} s(\theta = -1) = s(\theta = 1) = 0 \\ \mu(\theta = -1/s = 0) = 0.5 \\ \mu(\theta = -1/s = 1) = 0.5 \end{cases}$$

That means that both the two different types of enterprise choose not to pay attention to the public welfare undertakings and the stakeholders do not consider that performing the public welfare undertakings will deliver the signals. This is one kind of equilibrium indeed: given that the posterior probability of the stakeholders $\mu(\theta = -1/s = 1) = 0.5$, the enterprise's optimal choice is that to pay no attention to the public welfare undertakings($s = 0$); given that the enterprise choose not to pay attention to the public welfare undertakings, $s = 1$ will be impossible event, $\mu(\theta = -1/s = 1) = 0.5$ is not contradictious with Bayesian law.

Here, the fact that the confused equilibrium is a kind of equilibrium is just because of that we suppose that the stakeholders do not update the posterior probability when they observe the Non-equilibrium way($s = 1$).If the posterior probability of the stakeholder $\mu(\theta = -1/s = 1) = 0$,that is to say that the enterprise which choose to perform the public welfare undertakings must be the one with bright prospects, the confused equilibrium will not be true. That is because of that given $\mu(\theta = -1/s = 1) = 0$, the enterprise with bright prospects will choose $s = 1$ .That is another kind of equilibrium-- separating equilibrium:

$$(SE)\,separating \quad enuilibrium \begin{cases} s(\theta = -1) = 0\square s(\theta = 1) = 1 \\ \mu(\theta = -1/s = 0) = 1 \\ \mu(\theta = -1/s = 1) = 0 \end{cases}$$

That is to say, the enterprises with bright prospects choose to focus on public welfare undertakings, while the enterprises with dim prospects do not concern public welfare undertakings; The stakeholders will make affirmative decisions to the enterprises which focus on public welfare undertakings, just because they consider this kind of enterprises' prospects is promising. At the same time, they will make negative decisions to the enterprises which do not concern public welfare undertakings. It is easy to demonstrate that the separating equilibrium is a kind of refined Bayes equilibrium: given the posterior probability and decisions of the stakeholders, the optimal choice of the enterprises with bright prospects is paying close attention to the public welfare undertakings; the optimal choice of the enterprises with dim prospects is paying no attention to the public welfare undertakings. On the other hand, given the choice of the enterprise, the posterior probability of the stakeholders can be observed according to the Bayes law.

In this game model, there are two different equilibriums--a confused and a separating equilibrium. But the confused equilibrium is not a reasonable equilibrium, as it relies on a specific assumption---the posterior probability of the relevant stakeholders by non-equilibrium way ($\mu(\theta = -1/s = 1) = 0.5$), and this specific assumption is not reasonable. This is mainly because of that the enterprises with dim prospects can not run for a long time, the brand effect will not benefit the enterprise in later periods; While the enterprises with promising prospects pay attention to the public welfare, they get brand effect and can benefit the enterprise in subsequent periods. The benefit even can make up the cost of donations, etc. So the enterprises which concern the public welfare undertakings, take social responsibilities will get support from the stakeholders, the corporate value get increased.

3. Conclusion and counterplan

3.1 Guide the enterprises to establish the concept of social responsibility actively

First, guide the enterprises to establish the concept of social responsibility by force. Legislatures can formulate laws, regulations and requirements about corporate social responsibility, and ask for the enterprises execute. They can issue a series of mating laws and regulations, including accounting system of corporate social responsibility, information disclosure system, etc. That is to say, cover all the social problems as far as possible using the law system. Secondly, guide the enterprises to set up the concept of social responsibility through social public opinion. On one hand, strengthen the publicity of the positive cases, let the enterprises which are aware of the social responsibility profit (free advertising effects, etc), and then let more enterprises to realize the necessity of the social responsibility. On the other hand, for those who can't fulfill social responsibility, we can propagandize their conduct to let the public know, such as defraud, bully the employees, evade the taxes, violate the contracts, etc. We can expose their conduct through radio, television, newspapers and other media. Let them fear about this, and earnestly implement corporate social responsibility.

3.2 Strengthen the supervision of stakeholders

Strengthen the supervision power of the government and society (consumer, industry organization, etc.) about corporate social responsibility, and form a joint or a system to improve the supervision mechanism of social responsibility. For example, using the government administrative intervention or macro-control, using industry organization (union, consumer association, media, etc) and other relevant regulations, thus forming a multi-level and multi-channel supervision system, to promote enterprises' urgency of performing social responsibility. On one hand, we should give full play to the government supervision function. The government should give basic play to establishing enterprises restriction and the supervision mechanism, as the government has that force and they can control the degree and orientation of social responsibility well, correct or punish the behaviour of escaping social responsibility. In another level, we should give full play to audit firm, law firm, accounting firm, social intermediary organizations in the specification, supervision, service field.

3.3 Investors should focus on the information of corporate social responsibility

The stakeholder theory is an approach which connects the corporate value with corporate social responsibility. Only if the enterprises perform social responsibility and earnestly implement the real concern of stakeholders, they can find the long-term interests and realise the maximization of enterprise value. As an investor, he makes decisions by evaluating the corporate value, and when he evaluates the corporate value, he must consider the performance of corporate social responsibility. In other words, the investors must change investment concept. They should consider the performance of corporate social responsibility with strategic vision when they make decisions, and the enterprises' financial statement is just one side of the coin. That is to say, the rational choice of investors should be the one that pay close attention to the market behavior of the enterprises from the perspective of social responsibility.

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