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Analysis on the three methods of economic analysis with specific examples

Han Tingting

Zibo Vocational College, Zibo, Shandong, China

Abstract: *Cost-benefit, cost-effectiveness, and cost-utility analyses are part of a group of methods that measure the efficiency of interventions and achieving desired outcomes. These types analyses can help organizations analyze the value of an intervention or program relative to its cost. Cost-effectiveness analysis can also be used to evaluate the expenditure of management. Developing countries often worry, with good reason, that regulation of the environment and public health could drag down economic development or exacerbate poverty. Cost-benefit analysis can show that well-designed regulations produce net economic benefits, allinging concerns that environmental and health protections are a drag on economic development. The effective consumption of a given product. Under certain production conditions is certain, is relatively fixed; For the acquisition of a certain product of ineffective consumption, is relative change, is universal. The latter is the object of control, to control this consumption through a series of measures to reduce it to the lowest point.*

Keywords: *Cost-benefit Analysis, Cost-effectiveness analysis, Cost minimization analysis*

1. Introduction

Economic system analysis plays an advisory role in formulating economic policies. Other quantitative methods of economic analysis, such as econometric analysis and input-output analysis, play a role in evaluating economic policies that have been formulated. Economic system analysis is different from them, it directly helps leaders or decision makers to formulate correct economic policies, so that economic policies are based on sufficient investigation and research and in-depth scientific analysis. Through the analysis of economic system, we can choose the best course of action for leaders and provide them with well-grounded suggestions. At the same time, it can make the leader's intuition more keen, judgment more accurate, and the major decisions can be carried out in a coherent logical avoiding narrow views and major mistakes; It can also provide leaders with the necessary knowledge to make decisions and help them improve their decision-making level. The close cooperation and of opinions between leaders and staff analysts is the key to the success of economic systems analysis in making correct decisions

2. Cost-benefit Analysis (cost-benefit Analysis)

2.1 Overview on advantages of CBA

cost-benefit Analysis is also known as cost-benefit analysis, CBA for short, the principle of this analysis method is to compare the total Cost and Benefit of the project to evaluate the value of the project, and finally decide whether to support the decision. Its purpose is to seek investment decisions made by managers, how to achieve the maximum profit with the minimum cost. Our lives are made up of countless decisions, from what to eat for lunch to who to spend the rest of your life with. Each decision can lead to a good outcome or an unacceptable outcome. The cumulative effect and consequence is what life looks like. Making good decisions, or good choices, has become a compulsory course for everyone, except that there are no tests, no grades, no likes, but life will record them with tenderness or indifference, reward them, punish them, even discourage them. It is almost impossible to obtain the optimal solution for every decision, but the second-best solution can be pursued, that is, to make a good choice among the existing options. Cost-benefit analysis, that's what it's all about.

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2.2 The limitations on cost-benefit analysis

The cost-benefit analysis method has its advantages in practice, but it also has obvious limitations, mainly in the following aspects: First, a complete cost-benefit analysis requires that the costs and benefits be monetized or quantified as much as possible. However, in the actual operation process, it is often difficult to quantify the benefits of public goods. Therefore, this method is mainly applicable to projects that can accurately measure the costs and benefits, such as public works projects. Second, cost-benefit analysis examines the relationship between costs and benefits of different programs. For projects in new fields, cost-benefit analysis may not be used for comparison and selection due to the lack of accumulation of alternatives. Third, cost-benefit analysis takes input and output as the main consideration dimension, and lacks consideration of public demand and the importance of projects. If some projects are important and urgent, but have low benefits, they may be denied in cost-benefit analysis [1].

2.3 A case study of domestic sludge treatment project in Jiangsu Province

In 2017, the public Utilities Bureau of Yixing City conducted an open bidding for the domestic waste sludge disposal project through government procurement, and a state-owned enterprise won the bid at the price of 200 yuan per ton. But after three years of operation, the company put forward the need to adjust the price to 360 yuan per ton on the grounds of loss. In the process of evaluating the performance of the project, the evaluation agency demonstrated the production process of waste sludge disposal, analyzed the cost of sludge disposal, and proposed a reasonable price standard through cost-benefit analysis. The specific assessment steps include: - Analysis of the waste sludge treatment process and scientific demonstration. Check the cost, first of all, to understand the production process, the enterprise uses the waste sludge drying technology, the sewage treatment plant output moisture content of about 80% of the wet sludge, the use of excess steam heat source produced in the plant by the disk drying machine dry, dry sludge as a low calariness value fuel and coal mixed firing, fully realize the sludge "reduction, harmless, resource" utilization. On this basis, the evaluation agency investigated the surrounding similar enterprises, and found that the disposal processes in different places were different, and the energy sources and types used in the front end were different, which had a great impact on the cost. The use value of dry mud in the middle end is also different due to the different uses. At the end of the waste gas wastewater discharge standards on the enterprise's own technical reform ability requirements are higher. Through comparison and demonstration, the final suggestions are given: the whole sludge disposal process is scientific and reasonable, and compared with other enterprises, the investment in fixed assets, fuel costs, production costs and other aspects are the lowest.

Analyzing the sources of garbage and determining the annual amount of garbage disposal. Through the extended investigation of 11 sewage treatment plants, the evaluation agency traced the source of garbage, removed the industrial sewage and sewage generated by the enterprise's own products, and verified the amount of garbage disposal from the garbage receiving enterprise and the sending enterprise.In recent years, the cost-benefit performance evaluation method has been applied in Yixing City, Jiangsu Province, to determine the expected control range of all aspects of cost generated by project implementation, and good results have been obtained.

3. Cost-effectiveness analysis (CEA)

3.1 Three main ways to evaluate CEA results

In general, the evaluation results of CEA are not expressed in monetary units, and cost-effectiveness analysis is widely used in pharmaceutical economics. We usually use this analysis to evaluate the health outcomes of patients or the treatment standards of medical institutions, such as the number of people saved, the cure rate, the ability to prolong life, the ability to effectively control the spread of disease, etc. There are three main ways to evaluate CEA results: The first is the average cost-benefit ratio, which is how much each effect costs. The second is the added-cost added-effect ratio, which is the cost of creating added value. The third is the incremental cost and incremental effect ratio, which is used to assess the ratio of changes in treatment costs and effects of treatments to other alternative treatments.

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3.2 Acid Rain program of the 1990s

In many cases, the costs of environmental regulation have been overestimated, and the true implementation costs have been much lower than expected. The most famous example is the Acid Rain program of the 1990s. Industry estimates that the plan would be expensive to implement and could lead to higher electricity prices in some parts of the country, but the opposite has happened. Cap-and-trade schemes have greatly reduced emissions, and they cost companies very little because they have been able to use low-cost mechanisms to reduce emissions.

3.3 The use of cost-utility analysis in the United States

Although the use of cost-effectiveness analysis in the United States is not perfect, it still provides a lot of useful help for government management. Most importantly, it has taught governments that they need to consider and focus on the consequences of regulation before it is implemented, and that it is not enough to make important economic decisions based on instinct alone. It is the work of our institute to ensure that cost-effectiveness analysis takes a completely neutral stance in implementation to identify informed decisions. In addition to working to improve the implementation of cost-effectiveness analysis in the United States, we also hope to promote the use of cost-benefit analysis in environmental and public health policy worldwide.

3.4 Internal control and risk management

"The cost-effectiveness principle that has been so much discussed recently does not apply to internal control and risk management. There are two reasons: on the one hand, the unlimited extension of risk discount period makes the cost and benefit of risk control no longer limited to the current profit and loss; On the other hand, the damage caused by the corresponding risk outbreak is far from being measured by pure financial indicators. Therefore, the cost-benefit principle is more applicable to management control than risk control." Recently, Liu Xiaolun [2], director of the Institute of Audit and Risk Management of the National Accounting Institute of Beijing, and member of the internal Control Committee of the Accounting Society of China, reminded those enterprises that are actively planning and organizing the implementation of the relevant requirements of internal control standards in an interview with reporters.

As for the establishment of the organization, an internal control committee may be set up within the board of directors, or the audit committee may act on behalf of the relevant responsibilities. In order to better implement the internal control work, an internal control department can also be set up under the management, which is responsible for the design and implementation of internal control and reports to the general manager. However, there should be no direct reporting relationship between the internal control committee and the internal control department, otherwise the relevant internal control and supervision responsibilities of the internal control committee cannot be carried out by the audit committee.

4. Cost minimization analysis

4.1 The ways to obtain the maximum profit

Profit maximization and cost minimization are the top priorities of enterprises in the era of market economy. In order to maximize profits, enterprises must reduce the cost of input factors and achieve cost minimization. Therefore, if we want to obtain the maximum profit, we should follow the principle of cost minimization. Cost is actually a concept in accounting, and it is widely used in economic analysis. Cost is what we often call the price paid to achieve a certain expected result. Different categories of costs, including administrative costs, production costs, transaction costs, administrative costs, etc. As a micro subject in the market, the goal of enterprises is to make profits. Therefore, one of the key strategies for enterprises to win in the competition is cost minimization. Cost control is an important management topic that all enterprises must face. No matter what kind of reform and incentive measures are adopted by enterprises, they cannot replace the work of strengthening cost management and reducing costs, which is one of the most important aspects of the success or failure of enterprises. Effective cost control is very important for all walks of life, and if a business solves the cost minimization problem, it has achieved a key victory in the industry.

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In the market economy, profit maximization and cost minimization are the eternal themes of enterprises. To maximize profits, a firm must optimally allocate input factors to minimize costs. Therefore, if we want to achieve maximum profit, we should follow the principle of cost minimization. Cost, in fact, is a concept in accounting, which is also widely used in economic analysis. Cost refers to the price paid in order to obtain a certain expected result. There are different categories of costs, including production costs, administrative costs, transaction costs, etc. Enterprises are micro-entities in the market and aim to make profits. Therefore, cost minimization is one of the key strategies for enterprises to win in the competition. Cost control is an important management topic that all enterprises must face. No matter what kind of reform and incentive measures the enterprise adopts, it cannot replace the work of strengthening cost management and reducing costs, which is one of the most important aspects of the success of the enterprise. Effective cost control management is a problem that every enterprise must pay attention to, and grasping it can drive the overall situation.

4.2 Technology that is helpful to minimize the cost

In order to minimize the cost, what enterprises need is not a simple technology but a technology that is helpful to the economy. On the one hand, new achievements in technology can be widely used in production only when they are economically needed and have the conditions for adoption. On the other hand, technological progress also promotes economic development. Such as new product development, quality improvement, etc., thus can promote the transformation of science and technology into productivity. At the same time, through technological progress, higher requirements are put forward for the level of management, so as to achieve the unity of economy and technology[3].

Second, ineffective consumption is controlled to the lowest point. From the perspective of the relationship between product acquisition and consumption, part of the total consumption of an enterprise is effective consumption, which is necessary to obtain social products (qualified products); The other part is ineffective consumption, which is the consumption that should not occur to obtain the product, such as waste consumption, waste caused by poor management, etc[4].

Finally, strict expenditure management. For expenditure management, since the enterprise can improve the control of any cost expenditure through recycling, it is particularly important to analyze the expenditure and formulate the most reasonable operation process and formulate the procurement strategy. "Except for personnel salaries and investment expenses, we need to analyze all expenditures. In this way, we can find the best way to buy, including what to buy, from whom to buy, when to buy, and so on. For example, whether to purchase unified or single product purchase, or joint purchase. After determining the procurement method, it is necessary to find qualified suppliers and conduct business negotiations. Then there is the execution of contracts and the payment of goods, and finally the development of processes and systems for effective long-term management of suppliers."

4.3 Case study on Slow economic development countries

When economic growth is sluggish and demand is insufficient, expansionary fiscal policy (proactive fiscal policy) is adopted, and the state increases investment in infrastructure construction to stimulate the growth of aggregate demand and drive economic growth.

First, lower taxes to promote consumption and increase consumer demand. Second, increasing the transfer payment to low-income people, because low-income people have a higher propensity to consume, so it can also effectively increase the consumption demand.Third, increase government investment, such as 4 trillion yuan in 2008, railway and highway infrastructure construction [5].

To further revive consumption, since the National Development and Reform Commission and other state departments issued a notice on Measures to stabilize and expand auto consumption at the end of April, A large number of corresponding policies have emerged across the country to try to compensate automobile consumption by implementing a series of policies, such as tax incentives, increasing subsidies for new energy vehicles, unblocking the second-hand car market and increasing support for consumer credit .

In order to stabilize employment and ensure social stability, targeted poverty alleviation driven by national fiscal and financial policies has accelerated the growth of per capita income of residents in poor rural areas, effectively alleviated urban-rural income inequality, and promoted employment. In terms of corporate loans, the state has adopted a proactive fiscal policy. In order to hedge against the epidemic and support real enterprises to tide over difficulties, the central and local governments have

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introduced a series of fiscal and financial rescue policies to widen money and credit, and increased loan support to enterprises. While improving the financing environment for enterprises and reducing financing costs, these policies have also strengthened the investment determination of enterprises. It is expected that the trend of strong financing demand in the real economy will continue.

5. Conclusion

Under the influence of the epidemic, although China's economy did not rise too fast, it is still stable. Therefore, in the era of the epidemic, the following strategies can be adopted to achieve sustainable economic development: Give full play to the Internet economy. Cloud office is a product of the post-pandemic era, and it should be maintained. In the post-COVID-19 era, the development of emerging technology industries such as artificial intelligence and unmanned delivery will be expanded. In general, the post-epidemic era is more inclined to the Internet economy. From consumers to cloud, from scenario-type office to cloud-based office, they are updating the living state under the epidemic.

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