

The Effect of Tax Incentives on Innovation and Enterprise Performance: A Literature Review

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Abstract

In the context of globalization, numerous nations have adopted tax incentives aimed at fostering technological innovation and economic development. The paper seeks to investigate global tax incentive policies in detail with specific focus on their efficiency and corporate innovation capacity and performance. It is shown that this strategy has vaguer results in terms of innovation and performance for different kinds and sizes of enterprises. Despite the fact that rewards provide the participants with a positive stimulus, several problems in policy design and implementation were outlined, including the absence of sufficient motivational measures and the complexity of the policy implementation. By comparing the two, this review outlines key elements of effective tax incentive policy, which include the flexibility of the policy, clear policy goals, and policy support for proper internal management within firms. These findings, hence, offer fresh insights for theoretical research and managerial prescriptions to policy makers and business managers for framing and fine-tuning their policy of taxation. Finally, such approaches have the task of defining the conditions for the possible technological advancement and economic growth.

Keywords: Tax incentives, Enterprise Performance, Innovation, R&D Investment, Policy Effectiveness.

Introduction

As the global economy continues to change and technology is growing at a very fast rate making innovation one of the main sources of growth in the modern economy and improved competitiveness of nations. Especially in China, the reports of the 17th, 18th, and 19th CPC Congress state reports stress the need for innovation to handle global competition and internal issues, proposing that the main strategic direction within the innovative country (Hofman, 2018). This is complemented by the State Council's document on the 2016 eleven Outline of the National Innovation-Driven Development Strategy that reinforces the importance of innovation in China's economic plan by underlining its significance in strengthening the country's power (Dhar & Mutalib, 2020; Jahanger, 2021).

Tax incentives enjoyed a rather wide understanding all over the world as the essential instruments to increase the innovative potential and performance of the enterprises. These policies of reducing the tax burden on companies directly stimulate more investments in research and development (R&D) that in turn foster technological innovation and continual development of industries (Bloom, Griffith & Van Reenen, 2002). With enhanced globalization of economies and progression in technology, governments all over the world use various strategies and instruments with regard to their economic structures, stages of development, and strategic objectives when implementing tax incentives (Wang, Li, & Wang, 2019).

The purpose of this study is to investigate the effects of tax incentives on the innovation outcomes of corporations with a focus on the Institutional theory, the Innovation ecosystem theory, and the dynamic capabilities theory. It discusses how these policies are used and with what impact on the various categories of enterprises and industries, based on an analysis of how policy strategies are formulated and executed, as well as on the possible limitations of such policies. This study therefore seeks to construct a comprehensive framework of tax incentives' effects on corporate behaviors based on a comparative international analysis of decision-making processes concerning R&D and innovations. Furthermore, the study addresses the controversial issue of how to formulate better tax incentive schemes to not only enhance the companies' abilities for innovation, but also to facilitate sustainable competitive advantages in the external environment as well.

Tax Incentives and Enterprise Performance

Tax Incentives

Tax incentives are intricate instruments of fiscal policy that the governments employ with the aim of encouraging the undertakings and the economic activities by providing exemptions to certain undertakings. Keen and Mansour (2010), state that tax incentives include not only tax cuts but also numerous other non-standard tax arrangements that would apply to particular taxpayers or certain operations. These consist of taxation reduction, allowance of tax credits, taxation deferment and other concessionary treatments aimed at encouraging specified types of economic activities such as investment and research and development. Genschel and Seelkopf (2016), also categorize tax incentives into numerous relative taxes cuts, exemptions, and preferences that is directed on certain types of industry, regions, or investments.

Tax incentives can be grouped into two main types based on preference methods: direct incentives and indirect incentives. Direct incentives include pure exemptions, reductions, refunding and other favorable tax rates which are offered to the investors. This approach shifts government's grants directly to enterprises, thus raising expected profit from technical undertakings. But direct incentives are not always attractive in the situations when there were failures in performing the R&D activities or when the constant cash inflows are required during the R&D stages (Sun, 2018). On the other hand, indirect incentives mainly involve such approaches like deductions, offsets against taxable income, accelerated depreciation, investment offsets, and deferred taxation. These methods offer exceptional adaptability and focus on providing incentives before an event occurs, reducing financial constraints during the knowledge transfer process (Wang, Huang, & Zhang, 2019).

Enterprise Performance

Enterprise performance definable as an extent of an enterprise's productivity, efficiency and success in attaining its goals. According to Lee and Huang (2020) from the economic point of view, enterprise performance encompasses financial results that include profit margins, rates of return, and revenue generation which are, in turn, indicators of an enterprises' stream of enterprise's economic benefits and profitability. However, the strategic management perspective expands this understanding to non-financial indicators such as market share and the product innovation capability (González-Rodríguez et al., 2021). McElroy and Van Engelen (2012) also identify that corporate social responsibility and sustainable development capability are two more dimensions for the evaluation of performance, and this is because it is expected that enterprises should contribute positively to society and its environment.

Enterprise performance is, therefore, affected by specifics of enterprise's internal environment, including leadership, corporate culture, and employee motivation systems. According to Febrianti and Jufri (2022), performance is indeed influenced by two factors, namely, transformational leadership and organizational commitment that focus on the essentiality of leadership in inspiring employees and a good corporate climate. According to Mulyadi (2022), liquidity, leverage, risk management, as well as the asset's tangibility substantially impacts the financial performance. Market trends and factors in the economic environment also affect the performance of the Business enterprises to a great extent. Cataltepe et al. (2022) stress the need for strong market and dynamic capabilities to respond to competitive pressures, while Soni, Arora, and Le (2022) emphasize the importance of adaptable strategies to cope with policy and economic fluctuations.

The Effect of Tax Incentives on Enterprise Performance

According to institutional theory, the organizational behaviour is not entirely determined by economic factors but by the organizations' need for external recognition and support. The institutional factors like legal frameworks, policies, and societal norms play an important role in determining the behaviour of enterprises and their decision-making (Scott, 2008). Scott (2008), classified institutional elements into three dimensions: These are the cognitive, normative, and the cultural cognitive level. The cognitive dimension aims at comprehending how enterprises view and interpret their environment, the normative dimension concerns the aspect of ethics and norms, while the cultural-cognitive aspect revolves around the beliefs and values held by enterprises.

Taking into consideration tax policies as one of the major external institutional factors, it is possible to notice that they affect the decisions and actions of enterprises. Nevertheless, the effects of tax incentives on the performance of enterprises are not a clear issue that only depends on numerous direct and indirect factors. Relatively, the findings of empirical research has it that tax incentives has a beneficial effect on enterprise performance. According to Xiong, Wei, Yang and Cristofini (2023), the high-tech enterprises in the mainland China that enjoyed the 15% tax rate incentive received good results on the innovation performance. These tax incentives minimize the burden of tax on enterprises and thereby, cause an enhancement of the funds for the R&D and the growth of innovative plans and technologies. This in turn helps in pushing the technological evolution and new product innovation which in turn improves the quality of the product and technological competitiveness of the product. In addition, Huang and Liu (2024), demonstrated that fiscal

and tax incentives significantly improve the efficiency of innovation by enterprise, where the intermediary variable used is the financing constraints between these incentives and efficiency and performance of enterprise innovation. They highlighted that tax incentives not only ease the mandate on enterprises in the form of taxes but also help in cutting costs pertaining to financing which in turn helps in enhancing the capital asset productivity alongside the ability of enterprises in investments in innovations. Similarly, Abdelhakim and Zouaghi (2022), also ascertained that under some circumstances, the application of tax incentives has a positive effect on the enhancement of the financial performance of enterprises in Tunisia. They pointed out that enterprises are subjected to income taxes, however, tax incentive policies can help reduce these tax liabilities and enhance the enterprises' financial structure, thereby fostering higher growth in the long run. Further, Wang & Kesan (2022) examined the effect of tax policies related to SMEs innovation in China and proved that accurately defined R&D tax credit scope did encourage innovation and support the enrolment to patents efficiently.

Nevertheless, there seems to be some evidence from some works noting that tax incentives are sometimes detrimental in several ways. The study done by Razi, Kharuddin, & Abd Hamid (2024), concluded that the impact of tax incentives aimed at improving the enterprise performance may differ given the level of board diversity in electronics and electrical industry. If an enterprise's board is not diverse, it might result in limited creativity and different approaches to problem-solving, which, in turn, might decrease the effectiveness of incentives. Pekarski (2024) notes that adjustments of enterprises to global economic crises and policy responses might be hampered by the increase in public debt. Thus, this view establishes the interconnection between overall economic conditions and tax legislation as well as its impacts on the financial conditions and outcomes of the enterprise. Further, the manner of designing as well as implementing tax incentive policies may change their effectiveness. According to the study conducted by Li (2023) tax incentives as a policy tool fostered research and development investments in China's high-tech industries in the short run nevertheless there are flaws connected with it such as ineffective management and monitoring led to situations where some enterprises never converted these funds into effective innovation. This indicates that the efficiency of implementing the tax incentive policies and internal organizational controls may go a long way in determining their success in fostering innovation and improving the enterprise performance.

In addition, other moderating factors also affect the relationship between tax incentives and the performance of the enterprise. In their study Xiong, Wei, Yang, and Cristofini (2023), established that political connection acted as a negative moderator in enhancing the effect of low tax rate incentives on the high-tech enterprises innovation performance. Businesses that have close links with the political realm might depend on subsidies from the government instead of increasing performance through independent innovation. This can limit their innovation investment intentions and R&D activities, thus, circumscribing the optimality of the Tax incentives on its impact on innovation performance. Lin & Lin (2023), also noted that the provision of subsidies and tax relieves significantly influences the research and development and innovation involvement of enterprises in the environmental protection industry. Nevertheless, they may differ with regards to such factors as geographical location and ownership patterns of the undertaking. Enterprises in developed economic area might be endowed with more resources and a better innovation environment than enterprise in

other areas, therefore, they could use the Tax credit and subsidies for technological R&D and product innovation more efficiently. However, the enterprises in the less developed regions may not be able to apply these policy incentives effectively, because of scarcity of resources and constraint of markets. Moreover, it is essential to pay attention to the complexity and specificity of enterprises' development and the characteristics of specific industries in implementing tax preference policies. Ahmetoğullari and Yücel, (2022), have also established that the works regarding the relation of incentives and the performance of enterprises have conveyed that the response of each enterprise to incentives varies with the condition of the enterprise. Thus, for SMEs as well as companies which do not have R&D divisions, just offering incentives may not be enough to positively influence performance results and may lead to negative outcomes. Whereas the incentives can improve performance when it comes to the large enterprises that have R & D departments among them.

Tax Incentives and Innovation

Innovation

Innovation, which is a critical determinant of the economic, technological, and social progress, is defined differently across different disciplines. Within economics, Schumpeter (1934) describes innovation as "creative destruction," emphasizing its disruptive capacity to alter existing economic structures and foster industrial transformation. In management, innovation is critical for achieving competitive advantage and sustainable growth. Drucker (1986) defines innovation as "the manner in which an enterprise or market employs economic or social resources upon which it depends."

One such subset of innovation, technological innovation speaks directly to new technologies and the development and application of them. According to Rosenberg (1982), technological innovation involves the evolution and use of technology and this involves the coordination of cross-functional teams that may result in changes in the industry and the ecosystem. Abernathy and Clark (1985) have explained that along with new technologies, existing technologies when incorporated into different processes and products, lead to a vast improvement.

The Effect of Tax Incentives on Innovation

Innovation ecosystem theory emphasizes the collaborative nature of innovation, where various participants such as suppliers, customers, research institutions, and government bodies interact within a network. Moore (1993), first introduced the idea, suggesting that innovation occurs within a complex network rather than in isolation. Governments, academic institutions, enterprises, and other stakeholders each play crucial roles in the innovation ecosystem (Costa & Moreira, 2022).

Tax incentives are another significant consistently used weapon in the government's arsenal. Compared to "after-the-fact incentive" subsidy policies, tax incentive policies appeal to a wider range of entities and concurrently practice non-discriminatory treatment, which in turn reduces administrative costs and also the likelihood of subsidizing substandard firms (Dai & Liu, 2008). The question of whether tax incentives have been a true tool in promoting the research and development (R&D) innovation of enterprise has remained enlightening to academics over the years.

Firstly, based on reviewing the studies, majority of the evidence bear witness to the fact that tax incentives is a factor that fuels enterprise innovation. As for the role of tax incentives, most academics tend to agree that they can to some extent correct market failures in the course of innovation. Particularly, a decreased tax rate not only contributes to reducing the changes in the MC of enterprise R&D innovation but also boosts an enterprise's cash flow and profit margin (Hall, Van, & Reenen, 2000). This positive change in financial ratios increases the availability of external funds subsequently increasing the tax investment return rate on innovation projects in R&D. These combined factors help to incentivize enterprises' incentive to increase the intensity of R&D investment, and thus increase both the quantities and quality of enterprise innovation output (Bloom et al., 2002). Bloom et al. (2002), through an empirical analysis of panel data from nine OECD countries for the period 1979-1997, concluded that these countries' tax incentives positively affected enterprise innovation. To be specific, a 10% cut in tax credit for R&D not only encouraged a 1% short-term increase in enterprise investment in R&D but also a 10% increase in aggregate R&D spending in the longer run. Ghazinoory & Hashemi (2020), focusing on Iran's high tech sector, explored tax incentive and direct subsidies for enterprise R&D. From these findings, it could be concluded that both methods might help improve the scale of enterprise innovation while the relative incentive effect might be even more significant in the case of SMEs. Li (2023) differentiated tax incentives into general and special types and examined how they affected the high-tech industry's innovation efficiency. The study analyzed a positive relationship between the tax incentives and the research on the high-tech industry's innovation efficiency and provided relevant recommendations. Furthermore, Sterlacchini & Venturini (2019) examined the positive relationship that has tax incentive and enterprise innovation, more specifically, the incentive impact on the service sector innovation is more evident. In their empirical study, Bodas Freitas et al. (2017) demonstrated that tax incentive in three countries under investigation, that is Italy, France and Norway promoted enterprise innovativeness in the level that is more pronounced in the setting with high R&D orientation and market concentration. Additionally, Jia & Ma's (2017) study, utilizing a sample of listed enterprises from 2007 to 2013, conducted systematic GMN empirical analysis, revealing that a 10% decrease in short-term tax costs resulted in a 3.97% increase in enterprise R&D investment.

On the other hand, there exists an opposing scholarly opinion that tax incentives are not strong regulators of the innovation rate and they may lead to negative effects. Intending to substantiate this argument, Dai & Chapman (2022), focused their study on non-developed countries and conclude that tax incentive measures bring not beneficial consequences to enterprises in these nations. They also found that the working of tax incentives is observed only in the early years of the operations. Knoll et al (2021), revealed in their research of multinational enterprises that at the global level, the more generous tax incentives are, the less the enterprises raise their investment in R&D. According to the study of Gokhberg et al. (2014) conducted on Russian manufacturing industry, it observed that tax incentives not only do not increase the interest of enterprises in spending on R&D but also hinder an increase in enterprise innovation input, pointing towards a negative relationship between tax incentives and enterprise R&D expenditure. Chu et al (2017), chose 137 industry listed enterprises in Shanghai as the sample to analyze the micro data and examined the influence of tax incentives for enterprise innovation input of innovation patents output. Thus, they discovered that the tax incentives whether passed through directly to the firms or indirectly to human capital are negative to the rise in patent output in strategic emerging industries. Based on the

data on listed enterprises in Jiangsu Province on the Shanghai and Shenzhen stock exchanges, Xie (2019), also empirically validated the negative relationship between tax incentives and enterprise's innovation input and innovation output.

As more studies are conducted, a growing number of scholars argue that the impact of tax incentives on enterprise innovation cannot be universally applied. Its effectiveness depends on various parameters as enterprise characteristics, competition intensity, the vigor of the tax enforcement and the presence of specific policy configurations. They lead to the development of significant distinctions between enterprises of diversified kinds and at different cycles in the lifecycle of an enterprise. Yu and Xu (2022), especially stress on the fact that heterogeneity of enterprises plays a crucial role in determining the efficacy of tax incentives. From their research, the authors indicate that enterprise innovation activities are undoubtedly evoked by tax incentives. Also, the different characteristics of enterprises for instance the size and industry may influence the efficiency of tax incentives. Li (2023), also emphasize that at the certain development lifecycle of the enterprise, the incentive impact of the tax incentives and fiscal subsidies on innovation activities' differ greatly, especially for with growth enterprise. Zhou, Zhang, and Chen (2020), concentrate their study on how competition in the product market and tax incentive policies affect the innovation performance of enterprises. The results indicate that the relationship between tax incentives and innovation output is of the quadratic relationship, while competition diminishes the incentive impact of tax incentives on innovation output. Sun's (2022), examination suggests that tax preferences affect the innovation efforts of enterprises in a positive manner while increased tax enforcement enhances the Research and Development investment of enterprises. Remarkably, this influence is even slightly stronger in the non-state-owned enterprises. Knowledge from Lin and Liu's (2017), study that uses the 2012 World Bank China Enterprise Survey data showed that the relief of tax burdens promotes all forms of innovation in enterprises and especially in the SMEs, non-exporting enterprises, and privately-owned enterprises.

Integrated Analysis of Tax Incentives, Innovation, and Enterprise Performance

Pathways of Tax Incentives Impacting Innovation

Tax incentives serve as a critical tool for stimulating enterprise innovation. These incentives reduce the financial burden on enterprises, making it more feasible for them to invest in R&D. Bloom, Griffith, and Van Reenen (2002) argue that tax incentives reduce the incremental costs of innovation undertaking hence making more projects feasible. Such a reduction in cost lets the enterprises devote more resource towards high risk-high return innovation activities. Also, tax incentives can be a source of funding that improves the funding of innovation activities by the enterprise. This support comprises tax credits, deductions and exemptions whereby the cost of R&D is cut out (Chen & Yang, 2019). These incentives lead to higher cash-flow which in turn influences the financial metrics of the enterprise and enables the business to obtain more external finances and develop new, innovative projects (Hall, Van Reenen, & Griffith, 2000).

Another conduit via an organization's tax incentives influences innovation is through human resource investment. Tax incentives reduce the financial burden on enterprises hence hiring of skilled personnel that are so crucial in innovation. This is important for designing and introducing new technologies and techniques (Cohen, Nelson, & Walsh, 2002). The availability

of skilled personnel increases both the frequency and effectiveness of innovation, which improves the enterprise's innovativeness (Nelson & Winter, 1982).

Furthermore, tax incentives which acts as a mechanism of providing incentives assists in correcting various market failures on the innovation process. Market failures are largely unpredictable and thus could be attributed to the risks and uncertainties associated with R&D investments. Thus, due to the tax incentives, governments can make enterprises more willing to invest in more large-scale and daring projects related to innovations (Aghion & Howitt, 1992). This support is important more to the SMEs since they are more risky and most of the times have fewer funds to use in their innovation processes (Imran & Rehman, 2024).

Pathways of Innovation Impacting Enterprise Performance

Innovation is conceived to be a driver of enterprise performance by augmenting a firm's competence in product enhancement and process enhancement. Product innovation helps enterprises to create new products relevant to changing consumers' needs, hence creating a large pool of clientele and a competitive advantage in the market. This expansion serves much enticement not only in maintaining market share but also in establishing an avenue for long-term profit making for the firm (Afshar Jahanshahi et al., 2011). Process innovations that alter the manner in which goods are produced increase operational effectiveness and decrease costs, which directly increase profitability (Damanpour, Walker, & Avellaneda, 2009).

Technology, one of the primary results of actions directed toward innovation, drastically increases the value of products and optimizes production. They lower expenditures and enhance the revenues of a firm in the context of fast and changing markets so that it would be less vulnerable to market shifts (Kotsemir & Meissner, 2013). Also, by extending the scope of markets and opening new business opportunities, constant technology advancements lead to a longer-term and improved business profitability (Tidd & Bessant, 2020).

Technological innovation culture in an enterprise goes further than just supporting the usage of advanced technologies, it also improves employees' working conditions ultimately improving staff recruitment and attrition. Thus, in organizations characterized by innovation, employees demonstrate higher levels of willingness and motivation to work, as many possible learning experiences and career advancements are available within such settings (Oltra & Flor, 2010). This dynamism is healthy for organization effectiveness since it enhances the production rates and reduces staff turnover rates.

Comprehensive Analysis of How Tax Incentives Affect Enterprise Performance through Innovation

Therefore, the ability of organizations to harness innovation is crucial in the dynamically evolving markets. The dynamic capability theory pinpoints to the necessity that require firms to evolve and embrace alterations in their environment, and it provides particularly a perspective on how enterprises can leverage tax incentives to enhance adaptability and sustainable growth (Teece, Pisano, & Shuen, 1997).

Tax incentives have a major effect on the improvement of the performance of an enterprise by encouraging more investments in innovation. Chen and Yang (2019) have also underlined that regulations of R&D tax credits have a significant positive effect on an enterprise's

innovation capacity by alleviating the cost pressures resulting from research and development. This is because it becomes easier for firms to direct more cash to improvement on technology and research on new products to be developed. Backing this up, Tian et al (2020), find that the tax incentives substantially increase spending on R&D and that due to increased innovation performance, there is greater improvement in the performance of enterprises. The study by Wang (2019), also showed that tax incentives positively influence the business performance since companies put effort to raise their research and development expenses. In the subsequent study, Ting, Sheng, and Hong (2019), supported the findings of this study that tax incentives enhance quality of innovations as well as market competitiveness by enhancing R&D investment. As a result, ongoing investments in R&D allow not only the creation of new products and technologies but also the improvement of productivity and the reduction of cost, thus increasing the overall performance.

Innovations initiatives, which are impacted by tax incentives, are effectively implemented and lead to accelerated efficiency of the enterprises, as well as qualitative increase in outcomes that are considered as innovation outputs. Innovation output affects directly and indirectly the improvement of the enterprise performance. It generates new sources of revenues and markets and therefore have the quickest effect on the economic activities of organizations. In addition, the achievement of positive innovation outcomes, helps in boosting the market competitiveness and brand awareness, thus increases a enterprises' performance and guarantees long-term competitive advantage (Mousavi, Bossink, et al.). Liu and Mao (2019) show how business performance is boosted by tax incentives through encouraging R&D investments hence enhancing the production of innovation outputs. Such outputs consist of new products, advanced technologies, and patents which would be the immediate offshoots of the enterprises' R&D undertakings. They argue that tax credits reduce the cost of R&D hence, increasing enterprises' propensity to invest in the innovations as well as the input into innovative activities. Tax incentives promote business performances by increasing the level of innovations, and using innovative resources, which in turn improves commercial competitiveness that strengthens the long-term competitive advantage of enterprises.

Conclusions and Policy Implications

The following paper aims at giving an extensive analysis of the effectiveness of tax incentives in promotion of innovation and improvement of enterprise performance. It cannot be disputed that tax incentives are some of the most powerful weapons that governments use to spur enterprise innovation. Towards this end, the relaxation of the financial requirements for funding of R&D, offer the necessary incentives that helps enterprises, particularly SMEs to pump up their investments on research and development. It can be demonstrated by theoretical and empirical analysis proving that tax incentives directly influence the R&D expenditures and, thus, lead to the improvement in the quality and number of innovation outputs.

Innovation is closely related to the performance of the enterprise, and at the same time, it is a multifaceted process. Innovation strengthens market competitiveness since it brings new products and optimizes the existing processes, which ultimately give the business greater market share and greater profit margins. However, the fact that a proper need for the balanced innovation strategy is considered paramount, especially because the excessive

amount of innovations may lead to the improper distribution of resources and the general reduction of efficiency.

In order to increase the efficiency of tax incentives and make them additive to the strategic goals of economic development that focus on innovation and competitiveness, it is necessary to develop a system that would provide differentiation in distributing these incentives according to the type of business. Furthermore, there is need to carry out regular assessment of the impact of tax incentive policies so as to make the necessary adjustments. This process should also involve the evaluation of short-term innovation incentives as well as long-term ones in terms of performance enhancements in enterprises. In addition, one must strengthen efforts to promote proper configuration of innovation processes for enterprises to avoid wasteful investments in innovation. This can be done with the help of guidelines for resource and project management, which means that innovations will contribute to real development and its sustainable economic growth.

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