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APPROPRIATE POLICY RECOMMENDATIONS FOR BOOSTING PRODUCTIVITY

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ABSTRACT

In this paper, we propose a framework to analyse country-specific productivity challenges as well as a checklist of issues that should be reviewed when designing productivity-enhancing national policies. This framework is based on the recent work that was done on The Future of Productivity (OECD, 2015a), as well as subsequent developments of it in the context of the Global Forum on Productivity. One of the most important discoveries made in recent research on productivity is that the results of aggregate productivity are influenced by structural variables that are active at the level of the industry or the company. These include the degree of heterogeneity in productivity performances across firms (such as proximity to the global or national frontier), the distribution of firm characteristics across the economy (such as size, age, propensity to innovate), the ability of markets to allocate labour and capital efficiently across firms, the extent to which the business environment facilitates on the one hand the growth of the most productive and innovative firms and on the other the diffusion of best practices across the economy, and the smooth functioning of a "creative-destruction" process by which experimentation is encouraged through new entry, as well as exit in case of failure, freeing up resources for the most successful firms.

keywords : *boosting productivity , productivity policy*

INTRODUCTION

The growth rate of total factor productivity (TFP) has slowed down, falling from an average of 2.1% between 1948 and 1973 to a rate of 0.7% between 1974 and 2015. This slowdown is reflected in the declining total GDP growth, which has gone from 4% per year in the postwar years to 3% since the middle of the 1970s and has been less than 2% since the year 2000. Prior to the onset of the current crisis, the Congressional Budget Office (2020) forecasted that the economy would expand by 1.7% in the middle of the 2020s, and they projected that low productivity growth would continue. In addition to this, the majority of workers in the United States have seen real income growth that has been either stagnating or even dropping as a result of a lack of productivity improvement, and pay gap has been increasing. In order to achieve a higher level of production, one may either move closer to the technological frontier (diffusion) or advance the technological frontier themselves (innovation). Catching up is a strategy that is beneficial for emerging countries; nevertheless, it is not sufficient to prevent leading economies such as the United States from falling behind. Without a question, a significant proportion of American firms are well behind the curve in terms of technological advancement, and there are

indications that this imbalance may be compounding as the productivity gap between various sorts of organisations continues to widen.

One worthy goal is to increase the pace at which managerial and technical abilities are transferred from one person to another. Nevertheless, I believe that a significant portion of the solution to the problem of revitalising the economy is to formulate innovation policies in a rational manner with the intention of driving technological progress. In order to alleviate the effects of climate change and other environmental concerns, we need to wean ourselves off of fossil fuels and instead put a significant amount of money into innovation. Extensive research is required in the event of severe health catastrophes such as the COVID-19 pandemic. These findings bring to light the urgent need for improved innovation policy and make a plea for technical transformation that is guided by the government. The context of research and development, inequality, and the increase of productivity is provided by this study. The argument for innovation subsidies is presented in "The Challenge," where it is argued that, according to the evidence, more expenditure on research and development would result in societal benefits that would surpass the costs. "Evaluating Innovation Policies" is a compilation of data on prospective new ways to innovation, such as tax incentives for research and development, public support for scientific study, human resources, market competitiveness, and trade policy.

"A Menu of Innovation Policies" is the name I gave to my summary of these ideas, and it is intended to act as a guide for legislators. Following that, I will talk about how I want to create and distribute the Grand Innovation Fund, which would be a $100 billion yearly fund, and I will set out my strategy for it. To be more specific, I would state that twenty-five percent would be allocated to tax credits, twenty percent would be allocated to the expansion of STEM occupations, and twenty-five percent would be allocated to exposure policies that would assist in the production of better innovators in the United States. In addition, as part of the package, we need to relax immigration requirements for workers who have the necessary qualifications. This would have a highly positive influence on innovation swiftly and at no additional expense to the government, since any expenditures could be reimbursed by higher visa prices. This would have a very good impact on innovation. This innovation fund would shine both economically and politically if it were utilised as a rocket ship to take on some of the most urgent challenges of our day, such as climate change and health crises like pandemics. However, this would not be the case.

ASSESSING INNOVATION STRATEGIES

There are many different types of innovation policies, some examples of which include government research grants, tax incentives for research and development, human capital policies that encourage innovation, and rules governing economic rivalry and trade. Different policies have varied degrees of merit, and each of them has both benefits and downsides. Here are some of the policies that have merit:

R&D TAX INCENTIVES

The tax break that is offered to businesses for spending money on research and development is more beneficial than the tax break that is offered to them for investing in physical capital. Due to the fact that they are current expenditures, a significant portion of the materials that are used in research and development, such as wages for

scientists and lab equipment, are eligible for direct tax write-offs. On the other hand, the tax liabilities that are associated with permanent assets such as buildings and equipment are written off over a period of one or more years. In light of this, this particular provision of the tax law discourages firms from making long-term investments, despite the fact that it has a negligible impact on investments in research and development. The Research and Experimentation Tax Credit was created by the government of the United States in the year 1981. In spite of the fact that the policy has been subjected to a number of modifications since that time, at its core, it continues to allow for a greater portion of the costs associated with research and development to be deducted from the tax liabilities of the firm. According to the National Science Board (2018), the annual loss of tax revenue that occurs as a consequence of federal and state R&D tax incentives is around thirteen billion dollars. Eighty-three percent of the countries that are members of the OECD gave tax benefits for research and development in 2018.

The OECD has determined that the research and development tax credit offered by the federal government is among the most generous tax credits available anywhere in the world. The primary reason for this is because, in contrast to a subsidy that is paid for the whole amount of R&D investment, the United States tax credit is reliant on the incremental increase that occurs over a base level of R&D spending that was previously defined. A more favourable tax treatment seems to increase investment on research and development. According to OECD surveys (2019), there has been a substantial amount of research conducted on the effects of R&D tax credit changes. The use of data from a variety of nations or states, which illustrates how changes in tax legislation impact expenditure on research and development, is one of these ways. The most recent study takes use of data collected at the business level and examines the effects of tax policies both before and after they were changed. In one particular research, for instance, administrative data from the Internal Revenue Service was used to illustrate how various businesses incur differing after-tax R&D costs as a consequence of changes to federal tax legislation. The businesses who saw the greatest decrease in their pricing after taxes also made more investments in research and development. As a result of President Obama's signature on the Protecting Americans from Tax Hikes (PATH) Act in 2015, the research and development tax credit, which offered extra tax benefits to smaller businesses, was permanently extended the following year.

It is possible for researchers to compare businesses that fall on either side of the threshold that determines the tax regime of a company. This is because, in many countries, smaller businesses often get more considerable tax advantages than larger organisations. According to the academic literature, there is a correlation between a one percent decrease in the cost of research and development after taxes and a one percent increase in expenditure on R&D. Is it possible that the effects of the tax credit would be exaggerated, given that businesses have the ability to categorise their existing expenditures as research and development in order to take advantage of the credit? It was the mistake of reclassifying administrative costs as "R&D" that was responsible for thirty percent of the increased "R&D" spending in Chinese businesses. Auditing investigations conducted in the West, on the other hand, have not been successful in identifying widespread abuse. On the other hand, one may establish whether or not R&D tax credits are really essential outside the realm of relabeling by looking at results that are not related to research and development, such as patenting, productivity, or employment.

Rather than enhancing research and development (R&D) globally, to what extent do R&D tax credits merely enhance R&D in the areas that get them? It is possible for politicians to be unaware of the fact that tax incentives lure employment from another country if the benefits of innovation are restricted to their own country. If, on the other hand, state-specific incentives just serve to shift activity across states rather than raising activity on a national scale, then this should be a cause for worry for federal politicians. A beggar-thy-neighbor approach has the potential to make the distribution of research and development investments even more skewed. This is due to the fact that the places with the highest bids are not always the ones where the research would have the greatest impact on society. In spite of this, there is evidence that migration is occurring as a result of tax incentives. It does not provide a complete explanation for the increase in expenditure on research and development.

GOVT RESEARCH SCHOLARLY GRANTS

When it comes to funding research and development, tax credits are not the best option for the sorts of projects that have the most potential for spillover effects. An example of this would be the fact that companies that engage in fundamental research that has a significant spillover impact do not have an edge over those who engage in near-market research that yields large private profits. In principle, research that has a high potential for spillover to the public may be the major focus of direct government support for research and development. Several government schemes provide financial support to a variety of organisations, including commercial businesses and academic academics.

This makes it difficult to assess grant funding for research and development since, in comparison to tax credits, there is less evidence to support the effectiveness of grant financing. As a result of the selective character of these awards, it is difficult to locate a control group of individuals who did not get the R&D grant from which to extrapolate the effects of the grant's absence. In one kind of research, a comparison is made between grant proposals that were either narrowly granted or rejected. The typical award is $1.7 million, and it comes with a few incentives that are moderate but advantageous. One of these benefits is an additional publication after five years, which is a 7% rise. The most plausible reason for these very minor effects is that groups that were unsuccessful in receiving a grant from the National Institutes of Health (NIH) often find alternative sources of funding.

IMPACTS ON FIRMS

There are a number of ways in which commercial businesses are influenced by public research and development. As has been said before, the findings of academic research have the ability to have an impact on businesses. They illustrate that a $10 million boost in funding from the National Institutes of Health (NIH) to academics led in 2.7 more patents being given to private enterprises. This was accomplished by utilising the relatively random range of financing across research areas. It is important to note that privately owned enterprises are responsible for a portion of the research and development that is funded by the government. In Howell (2017), a comparison is made between the outcomes of applicants for SBIR funds who were either denied or just partly authorised.5. Receiving a Small Business Innovation Research (SBIR) grant has a positive impact on a firm's revenue, venture capital investment, and patenting, and it practically doubles the probability that a company would get financing from venture capital. It would seem that the excellent judgement of the SBIR examiners is the key element

contributing to the success of the programme. This is because they do not choose the projects that are in the greatest need of assistance with their selection.

Innovative Human Capital Policies

Human capital policies are interesting to innovators because they increase the supply side by educating more people to think creatively and execute new ideas. Furthermore, these policies enhance the supply side. The demand-side measures that we have seen, such as tax credits and direct government R&D subsidies, have the potential to encourage enterprises to increase their investments in R&D. If, on the other hand, the number of individuals who are eager to participate in research and development does not increase in parallel with the demand for it, then increasing pay (and the expenses of R&D) will not be sufficient to stimulate further R&D. In addition, this demand-side technique may result in increased inequality without considerably enhancing collective creativity. This is because workers participating in research and development earn more than those earning the median wage. It is very doubtful that there is no supply elasticity of labour in the research and development sector. On the other hand, these concerns are warranted in the near run due to the fact that supply may be somewhat reactive.
An increase in the number of people working in research and development would not constitute such a danger. Unless the newly hired employees are much less productive than the current workforce, we would predict a direct rise in creative output from the new personnel.

The decrease in spending on research and development (R&D) is an additional indirect advantage of innovation. This reduction should be brought about by the increase in supply and the following slowdown of pay growth among R&D personnel respectively. An alternative viewpoint is that there is a leak in the supply of STEM professionals. For instance, educated people could opt to work for investment businesses rather than public research institutes, so maximising their own gains at the cost of the public good.

IMMIGRATION

Due to the fact that migration alters both the composition and quantity of human capital, it has an effect on innovation. Furthermore, immigrants make up 26% of the workforce in STEM fields, despite the fact that they only make up 18% of the population in the United States that is of working age. Each year, immigrants account for more than 25 percent of all patents and enterprises in the United States. According to study conducted in the United States, immigrants, especially those who have earned postgraduate degrees, are less likely to be innovative than native-born Americans. For example, Hunt and Gauthier-Loiselle (2010) found that the number of patents issued per capita increases by 9 to 18 percent for every percentage point increase in the proportion of immigrant college graduates in the population. For this research, data from 1940 to 2000 were collected at the state level. In order to provide insight on the manner in which immigration impacts innovation, historical narratives may be of great use. In the early 1920s, the United States of America placed restrictions that were tighter on some countries than they were on others. When compared to immigrants from Italy, for example, those from Sweden saw a lower level of effect. Because of these restrictions, scientists from Eastern and Southern Europe had a lower likelihood of immigrating to the United States, which in turn led to a reduction in total intellectual output.

It is possible that their findings are only applicable to academic publishing, which is subject to temporary restrictions on the number of journals and departments. However, when both native-born and immigrant authors are included in the study, they fail to give convincing evidence of negative aggregate consequences.

The rules that regulate the production of new information are as follows: A number of different policies are essential for the enhancement of organisational, marketing, and process-related aspects. A targeted policy may look something like this:

1. The uniformity and openness of intellectual property rights (IPR) systems worldwide. Ensuring ex ante returns on innovation investment without giving preference to incumbents is important. A reassessment of current IPR regimes may be necessary to balance these concerns in order to keep up with technical advancements in certain sectors.
2. Policies intended to create a balance between fundamental and applied research, alleviate market weaknesses in the supply of inventive endeavour, and enable cross-border, cross-field, and university-private sector cooperation.
3. Public funding for postsecondary education and fundamental research, which promotes private R&D and leads to fundamental improvements in knowledge.
4. Direct assistance and economic incentives for R&D created to guarantee fair competition for both newcomers and established players.
5. Laws enabling more KBC investments, such as data and ICT

There are additional framework guidelines that include the following in order to further foster innovation by reducing the risks that are involved with experimenting:

1. Bankruptcy laws that do not penalise early liquidation or the inability to relaunch a firm as a means of punishing experimental failures.
2. Measures to create capital markets and marketplaces for seed and early-stage funding in order to provide startups the funding they need.
3. Reforms to the product market and pro-competition laws that lower obstacles for new competitors and heighten competitiveness between businesses

For example, government spending on basic research and financial incentives for research and development investment contribute to the body of knowledge that is required to assimilate state-of-the-art technology and best practices. Additionally, more comprehensive policies that promote competition have a positive effect on the dissemination of knowledge. There is also the possibility that we may come across additional channel-specific laws, such as:

1. Creating a competitive environment and making it easier for new, platform-based business models to be established in the services industry in order to encourage the use of improved management techniques and technology.

2. Financial incentives to encourage deeper university-business partnership so that smaller businesses may access resources (knowledge, human capital, and lab and equipment) that they otherwise would not be able to purchase.
3. Reforming trade policies and trade and investment agreements to promote cross-border connections, increase connectivity to global frontier enterprises, and ease the worldwide operations of businesses, such as by lowering FDI limitations.

Guidelines for the effective redistribution of resources:

The majority of measures that promote the spread of information are likewise pertinent to increasing reallocation efficiency. Other ones that might promote effective reallocation of labour and/or capital, among other things by lowering skill mismatch, are:

1. Improving bankruptcy laws' effectiveness may lessen the chance that priceless assets are locked up in incompetent companies.
2. Modifying housing policy to encourage employment and residential mobility by lowering moving expenses (especially those associated with purchasing and selling a home and other restrictions that restrict the housing market).
3. Cutting expenses associated with recruiting and dismissing by loosening the strict application of employment protection laws.
4. Encourage adult education to provide workers with the skills and information necessary to stay up to date with technology advancements.

The policy implications for expanding the services sector's productivity growth and its ability to create better jobs for more people by (1) identifying four policy areas—trade, technology, training, and targeting—that expand the potential for scale, innovation, and spillovers, emphasising the growing potential technological change and greater intersectoral linkages offer; (2) measuring how countries perform on these four dimensions to show where countries currently stand in practice; (3) examin The performance of nations across the four Ts should serve as a guide for policy priorities, with consideration given to the significance of each for specific services.

OBJECTIVES

1. To study about the boosting productivity

2. To study about the policies related to production.

CONCLUSION

Research conducted in recent years on productivity has shown that structural elements that operate at the level of the firm or industry have a substantial influence on the outcomes of aggregate productivity. Some of these factors include how different firms' productivity performances are depending on factors like how close they are to national or global borders, how various firm characteristics are distributed across the economy in terms of size, age, and innovation propensity, how well markets distribute labour and capital among firms, how well the

business environment promotes both the growth of the most innovative and productive firms and the spread of best practices, and how well a "creative-destruction" process works, where new firms can enter the market and exit if they fail, freeing up resources for the most successful ones. In order to alleviate the effects of climate change and other environmental concerns, we need to wean ourselves off of fossil fuels and instead put a significant amount of money into innovation. Extensive research is required in the event of severe health catastrophes such as the COVID-19 pandemic. In light of this, this particular provision of the tax law discourages firms from making long-term investments, despite the fact that it has a negligible impact on investments in research and development. The Research and Experimentation Tax Credit was created by the government of the United States in the year 1981. In spite of the fact that the policy has been subjected to a number of modifications since that time, at its core, it continues to allow for a greater portion of the costs associated with research and development to be deducted from the tax liabilities of the firm.

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