

SOME PROBLEMS OF POLICIES OF DIRECT FINANCIAL SUPPORTS FOR SCIENCE AND TECHNOLOGY ACTIVITIES BY ENTERPRISES, 2011-2015 PERIOD

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Abstract:

Direct financial supports for enterprises to conduct science and technology (S&T) activities are one of financial policy tools in use actually in Vietnam. The supports target to stimulate enterprises to make investment for S&T activities. Over the world, particularly in developed countries, the direct financial supports is the State policy tool which is used largely to share costs with enterprises and to stimulate enterprises to make more investments for S&T activities. International experience showed that this policy is designed in conformity to economic context and innovation system in every development stage of the nation. It would give contributions to push up effectively innovation activities, particularly in enterprise sector. In this paper, the author will provide a view on direct financial supports by the State for S&T activities by enterprises and show some remaining problems in regulations by these policies in Vietnam

Keywords: *S&T policy; S&T finance; S&T enterprise.*

Code: 17091301

1. View platform by the State on direct financial supports for enterprises to conduct S&T activities

Direct financial supports for enterprises to conduct S&T activities are one of financial policy tools in use actually in Vietnam. The supports target to stimulate enterprises to make investments for S&T activities. Integrating the UNESCO definition of S&T activities² and the OECD definition of R&D activities and innovation by enterprises³ where remarks are made toward the specific nature of R&D activities by enterprises in developing countries. The S&T activities by enterprises can be defined as *R&D activities and innovation activities conducted by enterprises or jointly conducted in cooperation with other enterprises, organizations and*

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² S&T activities include all activities of systematic nature to target development and application of S&T knowledge in all the science sectors. S&T activities may include research and pilot development, education and training, and S&T services.

³ R&D activities by enterprises include fundamental research, application research and pilot development.

individuals. R&D activities conducted within enterprises, by OECD definition, include fundamental research, application research and pilot development. Innovations by enterprises cover production activities, supply of new or renovated products (goods or services), development of new procedure or methods of marketing, and development of new organizational structure of enterprises. Direct financial supports are listed in the group of supply-oriented innovation policies, i.e. the group of policies targeting to enhance motivations for enterprises to make investments for innovation through reduction of costs (Edler, J and Georgiou, L 2007). These policies include direct supports for R&D activities by enterprises, financial measures, debt and risk sharing programs and industrial promotion services. Experience from many countries showed the tools of supply-oriented policies have their increasing impacts to push up innovation if they are named in the set of policies to push up innovation in both demand-oriented and supply-oriented approaches⁴. In the world, particularly in developing countries, direct financial supports are policy tools used largely by the State for purpose to share costs with enterprises and to stimulate enterprises to make investments for S&T activities more than the ones defined by enterprises in initial plans (OECD, 2012). In addition to purpose to support enterprises through cost and risk sharing efforts, these policy tools may be considered as to offer signals on quality of innovation activities by enterprises to get these supports. Then, enterprises would wish more to develop cooperation and venture investments for their R&D projects (Fischhoff et al., 1980; Finucane et al., 2000), or, by other words, State-supported funding sources play the roles of the so-called “seed capitals”.

In Vietnam, the points of view on the roles of financial investment by the enterprise sector for S&T development are presented in strategic documents such as guiding policies by the Party and resolutions by the Government, other master plans such as Strategies for socio-economic development, 2010-2020 period, Strategies for S&T development, 2011-2020 period, Law on S&T and other sub-law legal regulations. Accordingly, Law on S&T, Strategies for socio-economic development, Strategies for S&T development underline the necessity to mobilize all social resources, particularly the ones from enterprises, for S&T development, to stimulate and to offer favorable conditions for enterprises to make investments for S&T activities, innovations and higher technological level. Strategies for S&T development defined the objectives to increase the total social investments for S&T development to achieve the level of 1.5% GDP by 2015 and more than 2%

⁴ Demand-oriented innovative policies target to increase needs of innovation through creating motivations for innovation, to improve conditions for absorbing advanced initiatives and to propagate strongly new technologies (Edler, 2007).

by 2020. In order to achieve these objectives, one of the solutions defined by the Strategies is to renovate mechanisms of allocation and use of State budgets for S&T activities and to apply some break-through mechanisms and policies to push up socialization of investment resources for S&T development, to issue policies to encourage and support enterprises in all economic sectors to renovate technologies, to master key and spear-head technologies and to push up production of high tech rich products, priorities being given to small and medium enterprises (SME).

Resolution No. 19/NQ-CP on 12th March 2015 by the Government on tasks and main solutions to improve business environment, to enhance national competition position for two-year period of 2015-2016 targeted the reduction of costs, time and risks for enterprises in their business activities in general and S&T activities in particular.

Issued mechanisms and policies include State financial supports for S&T activities through programs of various levels, from national one down to ministerial, sectorial and local ones, State funds, preferential loans, low interest rate loans, guaranties for loans as noted in Law on S&T. In addition to financial policy tools to increase input finances for S&T activities, the State also provides supports for S&T activities by enterprises through provision of infrastructure facilities for S&T activities such as S&T information, incubators for high techs and S&T enterprises, supports for establishment and operation of national key laboratories, establishment of some strong research-application facilities, supports for production facilities and market promotion programs⁵.

Direct supports by the State are also conducted through various S&T programs including national and local ones. Strategies for S&T development, 2011-2020 period, provide solutions to focus resources on realization of national S&T programs and enhancement of national S&T capacities. Namely, during the 2011-2020 period, efforts are focused for realization of 2 groups of national S&T programs: one group is for socio-economic development and enhancement of competitiveness of the national economy and another group is for enhancement of national S&T capacities. The important point of these programs is to put enterprises into the center of S&T innovation and application. Investment resources should be focused and mobilized up to the level necessary for formation and development of goods with Vietnam trademarks through application of high and advanced technologies. These products should be capable of competing in markets by

⁵ Strategies for socio-economic development, 2010-2020 period, Strategies for S&T development, 2011-2020 period, Resolution No. 56/2009/ND-CP by the Government on supports for development of SMEs, Program of supports for development of S&T enterprises and public S&T organizations in implementation of self-management and self-liability mechanisms and etc.

their novelty, quality and low costs on basis of comparative advantages in terms of human and natural resources. The programs also target to enhance capacities for technological innovation by enterprises and national technological potentials (*MOST, 2016*).

So, during the recent time, the State has used financial policy tools in general and direct supports in particular to stimulate investments by enterprises for S&T activities through sharing investment costs with enterprises. State budgets allocated to support enterprises play right roles and functions of “seed capitals” for other S&T projects of enterprises. Another important remark is the fact that SMEs, for the first time, are officially named as priority in policies to support S&T activities by enterprises. At the same time, the State uses other supplementary policy measures to support enterprises to conduct S&T activities.

2. Overview of programs of supports for S&T activities by enterprises during 2011-2015 period

Actually, S&T activities by enterprises get supported and financed through national S&T programs, national funds and local budget sources for implementation of concrete priority orientations.

In this paper, the author focuses attentions on consideration of rules of direct supports by the State for S&T activities by enterprises (R&D activities, innovation and technology transfer, training of S&T human forces) in framework of national S&T programs under management of MOST. During the 2011-2015 period, there are 10 national key S&T programs and 8 national S&T programs which have components of supports for S&T activities by enterprises.

2.1. Supports for scientific research activities and technological development

2.1.1. Supports for costs

a) Projects of scientific research and technological development

S&T research projects conducted by enterprises get basically supported in terms of costs almost like to the ones for projects conducted by other organizations. Groups of costs to be supported are classified according to inter-ministerial circulars to guide the set-up of norms, allocation of budgets and accounting procedures applied for fully or partially State budgeted S&T tasks (Inter-ministerial Circular No. 44/2007/TTLT-BTC-BKHCN which afterwards replaced by Inter-ministerial Circular No. 55/2015/TTLT-BTC-BKHCN) which cover:

- Payments for labor forces, namely: hire of local and expatriate experts, training and instruction courses, surveys, investigations and etc.;
- Materials, power and fuel consumption, purchase of data, books and information;
- Purchase and hire of equipment and machines, softwares, technology transfer, purchase of patents;
- Construction works, maintenance and reparation works;
- Other expenditures which are divided into various groups: (i) mission trips, international cooperation costs; (ii) costs of management, evaluation, internal control and acceptance works, costs for investigations, surveys, tests and pilot trials; (iii) costs for seminars, workshops, document printing, stationary, translation of documents, application for intellectual property protection, searching of research documents; and (iv) allowances for programs/projects hosting bodies.

The groups of costs get identified concretely and differently for every national program due to its scale and objectives.

b) Pilot production projects

Enterprises are required to submit the total estimate of costs for implementation of pilot production projects which covers the fixed capitals, technological support costs and working capitals.

Costs for implementation of supported pilot production projects⁶ are divided into various groups, namely:

- *Costs for equipment and machines*: purchase of new technological equipment, test and measuring equipment, purchase of patents and copyrights, softwares, hire, transport and installation of equipment and machines;
- *Costs for producing facilities and workshops*: construction of new facilities, maintenance and reparation works, installation of electric and water systems, hiring equipments, warehouses and other costs...;
- *Costs for technological supports*: supports for completion, improvement for full control and mastering of technological procedures, completion of technical specification data, stability of specification and quality of input materials, pilot products and output products, and training works (in-charge-of-technology staffs and operating staffs);

⁶ Inter-ministerial Circular No. 22/2011/TTLT-BTC-BKHCN on 21st February 2011 on guidelines for financial management of State-supported pilot production projects.

- *Labor costs*: project managing bodies, engineers, technicians and workers;
- *Costs for materials and energy consumption*: main materials, auxiliary materials, tools, parts, power and fuel;
- *Other costs*: mission trips (domestic and abroad), management (administrative management for project implementation); maintenance and reparation of equipment and machines; control, inspection, acceptance evaluation (independent services); seminars, workshops, conferences, intellectual property protection application fee; communication, marketing, advertisement, commercialization of products, reports, printing works, various allowances and etc.

In addition to that, some national S&T programs support costs for purchase of information, equipment, machines, intellectual property right transfer in joint technology research projects between enterprises and S&T organizations (e.g. national program for development of high techs).

2.1.2. Support scales

As standard for programs of supports for enterprises, the qualified projects are supported from State budget from 30% to 100% of costs depending on their subjects of activities. For projects of scientific research and technological development, the highest rate of supports may come up to 100% of the total costs (e.g. projects approved for implementation in program for development of national products up to 2020; national program for development of high techs up to 2020; national program for technological innovation up to 2020).

For pilot production projects, the highest rate of supports for projects listed in national key S&T programs, 2011-2015 period is 30% of the total costs for implementation. This regulation is noted in Inter-ministerial Circular No. 22/2011/TTLT-BTC-BKHVN which gives the guideline for financial management for State budgeted pilot production projects. The maximal support rate of 30% of the total project costs is provided for new invested items (not taking into consideration the remaining values or amortized values in the total project costs) which must get approving decisions from competent agencies. A higher support rate (50-70%) can be provided for investment projects implemented in areas with difficult socio-economic conditions.

In national S&T programs, the support rate for pilot production projects may come up to the maximal volume of 50% of the total project costs (e.g. Program of supports for development of national products up to 2020), up to 50% of the total investment volume (e.g. national program for

development of high techs up to 2020, national program for technological innovation up to 2020), up to 50% of the total investment volume (not taking into consideration the remaining values or amortized values in the total investment volume) for implementation of pilot production projects under projects for development of national products, up to 70% of the total investment costs for pilot production projects in agriculture sectors implemented in areas with difficult socio-economic conditions (e.g. program for development of national products up to 2020). Generally, a higher support rate is to be applied for pilot production projects implemented in agriculture sectors and in areas with difficult socio-economic conditions.

2.1.3. Global conditions for supports.

Every program requires its own conditions for awarding supports, and the supports are different from a program to another one. Even a program may define different conditions for its component projects in different groups (e.g. national program for technological innovation, up to 2020). However, many programs do not formulate concrete sets of conditions. In general, programs always require projects to be named in priority S&T research directions.

The financing and supporting scheme does not have concrete requirements for enterprises to be qualified beneficiaries. However, enterprises applying for supports have to show their resources such as human forces, financial sources, infrastructure and other condition to secure successful implementation of projects.

2.2. Innovation activities and technology transfer

2.2.1. Costs qualified for supports

Innovation activities and technology transfer by enterprises are qualified to receive supports from national key S&T programs (through pilot production projects) and national S&T programs (through projects for scientific research and technological development and other investment supporting schemes).

Costs to be supported include:

- Costs for technology transfer activities (technical know-hows, technical knowledge, solutions to improve production procedures and etc.);
- Costs of purchase and import of high equipment and machines which actually cannot be produced domestically;

- Costs related to application of advanced technologies, training works, hire of experts to design and to produce new products and to change technological procedures.

2.2.2. Support rates

In national program for development of high techs up to 2020, the maximal financial support rates are defined as 50% for approved technology transfer packages.

In national program for technological innovation up to 2020, no concrete rates are defined where enterprises can get partially or fully financial supports for technological transfer packages.

2.2.3. Concrete conditions to get supports

In case of innovation and technology transfer activities in S&T programs, the conditions to get supports follow existing rules for domestic and external technology transfer activities. Technology transfer activities can be implemented as S&T research projects and contracts for technology transfer or purchase.

2.3. Supports for S&T human force training activities

In national program for technological innovation up to 2020, the rules applied for training packages of technology management, technology administration and technology updating for engineers, technicians and managing staffs are defined as follows:

- a) State-budgeted supports may come up to 100% of the total costs of training packages of technology management, technology administration and technology updating for engineers, technicians and managing staffs in public S&T organizations and maximally up to 50% of the total costs for training packages for non-State enterprises;
- b) In addition to these rules, State budget is to support travel and accommodation costs for expatriate experts which take parts in training activities for technology management, technology administration and technology updating for engineers, technicians and managing staffs of enterprises.

In program for development of national products up to 2020, the support rate for investment projects for production of national products are regulated as follows:

- Maximal State budgeted supports may come up to 50% for short time courses of training and qualification updating activities for researchers,

technicians and managing staffs in enterprises and non-public S&T organizations which target higher technology mastering and project managing capacities in projects approved by competent agencies;

- Supports for traveling (air ticket and airport fees) and domestic accommodation costs for Vietnam students conducting studies and researches abroad and coming back for participation in research activities;
- Supports for travelling costs (air ticket and airport fees) and domestic accommodation costs for foreign volunteer experts and overseas Vietnamese taking part in high tech related activities in high tech training, research and pilot production facilities of Vietnam.

For organization of short time courses of new, high and advanced technology transfer and application, the support schemes are defined as follows:

- Maximal financial supports may come up to 100% of costs for hiring consultant-experts for preparation of course contents, lease or purchase (in case of impossible lease) of training equipment, hire of teacher training experts for short time courses on technology transfer and application for enterprises;
- Supports may come up to 50% of the costs of short time courses for technology transfer and application for enterprises (they may maximally come up to 70% for enterprises working in agriculture and rural development sector and in areas with difficult socio-economic conditions).

For certain concrete training and qualification updating activities for technology transfer and application for enterprises, the support schemes are regulated as follows:

- Maximal financial supports may come up to 50% of the costs for hire of training experts (travel costs and fees, accommodation costs) and lease of training equipment and preparation of teaching contents (they may maximally come up to 70% for enterprises working in agriculture and rural development sector and in areas with difficult socio-economic conditions);
- Maximal financial supports may come up to 50% of the training costs for trainees attending short time courses (they may maximally come up to 70% for enterprises working in agriculture and rural development sector and in areas with difficult socio-economic conditions).

3. Some remaining problems in direct support policies for S&T activities by enterprises

A check and review of the State support programs for S&T activities show some remaining problems, namely:

First, there is a shortage of State budget supports for pilot production projects which are lower than investment costs for S&T activities conducted by enterprises.

Though the State budgets cover a large area of research sectors with detail support schemes for S&T activities by enterprises there exist yet certain items of high expenditure enterprises have to bear, namely: costs for innovation activities during implementation of pilot production projects (innovation of management, organization and procedures of activities). These innovation activities would help enterprises shorten the time of introduction of pilot products to market and their successful commercialization. Actually, this type of expenditures remains to be listed as investment costs but not costs of S&T activities then not qualified for State budgeted supports.

Second, direct support programs do not have specific schemes for areas of priority and sizes of enterprises.

Actually existing rules of State budgeted supports for S&T projects conducted by enterprises in areas with difficult socio-economic conditions provide only general regulations according to which the maximal support rate may come up to 70% of the total investment costs (regular norms are only 30-50%). The rules lack schemes for priorities based on other factors such as size of enterprises and possible propagating effects of projects.

Support programs do not provide specific schemes based on size of enterprises while actually the ones in Vietnam are SMEs. This group of enterprises is, as always, positioned disadvantageously in formality of application for and implementation of projects with granted State supports. The disadvantages of SMEs are also found in access to information of supported programs as well as their capacities for implementation of projects. They are also disadvantageously positioned in securing human forces, management qualification and counterpart finances for implementation of S&T projects.

In addition, support schemes are not used differently for development of some priority sectors to serve State large objectives. Obviously, 10 national key S&T programs for specific sectors are exceptional which grant supports for 62 enterprises, other national S&T programs do not have specific

schemes based on size of enterprises or vocational orientations (examples of exceptional cases are national program for development of high techs up to 2020, national project for supports of eco-environment for innovative start-ups up to 2025). Since there is no different approaches to all the groups of enterprises the support schemes remain, from one side, to deal with general terms and conditions in support related guidelines and, from another side, focus great attentions for projects of scientific research nature while enterprises may not need this type of activities for a concrete project to serve their needs and objectives.

According to experience from some countries such as Malaysia, China, Ireland, Belgium, Finland and etc., the State direct support programs regulate supports for enterprises namely including: (i) Conditions for eligibility enterprises need to meet to apply for supports; (ii) Conditions projects need to meet to get supports; (iii) Conditions R&D activities need to meet to get supports; (iv) Type of activities which supports are not granted for; (v) Costs of R&D activities which are eligible for supports (exceptions exist for SMEs); (vi) Regulations for selection of examination board members; (vii) Maximal support rates for every type of enterprises (large size enterprises, medium and small size enterprises); (viii) Additional support rates in case projects are implemented by partnership with other enterprises or by cooperation with research institutes and universities. According to that, small size enterprises get additional supports by 20% of the total costs and medium size enterprises get additional supports by 10% of total costs. Additional supports by 10% of the total costs are granted for cases of partnership of two enterprises up or cooperation with research institutes and universities.

As it was observed, though many policies were issued to support enterprises in their efforts for R&D activities and technology investments, almost all the provided support sources were made for large size State owned enterprises. According to a report by Central Institute of Economic Management (CIEM) by 2013, 86% of the total number of State owned enterprises get supports for R&D projects. The report also made know that from 1999 to 2012 there were 838 enterprises which submitted applications for technology transfer projects to Ministry of Planning and Investment and half of them are FDI enterprises. This fact shows that technology transfer promoting programs turn out to be really ineffective. Also it is not easy for private enterprises get access to this source of supports. The CIEM report shows many reasons of this situation. One of them is that enterprises do not have enough assets or do not dare to use their assets for mortgage of loans and, as result, it is difficult to meet the largely applied requirement of counterpart capitals by 30% of the total project costs.

Third, mechanisms, procedure and formality to get State supports are not found suitable with practice by enterprises. The author, though works with enterprises, noted two conflicting points in mechanisms, procedures and formality to get State supports.

From one side, the group of State owned enterprises and those enterprises which were used to get State supports sees the mechanisms, procedures and formality quite normal and they did it without any difficulty. Their reasoning is simple: once you want to get State supports you need follow State defined mechanisms, procedures and formality. From another side, other enterprises said that the mechanisms, procedures and formality to get State supports very complex and they have no way to get “acquainted” with them. The problems related to mechanisms, procedures and formality are seen through the following points:

- Enterprises need open an account at the State Treasury for receiving granted financial supports and disbursing expenditures from this account. Normally, enterprises do banking operations in other banks. This disturbs their accounting practice as well as causes troubles to their business control and financial records;
- Enterprises, in their practice, are not familiar to deal with presentation of their projects where research institutes and universities do it much better. The formality of presentation of projects requires a lot of aspects which need to be explained by scientific language, require the focus more on description of scientific theories, research methodology and implementation procedure (which are traditionally difficult for enterprises) rather than expected outcomes of projects (which are crucially targeted by enterprises). This practice makes enterprises embarrassed in their intentions to apply for supports;
- Procedure and formality of application for supports and clearance of deals are cumbersome and complex without concrete instructions provided for that. In many cases, enterprises need to adjust many times the set of documents before getting approval by the State Treasury for the clearance of deals.

Due to the above noted embarrassing difficulties many enterprises, even knowing about the support programs, hesitate to make applications to get supports.

Fourth, support policies and programs for enterprises are slowly implemented.

The duration to formulate the set of guidelines for implementation of support programs is long in practice, even 2-3 years from announcement of

support programs. It occurred even with major programs such as national program for technological innovation, national program for development of high techs, program for development of national products, Foundation for development of SMEs and etc. This delay causes embarrassments to implementation and application of regulations by executing agencies.

Fifth, State support policies and programs for SMEs are segmented and largely expanded. In practice, enterprises need to satisfy a lot of factors for sustainable development including financial resources, human resources, high level of technologies, and possibility of access to market information, legal regulation knowledge and others. Therefore, they need State supports in a more global plan. Though the Government annually arranges plans of supports for SMEs, actually it is impossible to measure the effectiveness as well as clear impacts of these supports for SMEs.

Briefly, State direct support programs for enterprises to carry out S&T activities are used as policy tools to stimulate enterprises to make investments for S&T activities. However, there exist yet some limitations which need to be settled to enhance effectiveness of these programs. This analysis shows the needs of attentions to the specific nature of investment for S&T activities by enterprises when support programs are planned, prepared and applied. It is necessary to take into consideration the difference between S&T activities by enterprises and the ones by research institutes and universities.

Another topic to be taken for attention is the fact that the State direct supports essentially are tools used by the State to serve its priorities. Therefore, the State should define clearly its priorities when formulating support programs and then enterprises would know where to make investments and how to adjust the “right dosage” of their investments./.

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