THE ROLE OF THE PRIVATE SECTOR IN PROMOTING TECHNICAL PROGRESS - POLICY IMPLICATIONS FOR THE NEW NATO PARTNERS

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Introduction

To date, promotion of technical progress in the countries of the former Soviet block has been performed only by state institutions because as recently as 10 years ago private sector industries barely existed in these countries. Following the political and economic transformation in Central and East European Countries (CEEC), two major developments have already affected the promotion of technical progress: the disengagement of the state from administrating the economy and the appearance of a weak but growing private sector which takes over many state sector functions. No doubt, in this transitory situation it will be essential to ensure that both the state (which has faced severe hard budget constraints) and the private sector (which is in an infant stage) act in an integrated manner that brings cohesion and sustainability as far as promotion of technical progress is concerned. Otherwise, ongoing depletion of human resources and know-how in CEEC, as a consequence of state sector budgetary constraints, will continue to occur via immigration, unemployment and disqualification of highly skilled human capital. In order to offset this trend which severely undermines the mid- to long-term economic perspectives of these countries, it is necessary to act now with clear cut policy measures that would enhance the national R&D potential by unearthing the innovation resources of the private sector.

R&D Overview in OECD

Whilst each OECD member has country-specific ratios of Business Expenditures on Research and Development (BERD) and different levels of government financing of these expenditures, it is important to note that despite these differences, BERD are found to be a key factor for fostering technological progress and economic development. The share of national R&D effort carried out in the private sector varies from about 20% of Gross Expenditure on R&D (GERD) in Iceland and Turkey to 75% in Japan and Switzerland.

In all highly intensive R&D countries of the OECD, business is the main source of technical progress promotion. Respectively, prevailing government-financed R&D is typical for less R&D-intensive countries such as Greece, Portugal and Turkey. As an exception, government financed R&D exceeds business financed R&D in a few highly R&D-intensive countries such as Canada, Norway and France.

Interaction among Government and Enterprises

In OECD countries, a large share of government financed R&D is conducted within the enterprise sector. An OECD study on S&T policy (Review and Outlook, 1994) indicates that OECD governments as a whole plus the European Commission spent about US$6.5bn a year between 1986 and 1989 on subsidies for industrial R&D. Such subsidies include grants, (soft) loans and incentives designed to encourage industrial R&D either in general or in certain types of firms or industries. Another form of government-financed R&D for the industrial sector is procurement which mainly takes the form of contracts for goods and services in the areas of defence and space.

Overall, governments finance about 25% of BERD in most OECD countries, about 15% in the EU and less than 10% in Australia, Belgium, Finland, Japan, Switzerland and Turkey. It is important to note that significant BERD financing in some OECD countries originates from abroad. By 1991, foreign sources financed over 15% of all industrial R&D in Canada, Greece and the UK, thus surpassing support from government.

Role of Foreign Direct Investment

Further to the general process of globalisation, it is not surprising to see that Foreign Direct Investment (FDI) plays an increasing role in fostering R&D. In 1990, the share of R&D conducted by foreign subsidiaries in the US accounted for 10% of total manufacturing R&D and 15.4% of the total for industry, compared with 3.7% and 6.4% respectively in 1980. (Please note that a company is considered to be foreign if non-US residents hold 10% or more of the stock.) This finding illustrates a general trend of decentralisation of R&D but does not necessarily mean that foreign firms relocate their R&D because decentralisation often takes place through the acquisition of existing laboratories.

Policy Implications for NATO Partners

Further to this brief overview of recent technology developments in OECD member countries and the CEEC - including a review of various survey results on private sector development in many transition economies - some policy implications could be summarised as follows:

- Science & Technology (S&T) policy institutions have to be reorganised in a way that reflects a sound understanding and utilisation of technology promotion by fostering the R&D capacities of the emerging private sector;
- effective and extensive public debate on the interaction between the state, think tanks and the private sector should ensure that momentum regarding necessary institutional and behavioural change is maintained;
- each development/restructuring initiative, such as privatisation programmes, has to be based on cost-benefit analysis that takes into account the strengthening of the R&D potential of the enterprise sector in order to achieve and maintain long-term competitiveness and prevent further depletion of human capital and know-how;
- financing of technical advancement has to be ensured by sources which do not rely heavily on state budgets but are geared to the drive of the private sector to gain competitive advantages on an international scale. Special focus on S&T targeted privatisation and FDI has to be at the core of such a policy framework;
- entrepreneurship-driven R&D has to be encouraged by adequate legal provisions with a focus on inventors' protection;
- maintenance of high technological standards in the defence sector has to be supported by a sound interaction with relevant civil industries and clients on the basis of access to products and R&D institutes;
- sound interaction with international programmes should be geared to minimising the brain drain, the setting up of cross-border networks and revealing the mutual benefits of business and R&D centres through adequate profit-sharing arrangements;
- introducing frameworks for performing realistic cost-benefit analysis and opportunity cost assessment would result in the streamlining of scarce resources towards cost-effective R&D.

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