

## **Analysis of R&D Spillovers in the Ukrainian Economy**

Topic: Productivity and efficiency analysis 3

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It is well-known that research and development (R&D) activities in one industry can have repercussions in other industries of an economy. In order to develop a successful industrial policy, it is important to understand both positive and negative externalities of R&D expenditures along with the channels of their diffusion within an economic system.

In this paper, we present and discuss the estimates of both positive and negative R&D spillovers, and detect the pattern of an interindustry R&D flow system and the influence of final output growth on R&D expenditures in the Ukrainian economy. We use total factor productivity (TFP) models to examine how R&D spillovers affect TFP growth (by industries) of the Ukrainian economy. The effects of positive externalities are investigated in the multisectoral framework, using Leontief inverse multipliers. Then, we attempt to estimate negative R&D spillovers using the approach based on the Ghosh price model (see Dietzenbacher & Los (2002)). We also detect the pattern of an interindustry R&D flow system in the Ukrainian economy using the subsystem flow analysis. Finally, we estimate the influence of final output growth on R&D expenditures using backward R&D multipliers. The Input-Output Tables and other statistic data for the period of time from 2001 till 2009, which is published by the State Statistics Committee of Ukraine, have been used for the state estimation and tendency determination of R&D spillovers in the Ukrainian economy.