

## **Assessing the impact of education, training and technology on the productivity of Cyprus**

**Research work conducted for the Cyprus Productivity Center by the Economic Research Centre, University of Cyprus**

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The effect of education, training and technology on productivity was estimated for each economic sector and for the overall economy using econometric methods. An econometric model was estimated where the ratio of the growth rate of total productivity depends on the exogenous rate of technological change (technological advancements outside the economy), the weighted average of the growth rate of capital and labor and the growth rate of human capital, ie the pace of change in education and training. This way productivity gains were associated in each sector or the overall economy with technology (exogenous technological change), traditional inputs (capital and labor) and human capital (education and training). In other words, the model attempted to explain the change in productivity that result from factors beyond the traditional inputs (capital and labor) such as exogenous technological change, and human capital (ie education and training) of workers and any returns to scale (changes in production by a corresponding increase / decrease in all inputs ).

The analysis was based on data from Cypriot enterprises for the period 1982-2004. Data for training existed only for the period 2000-2004.

Regarding education, four variables were used to measure it: the average years of education of workers (in any sector or the economy), and percentages of workers (in any sector or the economy) who completed primary, upper and lower secondary and higher education, and the rates of change of these percentages. **Econometric analysis for both sectors and for the economy, showed that none of the variables for education affects significantly the growth rate of productivity.**

As measures of training were used the percentage of employees in training, and the rate of change in this percentage from year to year. **The econometric analysis showed that training has a positive but not statistically reliable effect on the rate of change in productivity (due to limited data).**

**The technology has a positive and statistically reliable effect on productivity at both sector and at the level of the overall economy. The impact of technology is on a declining trend over time. Sectors Communications and Electricity, Gas, Water record the highest positive effects of technology on productivity.**

**An important result obtained from the quantitative analysis is that education affects positively and significantly the wages of workers, especially in the public sector.**