

## **Newsletter Issue 27 – October 2013**

The topics addressed in this issue of Economic Research are the following: (i) Productivity Developments prior to the Economic Crisis (ii) Business Survey Data for Cyprus, (iii) Agro-economic Optimization of the use of Water Resources in Cypriot agriculture and (iv) The Exchange Rate Channel of Monetary Policy: a DSGE Analysis for Cyprus

In Cyprus, from 1996 to 2001, the average labour productivity growth was 2.1%, while between 2002 and 2007 it was reduced to 1.7% and after 2008 dropped to 0.9%. This reduction can be attributed to the fact that both labour and output growth decelerated and unemployment increased. A large gap exists between the unit cost of labour in Cyprus, which is higher, and the Euro area starting in 2002 and lasting until 2007 suggesting loss of competitiveness while after 2008 the two indices move together. The sectors constructions, transportations, financial and health sectors can be said to be performing better compared to the EA. To the other extent the manufacturing, the accommodation, the electricity, gas & water and the education sectors are underperforming compared to the EA average.

The ability of confidence indicators constructed from business survey data to forecast the relevant reference series is assessed. The results of a forecasting exercise showed that substantial gains can be achieved in forecasting one-quarter ahead output growth in construction, manufacturing and services. The use of employment expectations in construction and manufacturing also generate considerable forecasting gains over the univariate models for employment growth in the corresponding sectors one quarter ahead. For a two-quarter ahead horizon, the use of survey series leads to improvements in forecasting output growth in manufacturing, and, to a lesser extent, employment growth in construction.

Agriculture in the Mediterranean region (including Cyprus) is constrained by the limited availability of water resources. The allocation of water for irrigation is expected to decrease in most countries, due to the increasing trend of water demand in the domestic sector and tourism. It is therefore important to utilize these resources efficiently so as to achieve maximum economic returns. For this purpose, an optimization model was developed to allocate the available land and water resources of Cyprus in order to maximize the net annual economic benefit of the agricultural sector. Model simulations for different scenarios of climatic conditions show that crop production in Cyprus has high potentials, despite the limited land and water resources. A potential re-allocation of the crops cultivated, and in particular a shift towards rain-fed agriculture under average and dry conditions, will result in higher net economic benefits and sustainable irrigation use.

DSGE models have become the workhorse of modern policy analysis in recent years. Due to the fact that they are constructed from optimizing conditions for all agents in the economy, their reduced form can be linked to the structural parameters of the model, making them less vulnerable to the Lucas critique, and therefore more suitable for analysing the relative importance of shocks, simulating the effects of different policies, and undertaking forecasting exercises. The DSGE-CY project, funded by the Cyprus Research Promotion Foundation, has developed a DSGE model for Cyprus. The research was built upon other small open economy models, and extended with a tourism sector, which exports to the rest-of-the world. We show that this sector can be an important channel for the transmission of shocks; a result that highlights that tourism can be an important channel for the transmission of business cycle fluctuations across countries, even though it has been largely disregarded in policy analysis.