

## **Newsletter Issue 38, March 2019**

The topics addressed in this issue of Economic Research are the following: (i) *The Impact of Austerity Measures on the Public-Private Sector Wage Gap in Europe*, (ii) *Productivity Developments in Cyprus*, (iii) *On the Cost-Effectiveness of National Economy-Wide Greenhouse Gas Emissions Abatement Measures*, (v) *Determinants of Non-Performing Loans in Cyprus: A Bayesian VAR approach*.

### ***The Impact of Austerity Measures on the Public-Private Sector Wage Gap in Europe***

Considering the year prior to the international and sovereign crises (2007) as a benchmark and studying all years until the crises receded in most of the 31 European countries (2013), we use the EU SILC dataset to examine the impact of public sector pay reforms on the public-private sector pay gap; we do so at the mean and along quantiles of the wage distributions, using decomposition methods to identify the explained and unexplained components of the gap. We study and code the measures taken in the 31 countries into the categorical variables Freeze and Cut and consider their impact on quantile features of the public-private pay gap using static and dynamic panel methods. Our estimates suggest that public sector freezes and/or cuts had negative and statistically significant impacts on the unexplained public-private sector pay gap, particularly evident at the median and the 90th quantile. At the 10th quantile, the impact of the measures was positive but statistically weaker. The 90th minus 10th quantile effects are negative, reflecting attempts by many countries to protect the lowpaid, regardless of the initial public-private pay gap for this group. Countries which received external financial assistance had high pay gaps before the crises and displayed a variety of adjustments during the crises. Our findings are robust to definitions of the pay gap other than the unexpected one, to estimation based on a balanced panel and to the panel method used. They should aid in the formation of wage policies pertinent to public sector employees.

### ***Productivity Developments in Cyprus***

Strong productivity growth is a prerequisite for sustainable economic growth, which in turn translates to increases in the standard of living. It further ensures national competitiveness, contributing to favourable current account dynamics. Using multifactor analysis allows us to examine the underlying forces that contribute to labor productivity changes. Changes in labor productivity over time reflect movements in multifactor productivity –and therefore efficiency of resources’ utilization, and in the relative intensity of the use of the various factors of production. Increases in multifactor productivity translate to higher output with the same amount of inputs (capital and labor), hence increased efficiency in production processes.

Since 2015 that the Cypriot economy has enjoyed strong economic growth, productivity growth has rebounded, but the economy’s rate at which output per hour worked has increased, is yet to reach the pre-crisis levels. More efficient usage of the country’s resources, as captured by the soar in multifactor productivity over the latest years, has been the primary driver of this increase in labor productivity. The increase reflects past and recent efforts aiming at privatization of state owned companies, removing barriers and introducing greater flexibility in the labor market, and reforming the public sector to minimize wasteful bureaucracy, among others. Nevertheless, the tepid labor productivity growth of the Cypriot economy is an outcome of the decline in the growth of capital intensity, or the rate of change in capital stock per employed labor. Since labor productivity rises when capital grows faster than labor (if no changes in the efficiency of input factors occur), the observed slowdown in

labor productivity is due to the fact that over the period since the end of 2014, capital has grown at a significantly slower pace than labor. With a significant amount of non-performing exposures still in Cypriot banks' balance sheets, and tighter regulations in place for new credit lines, corporations find it harder to finance the acquisition of new fixed assets, which contributes to the negative substitution effect observed in the economy, and at the same time hinders the potential expansion of productive firms, compromising productivity.

Earlier releases of this commentary, that included crosscountry comparisons of multifactor productivity among European countries, highlighted the need for Cyprus to find ways to increase its productivity in order to improve its relative position in comparison to advanced European countries. To the path towards higher productivity growth, policies that target on increasing economic efficiency are of utmost importance. Following the international literature on the factors that drive productivity growth, to boost productivity, and thus, enhance sustainable growth and competitiveness in Cyprus, policies that encourage investment in Information and Communications Technology (ICT) and human capital, and promote Research and Development (R&D) should be at the centre of political agendas. These policies, in conjunction with continuous efforts to eliminate structural rigidities (such as delays in the judicial system, and wasteful administrative procedures within the public sector) and improve the soundness of economic institutions, including a healthier banking sector and/or the development of alternative sources of financing that can satisfy the needs of enterprises to fund their investments, will lead to productivity increases, assisting Cyprus to catching-up with the West –Central European countries.

### ***On the Cost-Effectiveness of National Economy-Wide Greenhouse Gas Emissions Abatement Measures***

This paper explores cost-effective greenhouse gas abatement options for the European Union Member State of Cyprus, for those sectors of the national economy that are not subject to the region's Emissions Trading System. The analysis leads to the construction of a baseline and several alternative marginal emission abatement cost curves. It addresses all economic sectors and considers all different types of mitigation measures – improving energy efficiency, switching to low- or zero-carbon fuels, and inducing behavioural changes. We apply nationally appropriate data that are mainly derived from local market information and judgement of national experts. Finally, we present results of several sensitivity analyses, which address main shortcomings of marginal abatement cost curves that have been identified in the literature, and discuss the policy implications of each one of them. Apart from its relevance for EU Member States, this assessment is useful for all countries seeking guidance in their decarbonisation strategies.

### ***Determinants of Non-Performing Loans in Cyprus: A Bayesian VAR approach***

We investigate the macroeconomic determinants of non-performing loans in Cyprus, using a Bayesian VAR methodology, employing a disaggregate approach by using Household and Non-Financial Corporation (NFC) NPLs in order to reach more precise estimates. Overall, the results suggest that the determinants of NPLs vary across the two sectors, with only industrial production having a negative effect on both. Funding conditions, i.e. deposits, have been found to have an effect on both household and NFC NPLs, albeit likely through different channels. Other important factors also exist, although these are different across the two sectors. Forwardlooking variables, like the ESI, do not appear to register any important effects on NPLs. The findings bear policy implications, with the most important being that growth has to be persistent if a decrease in the overall level of NPLs is to be observed.