

Newsletter Issue 40, March 2020

The topics addressed in this issue of Economic Research are the following: (i) *The monthly Cyprus Composite Leading Economic Index (CCLEI)*, (ii) *What Determines Bank Lending Standards in Cyprus?* (iii) *Sectoral productivity developments in Cyprus.*

The monthly Cyprus Composite Leading Economic Index (CCLEI)

The recent global economic crisis as well as uncertainty which continues to unfold globally, has revived the interest in analyzing business cycles and predicting their turning points. International organizations (e.g. the European Central Bank (ECB), the Organization for Economic Cooperation and Development (OECD), The Conference Board) and most developed countries have created Leading Economic Indices which they monitor systematically in order to anticipate the phase of the business cycle and the short-run outlook of future economic activity. Within this context, the present study aims at estimating the corresponding monthly Composite Leading Economic Index for the Cyprus economy (CCLEI) which will provide early warning signals for the turning points of its economic activity.

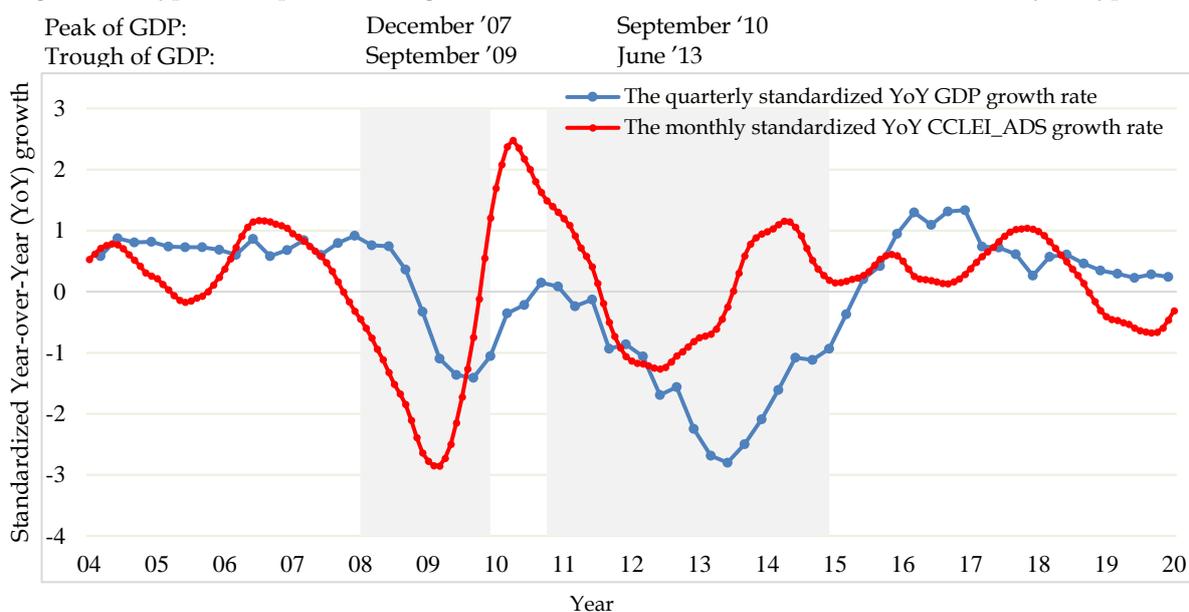
The monthly CCLEI index consists of a set of indicators, domestic and international, that have a strong and stable leading ability for the growth rate of the Cyprus Gross Domestic Product (GDP). These indicators were selected from a large set of variables following a number of statistical tests. Moreover, their leading ability is re-evaluated on a regular basis. Currently, the leading indicators that comprise the CCLEI are: Brent Crude oil price, Euro Area Economic Sentiment Indicator, the number of tourist arrivals, value of credit card transactions, retail volume index, volume index of electricity production, and the number of authorized building permits. All the aforementioned indicators are available in monthly frequency except the oil price which is used at weekly frequency to provide more timely information.

Composite Leading Economic Indicators can be constructed using either model-based methods (e.g. Aruoba, Diebold and Scotti (ADS) developed in 2009, Stock and Watson (1990), and Massimiliano (2006)) or simple non-parametric approaches (e.g. Conference Board (CB) developed in 1995, and the OECD system developed in 1970). The CCLEI has been constructed extending the Aruoba, Diebold, and Scotti (ADS) model. The ADS model is also used by the Philadelphia Federal Reserve Bank for regularly estimating the Business Conditions Index in the U.S. economy based on a variety of mixed-frequency stock and flow data which are available at very high frequencies (e.g. daily and weekly).

The most recent estimation of the Cyprus Composite Leading Economic Index demonstrates a Year-over-Year (YoY) decrease of 1.3% in January 2020 reaching a level of 110.9, following decreases of 2.5% in December, and 3.5% in November. The YoY downward trend of the CCLEI Index continues, although the recent facts indicate its reversal even though uncertainty in the external environment hasn't been eradicated. Moreover, the YoY positive performance of most of the domestic variables offsets the downward trend of the CCLEI suggesting an expanding but at slower pace growth economy in the near term. The CCLEI is updated on a monthly basis and the most recent publications can be found at the link:

<http://www.ucy.ac.cy/erc/el/publications/cyprus-composite-leading-economic-index-cclei>.

Figure: The Cyprus Composite Leading Economic Index (CCLEI) vis-à-vis the Economic Activity of Cyprus



-Note that for comparison purposes, the quarterly YoY GDP growth rate vis-à-vis the monthly YoY CCLEI_ADS growth rate are presented in a standardized format. Shade areas refer to recession periods defined following the CERP Euro Area Business Cycle Dating Committee and the conventional recession definition of at least two consecutive quarters of negative YoY GDP growth rate (2008M01-2009M12 & 2010M10-2014M12).
 -Source: Economics Research Centre (ERC) - Department of Economics @ University of Cyprus (UCY).

What Determines Bank Lending Standards in Cyprus?

This paper provides an overview of how lending standards affect and are affected by the underlying macroeconomic conditions in the Cyprus economy. The data includes variables that cover various sectors of the economy such as lending standards, demand for loans, bank lending rate, real GDP, inflation rate, Residential Property Price Index and the amount of new loan transactions during the quarter. It covers the period from 2008 (1st quarter) to 2019 (3rd quarter). The analysis is performed using a Vector Autoregression (VAR) specification.

The results suggest that only house prices appear to affect lending standards, with a positive house price shock causing a tightening. Other macroeconomic variables do not appear to have an impact on lending standards. House prices have the opposite impact on demand for loans, with an increase in the former having a positive effect on demand, while demand is inversely affected by the lending rate. However, lending standards have a strong impact on the economy, as they register an effect on lending rates and loan growth, and subsequently on GDP. This result highlights the importance of credit availability in the economy. As credit conditions tighten, the pool of borrowers that are able to get a loan decreases, resulting in them withdrawing from loan applications.

Sectoral productivity developments in Cyprus

An economy's productivity growth is a reflection of the performance of its individual sectors. In this bulletin we aim in assessing the performance of the Cyprus economy both at the aggregate and at the sectoral level.* We do so by employing two of the most widely used measures of productivity, Total Factor Productivity (TFP) and labour productivity. These two measures are interrelated in that labour productivity growth can be attributed to movements in TFP growth and in the relative intensity of the use of capital and labour (capital deepening). We consider a total of ten aggregated industries or sectors, defined according to the classification of economic activities - NACE Rev.2, for the period between 1996 and 2018.

A particularly tough period for the Cyprus economy was the period of the European economic crisis. Over the years from 2007 to 2009, a period by the end of which the European economic crisis began to unfold, as well as up to 2014 is the worse in terms of productivity growth (TFP growth) for all sectors of the economy. The banking crisis that peaked in 2013 also affected sectoral performance. It is not until the last period of our sample, the years between 2015 and 2018, that the Cyprus economy showed a remarkable improvement in terms of productivity growth, both at the aggregate and the sectoral level. This is mainly due to reforms (in the labour market and the public sector) that have taken place since the beginning of the crisis.

Cyprus' main productivity growth drivers are the Information and communication sector, the Financial and insurance sector and the Wholesale and retail trade transport, accommodation and food service sector (Figure 1 and Figure 2). Productivity growth in these backbone sectors over the period 1996-2018 exceeded the productivity growth in all other sectors. On the other hand among the worst contributors to the economy's productivity growth are the Industry and the Agriculture, forestry and fishing sectors. These two sectors are relatively small and their TFP growth, is on average amongst the lowest relatively to the other sectors (Figure 1 and Figure 2).

Policy reforms towards improved legal and institutional environment are crucial to the performance of the backbone sectors. Countries with deeper financial markets, flexibility in their labour markets, more skilled labour, and greater private investment in R&D, are also the countries whose high-tech industries are experiencing higher TFP growth. Further, labour market regulations, like strict employment protection legislation are known to depress productivity in low technology sectors. Labour market flexibility and efficient financial markets can ease the shift of labour and capital from less-to more-productive activities. Overall, policies introducing greater flexibility in the labour market, reforming the public sector to minimize bureaucracy and increase efficiency, as well as policies that support innovation through financial deepening and human capital investment, should be a priority in order to promote and sustain productivity and, consequently, economic growth.

* For more information see: <https://www.ucy.ac.cy/erc/en/publications/productivity-analysis>, Issue 20/1 - March 2020.

Figure 1: Productivity (TFP) growth by sector (average annual percent changes, 1996-2018)

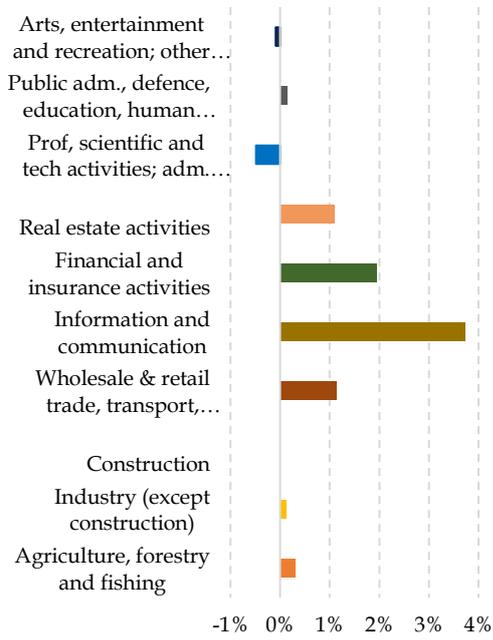
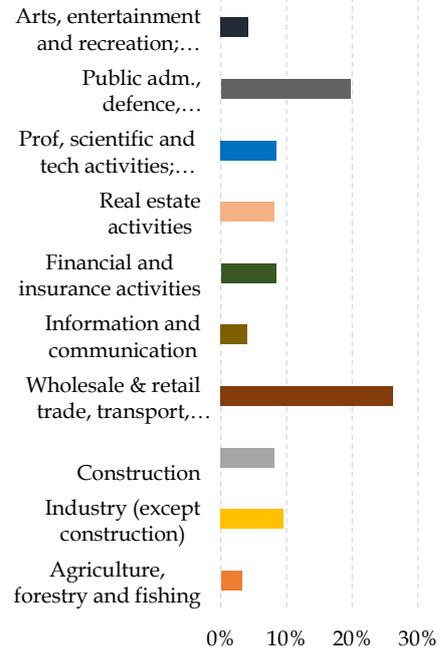


Figure 2: Sector share in total Value Added output (average annual, 1996-2018)



Source: Eurostat and authors calculations.