Economic growth and convergence in the world economies: an econometric analysis

ATTILA GASPAR *(Hungarian Central Statistical Office, Hungary, attila.gaspar83@gmail.com)*

Economic growth and convergence is one of the most discussed fields in economics, as the long-run growth basically determines the welfare of countries. Actually, it is assumed that countries with lower GDP per capita tend to grow faster than richer ones. This process is called catching-up. Developing countries might be able to converge toward high income countries, as they can e.g. adopt new technologies. These factors might lead to higher rate of economic growth exceeding the growth rate of developed countries. However, the significant convergence process of lower income countries is not guaranteed. There are many problems leading to divergence, e.g. expenditures are not efficient.

At the same time, several studies found empirical evidence of convergence among countries but mostly conditional convergence – usually a convergence rate of (approximately) 2% – is confirmed. This means that economies are converging but the steady-state level is rarely common, so countries are converging to different / own level of steady-states.

On the basis of recent statistical data I am trying to demonstrate, whether divergence or convergence can be observed among world economies and the number of expected years essential for significant catching-up has been calculated (by ARIMA models). As the growth rate of GDP per capita is a good proxy for economic growth, the analysis is based on this indicator. Data on PPS GDP per capita (and population) are available from IMF for 171 countries for the period from 1992 to 2008. However, group-specific variables (e.g. dummies and clusters) have also been applied, as significant differences can be observed among country groups. In such a way, not only the absolute but the conditional and club convergence can also be measured. For the classification three groups have been chosen: least developed countries (defined by the United Nations), OECD countries and rest of the world.

As the term 'convergence' can be interpreted by several ways, different, both econometric and purely statistical methods have been applied: sigma convergence, beta convergence, panel modelling and stochastic convergence. I have also created an indicator called omega and analysed the convergence process by a new approach. At the same time, the classic methods of convergence have slightly been modified (e.g. specific weights and different types of sigma).

The initial hypothesis of convergence can be confirmed by all of the indicators. The countries are converging to their own (group) level of steady-states but only very slow catching-up can be measured for low income economies (and also for developed countries). This means that the convergence is rather conditional and primarily applies for middle income countries. Long-run catching-up process is also expected to take place: at least 30 years are needed for significant convergence. But this primary applies for middle income countries, which mainly confirms the existence of conditional / club convergence.