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THE PROCESS OF ECONOMIC CONVERGENCE IN MALTA

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BOX 2: THE PROCESS OF ECONOMIC CONVERGENCE IN MALTA[1]

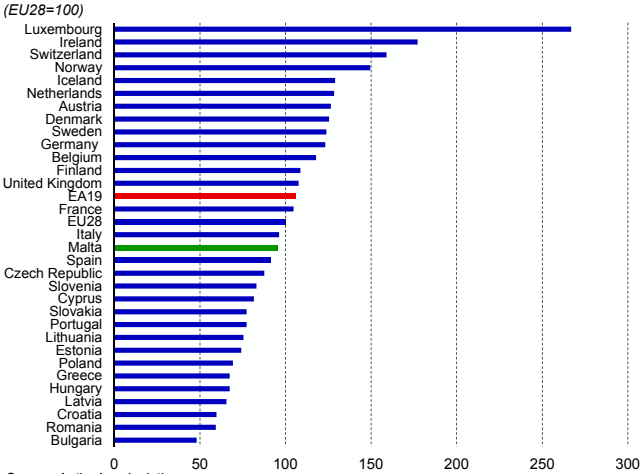
Convergence, both economically and institutionally, was always a key milestone of the European Union (EU) project. It is also a prerequisite for increasing cohesion within the EU, especially with the New Member States (NMS) that joined the EU since 2004 that have a lower per capita income level compared to the EU15 Member States. Convergence is facilitated through access to the Single Market, with its four freedoms and a common set of rules, combined with limited transfers from the EU regional policy, targeted primarily on infrastructural projects and economic development.

GDP per capita in EU countries

International comparisons of per capita GDP have to be expressed in a common currency and adjusted for differences in price levels. Failing to do so would result in an overestimation of GDP levels for countries with high price levels relative to countries with low price levels. GDP per capita is therefore defined in purchasing power standards (PPS), a common currency that eliminates the differences in price levels between countries, therefore allowing for a meaningful volume comparison of GDP between countries.

Chart 1 shows the GDP per capita in PPS in 2016 for the EU28 countries together with three countries in the European Free Trade Agreement (EFTA) – Iceland, Switzerland and Norway. As expected, there are substantial differences in income levels in this group of countries.[2] Luxembourg has by far the highest GDP per capita among the countries considered, standing at around 267% of the EU average. One particular feature of Luxembourg's economy which to some extent explains the country's very high GDP per capita is the fact that a large number of foreign workers are employed in the country and thus contribute to its GDP, while at the same time they are

Chart 1
GDP PER CAPITA IN PPS in 2016
(EU28=100)



Source: Author's calculations.

[1] Prepared by Brian Micallef, Manager Research Office. The views expressed in this Box are those of the author and do not necessarily reflect those of the Central Bank of Malta. Any errors are the author's own. This Box summarizes the main findings published in Micallef (2017), The process of economic convergence in Malta and in the European Union, Policy Note, March 2017, Central Bank of Malta.

[2] This Box follows the literature and uses GDP per capita in PPS as the measure of convergence. The country ranking in Chart 1 remains broadly unchanged if one uses Gross National Income (GNI) per capita in PPS. GNI per capita in Luxembourg and Ireland are however substantially lower compared to per capita GDP. The former is due to the large banking sector while the latter is due to the presence of multinational companies that have an incentive to report their profits in Ireland for tax purposes. While GDP is mainly an indicator of the level of economic activity, Actual Individual Consumption (AIC) is an alternative indicator better adapted to describe the material welfare of households. Levels of AIC per capita are more homogeneous than GDP although there are still substantial differences across the EU Member States.

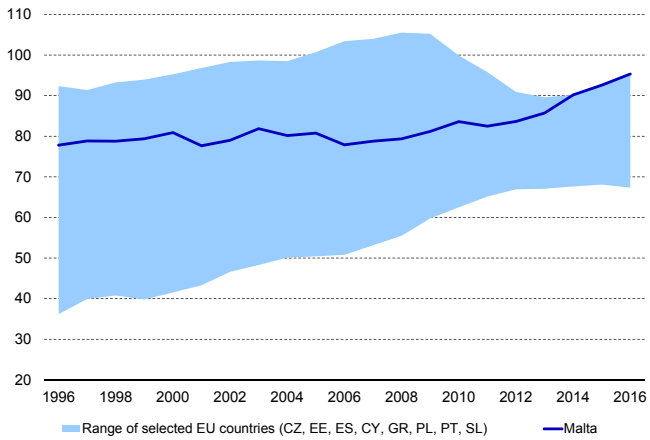
not included in the resident population. The three EFTA countries in the sample all have high per capita incomes, ranging from 129% of the EU average in Iceland to 159% in Switzerland. Among the EU countries, the richest countries are Ireland, the Netherlands, Austria, Germany, Denmark and Sweden, all with per capita income exceeding 120% of the EU average. With the exception of Greece and Portugal, members of the EU15 group of countries rank at the upper end of the table. At the other end, the three latest members of the EU – Bulgaria, Romania and Croatia – have the lowest per capita income. Bulgaria's income per capita, at 48% of the EU average in 2016, is the lowest in the EU.

Malta stands as the best performer among the NMS, with a GDP per capita of 95% of the EU average in 2016, up from 80% at the time of EU membership in 2004. Malta's GDP per capita in PPS in 2016 stood at around 27,600 PPS. Between 2010 and 2016, Malta's increase in GDP per capita in PPS averaged 4.8% per annum, slightly higher than the average increase of 3.9% registered between 1996 and 2009.

Chart 2 plots Malta's GDP per capita in PPS vis-à-vis the EU average between 1996 and 2016 together with selected EU economies. The countries in the range had a GDP per capita of 75% to 95% of the EU average in the mid-1990s: Czech Republic, Greece, Spain, Cyprus, Portugal and Slovenia. The group also includes Estonia, one of the fastest growing NMS, as well as Poland, which is the only country that was not affected by the 2009 recession.

Malta's per capita GDP increased gradually in the late 1990s as the economy benefitted from a broad programme of structural adjustment that included price deregulation, privatisation, and financial and trade liberalisation, all of which encouraged greater private sector involvement in the economy.[3] However, this catching-up process came to a halt in the early 2000s as the economy was hit by a combination of adverse demand and supply shocks. For most of the 2000s, the Maltese economy made no progress in closing its income gap vis-à-vis the EU, remaining at slightly above 81% by 2009. Since then, however, the country accelerated its pace of convergence with higher economic growth compared with the rest of the EU countries.

Chart 2
CONVERGENCE PROCESS IN MALTA AND SELECTED EU ECONOMIES
(EU28=100)



Source: Author's calculations.

The range of selected EU economies in Chart 2 starts relatively wide in the mid-1990s but gradually converges by 2016 for two reasons. The first relates to the catching-up

[3] Ebejer, I. (2006). Malta's growth predicament: from frontrunner to laggard…and back? *ECFIN Country Focus*, Vol. III, Issue 14, November 2006.

process of the NMS. For instance, Estonia increased its per capita GDP from 35% of the EU average in 1996 to 74% by 2016. Similarly, Poland improved its per capita GDP from less than 43% to 69% in two decades. On the other hand, countries that were severely affected by the financial crisis of 2009 and the European sovereign debt crisis of 2012 experienced a decline in their per capita GDP. By 2016, Malta's GDP per capita, at 95% of the EU average, is the highest from the range of countries in Chart 2 as well as among the NMS that joined the EU in 2004.

Different measures of convergence

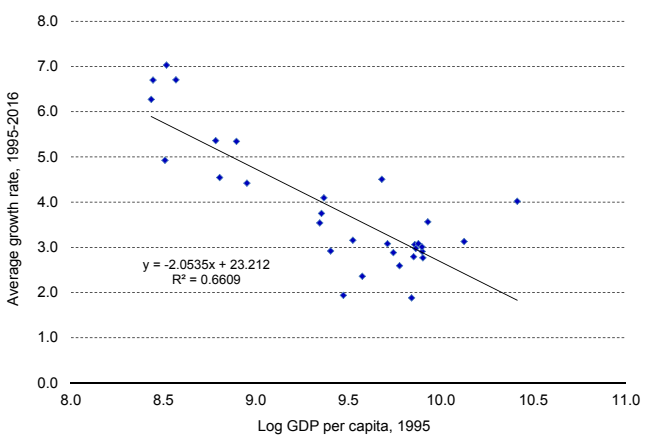
Economic theory postulates that developing economies have the potential to grow at a faster rate than developed ones since diminishing returns, in particular to capital, are not as strong as in capital-rich economies. In addition, developing economies can adopt and replicate the production methods, technologies, and institutions of developed countries, leading to faster economic growth.

The growth literature distinguishes between two types of convergence processes, "beta-convergence" and "sigma-convergence".[4] Beta-convergence refers to the concept that poor countries should grow faster than rich ones and therefore, will gradually 'catch-up'. Sigma-convergence refers to the reduction in the dispersion of per capita GDP levels among different countries. Beta convergence is necessary but not sufficient for sigma convergence.

Beta-convergence is estimated on the basis of univariate cross-country regression of per capita income growth. A negative sign of the estimated coefficient indicates absolute beta convergence, suggesting that countries at lower initial income levels grow faster.

Chart 3 presents empirical results on beta convergence in the EU28 and EFTA countries over the period 1995-2016. The scatter diagram and the fitted trend line point to a strong inverse relationship between the starting level of per capita GDP and subsequent growth over the following two decades. These results provide evidence that supports the beta convergence process in the EU. According to the parameters of the fitted regression, the average rate of convergence among this group of countries in this period has been around 2% per annum. This result is in line with

Chart 3
BETA CONVERGENCE: 1995-2016



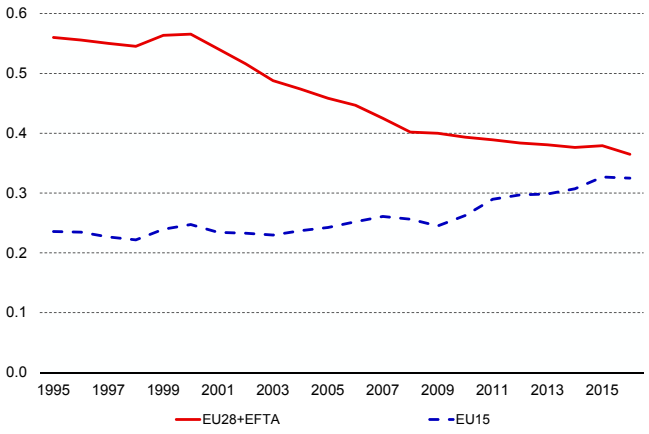
Source: Author's calculations.

[4] Barro, R. & Sala-i-Martin, X. (2004). *Economic Growth*. MIT Press, Second Edition.

the "2% rule" of convergence documented in the first studies of the convergence hypothesis.[5]

As a measure of dispersion, sigma-convergence is calculated by the standard deviation of per capita incomes in PPS of the countries in the sample. Chart 4 illustrates the evolution of sigma-convergence for all the countries as well as the EU15 covering the period 1995-2016.

Chart 4
SIGMA CONVERGENCE: 1995-2016
(standard deviation of logarithm of per capita GDP in PPS)



Source: Author's calculations.

A number of results stand out. First, the main trend during this period among the EU countries has been towards a declining standard deviation of per capita income, especially in the period after 2000. This process has been driven by the NMS that joined the EU after 2004, which have recorded higher growth rates than the older Member States. Second, the pace of the reduction of income dispersion has slowed down after the crisis. This can be observed by the flattening of sigma convergence for all the countries in the sample starting from around after 2009. On the contrary, in the EU15 countries, there has been a reversal of sigma-convergence since the start of the crisis. This process was driven by the considerable heterogeneity observed within this group of countries, with a number of countries being severely affected by the financial crisis and the European sovereign debt crisis, leading to a widening of dispersion in per capita incomes.

Decomposition of GDP per capita in PPS into labour productivity and utilization

Beyond the beta and sigma measures of convergence, GDP per capita in PPS can be decomposed into its two main determinants: labour productivity and labour utilization. More formally, GDP per capita can be expressed as:

$$\frac{GDP}{Population} = \frac{GDP}{Employment} x \frac{Employment}{Population}$$

where $\frac{GDP}{Employment}$ refers to labour productivity, that is, the output produced in an economy divided by total employment. Productivity depends on the amount of physical and human capital per worker as well as the state of technology. The term $\frac{Employment}{Population}$ refers to labour utilization, which can be further decomposed into three factors:

[5] Mankiw, G., Romer, D., & Weil, D. (1992). A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107 (May), 407-437.

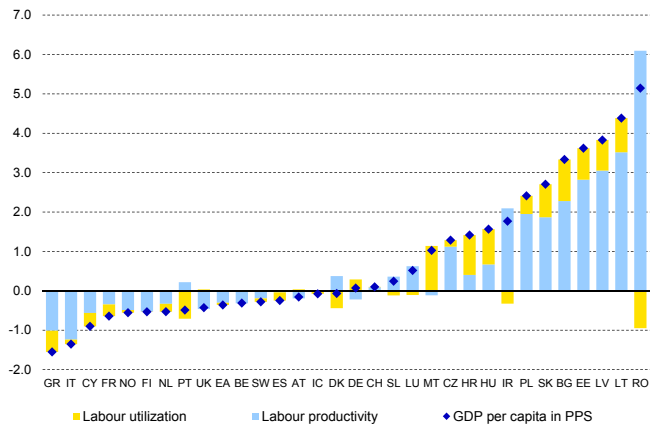
$$\frac{Employment}{Population} = \frac{Employment}{Labour\ Supply} x \frac{Labour\ Supply}{Working\ Age\ Population} x \frac{Working\ Age\ Population}{Population}$$

The term $\frac{Employment}{Labour\ Supply}$ refers to the share of employment in the labour force, or alternatively, to $(1 - \frac{unemployment\ rate}{100})$, since an increase in unemployment rate will lower this ratio. The term $\frac{Labour\ Supply}{Working\ Age\ Population}$ refers to the participation rate, while $\frac{Working\ Age\ Population}{Population}$ captures demographic factors.

Chart 5 plots the contributions of labour productivity and utilization, to GDP per capita in PPS over the period between 2000 and 2016. As expected, the largest gains in per capita GDP were registered in the NMS, especially Romania, Bulgaria and the Baltic countries. With few exceptions, the convergence process in the NMS was mostly driven by labour productivity, which accounted on average for around 75% of the increase in per capita GDP, with labour utilization accounting for the remaining 25%. In Malta's case, however, the convergence process was primarily driven by labour utilization. At the other end of the table, Italy and Greece stands as the biggest losers, with an average decline in GDP per capita of more than 1% per annum. The decline in Italy was mainly driven by labour productivity, while both productivity and utilization contributed almost equally to the Greek's situation.

A caveat is in order in the interpretation of relative labour productivity. Malta's productivity level was already relatively high compared with the EU average in the early 2000s, much more than the other NMS. For instance, Malta's labour productivity was around 95% of the EU average in 2000, while in Estonia, it was only 44%. Hence, it is only natural that in these countries, productivity would play a much more important role in closing the gap with the EU. In other words, the Balassa-Samuelson effect was more pronounced in the NMS compared with Malta. However, this 'gap' has not narrowed since 2000, which explains the slightly negative contribution of labour productivity in Chart 5. However, in the above framework, labour productivity is defined as GDP per person employed, while a better measure would be GDP per hour worked, given for instance, the increase in part-time employment. A recent study shows that a broader and more comprehensive measure of productivity – total factor productivity – derived from a production function

Chart 5
LABOUR PRODUCTIVITY AND UTILIZATION
(average % change between 2000 and 2016)

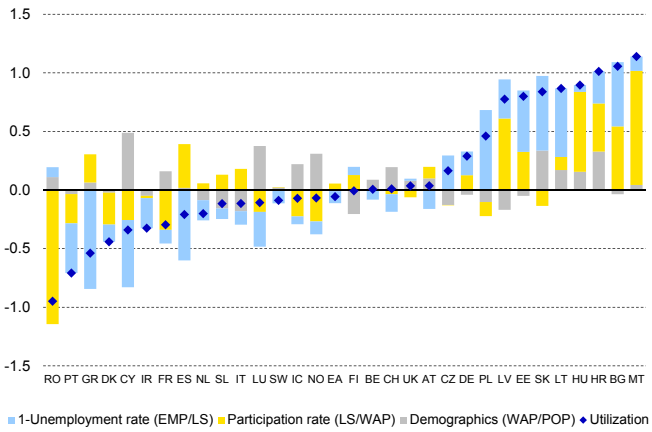


Source: Author's calculations.

has recovered strongly in recent years to levels last seen in the 1990s. This bodes well for the country's convergence prospects.[6]

Chart 6 decomposes labour utilization into the effects of demographics, the participation rate and the unemployment rate. As expected, one observes a lot of cross-country heterogeneity in the evolution of labour utilization over this period.

Chart 6
DECOMPOSITION OF LABOUR UTILIZATION
(average % change between 2000 and 2016)



Source: Author's calculations.

The largest gains in labour utilization were registered by Bulgaria, Malta, Croatia and the Baltic countries. In Malta, more than 80% of the gains were due to higher participation rates, driven by a number of initiatives taken by the authorities to encourage more people to join and remain longer in the labour market.[7] The reduction in the unemployment rate also played a minor role. On the contrary, an ageing population acted as a drag on the labour utilization, though this impact was to an extent mitigated by the inflow of foreign workers.

In the Baltic countries, the reduction in the unemployment rate from the relatively high levels seen in the early 2000s played a more important role. At the other end of the table stand Romania and the countries that were most severely affected by the crisis, such as Portugal, Greece and Cyprus. The deterioration in the latter group of countries is mainly driven by the increase in the unemployment rate after the crisis.

The convergence process by the NMS observed above is also reflected in increases in hourly wages, although the latter still remain substantially lower compared with the levels prevailing in the older Member States. Chart 7 plots the beta estimates of convergence based on hourly wages in all EU countries, adjusted for differences in price levels, by comparing their level in 2004 with the average growth rate registered over the period 2004-2015.[8] As expected, there are large differences in hourly wages among EU countries, with the highest wages being paid in Belgium, Denmark and Germany. However, hourly wages increased more rapidly in most of the NMS over the last decade, in line with the beta hypothesis of

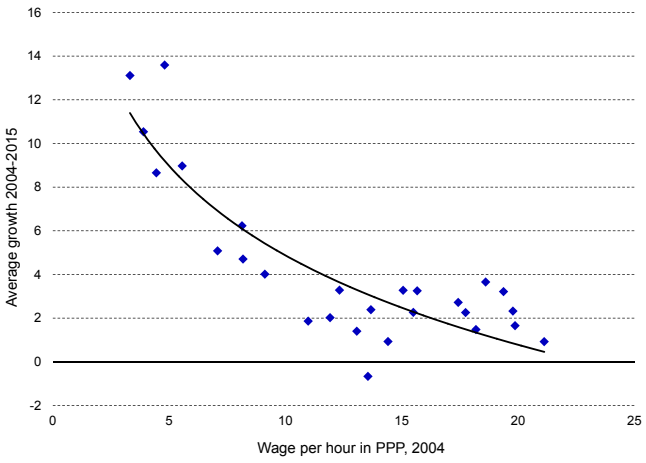
[6] Micallef, B., & Ellul, R. (2017). Medium-term estimates of potential output growth in Malta. In *Challenges and opportunities of sustainable economic growth: the case of Malta*. Edited by Grech A. G., Central Bank of Malta.

[7] See Micallef, B. (2015), Estimating the impact on potential output of structural reforms to increase the female participation rate. Policy Note November 2015, Central Bank of Malta, and Grech, A.G. (2016), The possible impact of pension age changes on Malta's potential output. Policy Note April 2016, Central Bank of Malta.

[8] The indicator refers to wages and salaries per hour for industry, construction and services (excluding public administration, defence and compulsory social security). This measure differs from labour costs which, in addition to wages and salaries, also include non-wage costs, such as employers' social security contributions. The PPPs used in Chart 7 refer to Actual Individual Consumption (AIC) instead of GDP. In this case, AIC is more appropriate given that the focus is on wages.

convergence, while they averaged around 2% per annum in the older Member States.

Chart 7
BETA CONVERGENCE IN HOURLY WAGES



Source: Author's calculations.

The way forward for Malta

Compared with the other NMS, Malta started from a higher initial level and, despite some ups and downs during the process, registered a gradual catching-up with the EU income level. The Maltese economy recovered quickly after the financial crisis of 2009 and was not affected by the European sovereign debt crisis of 2012. Malta's growth was underpinned by sound macroeconomic policies, diversification towards higher value added sectors as well as reforms to attract and retain more people in the labour market. Growth was not fuelled by credit but by an increase in competitiveness that led to the current account turning to surplus position after years of persistent deficits and a gradual reduction in the fiscal deficit.

After a recession in 2009, the economy recovered strongly such that, by 2011, it had already exceeded the pre-crisis level. By end-2016, real GDP stood 39% higher when compared with the pre-crisis peak. Estimates by the Central Bank of Malta suggest that potential GDP has accelerated substantially in recent years, returning to growth rates that characterised the economy in the 1990s.

The labour market has kept the pace with the rapid evolution of the economy since EU membership and proved resilient to the crisis. In the services sector, job creation continued unabated even during the crisis. The unemployment rate and NAIRU were hardly affected by the crisis and maintained their downward trend, reaching historical lows in 2016. The labour supply increased sharply, driven by reforms targeted to increase the participation rate of females as well as an influx of foreign workers. The share of the latter increased from less than 2% of the workforce at the time of EU membership in 2004 to more than 15% in 2016. In addition, the pension reforms of 2006 and 2015 should eventually encourage older workers to remain active for a longer period of time over the coming years.

Going forward, the speed of convergence towards the EU depends on whether the movements in the two components of per capita GDP – labour productivity and utilization – cumulate or offset each other. In Malta's case, convergence over the last decade was driven primarily by a higher utilization of labour. While the participation rate is still relatively low by European standards, therefore still providing some catching-up potential, with

the unemployment rate at a historical low and unfavourable demographics, future convergence cannot rely solely on labour utilization but increasingly on labour productivity. This will require considerable investment to up-skill the Maltese workforce and to make sure that existing skill mismatches are addressed quickly.