

GDP per capita in Purchasing Power Standards for EU, Candidate Countries and EFTA¹

Nowcast 2003

Statistics
in focus

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PRICES AND
PURCHASING POWER
PARITIES

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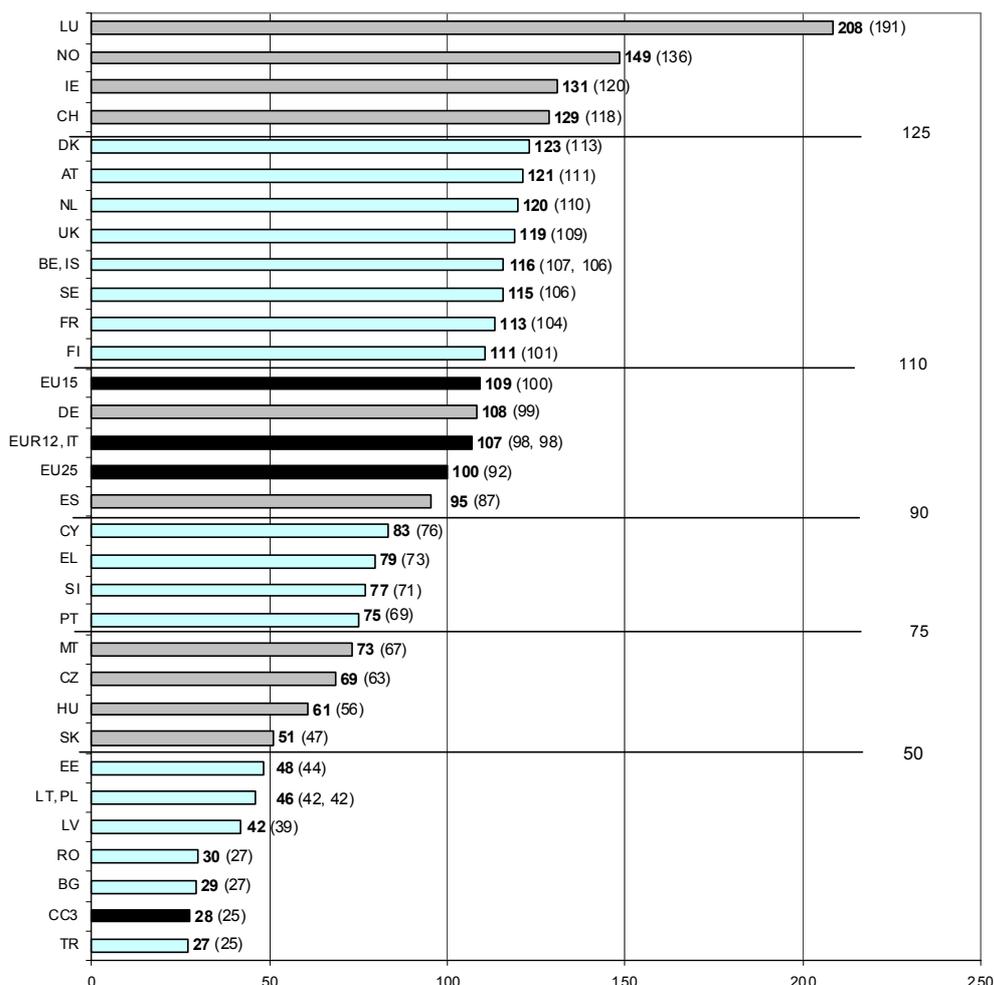
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This article presents first estimates of the per capita GDP volume index for 2003 for the 31 countries² participating in the Eurostat coordinated group of the European Comparison Programme (ECP). The second (also called *preliminary*) and third (also called *final*) estimates for 2003 will follow at the end of 2004 and 2005 respectively. The first Eurostat nowcast was published last year for 2002.

Chart 1: Per capita volume index at the level of total GDP
2003 nowcast results, EU25=100*



*Figures in brackets on the graph: EU15=100

¹Excluding Liechtenstein

²The 25 EU Member States, the 3 Candidate Countries, Iceland, Norway and Switzerland



A frequent user complaint was that the PPP results came too late for their purposes and that there were no early estimates available. Until 2003, preliminary PPP results for the reference year T were only available 12 months, and final results 24 months, after the end of

the reference year. Eurostat, therefore, developed, tested and introduced a nowcasting model for PPP, which produces early estimates of PPP and related economic indicators, five months (T+5) after the end of the reference period.

Box 1: Provisional character of the nowcast results

The regular publication schedule of GDP per capita includes three estimates for a particular year. Taking 2003 as an example, the first estimate (nowcast), based on projections, is published at the beginning of June 2004. At the end of 2004, the second estimate (preliminary data) will be published, partly based on prices collected in 2003. The third estimate (final data) will become available by end-2005. Between the second and third estimates it is mainly National Accounts (NA) data that will be revised.

The nowcast of PPP and related economic indicators for 2003 presented in this paper have, therefore, a very provisional character. This provisional status arises from the input data availability at the point in time of nowcasting.

Two main basic data sets are required for the calculation of PPP: prices from the PPP price surveys and weights (GDP expenditure) from the NA. Fully validated results of PPP price surveys are usually available only 12 months after the survey has been executed. This is not a long delay, given the extent of the exercise, involving twice per year price collection for about 500 precisely specified consumer price items in 31 countries and the necessary subsequent thorough validation process at country, country group and overall European level. At the point in time when the nowcasting is undertaken (T+5), generally no price data from price surveys is available for the reference year T in question. Therefore, the PPP of the previous year have to be extrapolated with annual average price indices such as the HICP or the national CPI for consumer goods and services.

NA information on main expenditure aggregates becomes available for the first time by March-April following the reference year. At this point in time, it is limited to a few main aggregates. These few main aggregates are, however, the first "hard facts" available for a reference year in the framework of the NA. For the aggregation of PPP more detailed expenditure weights are necessary, so that the detailed expenditure structure of the year 2002 is used to estimate detailed weights for 2003 by scaling it to the newly available information for 2003 at main aggregates level. A detailed description of the nowcast methodology employed and the related tests is given in the source mentioned on page 3.

Per capita GDP volume index, nowcast 2003

The **per capita GDP volume indices** shown in **Chart 1** represent the real volumes of production and consumption (GDP values in national currency, converted using PPP) in per capita terms, expressed in relation to the European Union average. If the per capita GDP volume index of a country is higher than 100, this country's level of production and consumption per head is higher than the EU average and vice versa. However, these indices are not intended to rank countries strictly. In fact, they only provide an indication of the comparative order of magnitude of the per capita GDP volume in one country in relation to others.

It is therefore preferable to use these indices for dividing countries into groups of a comparable level. In this respect, the **2003** nowcast results presented here produce the following groups of countries:

Group I ($\geq 125\%$ of the EU average): Luxembourg, Norway, Ireland and Switzerland;

Group II ($\geq 110\%$ and $< 125\%$ of the EU average): Denmark, Austria, The Netherlands, The United Kingdom, Belgium, Iceland, Sweden, France and Finland;

Group III ($\geq 90\%$ and $< 110\%$ of the EU average, i.e. close to the EU average): Germany, Italy and Spain;

Group IV ($\geq 75\%$ and $< 90\%$ of the EU average): Cyprus, Greece, Slovenia and Portugal;

Group V ($\geq 50\%$ and $< 75\%$ of the EU average): Malta, Czech Republic, Hungary and Slovakia;

Group VI ($< 50\%$ of the EU average): Estonia, Lithuania, Poland, Latvia, Romania, Bulgaria and Turkey.

Due to the enlargement of the EU, there are important changes in the way the figures are presented in Eurostat publications. This publication is the first among the publications on PPP and related indicators where the EU25 average is the basis for the comparison, i.e. the EU25=100. Through its website and other electronic publication channels, Eurostat will make available the time-series of the volume index of GDP per capita in relation to the EU25 average for all countries included in this publication.

The PPP underlying the volume index above and the related price level index are available at the dashboards listed on the last page.

ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Use of Purchasing Power Parities

PPP is a concept that is not immediately and easily understood. This has generated misunderstandings as sometimes PPPs are used for purposes for which they are not suited. In essence PPPs are price comparison in space and therefore the most recommended applications are spatial ones – i.e. comparisons of PPP converted indicators across countries at a given point in time. The most common usages of PPPs are to generate comparable volume measures in per capita terms across countries and to calculate general price level indices. They can be also used in other areas such as labour productivity comparisons at GDP level and in measuring the relative size of economies.

The differences in values of GDP between countries, even when revalued in a common currency using exchange rates, do not only correspond to a “volume of goods and services” component but also to a “level of prices” component, which can sometimes assume sizeable proportions. Exchange rates are determined by many factors, which reflect demand and supply on the currency markets, such as international trade and interest rate differentials. In other words, exchange rates usually reflect other elements than price differences alone. To obtain a pure comparison of volumes, it is essential to use special conversion rates (spatial deflators) which remove the effect of price level differences between countries. Purchasing Power Parities (PPPs) are such currency conversion rates that convert economic indicators expressed in national currencies to an artificial common currency, called Purchasing Power Standard (PPS). This conversion equalises the purchasing power of different national currencies.

Despite being designed for spatial comparisons, PPPs and related economic indicators can be used for inter-temporal comparisons but with certain limitations and with necessary care. In addition, the sampling of items and price collection for PPPs are not designed to capture the pure price change over time as in the case of consumer price indices but price differentials over space. In effect, GDPs converted using PPP should be understood more like current price volume series.

Finally, it needs to be underlined that PPP-based indices cannot be used to establish a strict ranking of countries because PPPs are statistical constructs rather than precise measures. They provide only an indication of the relative order of magnitude in a country in relation to others in the comparison. Therefore, these indicators are best used to assign countries to groups as, for example, in all Eurostat and OECD publications on PPP. In Table 1 below the uses of PPP-based data are divided into three groups, “recommended uses”, “uses with limitations” and “non-recommended uses” in a summary form.

Table 1: Uses and limitations of PPP-based data

Recommended uses	<ul style="list-style-type: none"> ▪ Spatial volume comparisons of GDP, GDP per head, GDP per hour worked, size of economies ▪ Grouping of countries by volume index of GDP ▪ Spatial comparisons of relative price levels
Use with limitations	<ul style="list-style-type: none"> ▪ Inter-temporal analysis of relative GDP per capita or relative prices ▪ Analysis of price convergence ▪ Cost of living index across countries ▪ Use of PPP established for expenditure categories for the deflation of other values, as e.g. household income.
Non-recommended uses	<ul style="list-style-type: none"> ▪ As a precision tool to establish rankings between countries ▪ As a way of constructing national growth rates ▪ As a measure to generate output and productivity comparisons by industry (unless there are industry-specific PPPs) ▪ As a measure to undertake price level index comparisons at detailed level. ▪ As an indicator for the over- or undervaluation of a currency ▪ As equilibrium exchange rates

To know more about:

“Purchasing Power Parities and Real Expenditures, 1999 Benchmark Year”, OECD 2002

“Nowcasting of PPP”, Eurostat paper for the CONFERENCE OF EUROPEAN STATISTICIANS, Consultation on the European Comparison Programme, Geneva, 2003

“Purchasing Power Parities and related economic indicators for EU, Acceding and Candidate Countries and EFTA. Revised 1995 – 2000, final 2001 and preliminary 2002 results” Statistics in Focus 64/2003, Eurostat, 2003

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➤ Databases

New Cronos, Theme 2

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