Quarterly national accounts at annualised growth rates

Often in the news the US growth rates published seem to be of a different magnitude than the European ones. This is due to diverse calculation methods. For instance, the US GDP growth rate in 2009Q3 was 2.2% (seasonally adjusted at annual rates) according to the news release issued by the Bureau of Economic Analysis. Eurostat published for the EU27 a seasonally adjusted GDP growth rate in the same quarter of 0.3%. These two figures are not comparable. When looking at the figures on an equal footing the EU27 GDP growth rate in annualised terms was 1.2% (and the US GDP change measured quarter on quarter was 0.6%).

Eurostat publishes quarterly GDP (and other national accounts') growth rates compared with the previous period and the corresponding period of the previous year, respectively. While the former can reasonably be calculated only from seasonally adjusted data, the latter can be calculated from both seasonally adjusted and from unadjusted data, because the comparison between similar quarters in different years supposedly removes most of the seasonal effect. One advantage of the quarter-on-quarter growth rates is that a change in the phase of the business cycle is visible in the numerical values quite early. Year-on-year growth rates on the other hand have the advantage of being immediately comparable to annual growth rates.

The US quarterly national accounts figures are published at annualised growth rates (a quarterly per cent change at an annualised rate shows what the per cent change would be **if** the quarterly rate continued for four quarters; annualised quarterly growth rates are calculated from the seasonally adjusted quarterly growth factor (that is the 1 plus the quarter-on-quarter growth rate divided by 100) by putting this value to the power of four). Annualising quarterly growth rates is an attempt to combine both advantages in a single growth rate. This advantage however comes at the price of sometimes dramatic volatility.

In order to enable users an easy comparison of EU and US national accounts' figures, the possibility to choose also quarterly growth rates at annualised rates (PCH_ANN) for quarterly GDP and the main expenditure components has been added in the online Statistics Database (Economy and finance/National accounts (including GDP)/Quarterly national accounts/GDP and main components-volumes) .

For an example, consider the following hypothetical seasonally adjusted time series:
2008Q3: 100
2008Q4: 101
2009Q1: 105
2009Q2: 115
2009Q3: 125

For 2009Q3,
- the quarter-on-quarter growth rate is (125/115-1) = 8.7%
- the year-on-year growth rate is (125/100-1) = 25.0%
- the annualised growth rate is ((125/115)^4-1) = 39.6%