Level comparisons of output, inputs and productivity by industry are high in demand by economists and policy makers and provide a useful complement to growth trends. Fast productivity growth from a situation in which there was a big gap in productivity could be interpreted as based on imitation, while growth at the frontier is mainly driven by innovation. With the current availability of international comparable growth accounts for many OECD countries through the EU KLEMS project, the next step is to provide comprehensive level accounts. A crucial ingredient for level accounts is a set of industry-level PPPs for output and inputs (intermediates, capital and labour). In recent years, there have been attempts to provide this data, but until now there is no comprehensive data set publicly available. In this paper we take stock of the current data sources and methodologies. We describe the construction of the EU KLEMS productivity level database which will become available in March 2008, and discuss the challenges ahead. These challenges include the following: consistency of industry output and intermediate input PPPs in a full input-output table; sensitivity of results due to various approaches (for example ex-ante versus ex-post capital input measures); aggregation issues in open economies explicitly accounting for imports and exports; minimum spanning tree approaches in a panel context (time-space) and more.