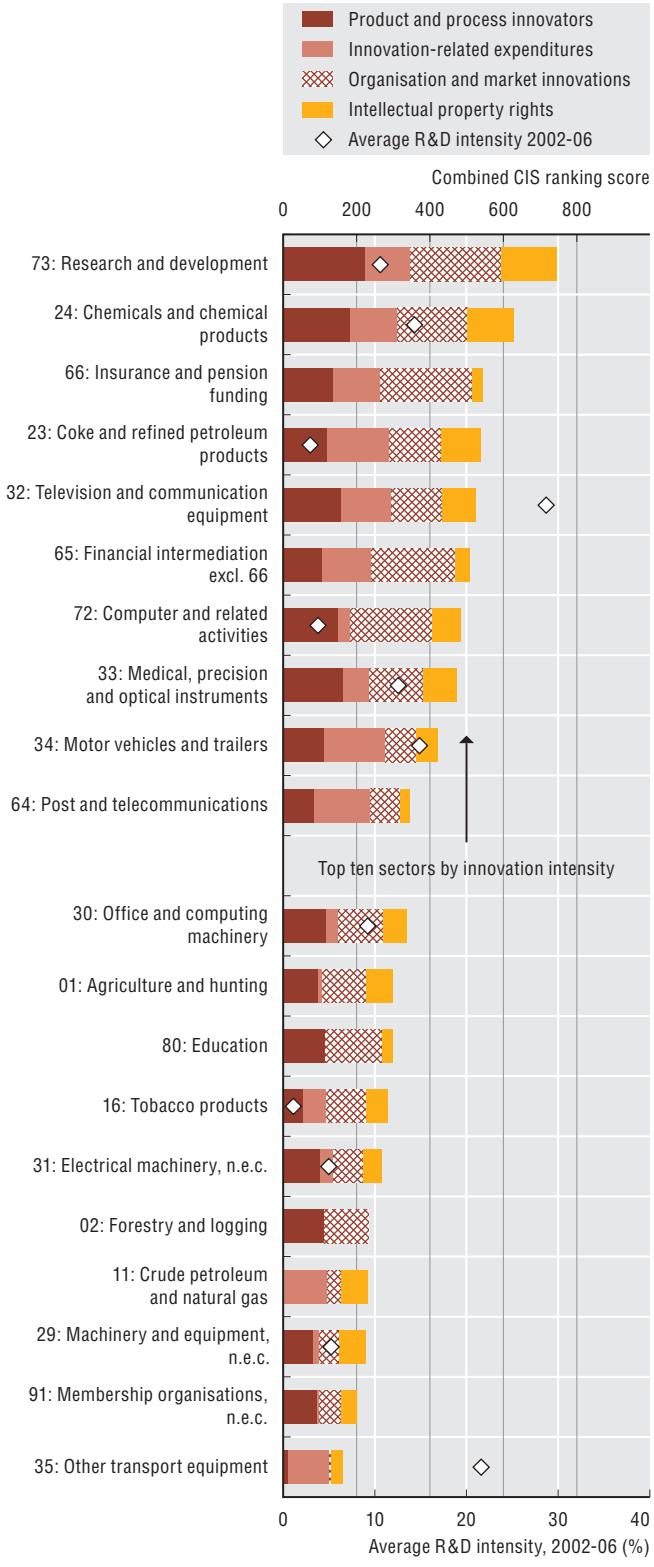
12. Innovative sectors

Innovation intensity in sectors, 2002-06

Aggregate rank based on combined CIS 2004 and CIS 2006 results



Source: OECD, based on Eurostat [CIS-2006 and CIS-2004 (CIS4)], June 2011. See chapter notes.

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A classification based on innovation can complement the established and widely used technology classification that is based on industry R&D intensities. By considering the more general scope of innovation it draws on sectors, particularly services, that do not undertake relatively high levels of formal R&D. Innovation surveys capture a broad range of innovation activities from product and process to marketing and organisational innovations and account for both innovation inputs and outputs.

The experimental methodology presented here uses results from Eurostat's Community Innovation Survey (CIS), for the periods 2002-04 (CIS4) and 2004-06 (CIS6), to identify "innovation-intensive sectors". NACE Rev. 1 (ISIC Rev. 3) 2-digit industry divisions are ranked according to the innovative performance resulting from combined CIS scores of firms within each industry. Sectors that perform high levels of formal R&D do not necessarily rank high when broader innovation inputs are considered. For example, "*Manufacturing of transport equipment*" (Division 35) is relatively R&D-intensive but only just features in the top 20 innovation ranking. Meanwhile, like many services, "*Computer and related activities*" (Division 72) has a low R&D intensity but ranks highly for innovation intensity – reflecting its role as a source of non-technological innovation.

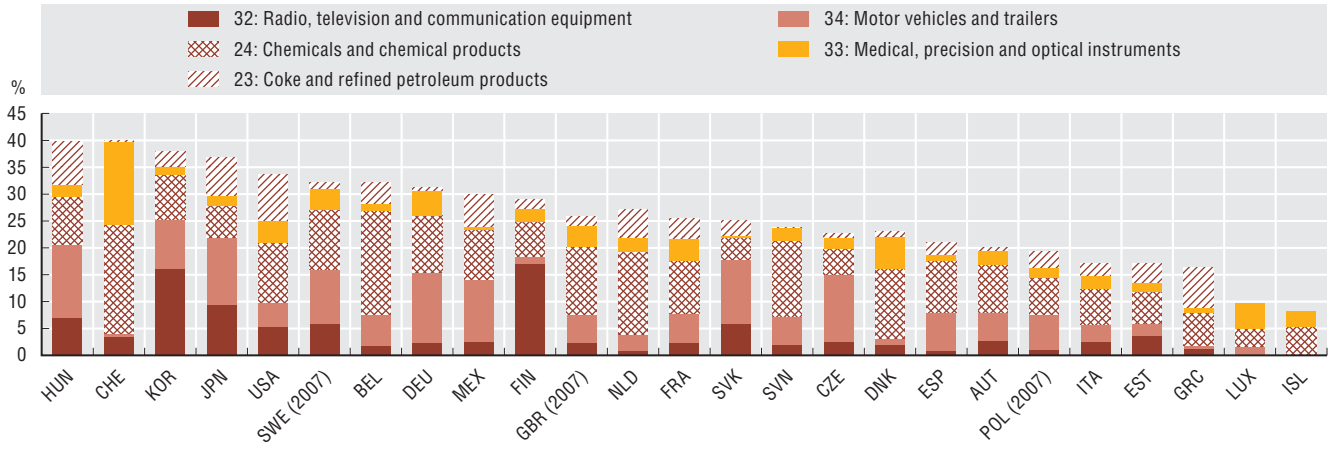
According to this preliminary classification and available data, innovation-intensive manufacturing sectors seem to account for about 25% of manufacturing value added, on average. Innovation-intensive services account for a similar share of total "market" services value added, for the countries shown, mainly owing to telecommunications, financial and computing services.

Definition

Innovation-intensive sectors are defined on the basis of a combined CIS score. To this end, a number of CIS variables are grouped into four main categories that are homogenous with respect to the information provided and the innovation-related feature addressed, namely: product and process innovations, organisation and market innovations, intellectual property rights and innovation-related expenditures. Some of these variables are dichotomous (*i.e.* yes/no answers), whereas the expenditure questions are considered as a continuous variable. Sectoral "performance" of the dichotomous variables is calculated as the share of firms answering "yes" to the total number of respondents to that question. In the case of the continuous variable, sectors are ranked on the basis of average expenditures.

Value added of innovation-intensive manufacturing sectors, 2008

As a percentage of total manufacturing value added



Source: OECD, Structural Analysis (STAN) Database, June 2011. See chapter notes.

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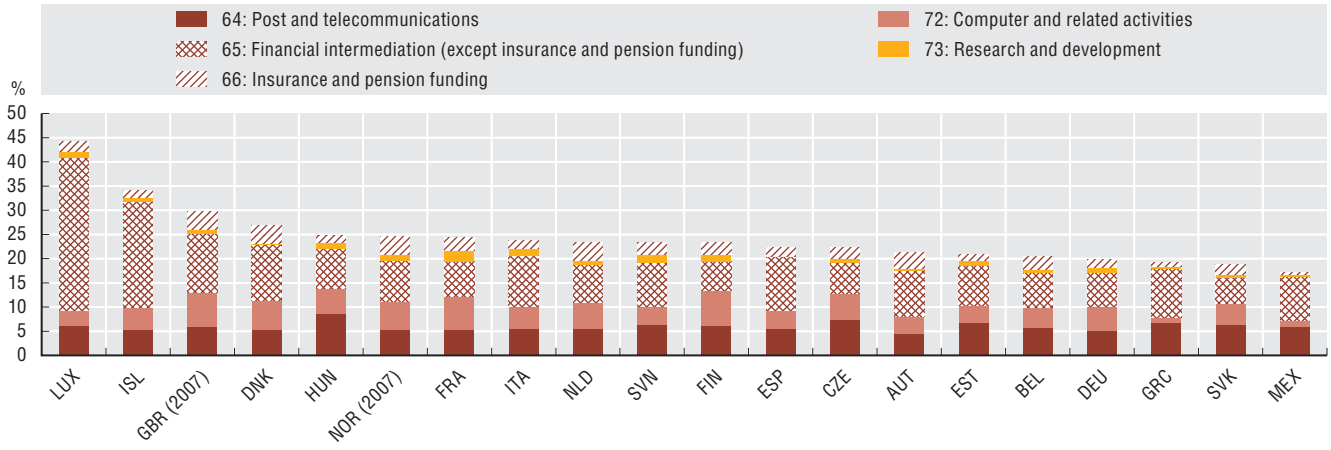
Value added of innovation-intensive service sectors, 2008

As a percentage of "market" services value added



Source: OECD Structural Analysis Database (STAN), June 2011. See chapter notes.

StatLink http://dx.doi.org/10.1787/888932488179

Measurability

The most innovative sectors are identified by means of a distribution-based approach which only considers the sectors performing above the mean in all four innovation dimensions. Sectors are then assigned a score proportional to their position, with top performers assigned 20 points. The others receive a progressively lower score and the last ranked sector in the upper part of the distribution has one point. The scores are then aggregated to produce an overall ranking. Sectoral estimates rely on unweighted statistics (data are not adjusted for the representativeness of the respondent firm) and company data aggregated at the most detailed NACE Rev. 1 level enabled by national sampling designs and Eurostat's data disclosure rules. Sectoral coverage varies across countries and tabulations may rely on a subset of countries and not be fully representative. Rankings rely on the same set of variables in CIS4 and CIS6 to ensure consistency and comparability over time. In this type of exercise, cut-off points for the top innovative sectors may sometimes not be clear. For example, the top ten sectors in this preliminary selection do not include Sector 30 (*Manufacture of computing and office equipment*), which is 11th in the ranking and thus could arguably be included in the innovation intensive group.