Addendum: Method for making trial calculations based on company databases

In (2) C, Section 1, Chapter 1, Part II, Bureau van Dijk's ORBIS was used when checking the breakdown of sales into domestic sales and overseas subsidiaries sales for manufacturers. Although the ORBIS company database has little financial data for unlisted companies, it does have data on a wide range of companies in major countries, making international comparisons possible. Some sort of corrections, however, are necessary because little financial data is recorded.[1]

In addition, many of the companies included in ORBIS only provide consolidated financial data. When compiling figures on sales for a company, it is necessary, therefore, to eliminate redundant sales within corporate groups.

The following is an explanation of how trial calculations were made in this section, including corrections for the percentage of companies for which there is financial data and excluding redundancies in consolidated financial data.

1. Extracting targeted companies

Only companies located in a particular country and that have financial data for 2015 and after are considered domestic manufacturers.

These directly related overseas affiliates (equity stake of 25% or more) were then extracted (financial data is the most recent figures for 2015 through 2017).

2. Compiling corporate sales after eliminating redundancies in consolidated financial data

Companies are first divided into domestic companies and overseas companies, and it is then assumed that only corporate groups of controlled companies as defined for ORBIS (of corporate groups that have an equity stake of at least 25%, only those that are connected to the ultimate parent company) for which all equity stakes are at least 50% are consolidated, and the amount (A) is calculated by multiplying the sales of companies that are the ultimate investment target by the stake of each investor.

For companies extracted at the same time (for domestic companies, is a manufacturer and there is financial data for 2015 and after) that are investors in the same corporate group, A is deducted from the sales of the investor.

3. Excluding sales of consolidated overseas subsidiaries from domestic corporate sales

Domestic sales calculated in 2., including sales of consolidated subsidiaries located overseas, but these sales must be excluded because the purpose is to calculate domestic sales. In the same way as for 2., there is assumed to be consolidated relationship if the equity stake is 50% or more for each

1 Statistics on sales for Japanese overseas subsidiaries can be found in the Ministry of Economy, Trade and Industry's Survey on Overseas Business Activities (hereinafter, Overseas Business Survey). A distinguishing aspect of this survey is that it is possible to use time series data to check the trends of overseas subsidiaries of Japanese companies. For the 2017 Overseas Business Survey, the response rate was 74%. There are cases when sales figures for companies that responded to the survey are unclear. If one keeps it simple, therefore, sales in the Overseas Business Survey are smaller than actual total sales of overseas local subsidiaries.

corporate group. Domestic sales are assumed to be sales of domestic companies minus sales of overseas companies.

4. Differentiating based on ultimate parent company

Overseas sales were compared against domestic sales using the sales of overseas companies invested in calculated in 2. (equity stake of 25% or more) and the sales of domestic manufacturers calculated in 3.

A condition for making international comparisons is that the ultimate parent company is in the same country. For example, companies included in "Japan" are those located in Japan and whose ultimate parent companies are also in Japan (this includes cases when the location of the ultimate parent is unknown).

5. Corrections based on Survey on Overseas Business Activities

For Japanese companies, in addition to figures based on ORBIS, adjustments related to regions with few companies that record financial information[2] are made to estimates using the Overseas Business Survey.

In particular, for the U.S., China, East Asia, Southeast Asia, and Central America, sales are based on the Overseas Business Survey, not ORBIS (Japan (2), Japan estimate (3), Japan estimate (4) of previously mentioned Figure II-1-1-2-27).

Of those, for Japan estimate (3), corrections are made using the average percent change in sales based on ORBIS and the Overseas Business Survey in regions where many companies have sales (England, Germany, France, other Europe, Russian, South Asia, Oceania, and South America).* This is because for these regions, the greater ORBIS sales (compared to Overseas Business Survey) exceeds the greater number of companies (compared to Overseas Business Survey) (this may be because the previous consolidated adjustments are insufficient).

(*) Japan (2) is multiplied by the percent change (a ÷ b), where a is ORBIS sales ÷ Overseas Business Survey sales, and b is ORBIS number of companies ÷ Overseas Business Survey number of companies.

Next, for Japan estimate (4), corrections were made assuming that not only a larger number for sales but also a larger number of companies ascertained in Overseas Business Survey, which is also true for other regions. In other words, overall, Japan (2) is multiplied by a since the results of Japan estimate (3) is multiplied by b.

2 For some major countries and regions (U.K., Germany, France, Russia, China, Hong Kong, and the U.S.), figures are compiled on a country basis. For other countries and regions, the ISO region category is basically used (however, Northern Europe, Eastern Europe, and Western Europe are included in Europe, and North Africa, South Africa, East Africa, and West Africa are combined into Africa).