II. Current Survey of Selected Service Industries: Test and Analysis Business for Supporting R&D

1. Scope of the Survey

The test and analysis business for supporting R&D that are covered in this survey are the establishments involved in conducting assigned tests and analysis or preparing test samples that are necessary for R&D by manufacturers and research institutions.

The types of R&D covered in this report are: 1) basic research (synthesis of new substances, elucidation of principles of chemical and physical phenomena and behaviors), 2) applied research (development of new material or new technologies using the elucidated principles or new materials), 3) product development (development of products utilizing new materials or new technologies), 4) process improvement research (researches on the rationalization, efficiency promotion and yield improvement in manufacturing processes) and 5) product improvement research (researches for promoting sophistication, accuracy and weight-saving).

Therefore, establishments that only conduct in-house tests and analyses, or establishments that undertake similar researches but fall under the following, are excluded from this survey: 1) safety tests conducted according to laws (such as the High Pressure Gas Safety Law, Gas Utility Industry Law, Measurement Law, Electrical Appliance and Material Control Law); 2) product and goods testing of existing products; 3) nondestructive test and evaluation of the physical properties of materials for quality control; and 4) environmental measurements related to existing production facilities (according to the Basic Environment Law, Water Pollution Control Law, Air Pollution Control Law, Noise Control Law and Offensive Odor Control Law).

2. Explanation of the Items in the Statistical Table

(1) The number of the business establishments: as of November 1, 2003.

Among the business establishments, “single businesses” do not have branches or sales offices under the same management in other places. “Headquarters” refers to a headquarters or main office that has branches or sales offices under the same management in other places. “Branch” refers to a branch or sales office that is controlled by the headquarters under the same management.

(2) By management organization: among the organizations whose corporate veils are recognized under the law and that operate a business, the corporations, limited companies, unlimited partnerships and limited partnerships are referred to as a “company,” and the organizations categorized under something other than “company” are referred to as a “corporation or body other than a company.” “Individual” refers to sole proprietorship.

(3) The amount of capital (or amount of investment) from which business expenses are deducted: as of November 1, 2003.

(4) The number of employees: as of November 1, 2003.

1) The number of employees of companies includes the employees who belong to business categories other than test and analysis business for supporting R&D and those who are assigned or dispatched to other business establishments (dispatched). However, the employees who are assigned or dispatched from other business establishments (accepted) are excluded.

2) The number of employees engaged in the test and analysis business for supporting R&D (excluding those who are assigned or dispatched to other companies or accepted from other business establishments)

A. Total number of “single proprietors, family workers or paid executives,” “regular employees” and “temporary or daily employees.”

a. From “single proprietors, family workers or paid executives,”

“single proprietor” means a person who is a proprietor of a privately managed company and is actually engaged in the business at the business establishment.

“Family worker” means a family member of a single proprietor who makes his/her living with the single proprietor and is primarily engaged in the business at the business establishment but does not receive a fixed salary.

“Paid executive” means a person who is paid and serves as a full-time or temporary executive of a “company” or an “agency/organization.”

b. “Regular employees” are classified into two groups: “full-time employees and full-time staff” and “part-time employees.” They are “those who are employed for an unfixed period of time, or those who are employed for a
fixed period of time of one month or longer” or “those who were employed for eighteen days or longer both in September and October 2003.”

c. “Temporary and daily employee” means those who do not fall under the category of regular employee and who are employed for less than one month.

B. “The number of employees by department” is the total number of employees engaged in the test and analysis business for supporting R&D counted by department.

a. The “management and sales department” generally refers to those in charge of the “general affairs, planning, human resources or budget” or those who are in charge of “accepting orders and making contracts of test and analysis business for supporting R&D or communicating the intentions of the clients to each department.”

b. “Technical departments” is the sum of the “research department” and the “other technical department.”

1) The research department refers to those who are engaged in the technical R&D department and the related administrative department.

2) The test and analysis department refers to those who carry out tests and analyses by using expertise.

3) The numerical analysis department refers to those who are mainly engaged in the calculations for structural analysis or heat/fluid analysis, or simulation of fluid diffusion.

4) The other technical department refers to those who belong to departments other technical department than those mentioned above.

c. Others refers to those who belong to departments other than those mentioned above (management and sales department, technical department).

3) The assigned or dispatched employee (dispatched or accepted) refers to those accepted or dispatched employees from (to) other companies to be engaged in test and analysis business for supporting R&D.

(5) The number of engaged workers is as of November 1, 2003.

The number of engaged workers includes those who are engaged in this business and those who are assigned or dispatched from other business establishments (accepted or dispatched).

(6) The annual sales is the amount of sales of the whole establishment and the amount of sales in the test and analysis business for supporting R&D obtained during the period of one year from November 1, 2002 to October 31, 2003. This figure is not profits or income but the amount before business expenses are deducted including consumer tax.

The amount for sales includes the sales amount and internal transfer invoice amount paid for the services that were provided in the course of headquarters-branch or inter-branch trading (or service offering amount if there were no such values). The sales of equipment are not included in the sales of this business.

(7) The classification of the category of business is as follows:

1) Evaluation of the physical properties of materials: measurement and evaluation tasks in the R&D process concerning the properties of samples such as mechanical, electrical, thermal, surface, molecular weight and chemical engineering properties.

2) Systematic and structural analysis: measurement and evaluation tasks in the R&D process concerning component substances, structure of elements, chemical structure, crystal structure, fine structure and surface structure of samples.

3) Numerical analysis of structures: calculating the strength, deformation, vibration and temperature distribution of structures by using such methods as the finite element method, or simulating the performance of mechanical devices.

4) Measurements of structures: measuring the strength, deformation, vibration, temperature distribution, fluid property and other properties of test models or mockups created in the R&D process.

5) Environmental measurement: measuring concentration, noise and vibration in order to investigate their effects on the environment during the course of developing new facilities, equipments, materials and manufacturing processes.

6) Nondestructive test: measurement and evaluation tasks in the R&D process to investigate a streak, property, condition and internal structure of an object without damaging, destructing or decomposing the material, test sample or structure.

7) Electromagnetic wave measurement: tasks in the R&D process of electronic equipment to measure electromagnetic wave noise radiated from test samples, etc. by using an anechoic chamber or an open site.

8) Safety test: tasks in the R&D process of chemicals to test the effects on people or on the environment by short-term
or long-term exposure of chemicals by using animals, plants or microorganisms; or to test the properties of chemicals concerning its combustion point or explosion limits.

9) Biochemical analysis: tests conducted in the study of organisms or life phenomena concerning isolation, detection, determination, enzyme reaction of biological materials, metabolic products, etc.

10) Other: test and analysis businesses for supporting R&D other than 1) through 9) mentioned above such as preparing samples for R&D.

(8) Annual operating cost: the annual sum of “total salary paid,” “sub-contracting cost,” “rental cost” and “other operating cost” (including consumer tax) of the overall business establishments and test and analysis business for supporting R&D during the period from November 1, 2002 to October 31, 2003.

1) Total salary paid is the sum of the annual salary paid (periodically or specially paid money such as base salary, bonuses and benefits) and retirement allowances (including gross provision of retirement allowance). It also includes compensation and bonuses for executives paid from business operating costs as well as pay for part-time employees or temporary and daily employees, and salary paid for loan-employees who are paid mainly by the respective company.

2) Sub-contracting cost: cost for outsourcing the business, either partially or totally, to others in the form of assignments, undertakings and so on. Sub-contracting costs accrued in the course of headquarters-branch or inter-branch trading are also included. However, the costs of printing, interior finish works and production are excluded from the sub-contracting cost of the test and analysis business for supporting R&D.

3) Rental cost refers to the total annual amount of costs of “land and buildings” and “machinery and equipment” that are used for the business.
   (i) “Land and buildings” includes the shared-facilities service fee such as administrative expense and monthly parking cost.
   (ii) “Machinery and equipment” refers to “transportation machinery” such as cars, “information-related equipment” such as computers and PCs, and “business equipment” such as copying machines.

4) Other operating cost are all operating cost other than 1) through 3) mentioned above: advertisement costs, packing and shipment costs, payment commission, sales commission, traveling expenses, consumable supplies and office expenses, business entertainment expenses, repair costs, insurance costs, tax and duties, donations, welfare expenses, membership fees, meeting expenses, communication and transportation expenses, utility bills, depreciation costs other than rental asset, labor costs of temporary employees, rental costs of the items other than land/buildings and machinery/equipment.

(9) Annual operating costs and expenditure for tangible fixed assets is expenditure for fixed assets obtained during the period from November 1, 2002 to October 31, 2003 (including the amount of “machinery, facility, and equipment,” “land,” and “buildings and other tangible fixed assets” (including consumption tax)).

1) “Machinery, facility, and equipment” refers to the expenses for devices, machines, and items that are durable for one year or more and cost ¥100,000 or more.
2) “Land” refers to expenses for buying land and for preparation of existing land.
3) “Building and other tangible fixed assets” refers to expenses for the construction, reform and improvement of buildings, expenses for buying built-in utilities such as a water supply and drainage, gas facility, and air conditioning, and expenses for buying other obtained tangible fixed assets.

3. Codes and Notes
(1) The codes used in the “General Situation” and statistical tables in this survey report are as follows.
   1) “-” means “n/a,” “… ” means “unknown” (not surveyed), “0” means “a rounded off number,” “▲” means a “negative figure.”
   2) “x” means a numerical figure concerning one or two business establishments that is kept confidential in order to keep the secret of each respondent. In addition, in the case where the figure is related to three or more business establishments, “x” is used in the same way, if the figure of the first or second business establishment can be identified from the context.

(2) As the aggregate numbers are rounded off, the sum of each figure in the breakdown and the total number may be
different.

III. Other notes

1. When reprinting the figures in this statistical table in other materials, be sure to specify that they were cited from the “Current Survey of Selected Service Industries of 2003, Test and analysis business for supporting R&D version, by the Research and Statistics Department, Economic and Industrial Policy Bureau, Ministry of Economy, Trade and Industry.”

2. Please contact the following section for inquiries about the statistical tables.
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