

These foundations, some bearing such familiar names as Mellon, Battelle, and Armour, are much more important as performers than as payers for research. Their capital expenditures were the main element we have reckoned³⁸⁴ for the earlier date. Later the institutional category was expanded and State and local funds were included with their own contributions, whence our much larger second³⁸⁵ and third lines³⁸⁶ on contributions, and on performance.³⁸⁷ Latest expenditure (1960) of "Foundations proper" is \$7 million in physical sciences, five-sixths in basic science, with the Sloan Foundation leading.³⁸⁸ The chief researches of foundations are in social, educational, and health fields.

[392] 8. Consulting laboratories and engineering firms:

Consulting laboratories, performance, 1953-----	\$25.5 m (illion).
Consulting laboratories, later performance, 1956-----	\$89 m.
Engineering firms, later performance, 1956-----	\$81 m.

Since these commercial custom laboratories put up only a negligible proportion of their funds themselves, data are provided for their performance only.³⁸⁹ Some duplication with manufacturing industry is involved, and the 1953 and 1956 data are not fully comparable.

[393] 9. Industry (the organized and counted laboratories):

1953-54 total funds supplied ³⁹⁰ -----	\$2,880 m (illion), 51%.
Same less duplications-----	\$1,736 m., 30.7%.
Latest, 1960-61-----	\$5,990 m.
1953-54 performance, general R&D-----	\$3,630 m., 64.2%.
Latest performance, 1959-60-----	\$9,550 m.

We have first set down the gross sum for this category, including capital outlays of \$728 million,³⁹⁰ making \$2,880 million, then deducted from it, to eliminate duplication, the amounts ascribed in table 8 to tax benefits, suggestion systems, compulsory license, patent pooling, and sales of know-how (sections 6, 10, and 13-15 below), thus obtaining the much smaller second line. (Cf. table 7, ¶ 382, lines 9a and b).³⁹⁰ The other sections are not duplicative in the main, but there are many minor, unresolved duplications between sections, e.g., between compulsory license and patent pooling. If such duplication could be eliminated, probably the net share of fully competitive, patent-relying industry (9b) would count larger, from items 10-15 becoming smaller. *Performance*³⁹¹ is seen to be far larger than the net or even gross funds supplied, due to the flood of research done for the government. The average capital equipment invested in R&D was \$27,000 per scientist or engineer employed in 1954.³⁹² The tax benefit was hypothetical, reflecting present law, not contemporary. Cf. ¶ 390.

[394] If we say so little here about such an important support of invention as large industry, it is because the rest is covered in other pages, or is familiar. When we add the unorganized inventors and the other commercial sections, as in table 7, column 5, the supports from business rise to 37.2%, of fully competitive business to 27%, as we should judge.

[395] 10. Suggestions systems:

Value of employees' suggestions, n.e.c., loosely estimated, for 1954-----	\$34 m (illion) 0.6%
Value of employees' suggestions, n.e.c., later, 1959-----	\$52 m.

³⁹² Reckoned without supplement for building.