

The Democratization of R&D After 1980*
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Using Compustat data, we document that prior to 1980, large R&D performing firms had higher R&D intensity (R&D / Sales) than small firms in the same industries. Over the course of the next two decades, in these same industries, small firms came to rival and even surpass large firms in terms of R&D intensity. During this period, corporate R&D intensity nearly doubled and most of the aggregate increase is due to the substantial increase in R&D intensity among small firms. Little of the change in composition is explained by changes in the industrial distribution of R&D.

Why did small firms increase their R&D after 1980 and not before? We argue that, after 1980, small firms were able to compete on better terms in industries already dominated by large firms. We show that the patterns we observe in the data are consistent with a straightforward dynamic model of R&D with falling barriers to entry.

But what barriers fell? We argue the shift in R&D intensity by small firms was largely due to the electronics revolution. The combination of rapid technological progress in electronics hardware and greater expenditures on this hardware had a two-fold impact on R&D. First, the cost of variety at the retail level fell, so that the potential return to new product development rose. Second, prior to the 1980s, a large corporate sales and clerical force was an essential factor for the rapid and widespread distribution of new products. This technology clearly favored large, established firms. But the electronics revolution obviated the need for these factors, making entry easier.