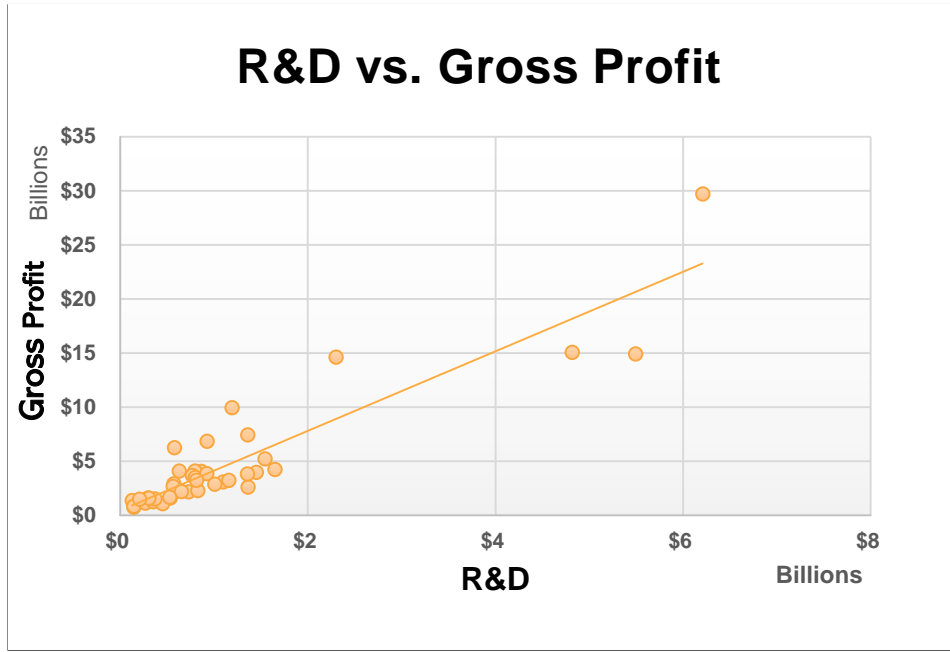


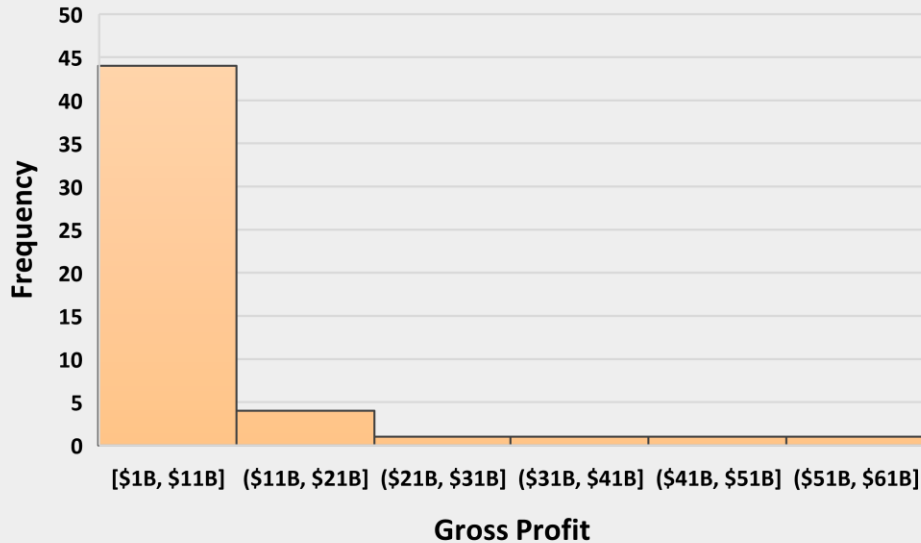
# Does Research and Development Generate Profit in IT Sector In Year 3?



Here is the scatter plot for the annual R&D expenses and gross profit for IT sector companies reported for all companies in Year 3.

The relationship between gross profit and their R&D expenses is being investigated. To find the general pattern, a couple of outliers have removed. This chart compares gross profit earning and their R&D expenses, it shows that these two variables have a positive association, the more R&D spending, the more gross profit increases.

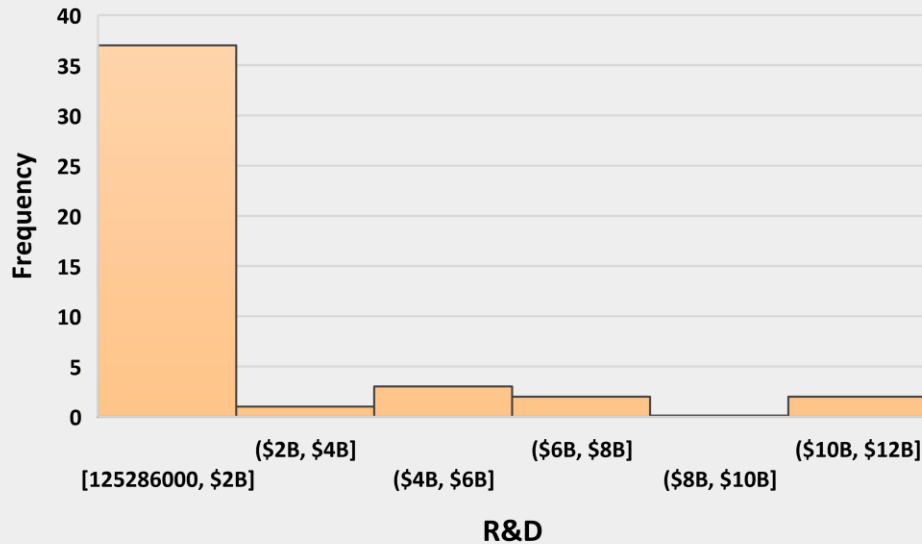
## Gross Profit for IT Sector for Year 3



Both distributions of gross profit and R&D for the IT Sector for year 3 are right-skewed or positively skewed, that means the mean for each is higher than the median

The mean for gross profit is about \$81.7 billion, and the mean R&D for IT sector in year 3 is about \$14.8 billion, the average of gross profit is 5.5 times than the spending in R&D. The median for gross profit is \$28.8 billion, and the median for R&D is \$6.3 billion. The standard deviation for gross profit earning (\$159 billion) is six times higher than R&D spending (\$26 billion). That means the variability of R&D spending is significantly improving companies' profitability because more than 50% of the IT companies have 5.5 times gross profit earning than their R&D spending.

## R&D for IT Sector for Year 3



Some outliers are removed due to measurement error it may cause. The gross profit has a range of \$59 billion, and it is about five times higher than the range of R&D (\$12 billion). It appears that R&D generated profitability in IT sector in year 3; in other words, R&D expenditure turns into new technology products, the latest tech products produce companies' profits.