



Analysis of NYSE Data

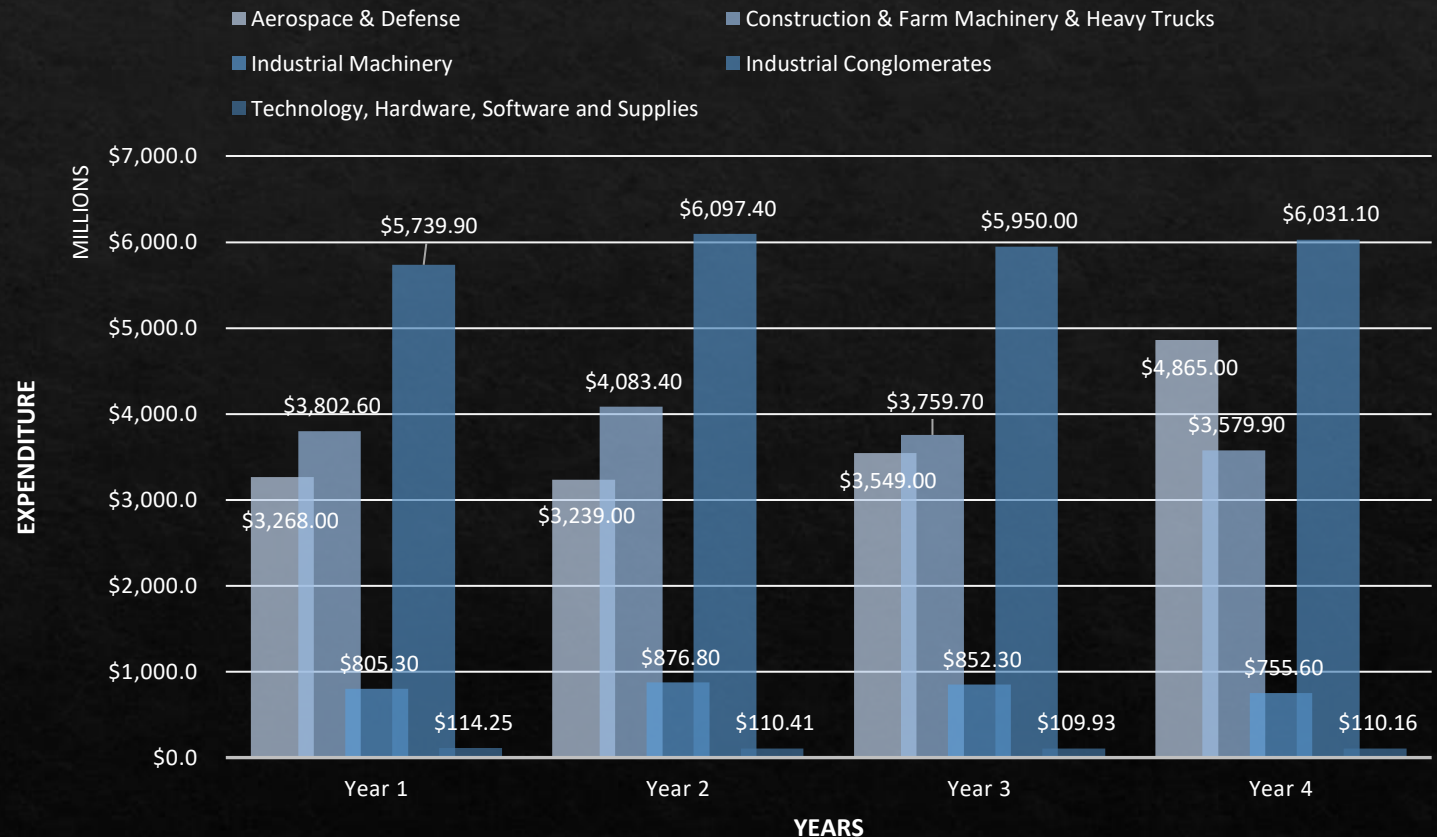
The background image is a financial candlestick chart, likely representing NYSE data. It features a dark blue background with white and light blue candlesticks. A white line, possibly a moving average, trends upwards from the bottom left towards the top right. Several numerical price labels are visible: '4610.57' in the upper left, '4547.31' in the center, '4292.14' in the lower right, and '4487.06' in the middle right. The chart also shows a vertical axis on the right with labels like '4300', '4200', and '4100'.

How is the research and development expenditure in the industrial sector different within four years?

This chart represent 5 sub-industries in Industrial Sector. After comparison, we can see that the companies within Industrial Conglomerates are the one who spend about 53 time more than Technology, Hardware, Software and Supplies.

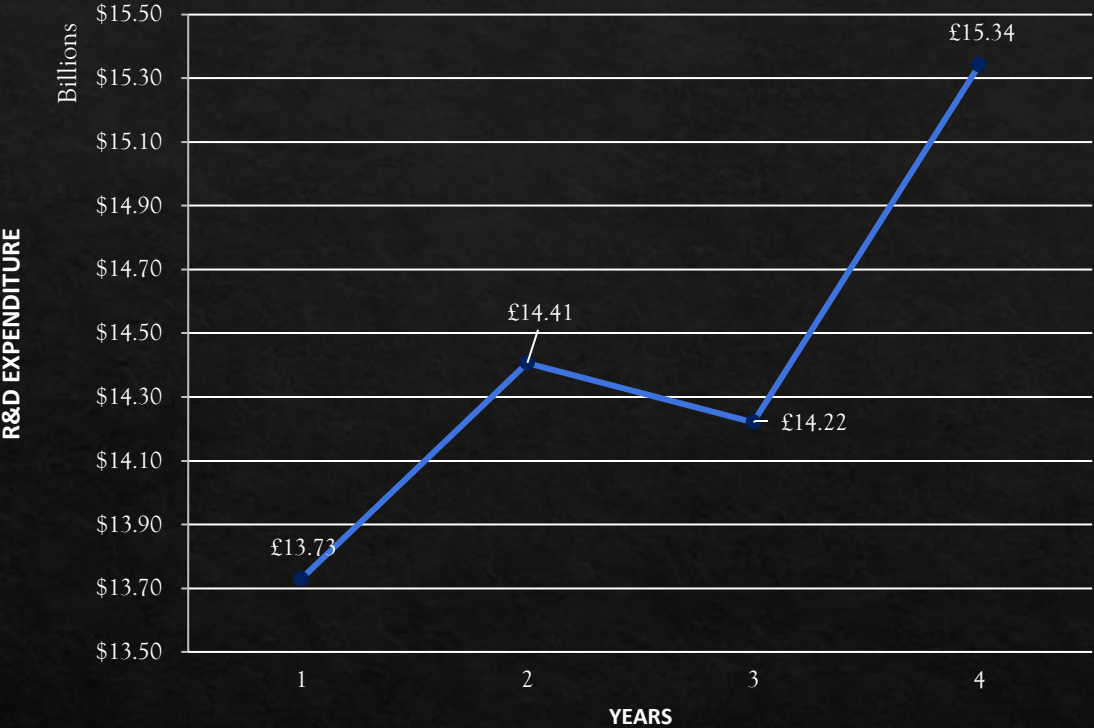
Industrial Conglomerates have the highest expenditure (41%) withing Sector.

Expenditure for Research and Development in The Industry Sector

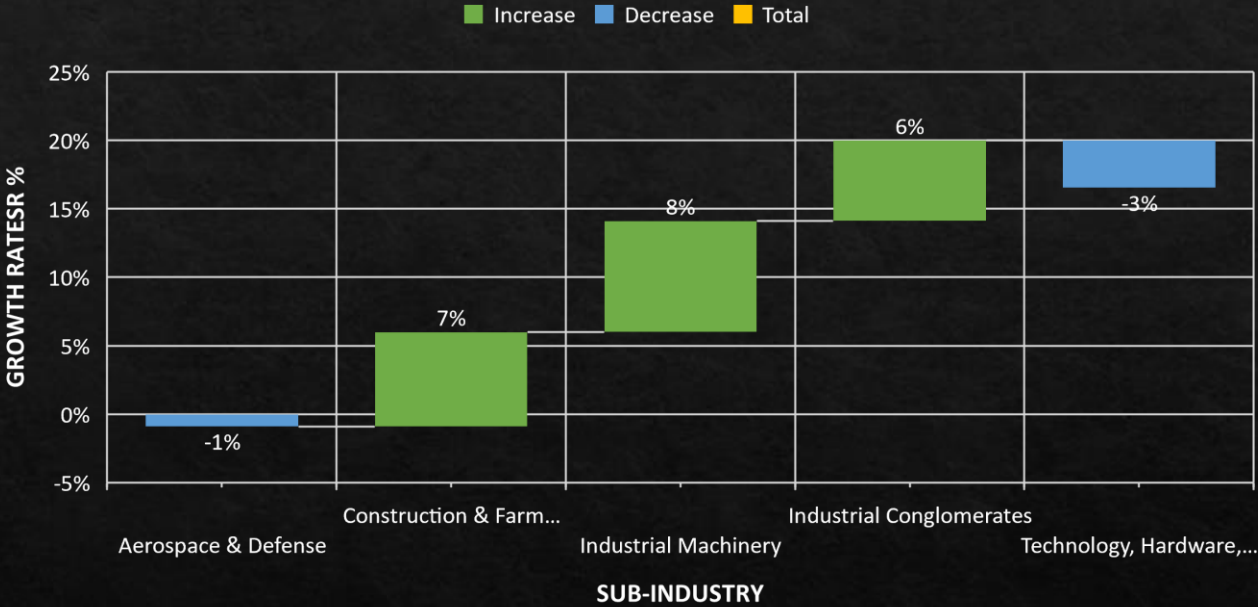


As you can see difference between year one and four are massive – \$1.61 billion which is 11.74% of whole expenditure in first year.

Expenditure Research and Development



Growth rates within the industry - R&D

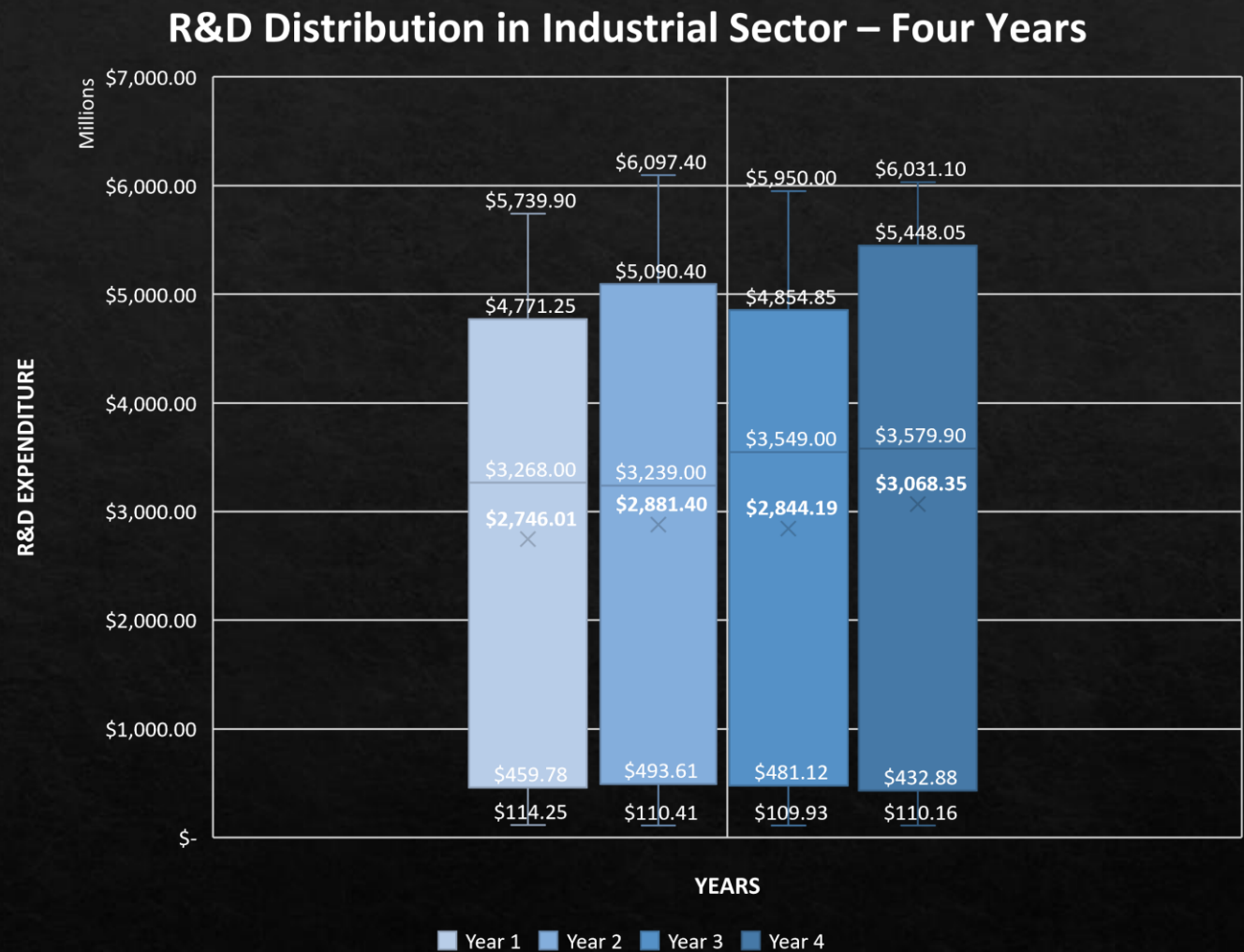


Research and Development in industry sector				
GICS_Sub Industry	Year 1	Year 2	Year 3	Year 4
Aerospace & Defense	\$ 3,268,000,000.00	\$ 3,239,000,000.00	\$ 3,549,000,000.00	\$ 4,865,000,000.00
Construction & Farm	\$ 3,802,600,000.00	\$ 4,083,400,000.00	\$ 3,759,700,000.00	\$ 3,579,900,000.00
Industrial Machinery	\$ 805,300,000.00	\$ 876,800,000.00	\$ 852,300,000.00	\$ 755,600,000.00
Industrial Conglomerates	\$ 5,739,900,000.00	\$ 6,097,400,000.00	\$ 5,950,000,000.00	\$ 6,031,100,000.00
Technology, Hardware	\$ 114,250,000.00	\$ 110,412,000.00	\$ 109,931,000.00	\$ 110,156,000.00
TOTAL:	\$ 13,730,050,000.00	\$ 14,407,012,000.00	\$ 14,220,931,000.00	\$ 15,341,756,000.00

From this Box plot of Research and Development, we can learn that first two years are quite similar to each other.

We can see that comparing first and fourth year we can see clearly change in grow of the expenditure when in year three was a drop.

Average of the R&D in year 1 is equal \$2,746.01M and its not far form second and third year. Fourth year noted average expenditure of \$3,068.35M which is about 4% growth.



Ticker Symbol AEP

Income Statement					
		Historical			
		Year 1	Year 2	Year 3	Year 4
Total Revenue		\$ 14,945,000,000.00	\$ 14,813,500,000.00	\$ 16,378,600,000.00	\$ 16,453,200,000.00
Cost of Goods Sold		\$ 6,395,000,000.00	\$ 6,722,300,000.00	\$ 7,685,700,000.00	\$ 7,433,500,000.00
Gross Profit		\$ 8,550,000,000.00	\$ 8,091,200,000.00	\$ 8,692,900,000.00	\$ 9,019,700,000.00
Gross Margin		0.57	0.55	0.53	0.55
Research & Development		\$ -	\$ -	\$ -	\$ -
Sales, General and Admin		\$ 3,812,000,000.00	\$ 3,329,800,000.00	\$ 3,667,900,000.00	\$ 3,676,500,000.00
Other Operating Items		\$ 1,782,000,000.00	\$ 1,712,500,000.00	\$ 1,897,600,000.00	\$ 2,009,700,000.00
Total Operating Expenses		\$ 5,594,000,000.00	\$ 5,042,300,000.00	\$ 5,565,500,000.00	\$ 5,686,200,000.00
Operating Profit		\$ 2,956,000,000.00	\$ 3,048,900,000.00	\$ 3,127,400,000.00	\$ 3,333,500,000.00
Operating Margin		0.20	0.21	0.19	0.20

Profit and Loss Statement of AEP Company between First to Four Year

Looking at the Profit & Loss statement, we can conclude what was happening with the company AEP picked from the list (‘Ticker Symbol’). We can learn that the company AEP didn’t have big grow across 4 years.

It’s climbed slowly to reach on the end if the 4 years period revenue of \$16.43 billion which is \$1.51 billion more than on the year 1.

Ticker SymbolBWA						
Income Statement						
	Historical				Forecast	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Revenue	\$ 7,436,600,000	\$ 8,305,100,000	\$ 8,023,200,000	\$ 9,071,000,000	\$ 9,630,226,122	\$ 10,223,928,471
Cost of Goods Sold	\$ 5,879,100,000	\$ 6,548,700,000	\$ 6,320,100,000	\$ 7,137,900,000		
Gross Profit	\$ 1,557,500,000	\$ 1,756,400,000	\$ 1,703,100,000	\$ 1,933,100,000	\$ 5,106,135,954	\$ 5,420,928,657
Sales, General and Admin.	\$ 702,300,000	\$ 792,700,000	\$ 763,400,000	\$ 1,707,200,000		
Research and Development	\$ -	\$ -	\$ -	\$ -		
Other Operating Items	\$ -	\$ -	\$ -	\$ -		
Total Operating Expenses	\$ 702,300,000	\$ 792,700,000	\$ 763,400,000	\$ 1,707,200,000		
Operating Income	\$ 855,200,000	\$ 963,700,000	\$ 939,700,000	\$ 225,900,000	\$ 2,302,078,302	\$ 2,444,001,168

Operating Statistics						
	Historical				Assumptions	
Revenue Growth (%)		10%	-4%	12%	6%	6%
Gross Margin	0.51	0.54	0.55	0.52	0.53	0.53
Operating Margin	0.24	0.26	0.26	0.20	0.24	0.24

Operating Scenarios - Sensitivity Analysis		
Scenario	Base case	
Revenue Growth (%)		
Strong case	8%	8%
Base case	6%	6%
Weak case	4%	4%
Gross Margin		
Strong case	0.55	0.55
Base case	0.53	0.53
Weak case	0.51	0.51
Operating Margin		
Strong case	0.26	0.26
Base case	0.24	0.24
Weak case	0.22	0.22

Profit and Loss Statement Forecast off BWA Company Between First to Four Year

The forecast of the Profit and Loss Statement of the next 2 years for BWA company show increase of revenue, remarkable gross margin growth and operating income.

The revenue is going to increase, depends on scenario, from 4% in weak case up to 8%(strong case) in year 5 and then in year 6.

The operating margin is expected to increase in the 5th and 6th year by 26% in best case scenario. In the weak case scenario it can only go to 22% which is still high increase.