

## MILITARY TOP DEFENSE MANUFACTURERS

### About Dataset

The dataset provides information on global defense manufacturers, focusing on their revenues, leadership, and ranking in 2019 and 2020.

It contains **10 attributes** including ranking, revenue data, revenue composition, and leadership information. This data helps us understand how defense companies performed over two years and how dependent they are on defense-related contracts. [Kaggle](#)

### About this file

This file contains 10 attributes which are described as follows:

1. `this_year_rank`: Rank of company of the year 2020
2. `last_year_rank`: Rank of company of the year 2019
3. `company`: Name of the company
4. `leadership`: Name followed by designation of the leader or supreme post holder in the company
5. `country`: Country the company has originated in
6. `2020_defense_revenue`: Company's revenue in year 2020 (in \$US Million)
7. `2019_defense_revenue`: Company's revenue in year 2019 (in \$US Million)
8. `%_defense_revenue_change`: Profit or loss company made in percentage in 2020 relative to 2019
9. `2020_total_revenue`: Total revenue of the company incl. defenses as well as from other assets or liabilities
10. `revenue_fom_defense`: Percentage of revenue company had from the defense sector

### Data Cleaning & Preparation

- **Duplicates:** No duplicate rows were found.
- **Trimming:** Removed leading/trailing spaces in *country* and *leadership* columns for consistency.
- **N/A Handling:**

- Replaced “N/A” in *2019\_defense\_revenue* and *%\_defense\_revenue\_change* with blanks.
- Since the distribution of *2019\_defense\_revenue* was **right-skewed**, missing values were filled with the **median** instead of mean (to reduce the effect of outliers).

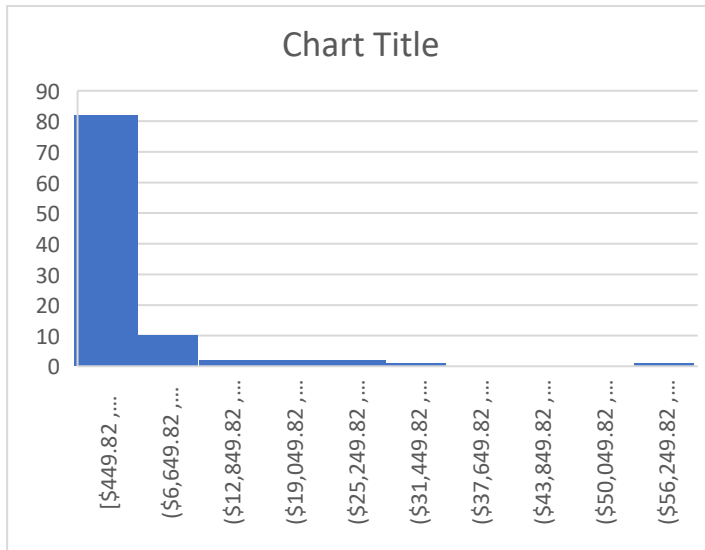


Fig 1. The distribution of *2019\_defense\_revenue*

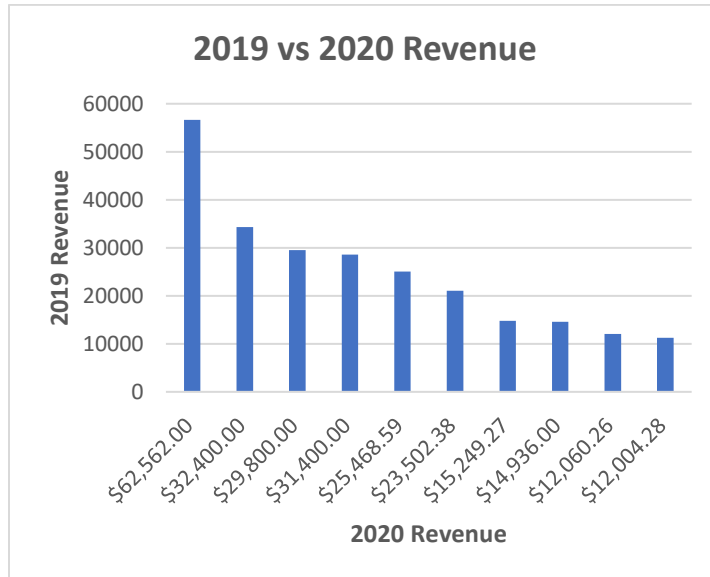
- **Standardization:** Corrected inconsistencies (e.g., “U.S.” → “U.S”, “U.K.” → “U.K”).
- **New Columns Created:**
  - **Recalculated % Defense Revenue Change** using 2019 and 2020 revenue.
  - **2020\_revenue\_other:** Difference between total 2020 revenue and defense-specific 2020 revenue. This highlights non-defense earnings.

## Exploratory Data Analysis (EDA) & Insights

### A. Revenue Performance

- **Top Players:** U.S. companies dominate the top rankings, accounting for the majority of global defense revenue.
- **Growth Trends:**
  - Some companies recorded significant **positive growth** in 2020 despite global slowdowns (indicating defense as a relatively recession-proof industry).

- A few companies had **declining revenues**, suggesting possible reduction in government contracts or diversification away from defense.



## B. Dependency on Defense Revenue

- Companies varied widely in how much of their total revenue came from defense:
  - Some firms earned **over 90%** from defense (highly defense-dependent).
  - Others had **less than 50%**, showing strong diversification into civilian or non-defense markets.

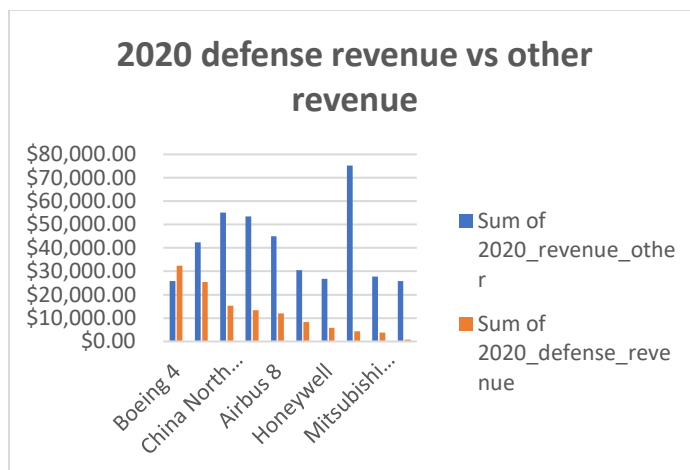
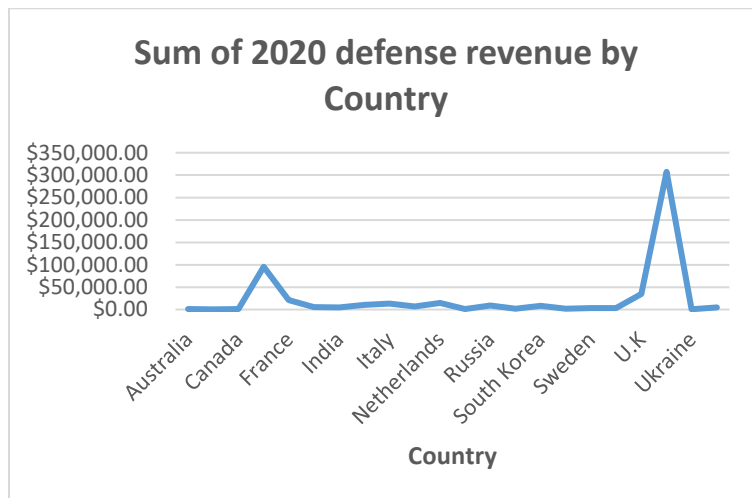


Fig2: 2020 defense revenue vs other revenue

## C. Geographic Concentration

- **U.S. dominates** with the largest number of top-ranked defense contractors and the highest combined revenue.
- **China and European nations (U.K., France, Italy, Netherlands/France)** follow behind.
- The **Middle East (e.g., UAE)** has emerging players but smaller revenue contributions compared to the U.S. and China.



*Fig3: total defense revenue by country*

#### D. Leadership & Strategy

- Leadership data shows that many top firms are led by executives with strong military, engineering, or long corporate tenure backgrounds — reinforcing the importance of expertise in managing large-scale defense contracts.
- Companies with diverse revenue streams (civil + defense) tended to show **more stability** in % revenue change.

#### E. Year-on-Year Revenue Change

- After recalculating the **%\_defense\_revenue\_change**, it became clear that while a few firms saw **double-digit growth**, others faced contractions.
- This aligns with shifting geopolitical priorities — U.S. and China increased spending, while some European contractors plateaued.

### 4. Key Insights

1. **U.S. dominance:** U.S. companies hold the majority of the market share and lead globally in defense manufacturing.

2. **China's rise:** Chinese contractors are rapidly climbing the rankings, showing increasing government investment in defense.
3. **Diversification matters:** Firms with strong non-defense revenue were less affected by fluctuations in defense spending.
4. **Revenue dependency:** Some contractors are almost fully reliant on defense ( $\geq 90\%$ ), making them vulnerable to changes in defense budgets.
5. **Market resilience:** Despite global economic downturns, the defense sector remains a strong and relatively stable industry, with steady revenue growth in major powers.

## 5. Recommendations

- **For policymakers:** Diversify supplier bases to reduce over-reliance on U.S. contractors.
- **For companies:** Balance defense vs non-defense revenue streams to reduce vulnerability.
- **For investors:** U.S. and Chinese firms remain the strongest bets, but emerging markets (Middle East) could offer long-term opportunities.
- **For analysts:** Monitor changes in geopolitical spending priorities (e.g., U.S. Indo-Pacific strategy, NATO spending commitments, Middle East defense modernization).