

Disney Movie Financial Analysis

By: Georgette Joseph



Research Question & Hypothesis

Question: Which decade produced the most financially successful Disney movies when adjusted for inflation?

Hypothesis: The 1990s and 2000s produced the highest revenue movies due to Disney's Renaissance and expansion strategies.



Dataset Overview

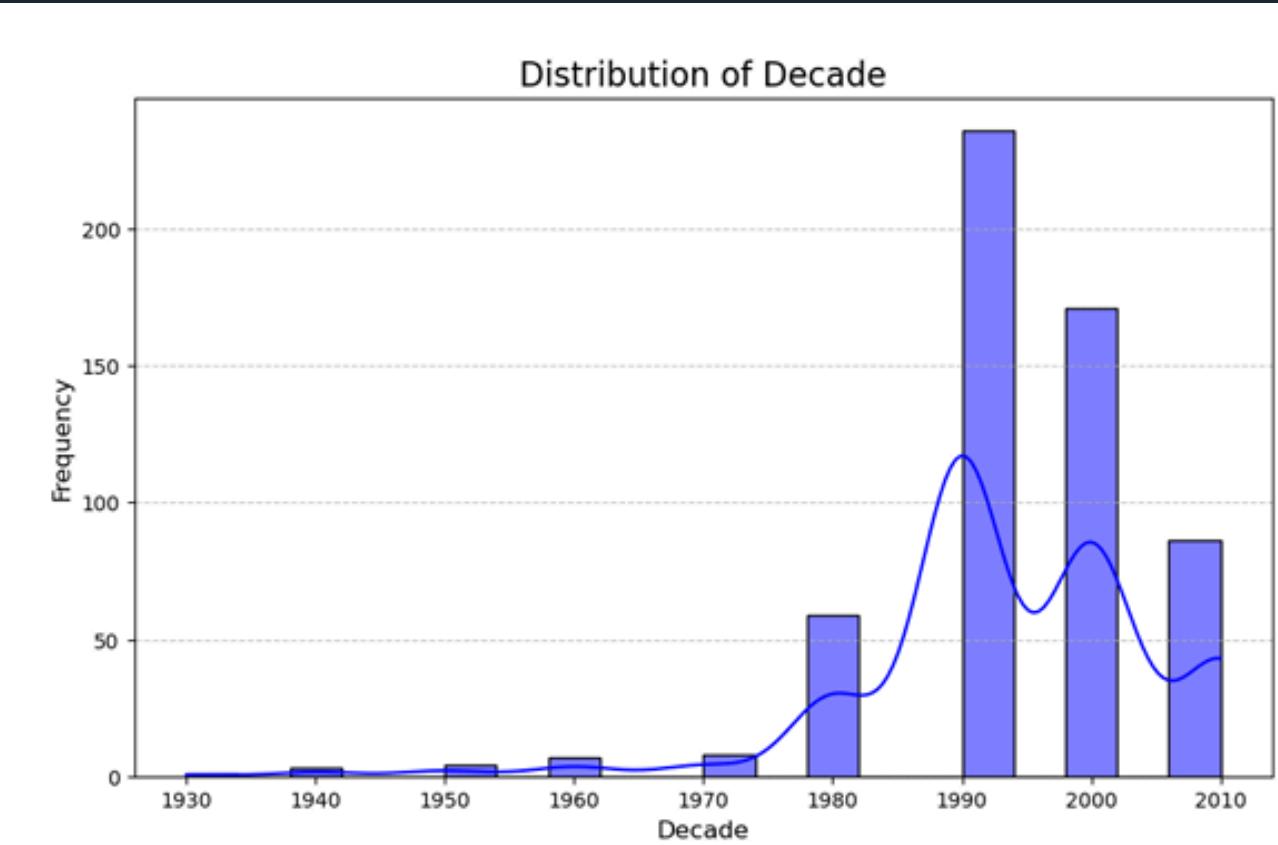
Data from 1937 to 2016 covering 575 movies

Key variables:

- **Movie Title** - Used to analyze individual success stories
- **Decade** - To compare trends over time
- **Inflation** - Adjusted Gross - to standardize earnings
- **Total Gross** - Unadjusted earnings comparison
- **Genre** - To see patterns in financial performance



Histograms for Key Variables

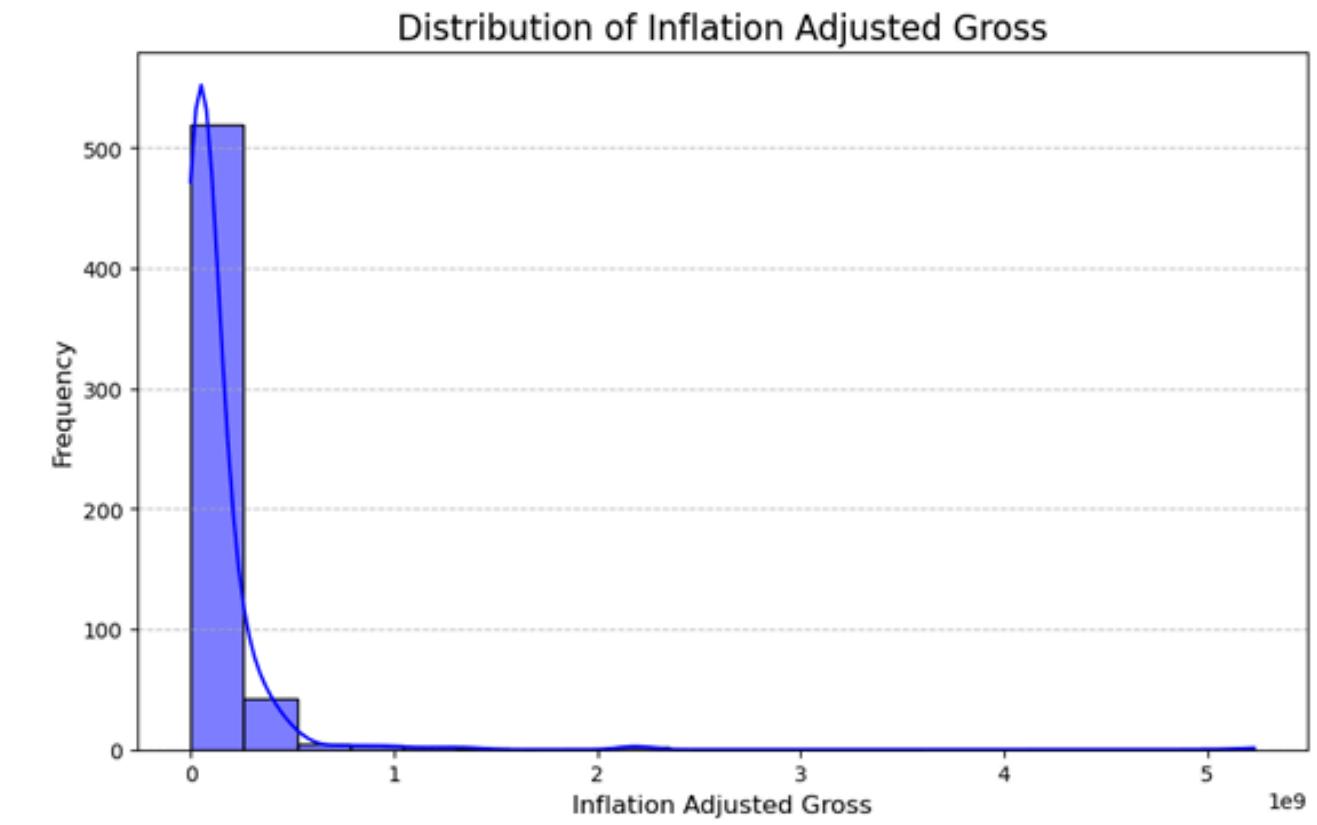


Number of Movies released Per Decade
(production trends)

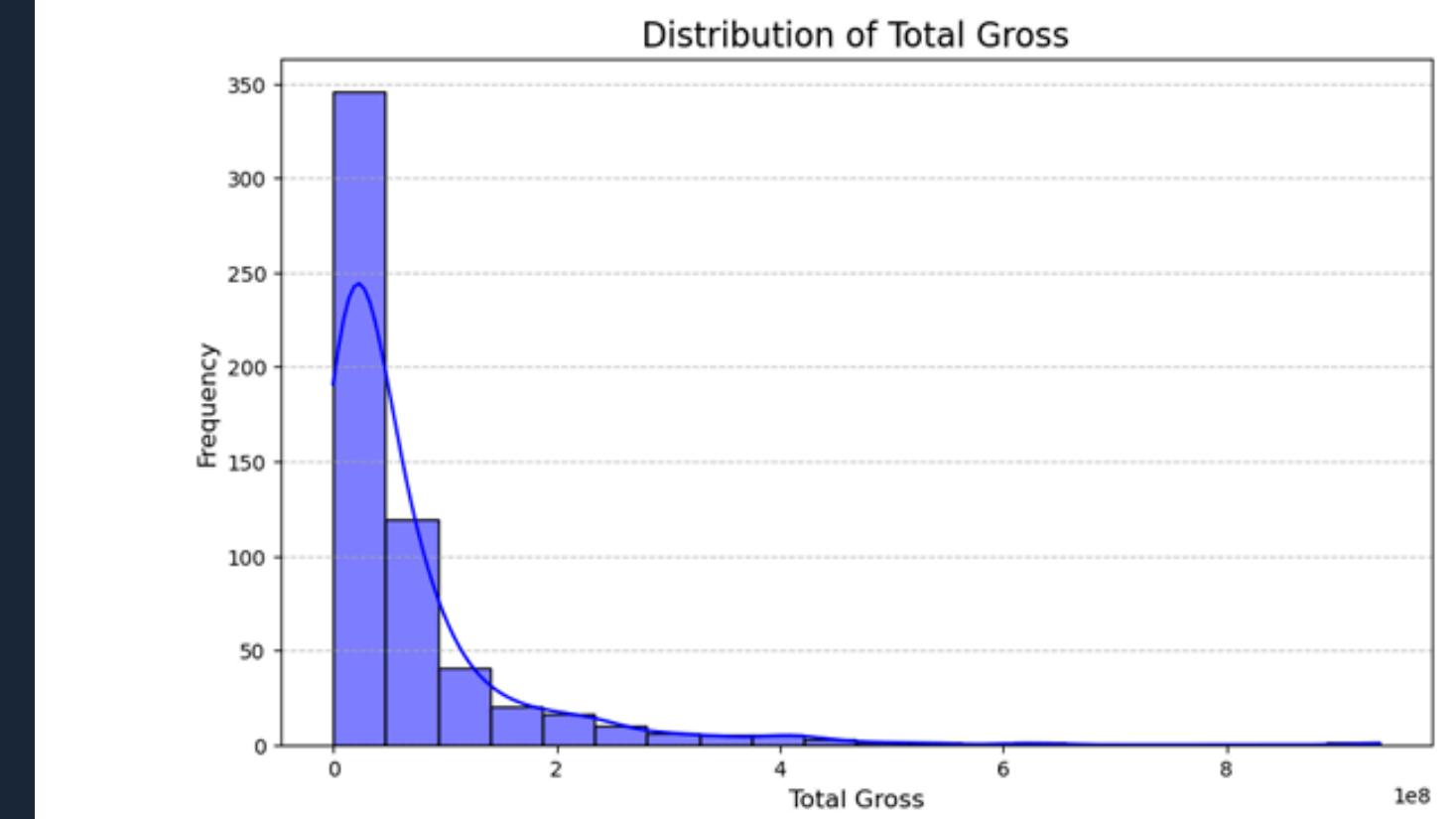
Decade Descriptive Statistics:
Mean: 1993.6521739130435
Median: 1990.0
Standard Deviation: 11.561864713321292
Mode: 1990



Histograms for Key Variables



Inflation Adjusted Gross Descriptive Statistics:
Mean: 119588697.38608696
Median: 55417615.0
Standard Deviation: 286907931.5712689
Mode: 2984



Total Gross Descriptive Statistics:
Mean: 65151887.91826087
Median: 30833914.0
Standard Deviation: 93179032.13268173
Mode: 2815

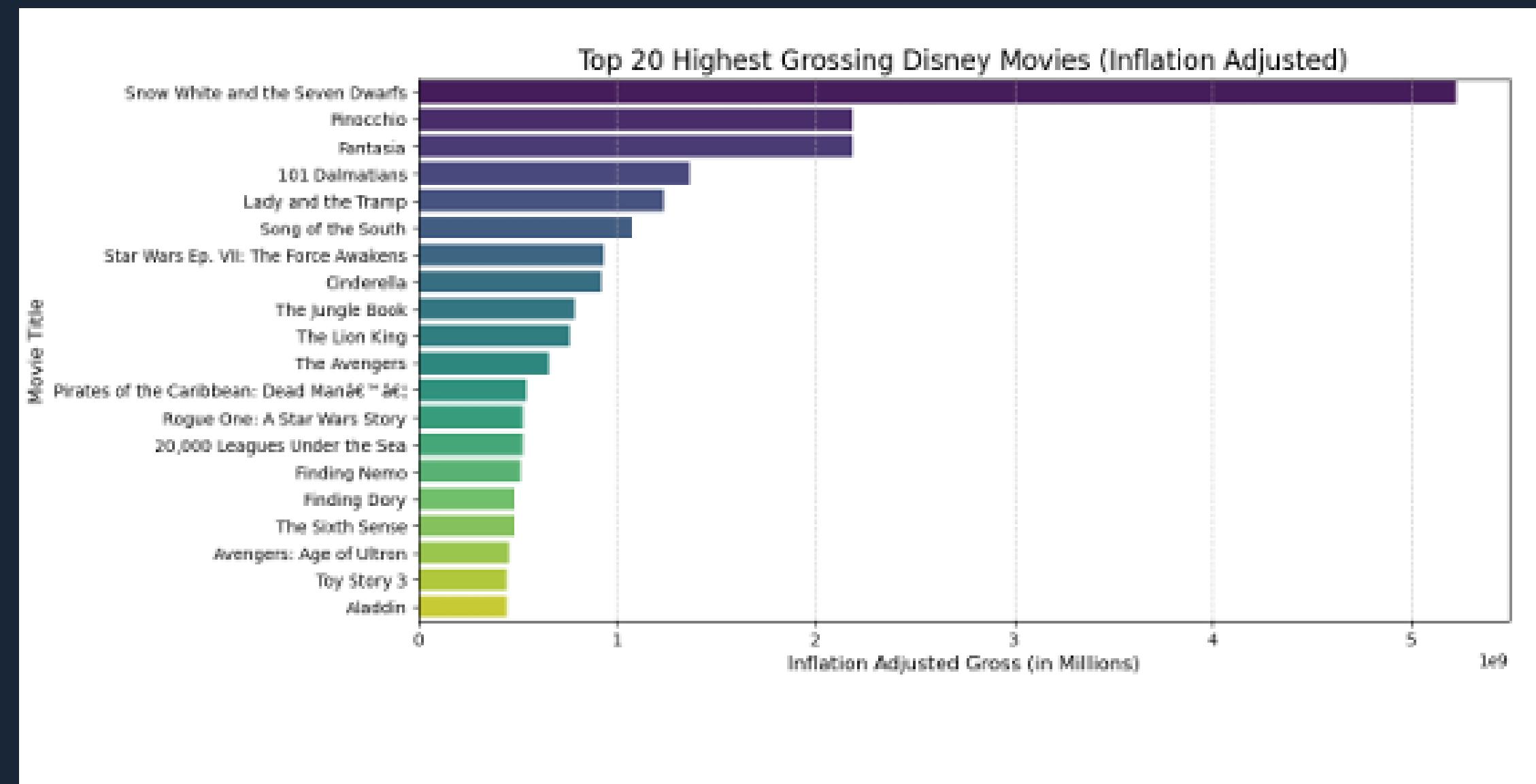
Distribution of earnings



Distribution of unadjusted earnings



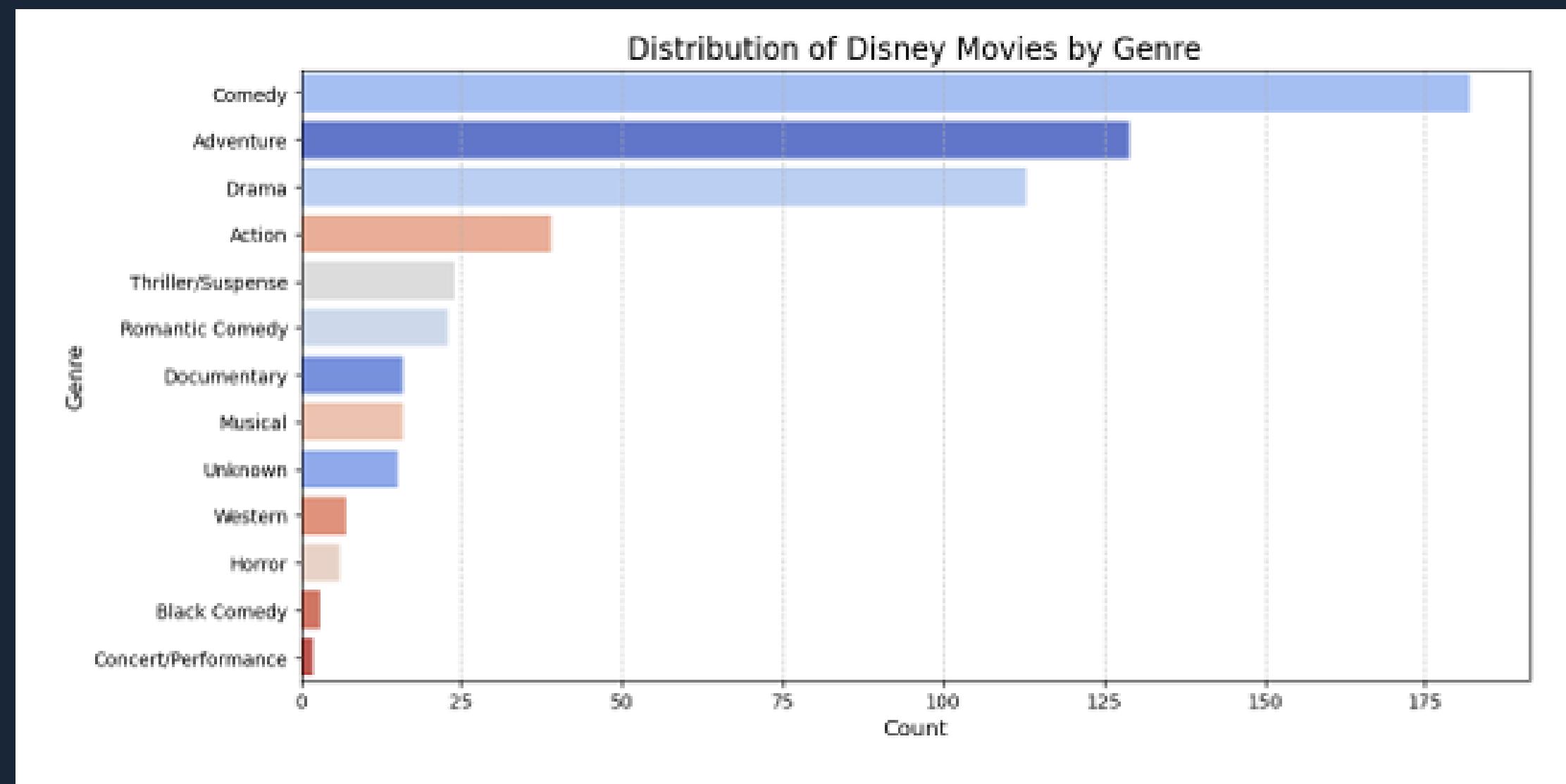
Histograms for Key Variables



Highest earning films



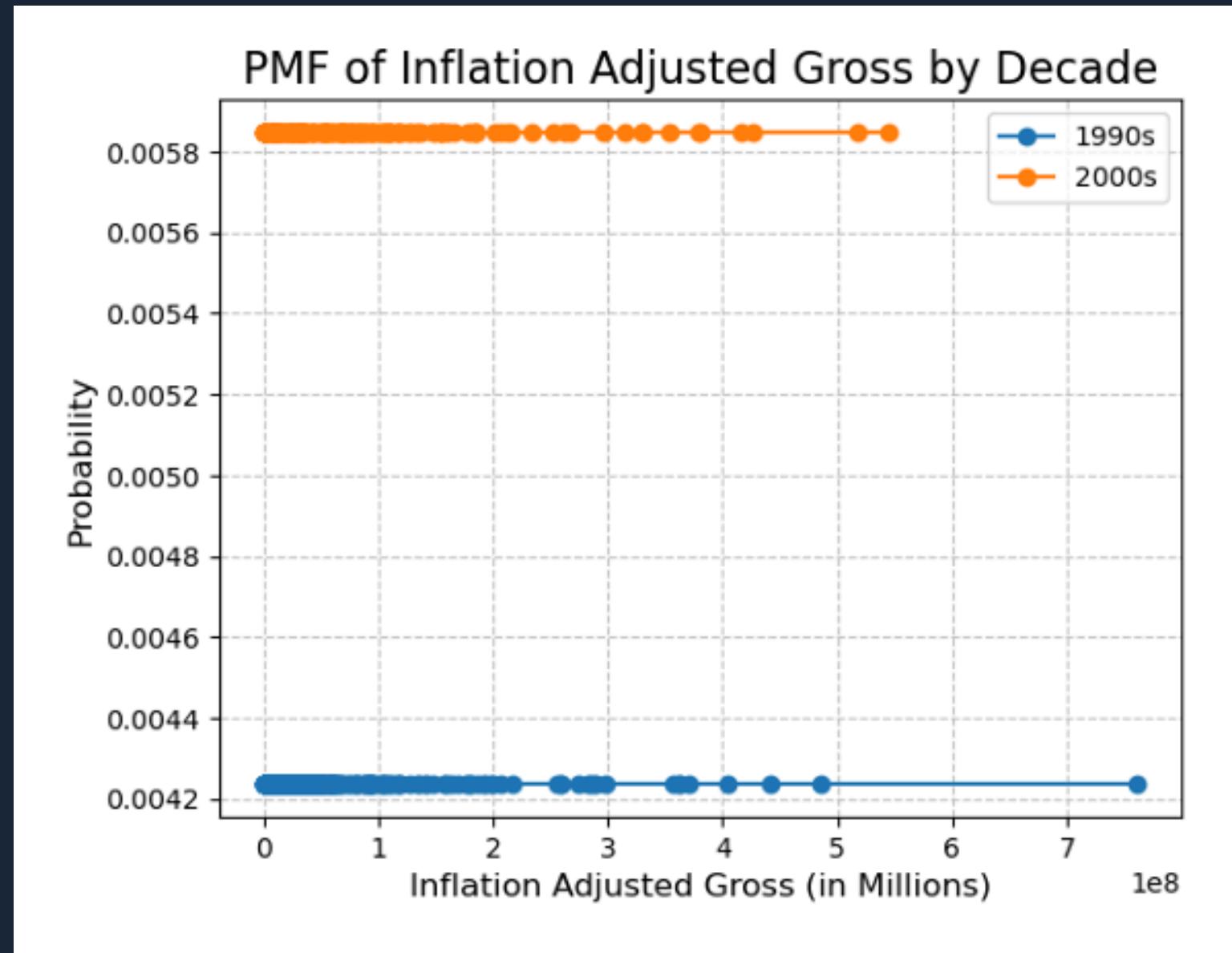
Histograms for Key Variables



Dominating genres



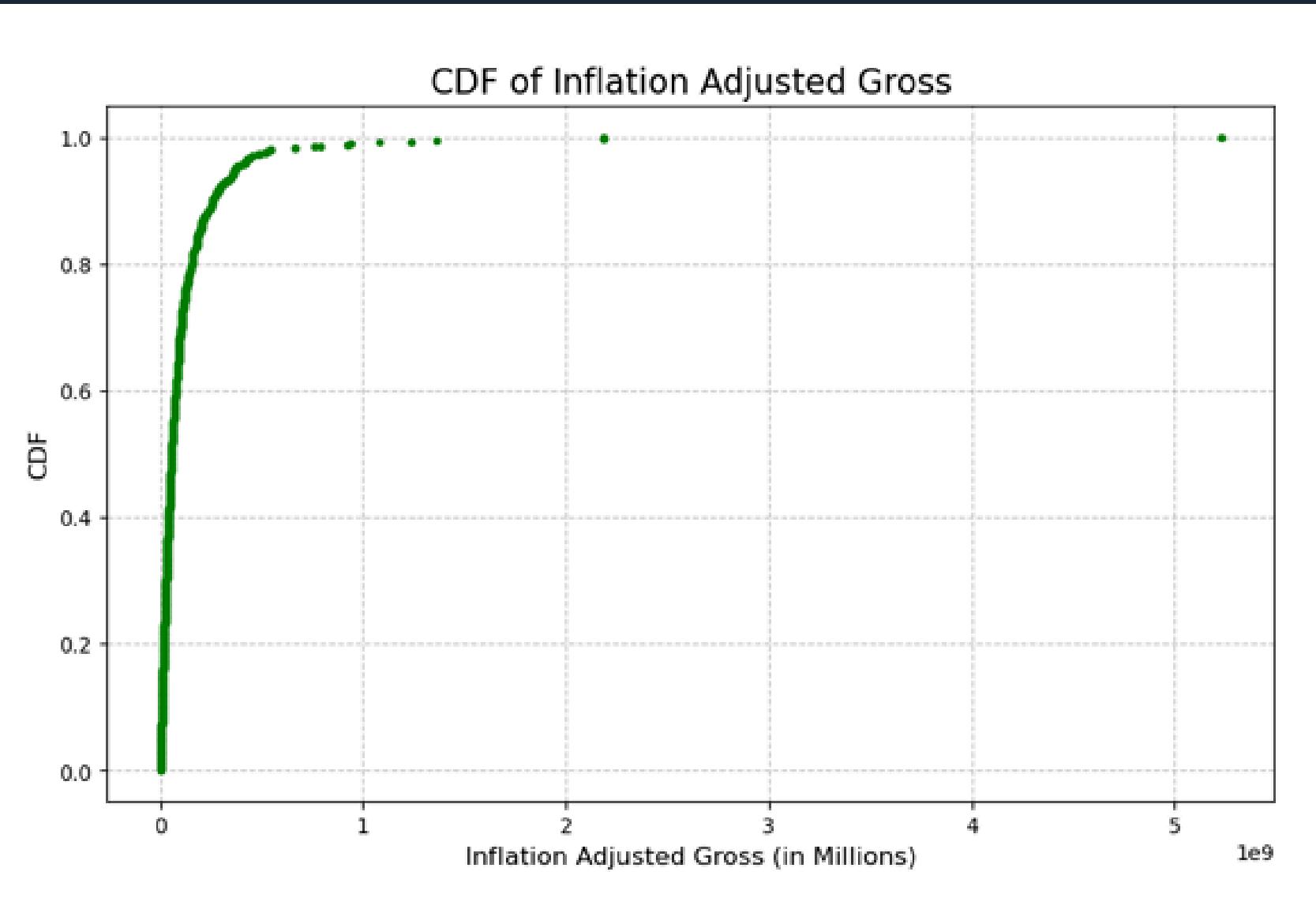
PMF Comparison



- Comparing 1990s vs 2000s
- Higher frequency of high-revenue movies in the 1990s



CDF Analysis



- 75% of Disney movies earned below \$119M
- A small percentage earned significantly more



Outliers Identified

1

High-earning movies like The Lion King (1994), Frozen (2013), and The Avengers (2012)

2

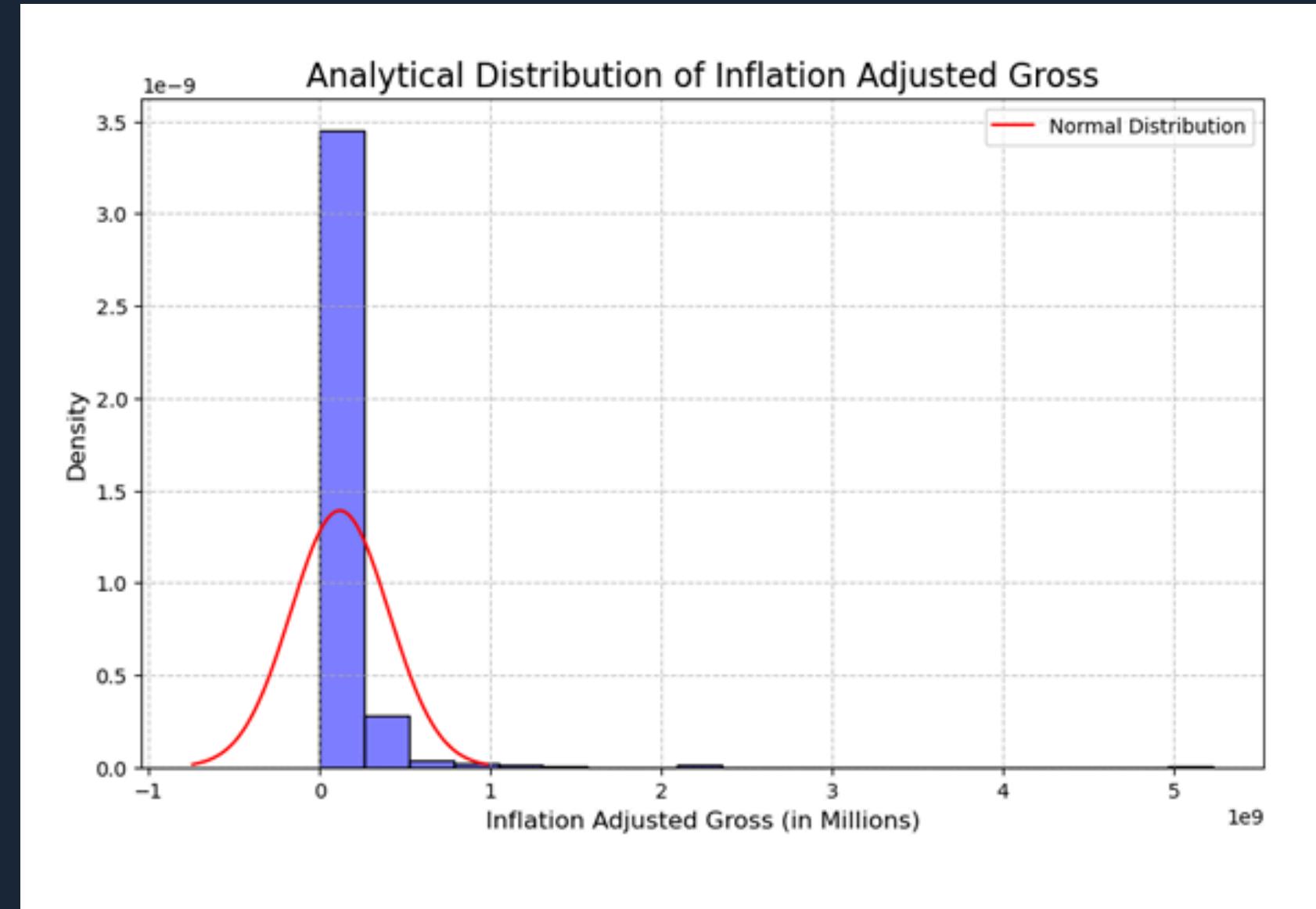
These skew the revenue distribution heavily

3

Potential Handling: Median over mean for better comparisons



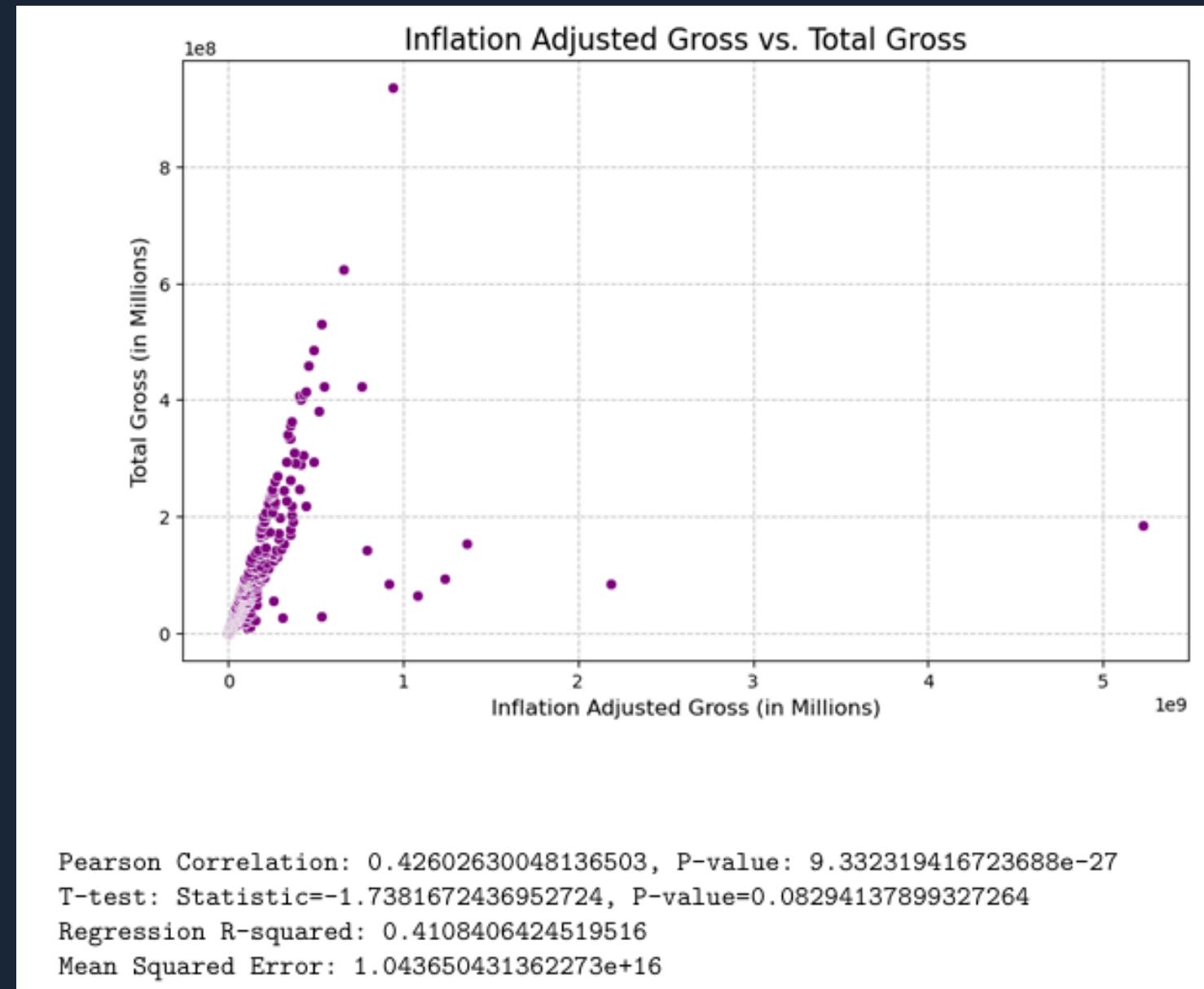
Analytical Distribution



- Distribution is right-skewed, showing high variance
- Standard deviation suggests extreme variability in success



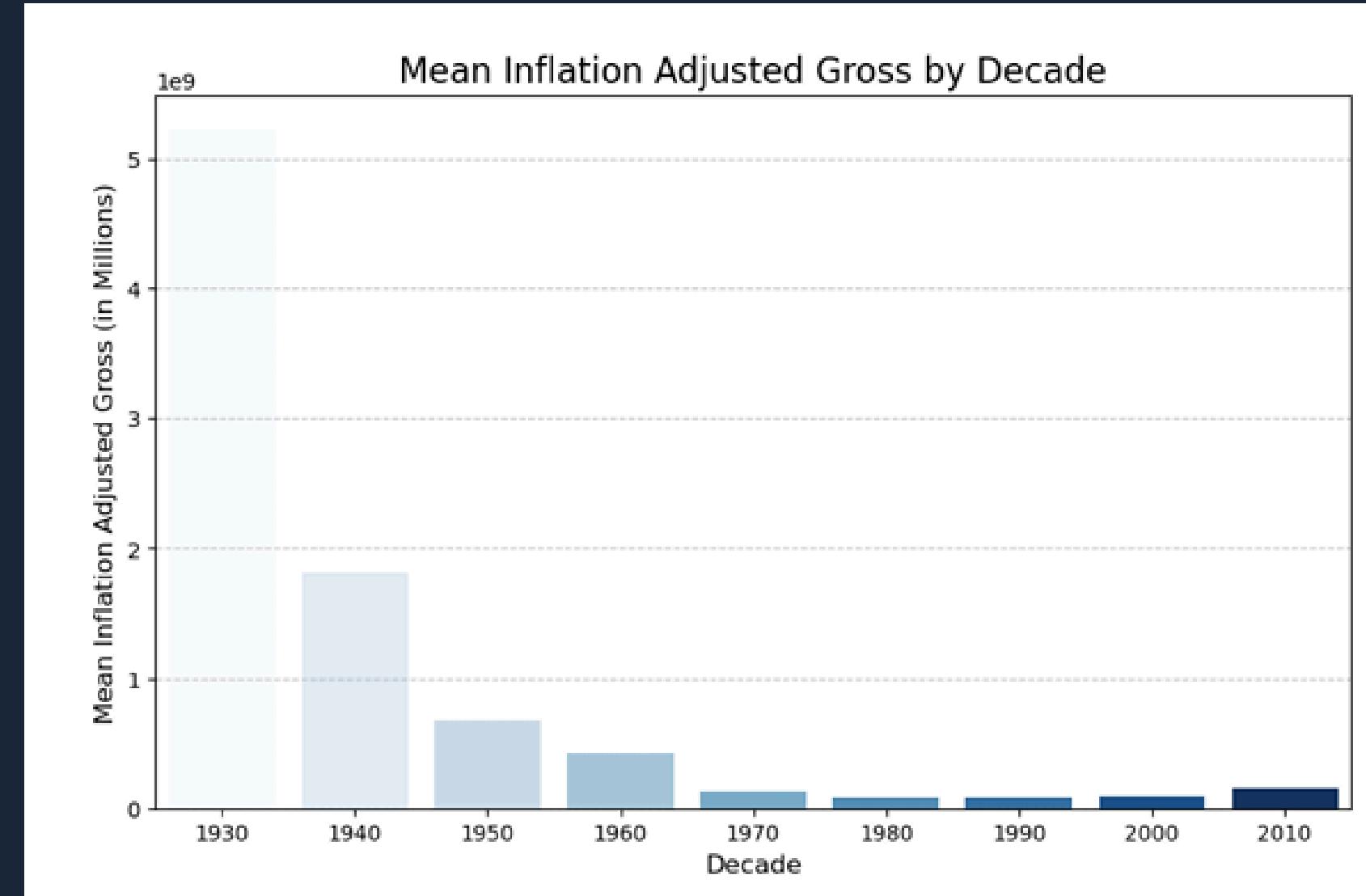
Scatter Plots & Correlation



- Comparing Two Variables:
Inflation Adjusted Gross vs. Total Gross
- Moderate correlation (0.426)
- Higher-grossing movies tend to perform well in both inflation-adjusted and total revenue



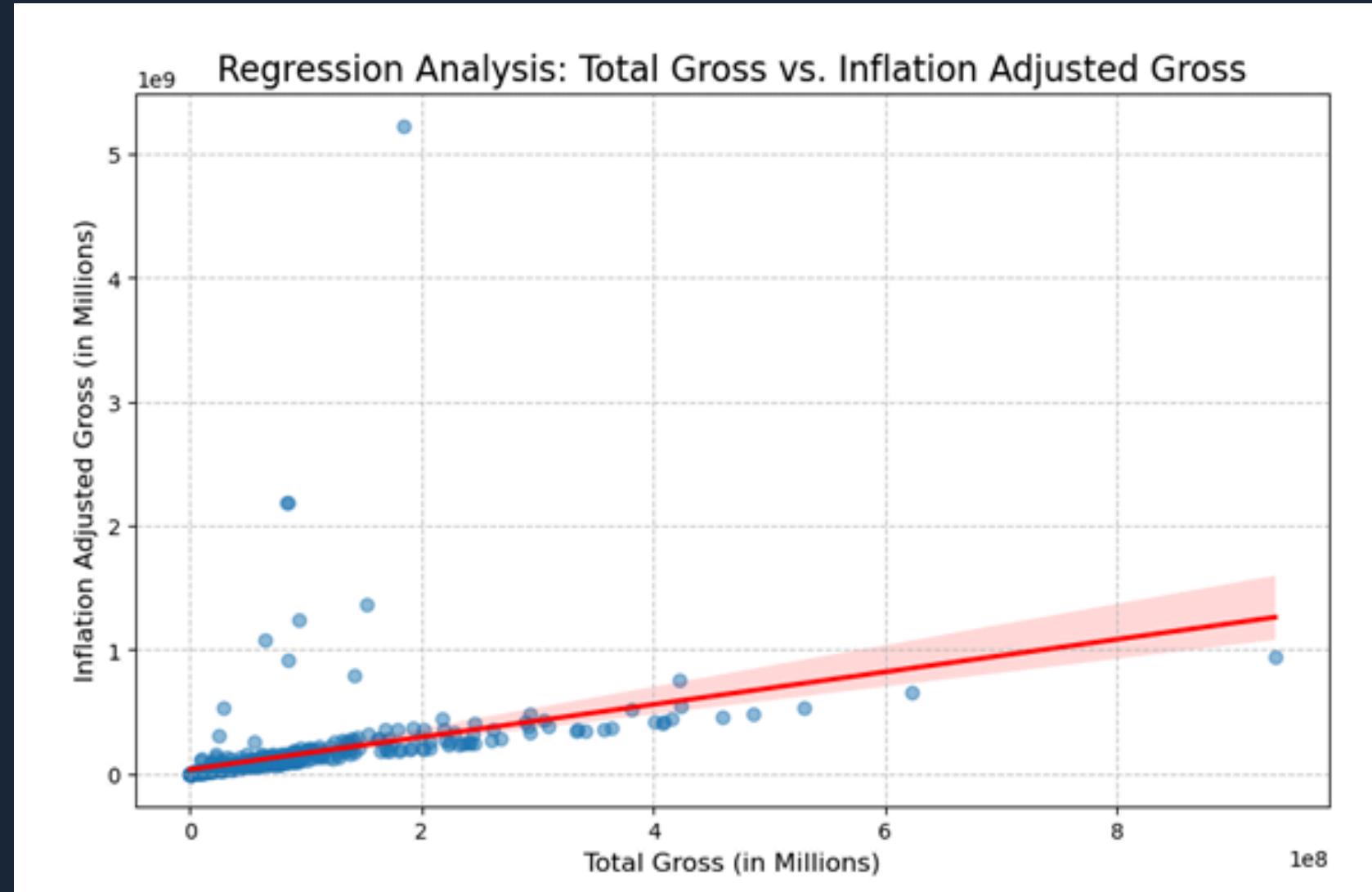
Hypothesis Testing



- Key Annotation: p-value = 0.0829 (Not statistically significant)
- Takeaway: No strong evidence that the 1990s were financially superior to the 2000s.



Regression Analysis



- R² Value: 0.41
- Mean Squared Error: $\$1.04 \times 10^{16}$
- Takeaway: The model explains some revenue variability, but other factors like marketing and international releases influence financial success.



Conclusions

- The 1990s had strong financial performance but were not statistically superior to the 2000s
- Revenue variance suggests factors beyond time period alone influence success
- Future research should consider marketing, international earnings, and digital releases



References

- Data Sources:
<https://www.kaggle.com/datasets/prateekmaj21/disney-movies>
- Tools Used: Python, Pandas, Matplotlib, Seaborn



Thank You

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