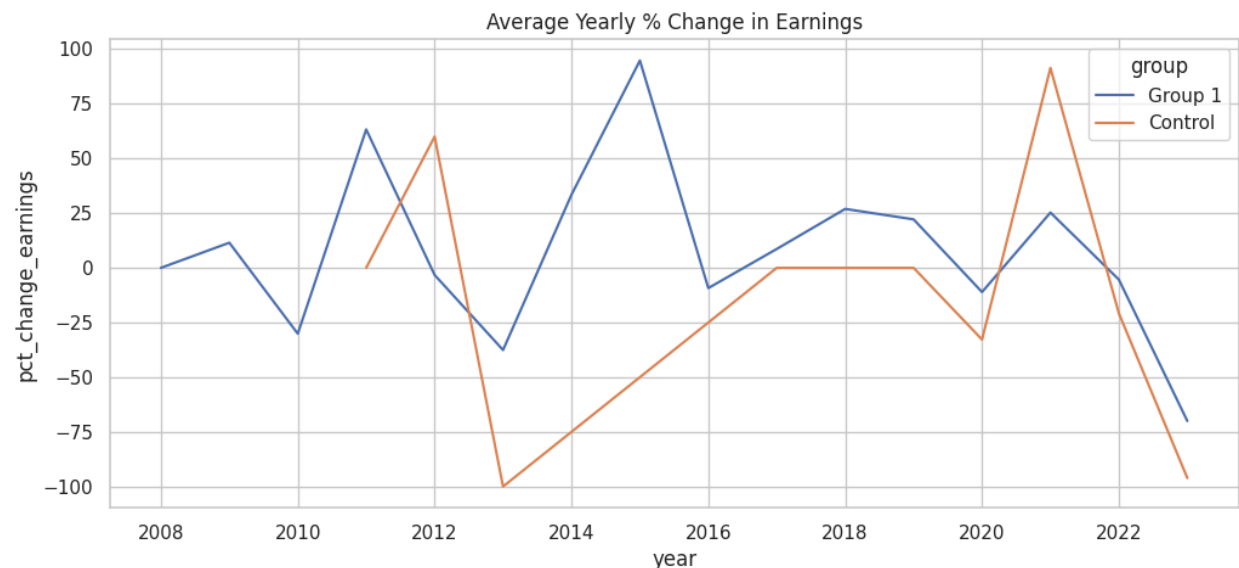


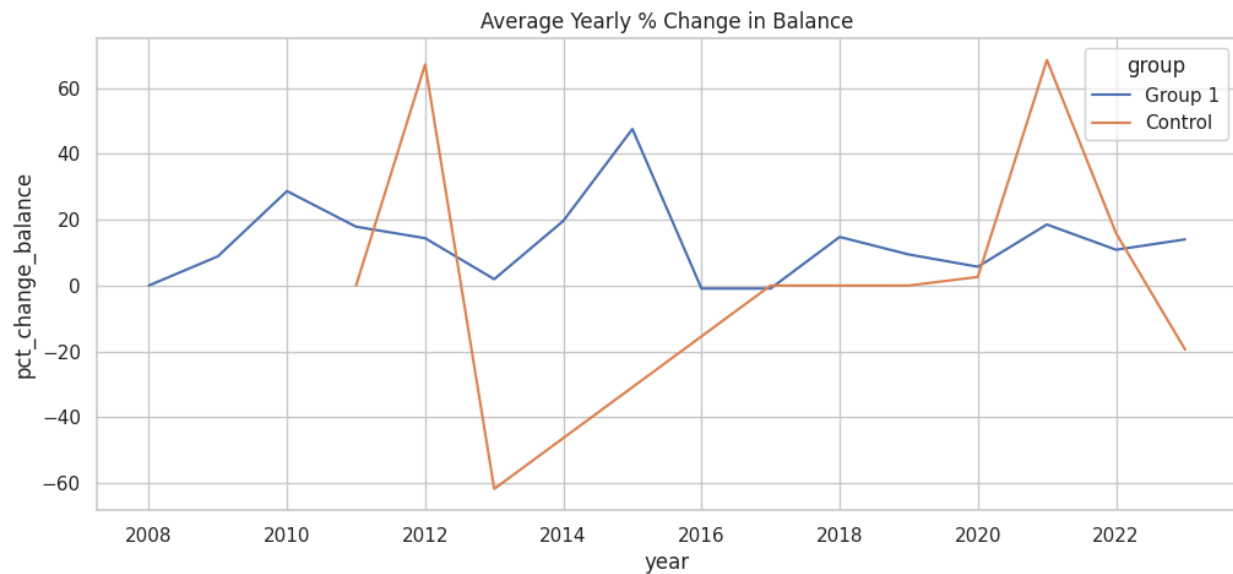
## 1. Boxplots of % Change in Earnings and Balance

- **Description:** The left graph shows the boxplot for percentage changes in earnings, while the right shows changes in balance. The y-axes indicate percentage changes, and the x-axes represent the two groups: Group 1 and Control.
- **Trends:** Group 1 displays a wider range in earnings changes compared to the Control, with a median above zero. The balance changes show Group 1 with slightly more positive shifts.
- **Key Insights:** Group 1 seems to have higher earnings growth potential, with more variability, indicating potential for both higher gains and losses compared to the Control.

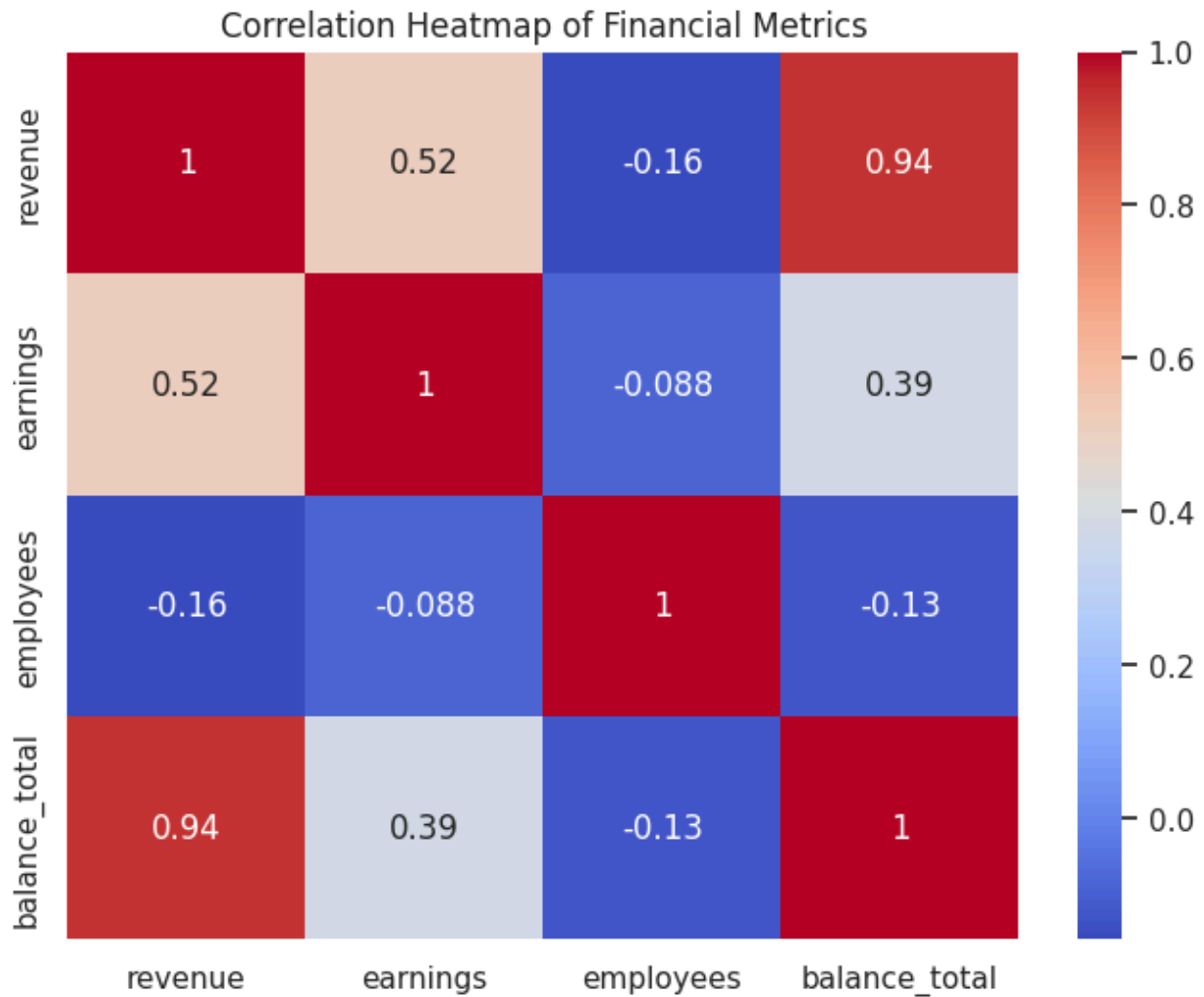


## 2. Average Yearly % Change in Earnings and Balance

- **Description:** This line graph tracks average yearly percentage changes in earnings from 2008 to 2022. Group 1 (blue) and Control (orange) are plotted over the years.
- **Trends:** Group 1 shows more fluctuation, with a peak around 2012, while the Control group appears more stable with less volatility.
- **Key Insights:** Group 1's earnings growth is more dynamic, suggesting a response to strategic changes, while the Control is more consistent but potentially less responsive.

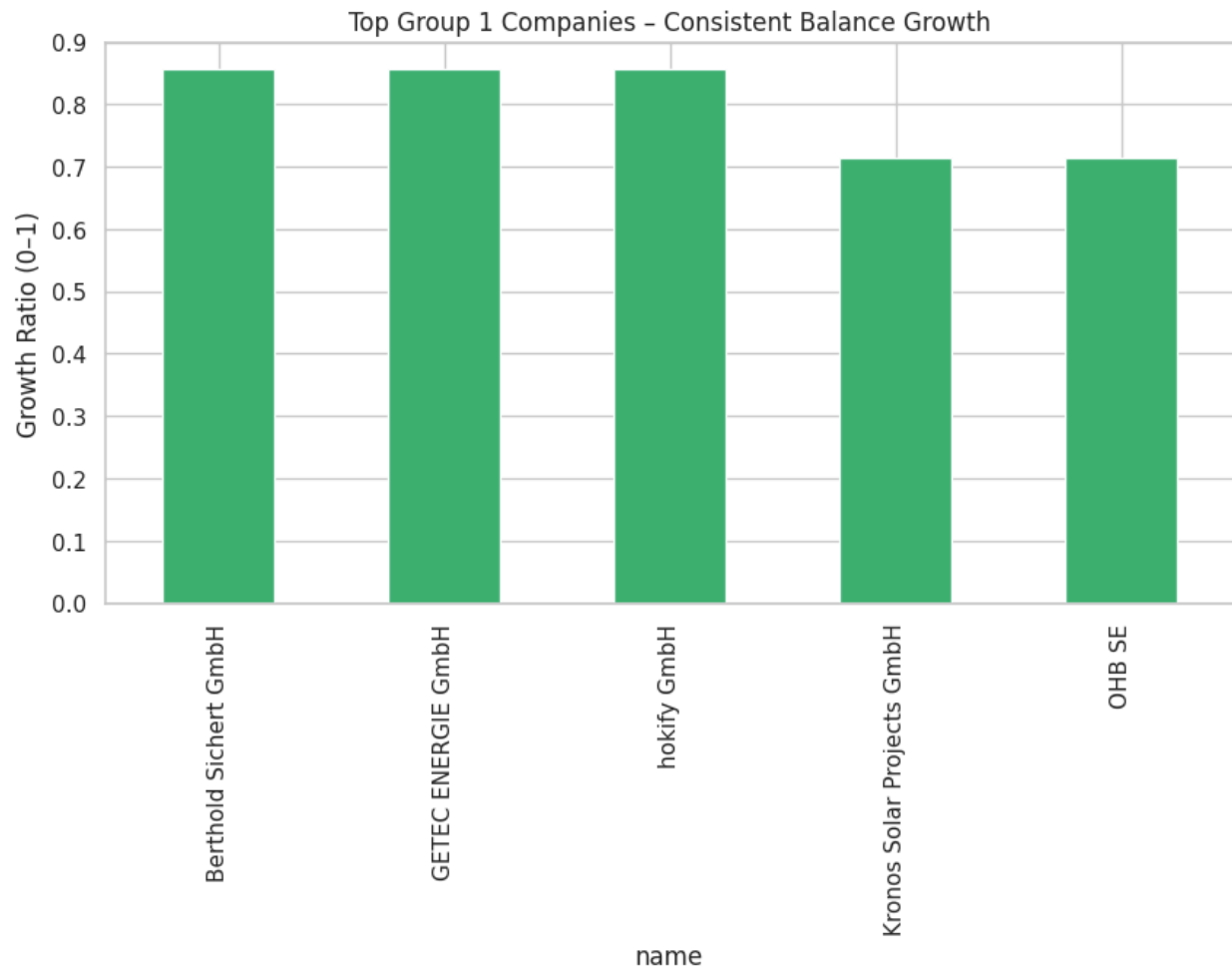


- **Description:** Similar to the previous graph, this one tracks changes in balance over the same years.
- **Trends:** Group 1 shows a significant peak in 2012, while the Control has a more gradual and consistent change in balance.
- **Key Insights:** The peaks for Group 1 indicate successful balancing strategies post-changes, contrasting with the steadiness of the Control.



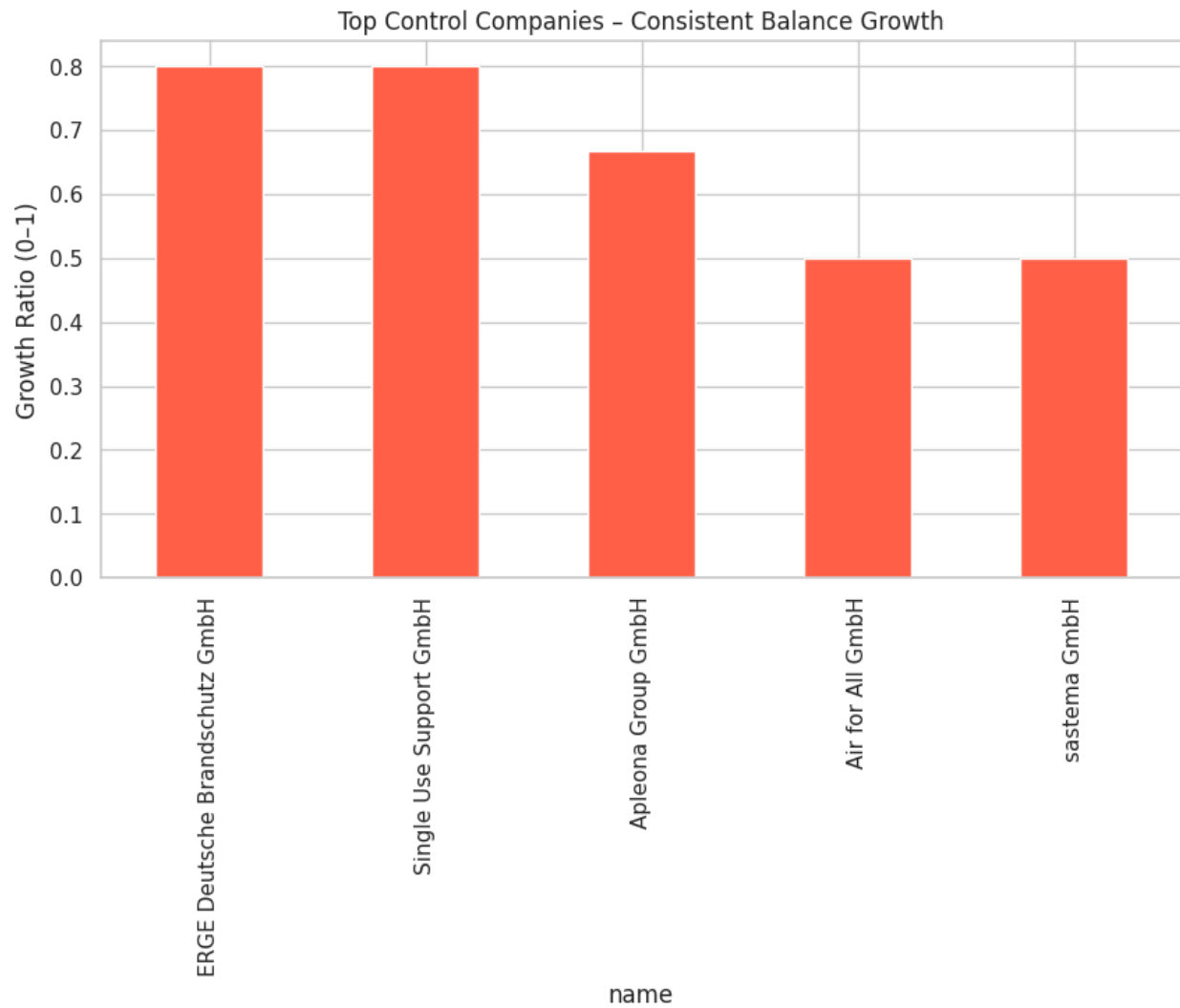
### 3. Correlation Heatmap

- **Description:** This heatmap shows correlations among financial metrics: revenue, earnings, employees, and balance total.
- **Trends:** Revenue and balance total have a strong correlation (0.94), while earnings correlate moderately with revenue (0.52).
- **Key Insights:** There's a strong link between revenue and balance, indicating that companies with higher revenue also tend to have better balance sheet health.

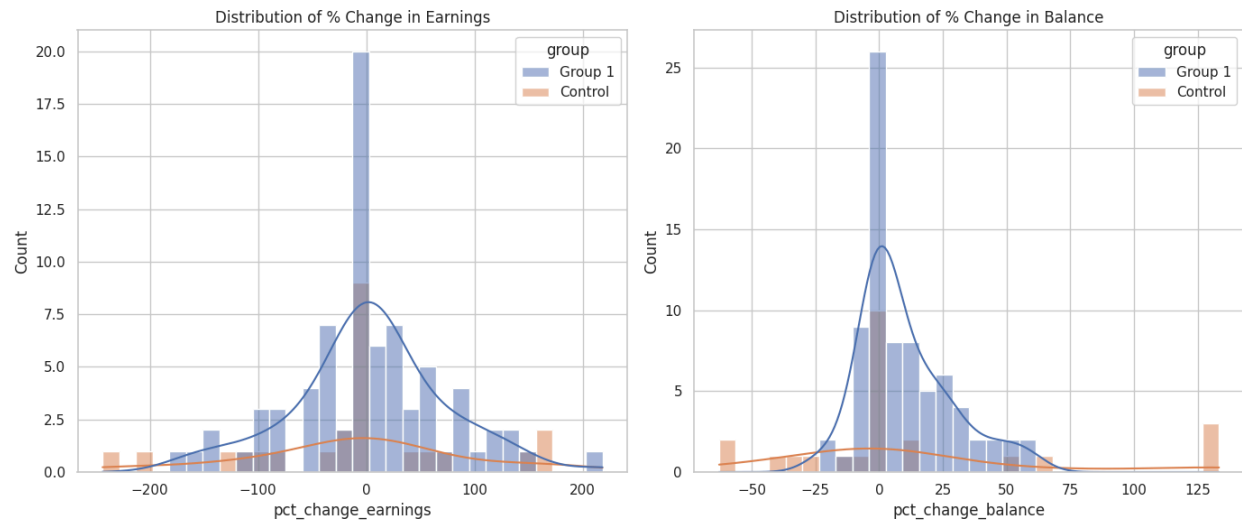


#### 4. Top Companies with Consistent Balance Growth

- **Graph 6 (Group 1):** The top companies in "Group 1" with consistent balance growth include:
  - **Berthold Sichert GmbH, GETEC ENERGIE GmbH, and hokify GmbH.**
  - These companies have high growth ratios (close to 0.9), indicating steady balance improvement over time.



- **Graph 7 (Control Group):** The top companies in the "Control" group include:
  - **ERGE Deutsche Brandschutz GmbH** and **Single Use Support GmbH**.
  - Growth ratios are slightly lower than "Group 1", averaging around 0.7–0.8.



## 5. Histograms: % Change in Earnings and Balance

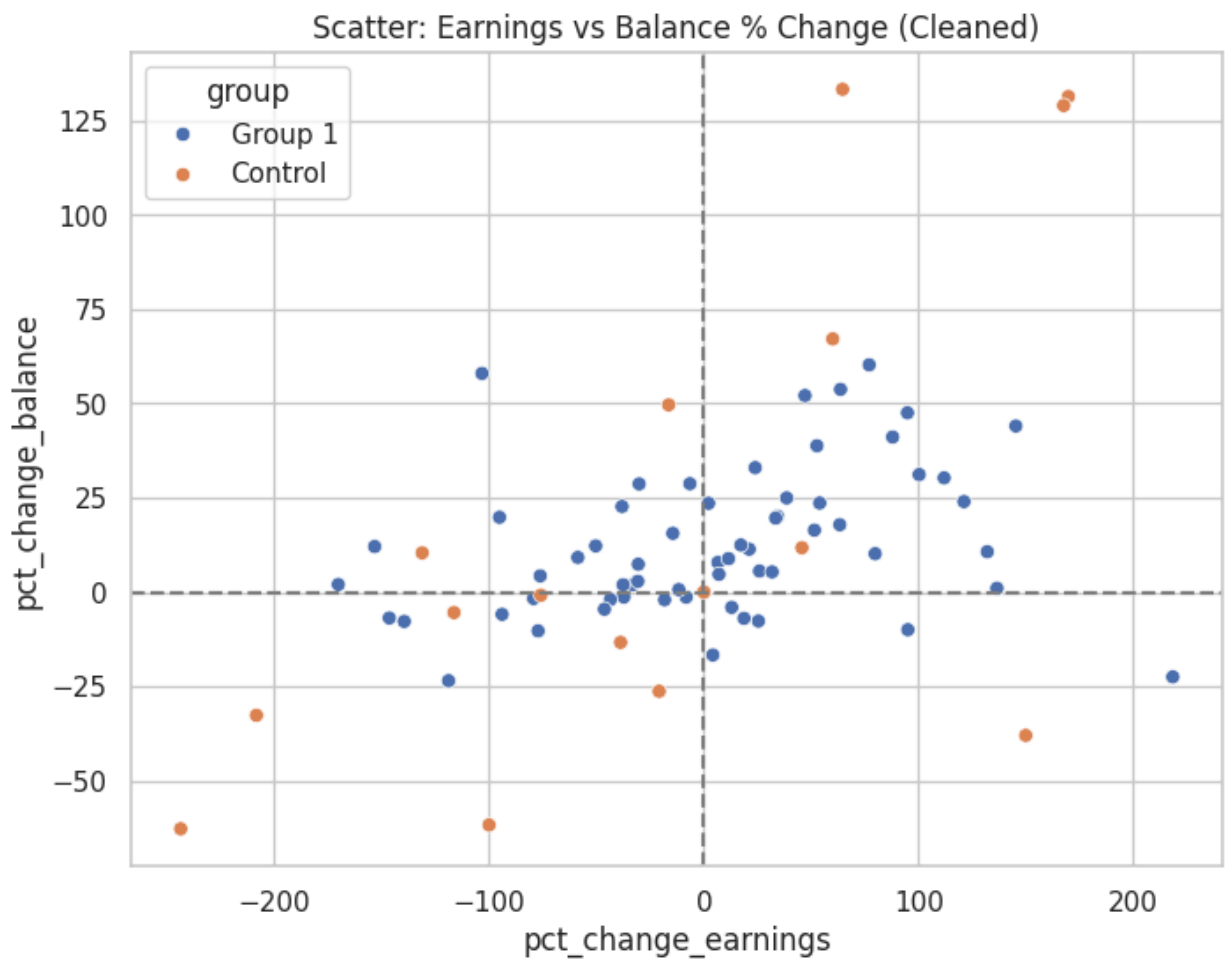
- **Description:** Two histograms show the distribution of percentage changes in earnings (left) and balance (right).
- **Trends:** Earnings distribution is right-skewed for Group 1, while balance shows a more symmetric pattern.
- **Key Insights:** The right skew in earnings suggests potential for significant gains in Group 1, while balance appears more stable.



## 6. Violin Plots: Earnings and Balance Change Distribution

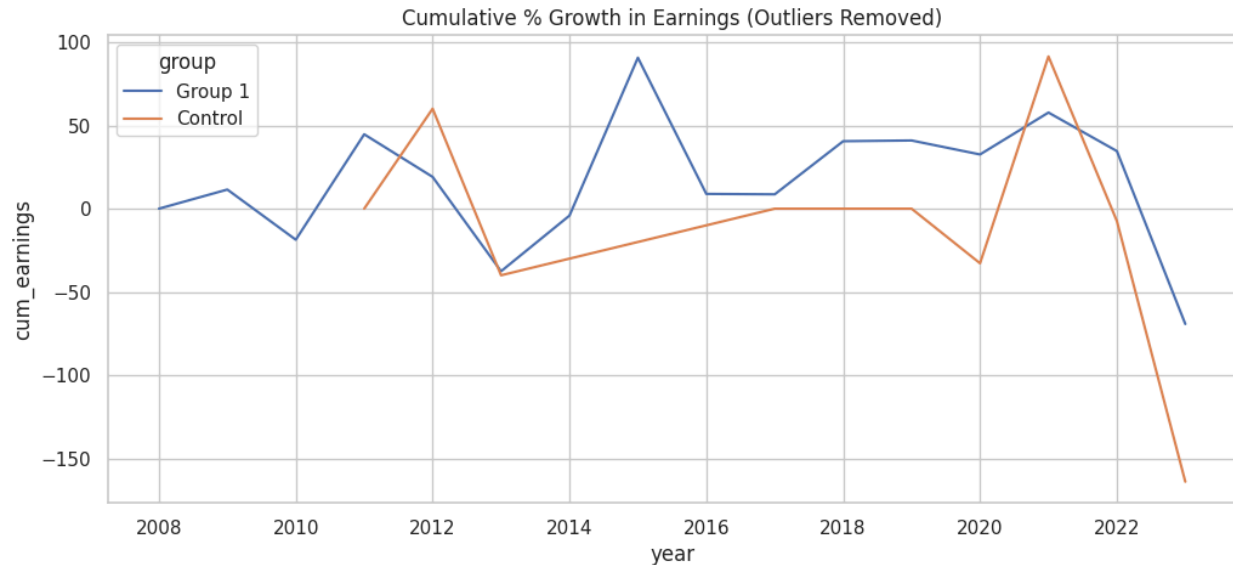
- **Description:** These plots show the distribution of percentage changes in earnings and balance for both groups.
- **Trends:** Group 1 has a broader distribution for earnings, indicating variability, while balance distributions are similar but with Group 1 having a slight edge.

- **Key Insights:** The variability in earnings for Group 1 suggests greater risk but also potential for higher reward.



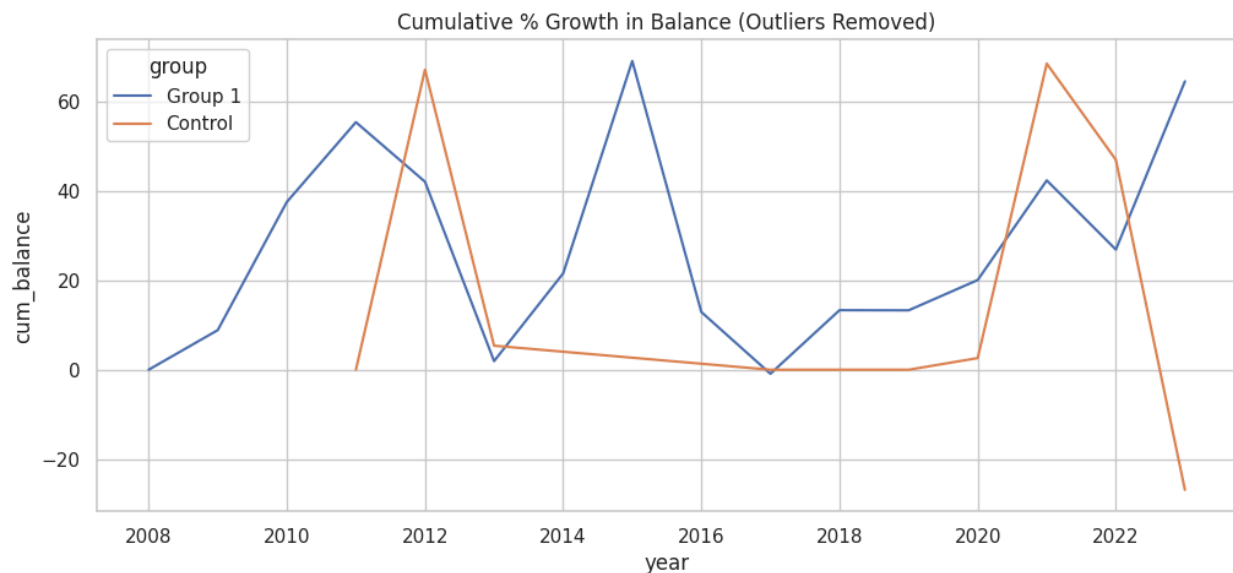
## 7. Scatter Plot: Earnings vs Balance % Change

- **Description:** This scatter plot examines the relationship between percentage changes in earnings and balance for both groups.
- **Trends:** There's a scattered relationship, but Group 1 points show some clustering in positive earnings growth with balance changes.
- **Key Insights:** This indicates that companies in Group 1 with higher earnings changes tend to also improve their balance sheets.



## 8. Cumulative % Growth in Earnings and Balance Over Time

- **Description:** This line graph depicts cumulative percentage growth in earnings over the years.
- **Trends:** Group 1 shows a significant upward trend until 2012, followed by a decline, whereas the Control group remains relatively flat.
- **Key Insights:** Group 1's growth is volatile, suggesting the influence of their strategic changes, while the Control group remains stable.



- **Description:** Similar to the earnings graph, this shows cumulative growth in balance.
- **Trends:** Group 1 initially outperforms the Control but experiences a decline post-2018.
- **Key Insights:** The volatility in Group 1's balance growth could indicate a need for better stabilization strategies post-change.



## Overall Comparison

- **Growth Trends:** Group 1 generally shows higher potential for growth in both earnings and balance but with increased volatility. The Control group is more stable but lacks the same growth potential.
- **Business Implications:** Companies in Group 1 might need to manage risks associated with their strategic changes to ensure sustained growth, while the Control group could benefit from innovative strategies to enhance performance

## Conclusion:

1. **Higher Growth Potential for Group 1:** Companies that underwent strategic or structural changes (Group 1) demonstrate a greater potential for growth in both earnings and balance compared to the Control group. This suggests that proactive changes can yield significant benefits.
2. **Increased Volatility:** While Group 1 shows promising growth, it also exhibits higher volatility in earnings and balance changes. This indicates that while there are opportunities for significant gains, there are also risks that need to be managed effectively.
3. **Stability in Control Group:** The Control group, which did not undergo changes, maintains a more stable performance. However, this stability comes with lower growth potential, highlighting a trade-off between risk and reward.
4. **Correlation Insights:** The strong correlation between revenue and balance suggests that companies focusing on revenue growth may also see improvements in their financial health. This is an area for both groups to explore further.
5. **Strategic Recommendations:**
  - **For Group 1:** Implement risk management strategies to mitigate volatility while capitalizing on growth opportunities.
  - **For Control Group:** Consider exploring strategic changes to enhance growth, as remaining static may hinder long-term competitiveness.

Overall, the data indicates that strategic changes can drive significant financial improvements, but companies must balance this with effective risk management to ensure sustainable success.

