THE FLATIRON SCHOOL: DATA SCIENCE FELLOWSHIP - MODULE 3 PROJECT

IEX API DATA

SURVEY OF PUBLICLY TRADED BANKS

PREPARED BY | DMITRY MIKHAYLOV &
MISHA BERRIEN

INTRODUCTION

PROJECT OVERVIEW

There has been renewed interest in banking stocks over the past few months. According to USNews.com, experts agree that the banking sector could have a strong year. In this project we took a look at a number of key statistics for assessing banking stocks/ the banking sector as a whole. This survey was conducted in an attempt to better understand the current market.

In what follows, we present a survey of 50 US publicly traded banks. In our survey we conduct hypothesis tests to probe into questions regarding our samples 1-year returns, trading volume and earnings per-share for both large and small banks.

METRICS

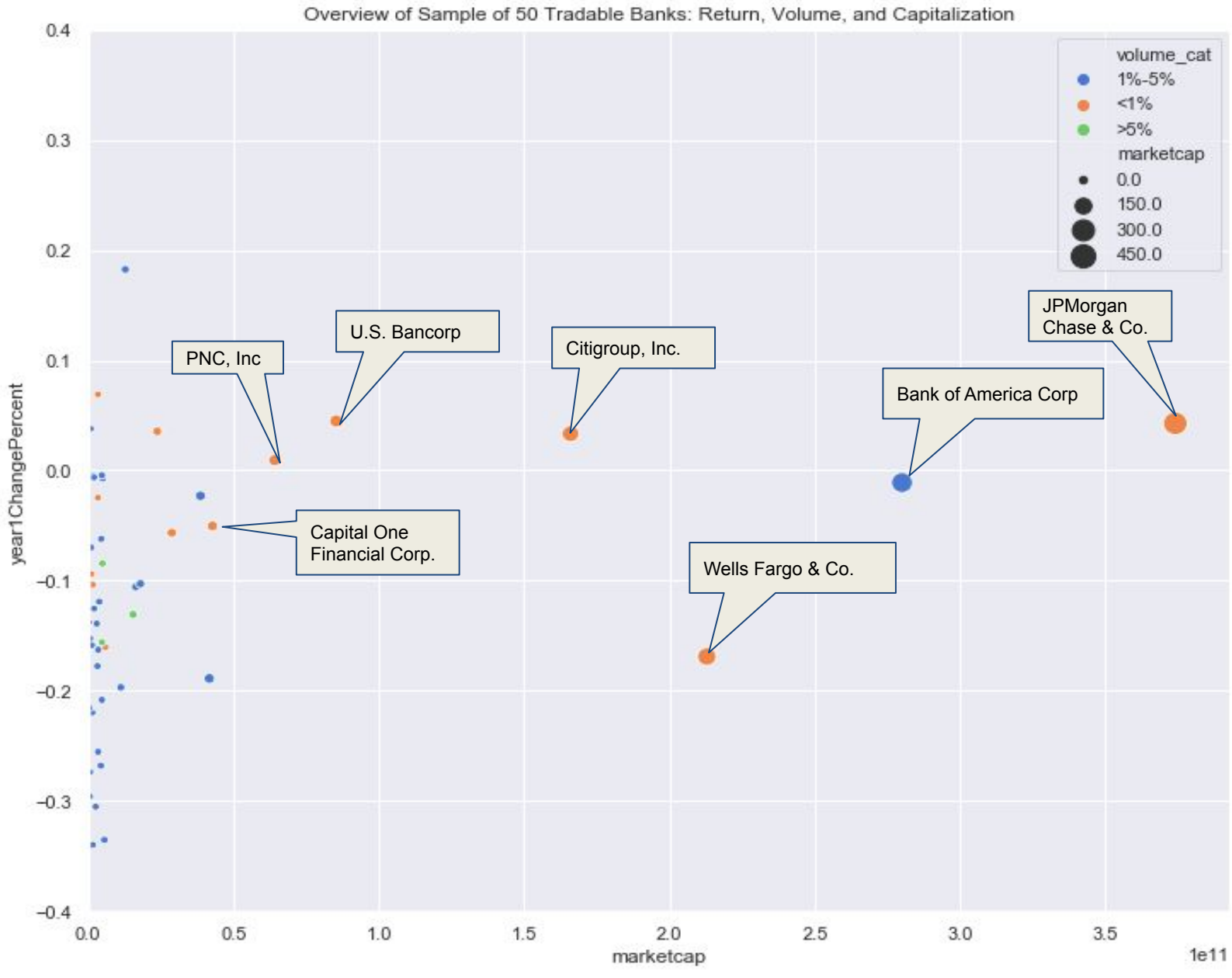
DATASET OVERVIEW

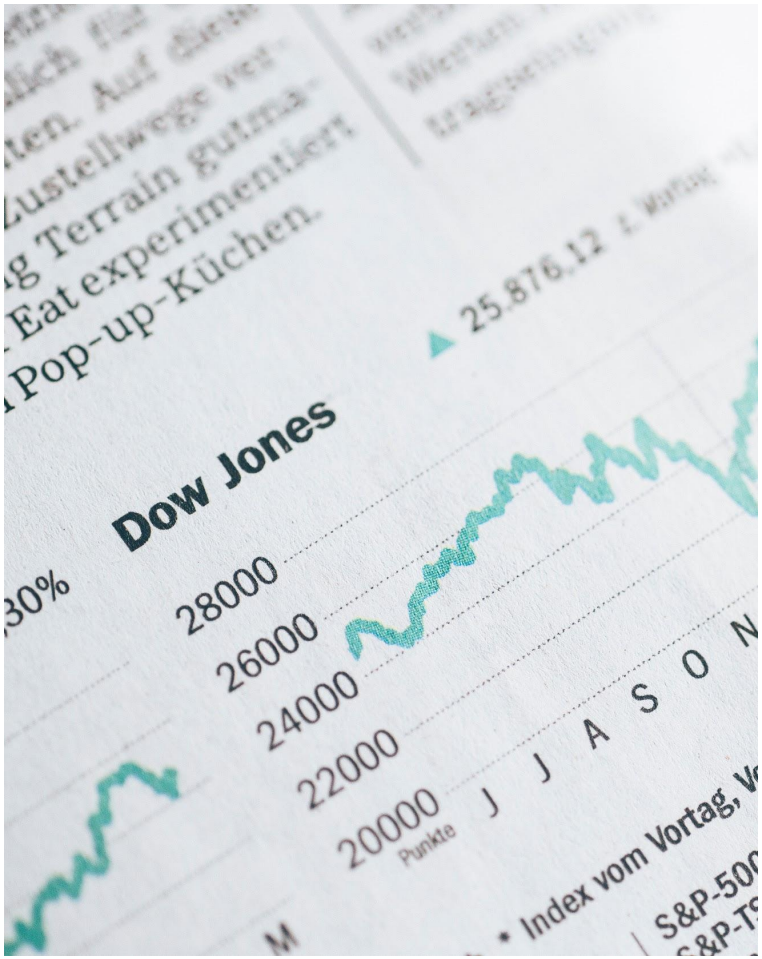
- **10/30 day average volume**: Serves as a major liquidity indicator.
- **Market capitalization (market cap)**: Serves as objective valuation of the company.
- **Price-earnings ratio (P/E ratio):** Shows how much the market is willing to pay for a share of earnings.
- **Earnings Per Share (EPS)**: Serves as an indicator of a company's profitability.

Source: IEX Cloud

QUESTIONS & ANALYSIS

General overview of banks in the study - compare and contrast 1-year returns and volume-to-size, i.e. average 10-day trading volume to market capitalization ratio





TEST I

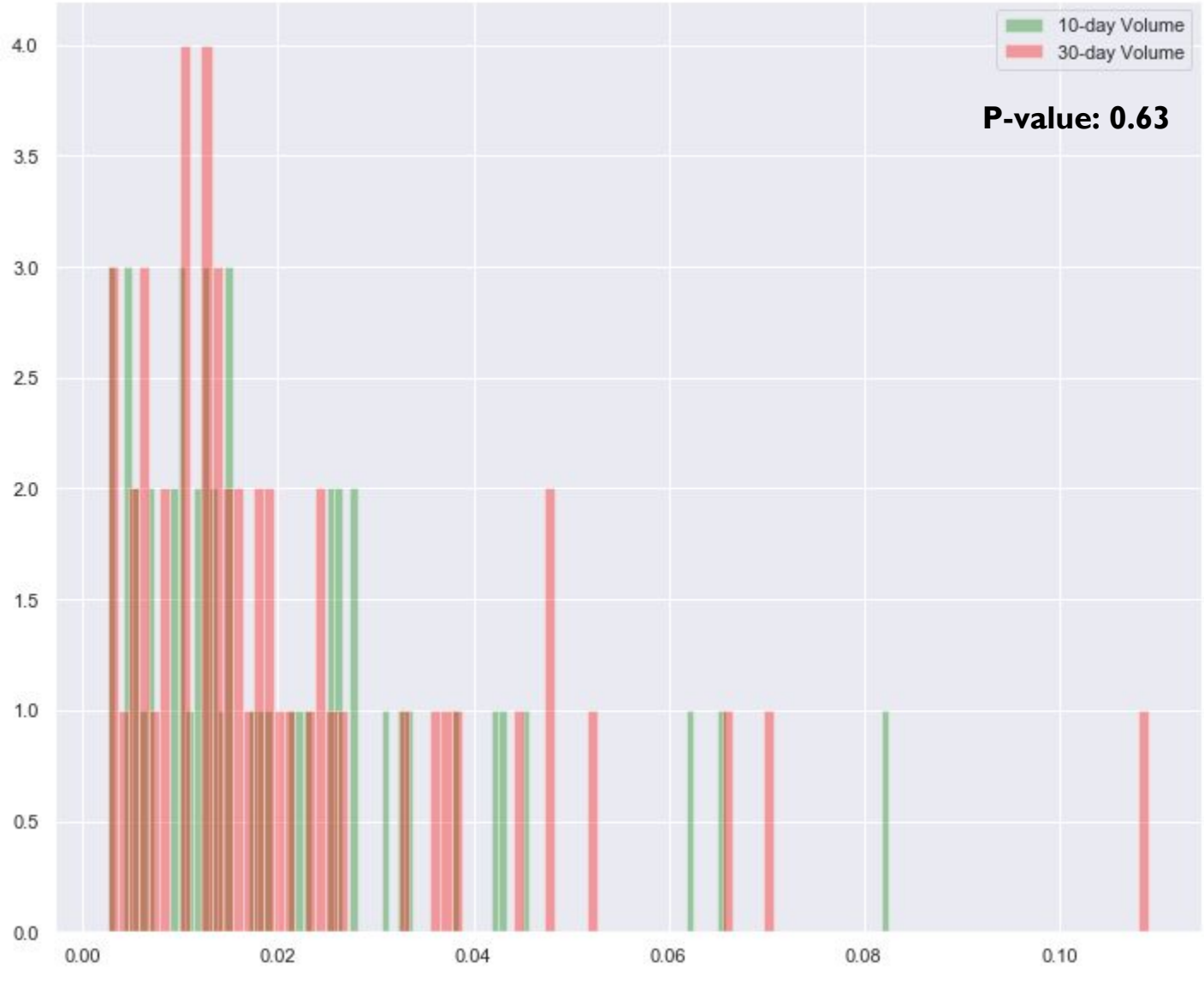
Question: Is trading volume different for short vs long-term time periods, approximated by 10-day vs 30-day average volume.

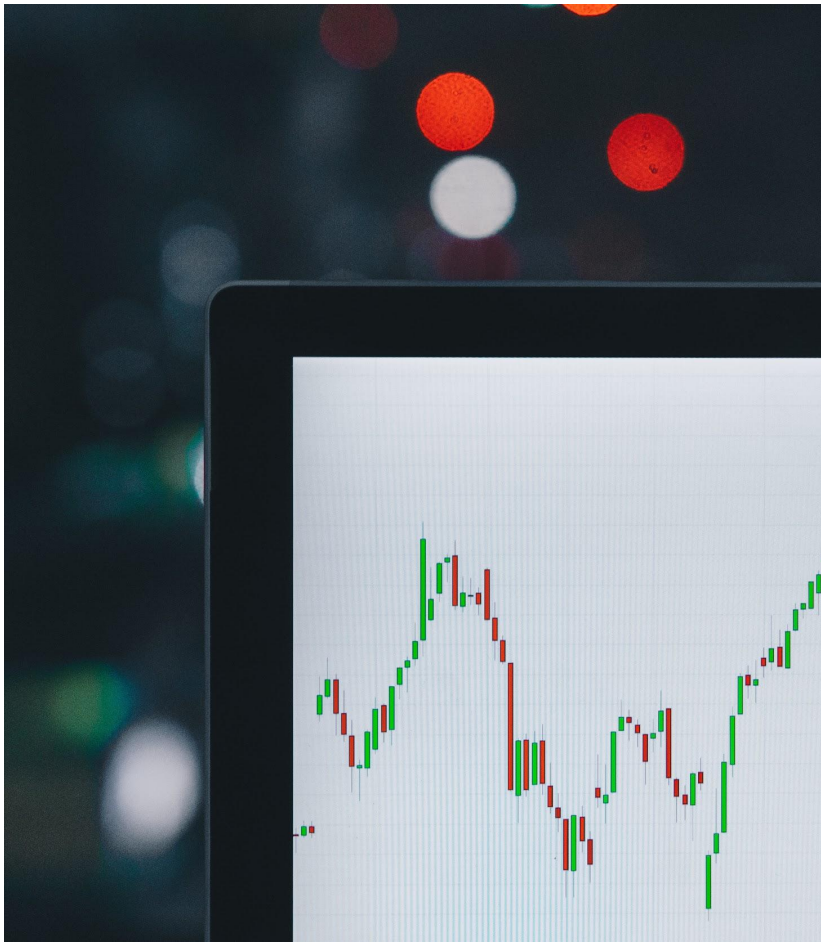
H0: The mean difference between the 10-day trade volume and 30-day trade volume variables is zero.
Ha: The mean difference between the 10-day trade volume and 30-day trade volume variables is different from zero.

Conclusion: Fail to reject the null hypothesis.

Takeaway*: Trading volume adjusted for bank's size does not change with time.*

Welch's test findings: fail to reject H0, 10-day and 30-day volumes adjusted for market capitalization are not statistically different





TEST 2

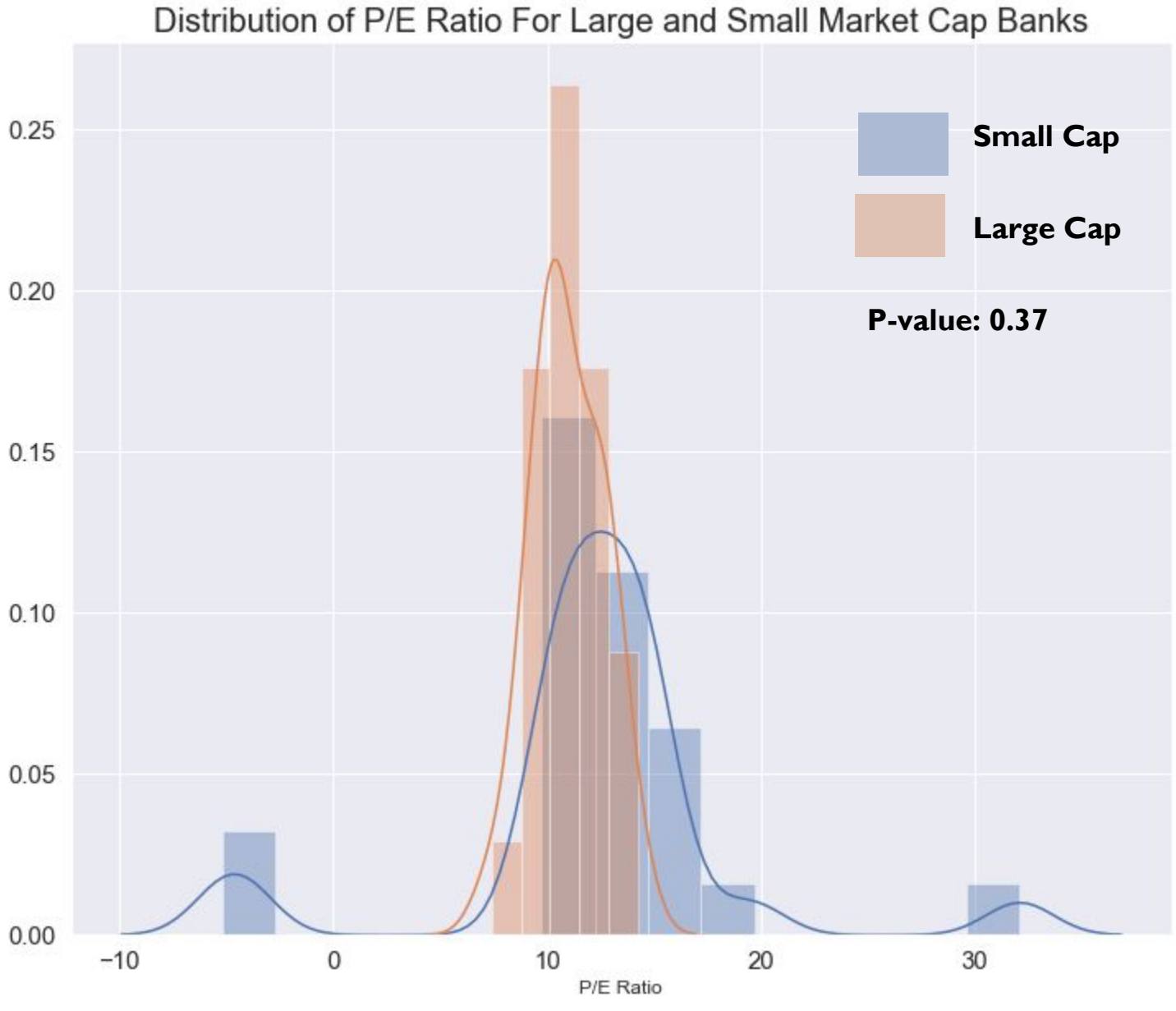
Question: Is there a significant difference in P/E Ratio between banks with large and small market capitalization?

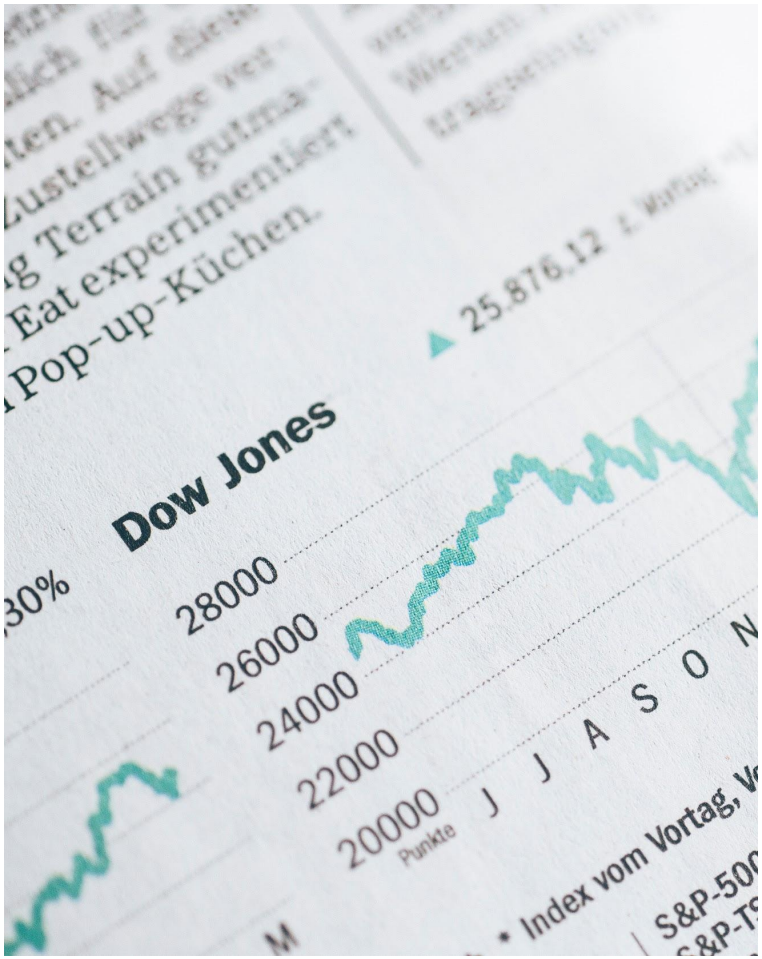
H0: The mean difference in p/e ratio for small and large market cap banks is zero.
Ha: The mean difference in p/e ratio for small and large market cap banks is different than zero.

Conclusion: Fail to reject the null.

Takeaway*: Smaller banks tend to have higher PE ratios, but the difference is not significant.*

Student T-test findings: Fail to reject H0, difference in p/e ratio for small and large market cap bank is not statistically different from zero





TEST 3

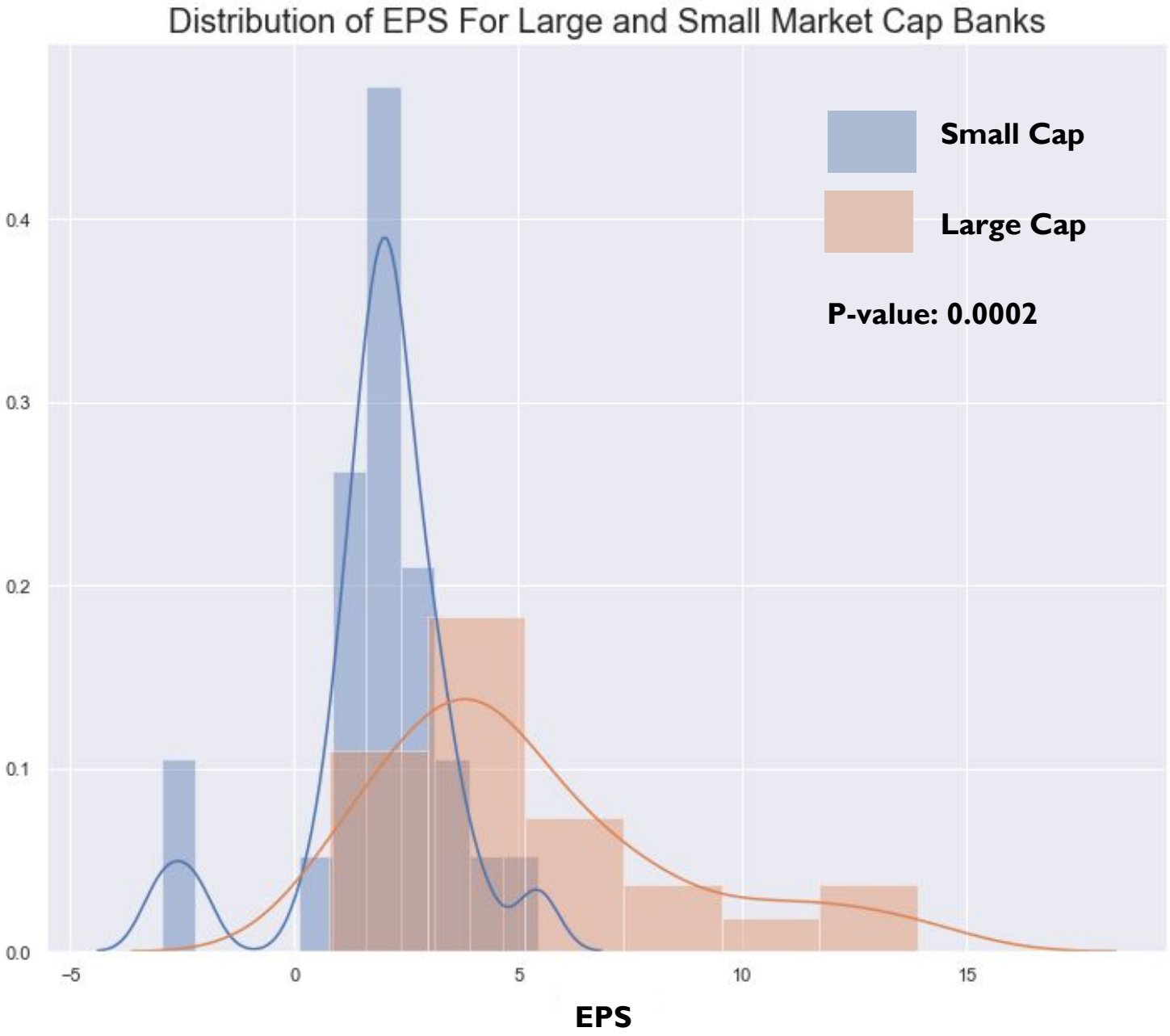
Question: Is there a significant difference in TTM earnings per share between banks with large and small market capitalization?

H0: The mean difference between small market cap and big market cap is zero.
Ha: The mean difference between small market cap and big market cap is different from zero.

Conclusion: Reject the null hypothesis.

Takeaway*: Smaller banks also tend to have lower EPS and the difference is significant.*

Student T-test findings: Reject H0 and accept Ha, the mean difference for EPS for small market cap and large market cap publicly traded banks is different from zero



Conclusions

- Trading volume adjusted for bank's size does not change with time.
- Smaller banks tend to have higher PE ratios, but the difference is not significant.
- Smaller banks also tend to have lower EPS and the difference is significant.

Therefore, market for traded bank shares is stable and investors seem to put value on smaller banks' earnings and tend to pay higher price for smaller, supposedly promising and growing, banks.

THANK YOU!

QUESTIONS?