

English Summary for Week 3 (10 minutes)

Good afternoon everyone.

To conclude today's session, let me summarize in English what we covered in **Week 3: Testing the Factors Influencing Stock Prices**.

1. Research Variables

We introduced the key variables in our regression model:

- **Dependent Variable:** Stock Price (Price).
- **Independent Variables:**
 - Earnings per Share (EPS), obtained from the income statement.
 - Book Value per Share (BV), obtained from the balance sheet.

Since all three variables are expressed on a per-share basis, there is no need for scaling. However, if we use non-per-share variables (e.g., total assets), they must be converted into per-share figures.

2. Regression Equation

We established the multiple regression model as:

$$\text{Price} = a + b_1\text{BV} + b_2\text{EPS} + e$$

where e represents the error term.

This allows us to test how EPS and BV explain changes in stock prices.

3. Data Sources and Collection

We explained how to collect data from the **TEJ database**:

- **Stock Price Data:** TEJ Stock Price Database → "Unadjusted Daily Price."
- **Financial Data (EPS and BV):** TEJ IFRS Finance → "Consolidated Financial Statements."
 - Select *Book Value per Share (A)*.
 - Select *Earnings per Share – Fully Diluted*.

After exporting the data into Excel, we can prepare it for further analysis.

4. Research Design Considerations

- **Archival Databases (e.g., TEJ):** Convenient but widely accessible, so research using these sources must rely on sophisticated statistical models to demonstrate originality.
 - **Self-Collected Data:** Harder to obtain, but more unique. Research in this category can often use simpler models and still be publishable.
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5. Running the Model in Gretl

We demonstrated how to import Excel data into **Gretl** and estimate the regression:

- Select Price as the dependent variable.
- Select EPS and BV as independent variables.
- Use Ordinary Least Squares (OLS).

The regression results showed:

$$\text{Price} = 58.38 + 62.32\text{EPS} - 0.78\text{BV} + e$$

- EPS is highly significant ($p < 0.01$).
 - BV is negative but not statistically significant.
 - The overall F-statistic shows strong model significance.
 - $R^2 = 0.53$, Adjusted $R^2 = 0.525$, meaning the model explains about 53% of the variation in stock prices.
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6. Statistical Interpretation

- **Significance Levels:**
 - $p < 0.1 \rightarrow$ 10% significance (education standard).
 - $p < 0.05 \rightarrow$ 5% significance (business research standard).
 - $p < 0.01 \rightarrow$ 1% significance (biomedical research standard).
 - **Model Fit:** Adjusted R^2 ensures that explanatory power is not artificially inflated by adding too many variables.
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Closing

In summary, today we learned:

1. How to define dependent and independent variables for stock price research.
2. How to extract EPS, BV, and price data from TEJ.
3. The trade-offs between archival data and self-collected data.
4. How to run regression analysis using Gretl.
5. How to interpret significance, F-statistics, and R^2 values.

Together, these steps provide a solid foundation for empirical research in financial accounting and capital markets.

Thank you.