Regression Analysis of the Chaebol Dominance effect determining South Korean Economic Growth from 1974 to 2018.
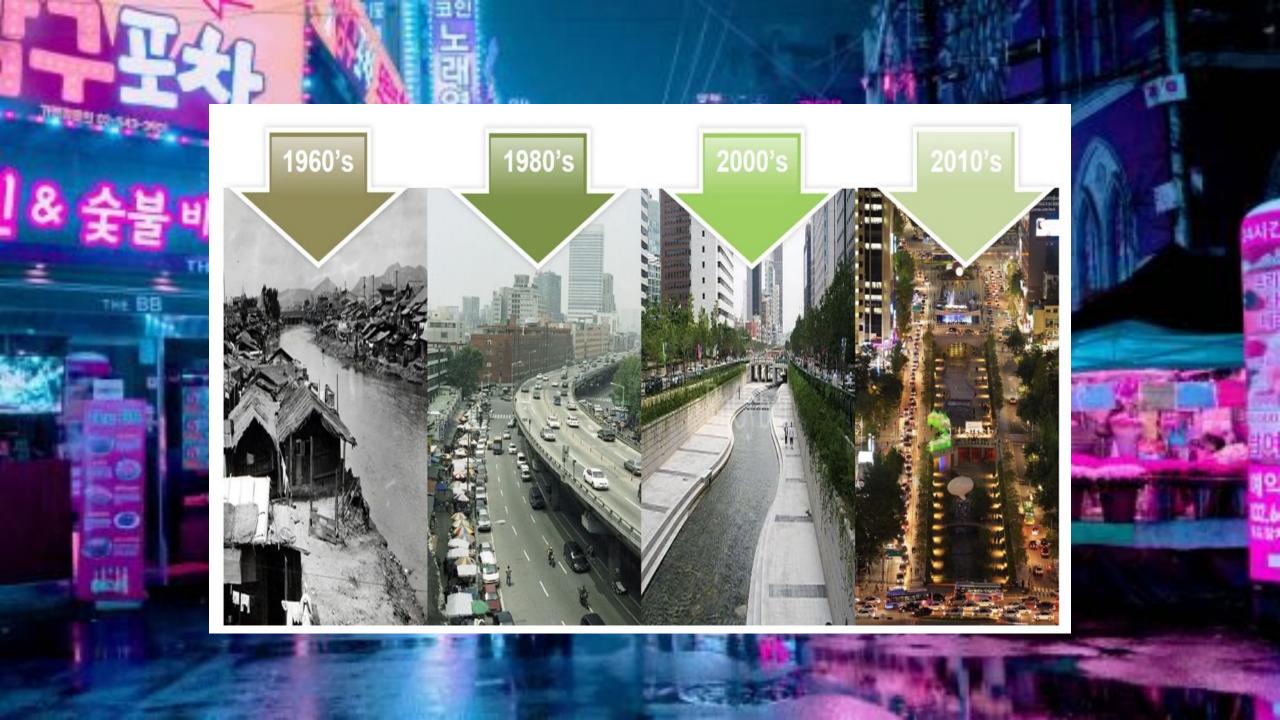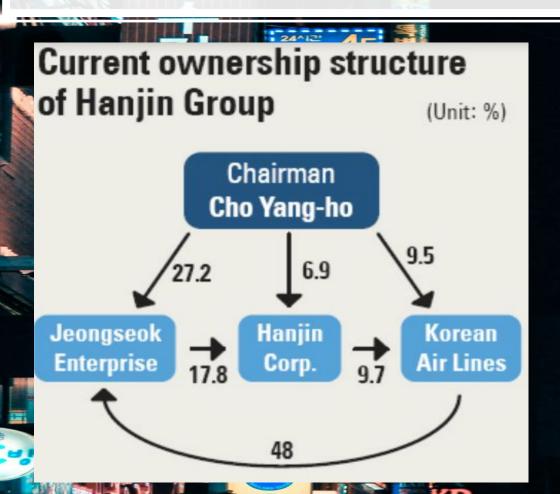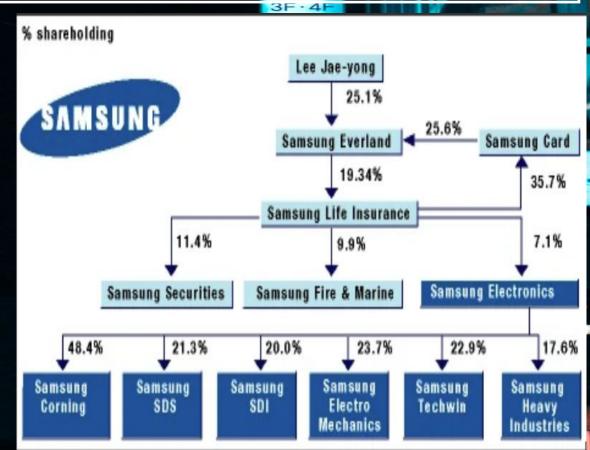
Adolfo Artola Madrigal

Objective of the Research

The higher the influence or dominance chaebols exert over the Korean economy the better for the South Korean economic growth

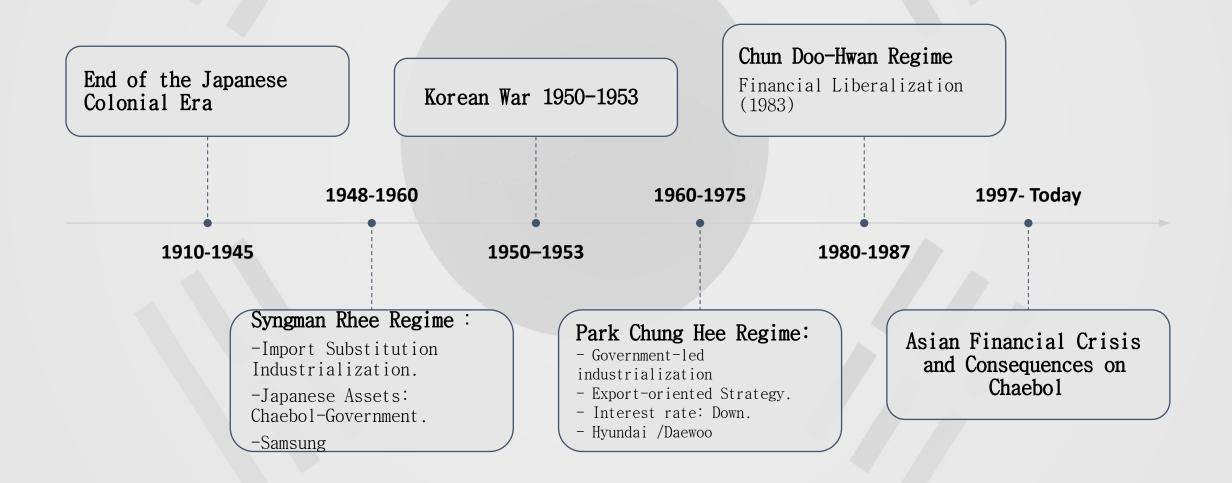1960's　　　　1980's　　　　2000's　　　　2010's

A chaebol is a large, family-owned South Korean conglomerate, typically with diverse subsidiaries, significant political influence and centralized control.

Current ownership structure of Hanjin Group (Unit: %)

% shareholding — SAMSUNG

Literature Review: **Government-Chaebol Relationship**

End of the Japanese Colonial Era

Korean War 1950-1953

Chun Doo-Hwan Regime
Financial Liberalization (1983)

1948-1960

1960-1975

1997- Today

1910-1945

1950–1953

1980-1987

Syngman Rhee Regime :
-Import Substitution Industrialization.
-Japanese Assets: Chaebol-Government.
-Samsung

Park Chung Hee Regime:
- Government-led industrialization
- Export-oriented Strategy.
- Interest rate: Down.
- Hyundai /Daewoo

Asian Financial Crisis and Consequences on Chaebol

Methodology

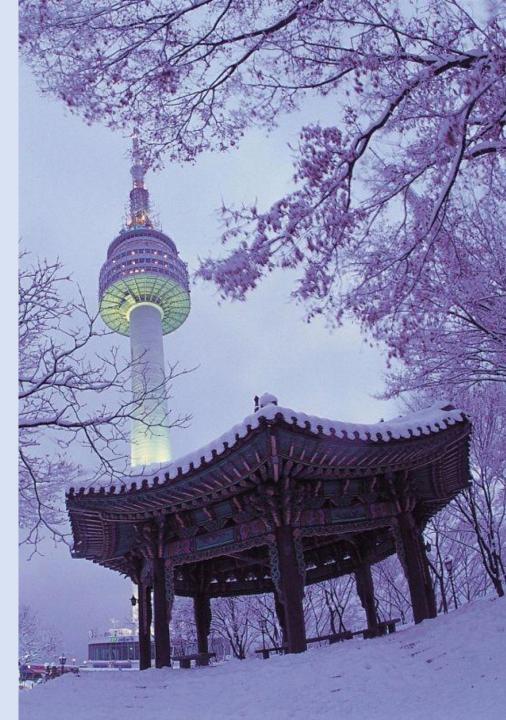| Variables	Measures
Economic Growth	GDP (constant LCU)
Chaebol Dominance	Combined Annual Sales of Korean business groups whose sales ≥ than 50 billion Korean Won expressed in Constant LCU
Government expenditure on Education	Expressed as (% of the Korean GDP)
Exports of Goods and Services	Expressed as Constant LCU Wons
Education Expenditure	Expressed as Constant LCU Wons
Population Annual Growth	Expressed as Yearly Total Population

Source: World Bank Development Indicators, Korean Statistical Information System, Myung Hun Kang (1996)
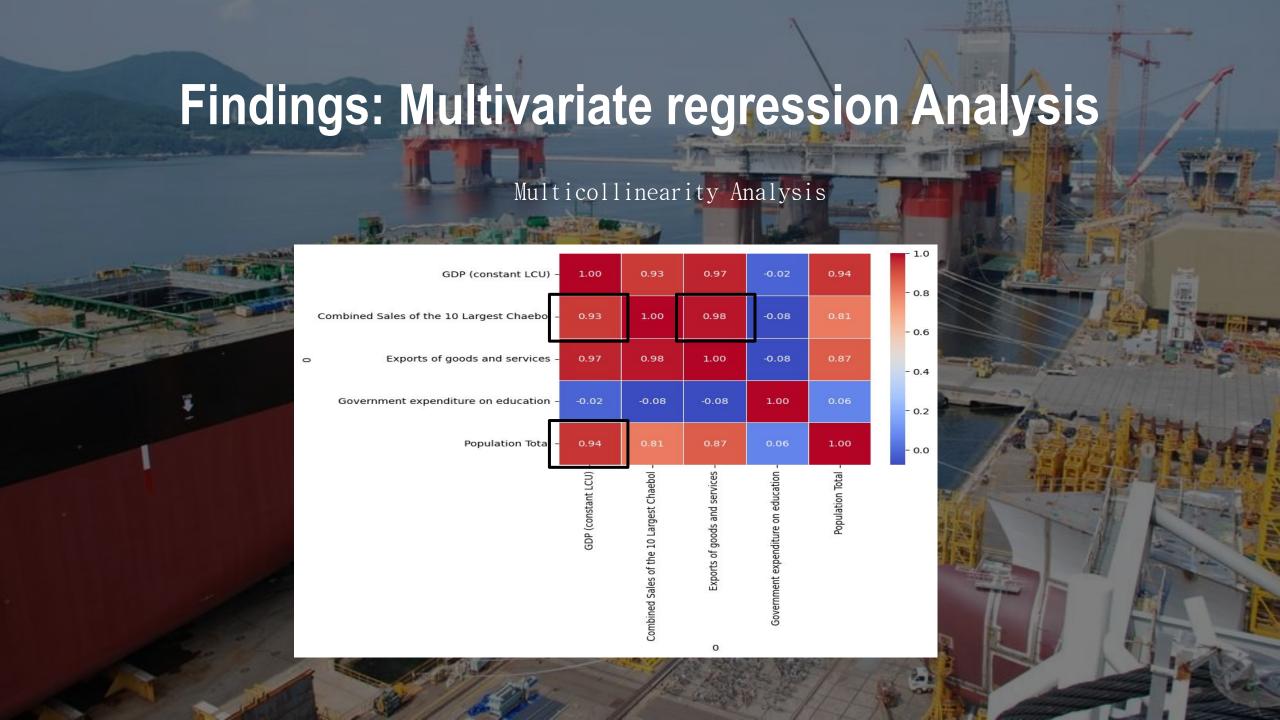
Model

Korean Economic Growth (GDP Annual %Growth)= ((Combined Annual Sales of Korean business groups whose sales are bigger than 50 billion Korean Won expressed in Current LCU (% of the Korean GDP)*(x1) +

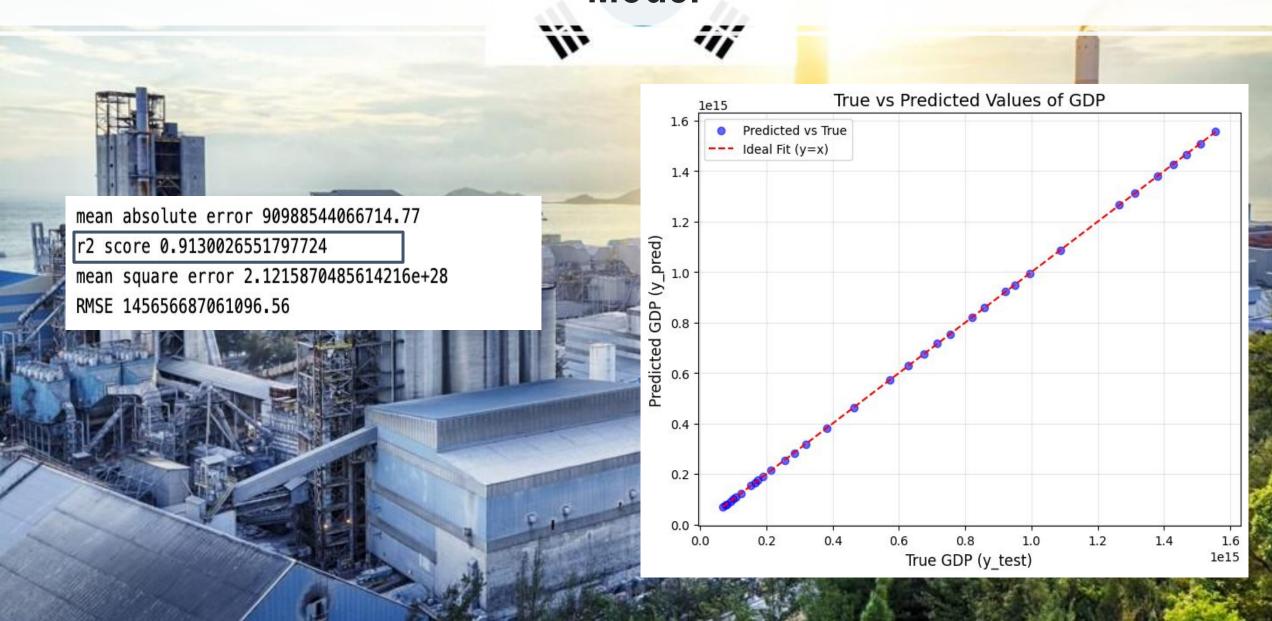Government Expenditure on education as a % of the Korean GDP*(x2) +

Exports of Goods and Services (% of the Korean GDP)*(x3) +

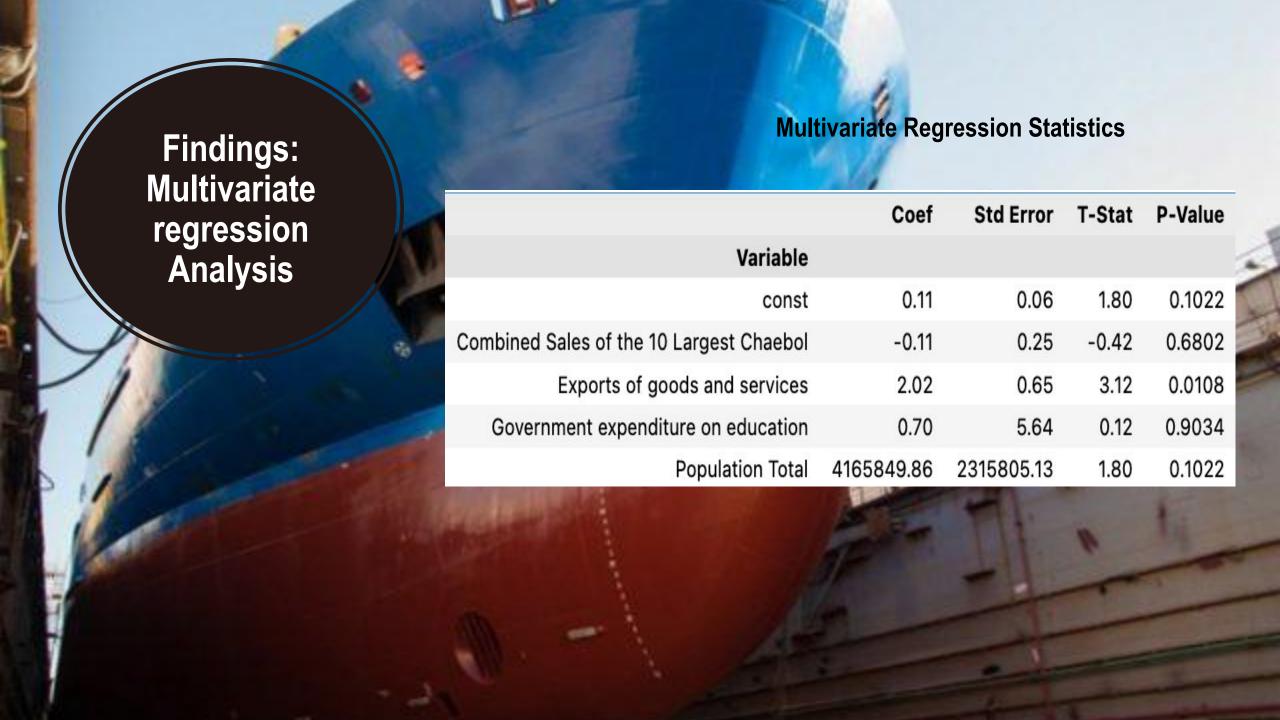Population Annual Growth (%)*(x4)) + B

Findings: Multivariate regression Analysis

Multicollinearity Analysis

Model

mean absolute error 90988544066714.77
r2 score 0.9130026551797724
mean square error 2.1215870485614216e+28
RMSE 145656687061096.56

Findings: Multivariate regression Analysis

Multivariate Regression Statistics

Variable	Coef	Std Error	T-Stat	P-Value
const	0.11	0.06	1.80	0.1022
Combined Sales of the 10 Largest Chaebol	-0.11	0.25	-0.42	0.6802
Exports of goods and services	2.02	0.65	3.12	0.0108
Government expenditure on education	0.70	5.64	0.12	0.9034
Population Total	4165849.86	2315805.13	1.80	0.1022

Key Findings:

- Risk of Overfitting:
  - Small dataset to learn different patterns.

  - The model memorizes every specific line on the data set and it predicts perfectly the economic growth.

- Analyze whether the GDP is a good measure for determining measuring the economic growth.

- Corporate Sales wrongly considered as measured to be compared with GDP

Thank you.