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ECONOMETRIC ANALYSIS: EVIEWS & STATA

CONTENTS

Econometric analysis combines economic theory, statistical methods, and mathematical models to analyze economic data and relationships. For instance, it can quantify how a change in income affects consumption expenditure, providing insights that are essential for economic policymaking. In this chapter, we delve into two powerful econometric software packages: EViews and Stata. By the end of the chapter, you will have a solid understanding of how to leverage EViews and Stata for your econometric analyses, enhancing your ability to draw meaningful insights from complex datasets.

NOTE: Aside from EViews and Stata, there are several other econometric software options available: R, SAS, MATLAB, Gretl, Minitab, RATS and GAUSS. Each of these tools has its own strengths, making them valuable for different types of econometric work.

Avoiding Pitfalls in Econometric Analysis

In econometric analysis, even minor mistakes can lead to significant errors in your results and interpretations. Here are some common pitfalls to avoid, along with practical advice to ensure your research is robust and reliable:

1. *Justify Your Model and Variables with Economic Theory:* Always ground your model and choice of variables in sound economic theory. This ensures that your analysis is not only statistically valid but also economically meaningful.
2. *Avoid Overcomplicating Your Model:* Including too many irrelevant variables or using overly complex methods can obscure the true relationships in your data. Strive for simplicity and clarity in your models.
3. *Thoroughly Understand Your Data:* Spend ample time exploring and understanding your dataset before analysis. This includes checking for missing values, outliers, and understanding the data's structure and limitations.
4. *Address Unreasonable Results Promptly:* If your analysis yields unexpected or unreasonable results, investigate and address these issues before drawing conclusions. This might involve re-examining your data, model, or assumptions.
5. *Emphasize Economic Significance Over Statistical Measures:* While statistical significance is important, the economic significance of your findings should be your primary focus. Ensure that your results have practical implications and contribute to the understanding of economic phenomena.

EVIEWS

EViews (Econometric Views) is a statistical package (developed by IHS Markit) designed for econometric analysis, forecasting, and simulation. It is widely used in academic research, government agencies, and financial institutions for its powerful time series analysis and econometric modeling capabilities.
This section serves as a practical guide for using EViews to analyze key economic relationships in time series. We will explore essential commands that facilitate this analysis, enabling readers to develop valuable skills in econometric techniques.

☑ EXAMPLE 36.1

The Ministry of Finance has tasked you with analyzing the relationship between fintech development and the country's GDP growth rate using regression analysis in EViews. Download the data file at:
https://unimath.5profz.com/example36-1/

I. Conduct a correlation analysis to examine the relationships between the independent variables (Fintech Investment, Number of Fintech Startups, Digital Payment Transactions, Regulatory Failure) and the dependent variable (GDP Growth Rate). Discuss the strength and direction of these relationships.
II. Estimate a multiple regression model with GDP Growth Rate as the dependent variable and the three fintech-related variables as independent variables. Write down the regression equation. Interpret the coefficients of the regression model. Discuss the significance of each independent variable.
III. Evaluate the overall fit of the model using R-squared and adjusted R-squared values.
IV. Conduct diagnostic tests to check for any violations of regression assumptions (e.g., autocorrelation). Discuss.
V. Provide policy recommendations to the Ministry of Finance.

SOLUTION **tips**

Open Eviews. Drag and drop the downloaded data file onto the opened EViews. Then click *Finish*.

For this analysis, note the following:
gdpgr = GDP Growth Rate (%) fi = Fintech Investment ($' billion)
nfs = Number of Fintech Startups rf = Regulatory Failure
dpt = Digital Payment Transactions ($' billion)

I. Correlation Analysis

To carry out a correlation analysis, type the following code into the command window:

Cor *gdpgr fi nfs dpt rf*

When you are finished typing the command, you need to tell Eviews to run the command by pressing *enter* on your keyboard.