Lesson 3: Data Analysis

IFs is a tool for thinking about the future. Thinking about the future also requires understanding the past. Exploration of historical data is a key to evaluating and enhancing the relationships used in IFs and other models for forecasting.

An extensive, country-specific database underlies IFs. It is used for (1) computing the initial conditions for all countries/regions, and (2) investigating relationships between variables as a basis for specifying those relationships within IFs. Lesson 3 introduces you to tools for exploring that database.

Begin at the Main Menu of IFs. Under Data Analysis, look at the sub-options. These include:

- World Map
- Analyze Across Countries (Cross-Sectional)
- Analyze Across Time (Longitudinal)
- Show Computed Functions
- Identify Group or Country/Region Members

This lesson gives you a brief introduction to each form of analysis, with pointers to more extended discussion.

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World Map

This Data Analysis option allows users to map various sets of historic data on a world map. Learn more about the World Map topic.

Explore and test your knowledge:

1. From the Data Table, which category would you choose if you wanted to display data representing values and norms held by different countries?

2. Can you produce a map that separates GDP at PPP out into 6 different categories, each category having the same number of members?
3. Can you change the map display to show a Mercator projection?

Analyze Across Countries (Cross-Sectional)

This Data Analysis option allows users to access the extensive database that underlies IFs and statistically compare data series for different variables. Learn more about the Analyze Across Countries topic.

Explore and test your knowledge:

1. Can you select total fertility rate (TFR) as your dependent variable and GDP at PPP as your independent variable?
2. What is the best line for a statistical relationship for these two variables?
3. What do the values under Primary Statistics and Secondary Statistics tell you?

Analyze Across Time (Longitudinal)

This Data Analysis option allows users to access the database that underlies IFs and compare data sets longitudinally. Learn more about the Analyze Across Time topic.

Explore and test your knowledge:

1. Select a data series. How can you display this across time for the United States?
2. Can you fit a trend to the data that is meaningful?
3. Using the "As Time" option for Treatment of Time, prepare a plot showing both GDP at PPP and total fertility rate (TFR) for one country of your choosing. Because the units are so different, determine how to rescale the variables so as to see the pattern of change over time in each.

Show Computed Functions

This Data Analysis option allows users to view a list of variable relationships (some used in the model and others for informational purposes) with their function and R-squared value. Learn more about the Show Computed Functions topic.

Explore and test your knowledge:

1. Select GDP/Capita (PPP 2005) versus Democracy (2010) Log. What relationship do you observe?
2. Select GDP/Capita (PPP) versus Household Consumption for 1960, 1980, and 2000. What change in the relationship do you observe across time?

Identify Group or Country/Region Members

This Data Analysis option allows users to identify Group or Country/Region members used in IFs. Learn more about the Identify Group or Country/Region Members topic.

Explore and test your knowledge:

1. Which countries are members of the FAO South Asia group?
2. Is Chile a member of the OECD?