

Macro Data Quest Worksheet Exercises

Overview

In a series of worksheet exercises students will examine and collect current data relating to key economic indicators that are typically discussed in a principles of macroeconomics course. By completing the hands-on worksheets covering significant components of an economy students will explore and analyze current macroeconomic conditions in a “foreign” country and make comparisons with current macro conditions in the United States and other countries.

The instructor has the flexibility to allow students to choose a country to compare, or alternatively to assign countries as part of a group or team-based learning exercise. To facilitate discussion the mix of countries should be diverse: OECD, BRICs, sub Saharan Africa, etc. As the course progresses students are able to practice economics by discussing the relevance of various macro measures and detecting trends in the global economy.

Students can be given credit for simply completing the exercises. Peer grading can be utilized. The exercises can be used as the foundation of class discussion questions, group projects, team based learning, etc. The Macro Data Quest exercises are designed to encourage are designed to offer the student the opportunity to collect and interpret macro data. The assessment strategies can vary depending on the format of the class.

A final synthetic report/post can be assigned which utilizes the information developed on the worksheets to summarize the state of the economy and to discuss the implications of these measures. The worksheets can be adapted to fit the requirements of a particular course. These worksheets can be assigned to individual students as homework. They are suitable for group work and team based learning as well as class presentations.

These exercises can be utilized as the empirical base to develop a country case study in which students compile a comprehensive profile of a particular country utilizing the terminology and concepts that are developed macroeconomics. The information that is collected can be employed to make comparisons of macroeconomic conditions in countries at different stages in economic development.

For example in my Honors Principles of Macroeconomics classes I suggest that students imagine that a multinational corporation has hired them to write a country profile to determine the riskiness of a large investment in a particular country after they have completed the data quest exercises. Alternatively students could envision that they have been hired by an economic think tank or an NGO to prepare a report on a particular country. Mark Maier suggests context-rich problems where students are assigned to write a summary of the economic conditions in country X for the study (or volunteer) abroad program at their college.

After they have completed the worksheets I have students locate and incorporate *at least* one recent significant and substantial online article/post/report (more than 2000

words) which covers current macroeconomic conditions and challenges in their country. Combining their research with class discussion students can then address a variety of questions:

- What are two key drivers of economic growth for your country? What are the key growth constraints?
- Identify the most significant macroeconomic type challenges confronting your country based on your research. Students should have some ability to discuss the severity of these problems in quantitative terms.
- If you were an entrepreneur would you invest in this country?
- Would you like to live in your country?
- What will life in your country be like in 30 years?

Five data quest worksheet exercises which relate to key measures of macro performance and economic development have been developed for publication on the Starting Point website:

- I. Key Macro Data Worksheet/Exercise
- II. International Trade Worksheet/Exercise
- III. International Finance Worksheet/Exercise
- IV. Worksheet/Exercise on the Role of the Government
- V. Development and Competitiveness Rankings Worksheet/Exercise

Student Learning Outcomes and Essential Competencies

The Macro Data Quest exercises are congruent with the five competencies identified in [Student Learning Outcomes in Economics](http://highered.ssrc.org/wp-content/uploads/MCL-in-Economics.pdf) published by the Social Science Research Council:¹ These competencies include applying the scientific process; analyzing and evaluating behavior and outcomes using economic concepts; using quantitative approaches; thinking critically about methods; and communicating economic ideas. <http://highered.ssrc.org/wp-content/uploads/MCL-in-Economics.pdf>

On the *Matrix of Essential Concepts and Competencies* these exercises are closely aligned with “Essential Concept 3: The Aggregate Economy” and “Essential Competency 5: Communicate Economic Ideas in Diverse Collaborations”:

The specific competencies that are encouraged include:

- Know how to access credible sources of economic statistics
- Collect and present data
- Interpret and critique key economic statistics

¹ Allgood, Sam, and Amanda Bayer. 2016. “Measuring College Learning in Economics.” In *Improving Quality in American Higher Education: Learning Outcomes and Assessments for the 21st Century*, edited by Richard Arum, Josipa Roksa, and Amanda Cook, 87-134. San Francisco, CA: Jossey-Bass.

- Explain what information an economist would like to have to provide a more complete analysis of a current issue
- Demonstrate fluency in economic terminology and graphical tools.
- Demonstrate knowledge of major economic institutions and familiarity with magnitudes of common economic statistics.
- Use training to discuss economic issues and policies in ways that promote mutual understanding and inquiry.

I teach at Saddleback College which is a large, transfer oriented community college located in southern California. The Student Learning Outcomes (SLOs) for Econ 2: Principles of Macroeconomics at Saddleback College are:

1. Using employment and national income statistics students will be able to describe and analyze the economy in quantitative terms.
2. Students will be able to utilize a simple contemporary economic model such as the aggregate supply/aggregate demand model and describe the interrelationships among prices, income and interest rates as they affect consumption, saving and investment.
3. Students will be able to explain and evaluate the economic challenges of unemployment, inflation, and economic growth.
4. Students will be able to describe the contemporary banking and monetary system, and analyze the role of money, credit, and Federal Reserve monetary policy.
5. Students will be able to assess the historical and contemporary use of monetary and fiscal policy.
6. Students will be able to describe the role of international trade and finance on domestic economic activity.
7. Students will be able to identify and analyze the factors that contribute to or hinder economic growth and development.

The Macro Data Quest exercises are directly linked to the first SLO at for Principles of Macroeconomics at Saddleback College which states that students should develop the ability to describe the economy in quantitative terms. The exercises are designed to offer the student the opportunity to collect and interpret data prior to taking a formal statistics or econometrics course.

I. Key Macro Data Worksheet

Macro Data Worksheet		
Important Macro Data	Your Country	USA
GDP (in billions of U.S. \$)		
Population (in millions)		
Real GDP growth during the past year (latest figure available)		
Real GDP growth during the past decade (latest figure available)		
Recessions, financial crises in past ten years?		
GDP per capita (U.S. \$, PPP)		
Government Debt to GDP (%)		
Unemployment rate (%)		
Consumer Inflation (current %)		
Consumer Inflation (past 10 years %)		
Corruption Rank		
Real GDP per hour worked (% OECD)		
Pick another interesting stat		

Discussion Questions:

Make some notes on the following questions:

- How would you characterize the current economic situation in your country?
- How does the macro situation in your country stack up against conditions in the United States?
- List some reasons why GDP should not be considered an effective measure of the standard of living of a country?
- What does GDP **not** tell us about an economy?

Suggested Sources and Useful Resources for Completing Worksheet 1

1. **Trading Economics** has a variety economic indicators, historical data and forecasts for 196 countries: [Trading Economics - Listing of Countries: http://www.tradingeconomics.com/](http://www.tradingeconomics.com/)
2. The Central Intelligence Agency's, *The World Fact Book*, (<https://www.cia.gov/library/publications/the-world-factbook/rankorder/rankorderguide.html>) is a useful source for basic information about virtually any country.
3. The [World Bank](http://www.worldbank.org/en/country) website has economic data ("At a Glance" and "Key Statistics") for most countries. Students may want to print out the "[Country at a Glance](http://www.worldbank.org/en/country)" tables for their country: <http://www.worldbank.org/en/country>
4. The [International Monetary Fund](http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx) publishes a World Economic Outlook Data Base with data on national accounts, inflation, unemployment rates, balance of payments, fiscal indicators, trade for countries and country groups), and commodity prices: [IMF Data http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx](http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx)
5. The Organization for Economic Co-operation and Development (OECD publishes [Country statistical profiles: Key tables from OECD: http://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd_20752288](http://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd_20752288) for countries that are members of the OECD

[The Key tables from OECD](https://data.oecd.org/lprdt/gdp-per-hour-worked.htm) include a wide range of indicators on the economy and other social measures. The Organization for Economic Co-operation and Development (OECD) also tracks data on the annual growth rate of real GDP per hour worked. Students can find these data on the OECD data webpage "GDP per hour worked" at this URL: <https://data.oecd.org/lprdt/gdp-per-hour-worked.htm>

5. Additional Resources:

- The **BBC** site http://news.bbc.co.uk/2/hi/country_profiles/default.stm has profiles on most countries which provide an instant guide to history, politics and economic background of countries and territories, and background on key institutions.

-For detailed macroeconomic news and forecasts, students can check out [Focus Economics](http://www.focus-economics.com/countries):
<http://www.focus-economics.com/countries>

-[The Human Development Index](http://hdr.undp.org/en/countries) (HDI) covers more than 160 countries, and is a broader measure of well-being than GDP per capita. The HDI combines three indicators of welfare: life expectancy, Gross National Income per capita, and educational attainment. Use this link to get some basic data on your country. <http://hdr.undp.org/en/countries>

II. International Trade Worksheet

International Trade Structure		
Trade Data	Your Country	USA
Exports of goods and services (% of GDP)		
Imports of goods and services (% of GDP)		
Merchandise Trade Balance (% of GDP)		
Current Account Balance (% of GDP)		
3 Main Exports		
Major Exporting Firms		
Important Imports		
Example of Protectionism		
Member of Regional Trade Agreement?		

Discussion Questions:

-What are the probable goods and services for which your country has a comparative advantage?

-What does your country import and export?

-Has trade been growing in recent years?

-What are the major industries in your country?

-Describe the impact of international transactions on the overall economy of your country.

Suggested Sources and Useful Resources for Completing Worksheet 2 on International Trade

1. [The Observatory of Economic Complexity : OEC](http://atlas.media.mit.edu/en/) <http://atlas.media.mit.edu/en/>This online resource has been developed by the MIT Media Lab to present international trade data and economic complexity indicators in a visual manner. It is an awesome source for interactive visualizations of countries and products:<http://atlas.media.mit.edu/en/profile/country/>
2. [Trading Economics](http://www.tradingeconomics.com/) has a variety economic indicators, historical data and forecasts for 196 countries: [Trading Economics - Listing of Countries: http://www.tradingeconomics.com/](http://www.tradingeconomics.com/)
3. The [World Bank](http://www.worldbank.org/en/country) website has economic data (“At a Glance” and “Key Statistics”) for most countries. Students may want to print out the “[Country at a Glance](http://www.worldbank.org/en/country)” tables for their country: <http://www.worldbank.org/en/country>
4. The [International Monetary Fund](http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx) publishes a World Economic Outlook Data Base with data on national accounts, inflation, unemployment rates, balance of payments, fiscal indicators, trade for countries and country groups), and commodity prices: [IMF Data http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx](http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx)
5. The Organization for Economic Co-operation and Development (OECD publishes [Country statistical profiles: Key tables from OECD: http://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd_20752288](http://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd_20752288) for countries that are members of the OECD
[The Key tables from OECD](http://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd_20752288) include a wide range of indicators on the economy and other social measures.
6. The Central Intelligence Agency’s, *The World Fact Book*, (<https://www.cia.gov/library/publications/the-world-factbook/rankorder/rankorderguide.html>) is a useful source for basic information about virtually any country.

III. International Finance Worksheet

International Finance Worksheet		
International Finance Data	Your Country	USA
Currency unit?		
Exchange rate against U,S.\$		
Has the currency appreciated or depreciated against the U.S. \$ in the past year?		
Has the currency appreciated or depreciated against the U.S. \$ in the past 10 years?		
Exchange rate system: Does your country have a floating or fixed exchanged rate? A soft peg? A hard peg?		
What is the monetary policy target interest rate?		
What is the yield on a 10 year government bond? (%)		
How much does a Big Mac cost in your country?		
Is the currency of your country undervalued or overvalued according to the Big Mac Index?		
Any role for IMF or World Bank?		

Potential Discussion Questions:

-What is the name of your country's currency? What is its exchange rate against the U.S. dollar?

-What does it mean for a currency to appreciate, or depreciate?

-Who benefits from a stronger or weaker currency?

-In the last year has the currency appreciated or depreciated against the U.S. dollar?

-Has the currency of your country been appreciating or depreciating in the last ten years against the U.S. dollar? Gold? Bitcoin?

-Differentiate among fixed exchange rates and flexible exchange rates?

-What is a soft peg versus a hard peg?

-Which would be preferable for your country: a fixed or flexible exchange rate?

-How much does a Big Mac cost in your country?

-Is the currency of your country undervalued or overvalued according to the Big Mac Index?

-What are some shortcomings of the Big Mac Index as it relates to the country in your case study?

-Would goods and services be more expensive or less expensive than the U.S. for tourists who visit your country?

-Has the [International Monetary Fund](#) or [World Bank](#) played a role in your country's finances in recent years?

What has been the impact on your country of international debt?

What has been the impact of the financial crises on the economy of your country?

Suggested Sources and Resources:

The following websites should prove to be useful for this exercise:

-For current news about currencies and foreign exchange rates try <http://www.bloomberg.com/markets/currencies/>

-FRED:

<https://fred.stlouisfed.org/search?st=exchange+rates&t=exchange+rate&ob=sr&od=desc>

-Trading Economics: <http://www.tradingeconomics.com/countries>

-Oanda: <https://www.oanda.com/solutions-for-business/historical-rates/main.html>

-The [Big Mac Index](#) is a simple index of [purchasing power parity](#) created by the Economist Magazine. The Big Mac Index is a comparison of the cost of a Big Mac burger in different countries in the world. Recently the [Big Mac Index](#) has gone high tech and interactive making it much easier to do comparisons.

-**Trading Economics** has a variety economic indicators, historical data and forecasts for 196 countries: <http://www.tradingeconomics.com/>
[Trading Economics - Listing of Countries](#)

-For the detailed macroeconomic news and forecasts, students can [try Focus Economics](#):
<http://www.focus-economics.com/countries>

-The Federal Reserve Bank of St. Louis has prepared a useful classroom exercise on the impact of exchange rates on an economy: "[Is a Strong Dollar Better than a Weak Dollar?](#)"

<https://www.stlouisfed.org/education/page-one-economics-classroom-edition/is-a-strong-dollar-better-than-a-weak-dollar>

The exercise comes complete with a [Teacher's Guide](#).

https://research.stlouisfed.org/pageone-economics/uploads/newsletter/2015/Class_Room/PageOneCE201503.pdf

-[Econedlink](#) has made available a "lesson" dealing with The Big Mac Index
<http://www.econedlink.org/teacher-lesson/156/Big-Mac-Index>

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IV. Role of Government Worksheet

Role of Government Worksheet		
Important Macro Data	Your Country	USA
Government Spending (% of GDP)		
Tax Revenue (% of GDP)		
Budget Surplus or Deficit (% of GDP)		
Government Debt (% of GDP)		
Interest Payments (% of revenue)		
Military Expenditures (% of GDP)		
Corporate Tax Rate		
Personal Income Tax Rate		
Sales Tax Rate		
Social Security Tax Rate		

Suggested Sources and Resources:

The following websites should prove useful for this exercise:

1. **Trading Economics** has a variety of economic indicators, historical data, and forecasts for 196 countries: Trading Economics- Listing of Countries:
<http://www.tradingeconomics.com/>
2. **The World Bank** website has an economic data bank for most countries. Thousands of data series can be found at:
<http://databank.worldbank.org/data/home.aspx>

Potential Discussion Questions:

-Is there a significant difference in government spending (% of GDP) in your country compared to the United States? Explain and detail some of the economic, political, or social reasons for the difference.

-Has government spending (% of GDP) in your country been growing or decreasing in recent years? What are the main economic factors that have driven the growth or decrease in recent years?

-Would your country either benefit or be worse off by increasing government spending (% of GDP)? Why?

-Has the government's debt (% of GDP) been growing or decreasing in recent years? What are the main drivers for the recent trends in the size of the debt?

-Is your country's corporate tax rate higher or lower than the United States? Would your country stand to benefit or lose by either lowering or raising the corporate tax rate?

-Does your country have an aging population? If it is ageing rapidly, do you think social security taxes are going to have to be raised in the future to provide for the ageing population?

V. Development and Competitiveness Rankings Worksheet

Development and Competitiveness Worksheet		
Important Macro Data	Your Country	USA
Human Development Index (HDI) Ranking		
Inequality-adjusted Human Development Index (IHDI) Value		
Gender Development Index (GDI) Value and Group		
Gender Inequality Index (GII) Rank		
Economic Freedom Index Ranking		
Global Competitiveness Index (GCI) Ranking		
Corruption Perceptions Index (CPI)		
Ease of Doing Business Index Rank		

Suggested Sources and Resources:

The following websites should prove to be useful for this exercise:

1. **The UN** publishes the Human Development Report every year, which includes the HDI, IHDI, GDI, and GII rankings: <http://hdr.undp.org/en/content/human-development-index-hdi>
2. **The Heritage Foundation** creates the Index of Economic Freedom every year, which can be found at the following website: <http://www.heritage.org/index/ranking>
3. **The World Economic Forum** creates the Global Competitiveness Index (GCI) every year, which can be found at the following website: <http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/>
4. **Transparency International** creates the Corruption Perceptions Index every year, which can be found at the following website: <http://www.transparency.org/cpi2015>
5. **The World Bank** publishes the Ease of Doing Business Index every year, which can be found at the following website: <http://www.doingbusiness.org/rankings>

Potential Discussion Questions:

- Discuss some of the reasons why GDP per capita and Gross National Income (GNI) can be a myopic and narrow measure of development and a country's standard of living?
- Do you think that the Inequality-Adjusted Human Development Index (IHDI) is a more accurate measurement of development than the Human Development Index (HDI)? Explain your reasoning.
- Using economic reasoning discuss how gender inequality can limit economic growth and development.
- How does your country rank in relation to the United States on the Index of Economic Freedom? What are the reasons for the difference in the "freedom" ranking?
- Would you want to invest in your country based on its economic freedom, global competitiveness, and ease of doing business rankings?
- Is corruption limiting economic growth and development in your country? Discuss some examples and use economic reasoning to show how corruption could potentially limit growth and development.