

Macroeconomic Theory for MDE, Econ 5001**Assignment 1****Due date and time: 11 January 2012, 9:35****General instructions**

There are two parts to this assignment. The first part requires you to submit an annotated bibliography that contains significant studies on the country of your choice. The second part of this assignment is intended to give you an opportunity to apply one of the key concepts you need to know to understand and evaluate the existing literature on cross-country income comparisons.

Your answer to this assignment must reflect your individual work, and requires knowledge and comprehension. Use footnotes or an appendix to describe data sources and variables that are not otherwise essential within the main text. You must follow the policy on *Academic Integrity* and the *Style Guidelines* attached to the course syllabus.

Late assignments will be marked down by 10 percent per day.

Assignment**Part (a)**

You are asked to submit a maximum one page **annotated** bibliography that contains few but significant studies on the country of your choice. These studies must shed light on *general* (economic) history of the particular country and might be considered as “classic” reference (use citation indexes for this purpose). Use available library resources. The Web is a wonderful resource for storing and accessing information. However, there is no magical formula, which can convert this information into knowledge. Since online (and library) resources can quickly lead to an information overload, develop and use filters that will help you to discriminate across sources based on their scientific content. Do not include journal articles that are narrow in focus, written for highly specialized readership, or of unverifiable quality.

Individual project. Maximum 1 page (single spaced). 2 percent.

Part (b)

Background and learning objectives.—The background knowledge of concepts for this assignment include: gross domestic product (GDP) or gross national product (GNP) as reported in National Income and Product Accounts (NIPA); exchange rate; purchasing power parity, PPP (or “international prices”); alternative databases.

1. What is GDP? How do statistical agencies collect GDP data? You must read Landefeld, Seskin, and Fraumeni (2008), which gives a good account of how this is done in the United States, and would allow you to appreciate the difficulties involved in constructing aggregate output measures in developing countries.
2. What is PPP? How can we compute a multilateral real exchange rate index? Anand and Segal (2008, pp. 70–73) present a brief and informative account of PPP exchange rates in an important context. See Deaton and Heston (2010) for more on this issue.

3. Why several data sources? You should understand that results and interpretations are highly sensitive to underlying data sources. For instance, see, Hanousek, Hajkova, and Filer (2008) for a study that demonstrates the differences in results using different GDP per capita growth rates from different databases.

Object.—Collect data on

- (i) real GDP or GNP per capita, and
- (ii) real GDP per capita in international prices (PPP)

of the *country of your choice* from at least two different data sources, including

- International Monetary Fund's *International Financial Statistics*,
- World Bank's *World Development Indicators*, and
- Center for International Comparisons's *Penn World Table* (<http://pwt.econ.upenn.edu/>).

Please read the definition of the variable in a database before you extract any series.

Using a table (no figures), summarize the history of economic growth in the country of your choice. Report your data sources and variables as a note to your table. Your discussion should be informed and informative about the specific set of international prices used in the data sources. Compare and contrast these data since the earliest common dates available, and identify the basic trends in the data.

Organize your paper as an informative essay, rather than a dry list of findings. Are there major subperiods to consider? Together with the bibliographic sources you list in part (a), you should consult Reinhart (2010) for dates and periods of financial crises in the country of your choice.

Individual project. Maximum 1 page. 3 percent.

References

- Anand, Sudhir, and Pual Segal, 2008. What do we know about global income inequality? *Journal of Economic Literature* 46 (1), 57–94.
- Deaton, Angus, and Alan Heston, 2010. Understanding PPPs and PPP-based national accounts. *American Economic Journal: Macroeconomics* 2 (4), 1–35.
- Hanousek, Jan, Dana Hajkova, and Randall K. Filer, 2008. A rise by any other name? Sensitivity of growth regressions to data source. *Journal of Macroeconomics* 30, 1188–1206.
- Landefeld, Steven J., Eugene P. Seskin, and Barbara M. Fraumeni, 2008. Taking the pulse of the economy: measuring GDP. *Journal of Economic Perspectives* 22 (Spring), 193–216.
- Reinhart, Carmen M., 2010. This Time is Different chartbook: Country histories on debt, default, and financial crises. NBER Working Paper 15815. Cambridge, MA.

Macroeconomic Theory for MDE, Econ 5001**Assignment 2****Due date and time: 18 January 2012, 9:35****General instructions**

Suppose, as an advisor to the central bank in a small open economy, you are asked to evaluate the exchange rate regime this country has been pursuing. (Note that this issue is relevant even if the country has been using another currency as a legal tender.) What are some of the critical issues that you would consider? How would you structure your reasoning?

This assignment requires knowledge, comprehension and application.

Late assignments will be marked down by 10 percent per day.

Assignment

Background.—The background knowledge of concepts for this assignment include: floating and fixed exchange rate regimes; the Mundell-Fleming model; the uncovered interest parity condition; the Policy Trilemma in open economies.

1. *The exchange rate regime.*—International Monetary Fund regularly publishes the exchange rate regime pursued by its member countries—as communicated to the IMF by individual countries' central banks. However, the actual monetary policy may deviate from the stated exchange rate regime. With this in mind, some economists have attempted to classify exchange rate regimes based on the actions of the central banks rather than their statements. See, for instance, Reinhart and Rogoff (2004), but read selectively.
2. *Empirical evidence on the choice of exchange rate regime.*—Comparative evidence on the performance of outcomes in countries pursuing fixed versus flexible exchange rates is surprisingly sparse. Broda (2001) is a required read in this context.

Object.—In your essay, consider the following issues.

(a) Using the small open economy Mundell-Fleming model with perfect capital mobility, compare and contrast the effects of domestic fiscal and monetary policy changes on output under fixed and floating exchange rates. That is, compare the effectiveness of domestic monetary policy changes on domestic output under the fixed and floating exchange rates. Repeat the same analysis for fiscal policy changes. How would your responses change, if at all, if there were restrictions on international capital flows?

(b) Using the same Mundell-Fleming model, compare and contrast the effects of real versus nominal shocks on domestic output under fixed and flexible exchange rates. That is, compare the impact of a generic domestic nominal shock (such as, a shock to money demand or money supply) on domestic output under the fixed and floating exchange rates. Repeat the same analysis for several a domestic real shock (such as, a shock to the terms of trade, productivity, or fiscal policy).

You cannot use graphs in answering parts (a) and (b).

Group project. Maximum 3 pages. 7 percent.

(c) Give a brief account of the exchange rate regimes pursued in the country of your choice over the last 40 years. You may find Reinhart (2010) useful for this purpose. What is the current exchange rate regime? Suppose the goal of economic policy is to minimize the volatility of real domestic output given the nominal and real shocks the economy faces. From the standpoint of the taxonomy you developed in parts (a) and (b), and given the empirical evidence, what would be the most suitable exchange rate regime that would help achieve this goal at the present?

Individual. Maximum 1 page. 3 percent.

Detrending

Since most macroeconomic time series are nonstationary (“they have a trend”), before computing their means, and standard deviations (which you will need in the next set of assignments), it is important to transform them into stationary time series. There is no simple way to determine the appropriate detrending method. There are three commonly used, alternative methods.

1. *Time trend*.—If the original time series has a constant time trend, the difference between the time trend and the actual data is stationary. So, fitting a linear time trend (using ordinary least squares) to the actual data is appropriate.
2. *Hodrick-Prescott filter*.—This is a flexible method to identify the time-varying trend component in a nonstationary series; see Hodrick and Prescott (1997).¹ An Excel add-in program, written by Kurt Annen, is available at: http://www.web-reg.de/hp_addin.html (see attached instructions).
3. *Bandpass filter*.—This detrending method isolates the component of a time series that lies within a particular band of frequencies (low frequencies correspond to the trend). See Christiano and Fitzgerald (2003) for an approximately “ideal” bandpass filter. An Excel add-in program, written by Kurt Annen, is available at: http://www.web-reg.de/bp_addin.html.

References

- Broda, Christian, 2001. Coping with terms-of-trade shocks: Peg versus float. *American Economic Review Papers and Proceedings* 91 (2), 376–380.
- Christiano, Larry J., and Terry J. Fitzgerald, 2003. The band-pass filter. *International Economic Review* 44, 435–465.
- Hodrick, Robert J., and Edward C. Prescott, 1997. Postwar U.S. business cycles: An empirical investigation. *Journal of Money, Credit and Banking* 29, 1–16. (Working paper version dated 1980.)
- Reinhart, Carmen M., 2010. This Time is Different chartbook: Country histories on debt, default, and financial crises. NBER Working Paper 15815. Cambridge, MA.
- Reinhart, Carmen M., and Kenneth S. Rogoff, 2004. The modern history of exchange rate arrangements: A reinterpretation. *Quarterly Journal of Economics* 119 (February), 1–48.

¹This is a computational method with little statistical theory underlying it. However, it is widely used in business-cycle analysis. The method involves a free parameter that depends on the frequency of the actual data. For annual observations, it is common practice to set this parameter equal to 100.

Macroeconomic Theory for MDE, Econ 5001
Hodrick-Prescott Filter Excel Add-in Instructions

Loading the Excel Add-in

- Download the HP-filter Excel add-in program files **HPFilter.xla** (the addin) and **HP-Example.xls** (a demo file) from either <http://ideas.repec.org/c/dge/qmrbcd/165.html> or http://www.web-reg.de/hp_addin.html.
- Load the Excel add-in program
 1. Click the **Microsoft Office Button**, and then click **Excel Options**.
 2. Click the **Add-Ins** category.
 3. In the **Manage** box, click **Excel Add-ins**, and then click **Go**.
 4. To load an Excel add-in, do the following:
 - (a) In the **Add-Ins available** box, select the check box next to the add-in that you want to load, and then click **OK**.

TIP If the add-in that you want to use is not listed in the **Add-Ins available** box, click **Browse**, and then locate the add-in. Add-ins that are not available on your computer can be downloaded from Downloads on Office Online.

TIP If the add-ins **Analysis ToolPak**, **Analysis ToolPak - VBA** and **Solver Add-in** are not already available, select them.
 - (b) If the add-in is not currently installed on your computer, click **Yes** to install it.

TIP Follow the setup instructions as needed.

Using the Excel add-in HPFilter.xla

The HP-Filter is a single command function,

$$HP(timeseries,lambda)$$

where *timeseries* is a vector or matrix of time series data. The data have to be organized in columns. The “standard-values” for *lambda* are 100 for yearly data, 1600 for quarterly data and 14400 for monthly data.

HP is an array-function. First, select an empty range which is of the same dimension as the *timeseries* that you would like to filter. Type **=HP(** . Next, highlight the data range to be filtered. Type a comma (or semicolon, depends on your language settings in Windows). Enter the value of *lambda* and close the parenthesis. At this point, do **not** press Enter. Hold down the **Shift and the Ctrl Keys** and press **Enter**.

The “filtered” series will appear on the highlighted range. This is the “trend” (non-stationary) component of the series. The “cyclical” (stationary) component of the series is the difference between the original series and the filtered series. For a demonstration and examples see **HP-Example.xls**.

Macroeconomic Theory for MDE, Econ 5001**Assignment 3****Due date and time: 25 January 2012, 9:35****1. General instructions**

This assignment focuses on several key concepts in international macroeconomics, involves several measurement issues related to these concepts, and asks you to compute their statistical properties for business-cycle analysis. The last part of the assignment asks you to contextualize your findings by comparing them with those from the existing literature.

This assignment requires knowledge, comprehension, application, and analysis.

Late assignments will be marked down by 10 percent per day.

2. Assignment

Background.— Those concepts that form the background knowledge for this assignment include: the balance of payments accounts, the balance on trade, the balance on current account, gross domestic product (output), personal consumption expenditures (consumption), gross capital formation (investment), standard deviation, and correlation.

Object.—In your essay address the following issues.

(a) Using the balance of payments accounts examine the balance on current account of the country of your choice. If the balance of payments accounts are not available, use the national income and product accounts to determine the current account. (Even if the balance of payments account data are available, ensure that you can compute a measure of the current account from the national income and product accounts.) Provide a descriptive analysis of both the current account and the current account to GDP ratio. Are there any major global or domestic events that may help explain the behavior of the current account (or the current account to GDP ratio)? Discuss.

(b) Compute the standard deviations of balance on trade, balance on the current account, output, consumption, and investment. Since most macroeconomic time series are nonstationary (“they have a trend”), before computing their means, and standard deviations (and correlations for this assignment), you need to transform them into stationary time series. (See Assignment 2 on how to detrend data). Analyze the main patterns.

(c) Compute the sample correlations between (i) the current account and GDP, (ii) the GDP and consumption expenditures, and (iii) the GDP and investment. Analyze the main patterns.

In your calculations, ensure that

1. the current account and the GDP are measured in a common currency and expressed in constant price terms; and
2. all the individual series should be expressed in natural logarithms before detrending (see below), except the current account, the trade balance, the current account to GDP ratio, and the trade balance to GDP ratio.

(d) Compare and contrast your results in parts (b) and (c) with those “stylized facts” reported in the studies cited in this course. In particular, consult Mendoza (1995), Aguiar and Gopinath (2007), and García-Cicco, Pacrazi, and Uribe (2010).

(e) In light of the arguments advanced by Feldstein and Horioka (1980), discuss the economic significance of these comparative correlations.

Individual. Maximum 3 pages. 10 percent.

References

- Aguiar, Mark, and Gita Gopinath, 2007. Emerging market business cycles: The cycle is the trend. *Journal of Political Economy* 115, 69–102.
- Feldstein, Martin, and Charles Horioka, 1980. Domestic savings and international capital flows. *Economic Journal* 90, 314–329.
- García-Cicco, Javier, Roberto Pacrazi, and Martín Uribe, 2010. Real business cycles in emerging countries? *American Economic Review* 100, 2510–2531.
- Mendoza, Enrique G., 1995. The terms of trade, the real exchange rate, and economic fluctuations. *International Economic Review* 36 (1), 101–137.

Macroeconomic Theory for MDE, Econ 5001**Assignment 4****Due dates and times: 1 and 8 February 2012, 9:35****1. General instructions**

Academic economists and policy makers frequently use information on the current account to evaluate and forecast the economic performance of an economy in the short to medium run. This assignment asks you to present an informed discussion of the response to shocks of the current account of the country of your choice within a comparative setting. It is an empirical application of the key impulse and propagation mechanisms extensively studied in international macroeconomics.

Thesis statement.—When dealing with complex economic issues, it is important to advance a “thesis statement,” which clearly states the main object of the analysis, and clarifies what factors are deemed as causes and what factors are deemed as consequences for a particular study. A thesis statement sets the conceptual boundaries of the ensuing analysis, states the problem that will be scrutinized, but does not necessarily advocate a particular methodology or viewpoint. Articulating a clear thesis statement is an important component of this assignment. In general, a thesis statement is part of the research process: it may evolve during the course of the research.

Classifying evidence.—Another key component of this assignment is collecting and classifying evidence (based on your own research, as well as based on the existing literature), which has implications for the main thesis of the paper. Economists never have perfect evidence, and existing evidence can be ranked based on its proximity to the main thesis question and theory (from direct to indirect), and assessed based on persuasiveness of the argument (convincing to unconvincing). Consider collecting, ranking and assessing data accordingly. Do not hide evidence that is not consistent with the main thesis of the paper. As long as the research question is economically significant and the method is persuasive, even a “negative” finding is worth reporting.

Alternative explanations.—In your discussion, if there are alternative and relevant interpretations of the evidence, mention and briefly evaluate them. If there is a major alternative to your thesis statement, mention it in the conclusion. Otherwise, use footnotes for minor qualifications. Strike a balance: avoid an overly-qualified and cautious prose.

This assignment requires knowledge, comprehension, application, and analysis.

Late assignments will be marked down by 10 percent per day.

2. Assignment

Background.— Those concepts that form the background knowledge for this assignment include: detrended data, consumption smoothing, intertemporal substitution, precautionary saving, shocks and propagation mechanisms in small open economies, country-specific and global shocks, transitory, persistent, and permanent shocks.

Object.—Your essay should address the following issues.

a) Identify and discuss the major domestic (country-specific) and global (common) “shocks” that possibly had a significant impact on the economies of your choice. Provide an analysis of the consequences of these shocks. Pay close attention to the classification of these shocks.

In identifying these shocks you are encouraged to use judgement rather than statistical techniques. Specifically, use sudden changes in the growth rate of GDP or in the detrended or filtered level of (natural logarithm of) GDP to identify shocks and link these episodes to major identifiable events. When appropriate and possible, use data to support your identification. For instance, show evidence for a world interest rate shock, even if your measure is crude.

b) Discuss and compare the short-run (one to three years) response of the current account, investment, domestic saving and consumption to these shocks. Explain whether these responses are consistent with the following motives for saving:

1. the *life-cycle* (or consumption-smoothing) motive for saving (see, Sachs, 1981);
2. the *intertemporal-substitution* (or consumption-tilting) motive for saving (e.g., Neumeyer and Perri, 2005); and
3. the *precautionary* motive for saving (e.g., Fuchs-Schündeln, 2008; McKenzie, 2006; Bems and de Carvalho Filho, 2011).

3. Stages of delivery

There are two stages to this assignment.

In the first stage, you must submit a thesis statement, together with a motivation for this thesis, based on a preliminary data analysis and literature review.

Group project. Maximum 1 page. 3 percent.

In the second stage, you must submit the final version including analysis.

Group project. Maximum 5 pages. 7 percent.

References

- Bems, Rudolfs, and Irineu de Carvalho Filho, 2011. The current account and precautionary savings for exporters of exhaustible resources. *Journal of International Economics* 84, 48–64, URL <http://dx.doi.org/10.1016/j.jinteco.2011.02.004>.
- Fuchs-Schündeln, Nicola, 2008. The response of household saving to the large shock of German reunification. *American Economic Review* 98, 1798–1828, URL doi: 10.1257/aer.98.5.1798.
- McKenzie, David J., 2006. Precautionary saving and consumption growth in Taiwan. *China Economic Review* 17, 84–101, URL doi:10.1016/j.chieco.2005.05.002.
- Neumeyer, Pablo A., and Fabrizio Perri, 2005. Business cycles in emerging economies: The role of interest rates. *Journal of Monetary Economics* 52, 345–380.
- Sachs, Jeffrey, 1981. The current account and macroeconomic adjustment in the 1970s. *Brookings Papers on Economic Activity* 1, 201–268.

Macroeconomic Theory for MDE, Econ 5001**Assignment 5****Due date and time: 15 February 2012, 9:35****1. General instructions**

This assignment focuses on several key concepts in international trade and macroeconomics, involves several measurement issues related to these concepts, asks you to compute their statistical properties (standard deviations and correlations), and interpret them according to a conceptual framework. The last part of the assignment asks you to contextualize your findings by comparing them with those from the existing literature.

Parts **(b)** and **(c)** in your assignment define certain tasks but are not otherwise specific about expected outcomes. This is deliberate: you are expected to articulate a *thesis statement* on a contextually appropriate topic, and provide the best evidence possible for and against this hypothesis. Consider combining historical social and economic knowledge with a conceptual (and analytical) framework that is suitable given your data and research question.

This assignment requires knowledge, comprehension, application, analysis, and synthesis.

Late assignments will be marked down by 10 percent per day.

2. Assignment

Background.—The following concepts form the background knowledge for this assignment: the balance on trade (net exports), the real exchange rate, the effective exchange rate, the real effective exchange rate, detrending.

Object.—Your essay should address the following issues.

(a) Using the balance of payments accounts examine the balance on trade of the country of your choice over the the longest time period possible. Provide an analysis of both the trade balance and the trade balance to GDP ratio, and discuss (i) the commodity and service composition of exports and imports, (ii) the country of destination of major exports and country of origin of major imports, and (iii) the international trade policy, such as tariffs and duties.

(b) Compute the terms of trade, the effective exchange rate, and the real effective exchange rate of the currency of the country of your choice. Compute the standard deviations of these variables. Analyze the main patterns.

(c) Compute the sample correlations between the GDP and (i) the trade balance, (ii) the trade balance to GDP ratio, (iii) the terms of trade, (iv) the real exchange rate, and (v) the current account to GDP ratio. Analyze the main patterns and discuss their economic significance.

In your calculations, ensure that

1. the trade balance and the GDP are measured in a common currency and expressed in constant price terms; and
2. all the individual series should be expressed in natural logarithms before detrending, except the balance on trade, and the trade balance to GDP ratio.

(d) Compare your results in parts (b) and (c) with those “stylized facts” reported in Aguiar and Gopinath (2007), Ambler, Cardia, and Zimmermann (2004), Mendoza (1995), and Raffo (2008).

(e) In light of the specific model studied by Backus, Kehoe, and Kydland (1992), discuss the economic significance of these correlations and standard deviations.

Individual. Maximum 4 pages. 10 percent.

References

- Aguiar, Mark, and Gita Gopinath, 2007. Emerging market business cycles: The cycle is the trend. *Journal of Political Economy* 115, 69–102.
- Ambler, Steve, Emanuela Cardia, and Christian Zimmermann, 2004. International business cycles: What are the facts? *Journal of Monetary Economics* 51, 257–276.
- Backus, David, Patrick Kehoe, and Finn Kydland, 1992. International real business cycles. *Journal of Political Economy* 100, 745–775.
- Mendoza, Enrique G., 1995. The terms of trade, the real exchange rate, and economic fluctuations. *International Economic Review* 36 (1), 101–137.
- Raffo, Andrea, 2008. Net exports, consumption volatility and international business cycle models. *Journal of International Economics* 75, 14–29.

Macroeconomic Theory for MDE, Econ 5001**Assignment 6****Due dates and times: 7, 12 and 19 March 2012, 9:35****1. General instructions**

This assignment concerns the analysis of international financial integration of the country of your choice to the international financial markets. The main focus of the analysis should be how risk and risk sharing might influence financial market integration, and how, in turn, international financial market integration may pose certain risks. Although it is not required, a good understanding of the degree of domestic financial market development would be helpful in framing your analysis.

You are expected to articulate a *thesis statement* on a contextually appropriate topic, and provide the best evidence possible for and against this thesis. Consider combining historical social and economic knowledge with a conceptual (and analytical) framework that is suitable given your data and research question. A *discussion* identifies an important question related to an issue, formulates a “thesis statement,” and attempts to answer this question. “Where there are several sides to an issue, a discussion involves presenting this variety of sides. A good discussion explores as much of the relevant evidence and information on a topic as it can” (Gardner, Jewler, and Robb, 1995, p. 87). An *analysis* involves organizing the data, recognizing major patterns in the data, discussing these patterns, and relating them to a conceptual framework. Your discussion should draw on the existing literature, your analysis should explicitly demonstrate how you contribute to that literature, and your conclusion should draw out the implications of your research for economic policy.

This assignment requires knowledge, comprehension, application, analysis, and *synthesis*.

Late assignments will be marked down by 10 percent per day.

2. Assignment

Background.—Those concepts that form the background knowledge for this assignment include: the current account, financial account, capital account, balance of payments accounts, foreign assets and liabilities, international investment position, equity investment, portfolio investment, foreign direct investment, the terms of trade, financial crisis, banking crisis, currency crisis, sudden stops, the policy trilemma in open economies.

Object.—In terms of international risk sharing, consider the main developments in the foreign assets and liabilities and the terms of trade of the country of your choice since the earliest date possible. In this context, the main themes include:

1. international risk-sharing through *international asset trade, including lending and borrowing* (e.g., Obstfeld and Rogoff, 1996, chp. 6);
2. international risk-sharing through *adjustments in the terms of trade* (Cole and Obstfeld, 1991; Heathcote and Perri, 2009); and
3. international risk-sharing through *revaluation of financial assets* (Gourinchas and Rey, 2007).

An early study in the context of financial crisis is Díaz-Alejandro (1985). As part of your background research review the history of the exchange rate arrangements, monetary policy and financial sector in the country of your choice. If there were any financial, banking, or currency crises in the country of your choice (see, e.g., Reinhart, 2010), study the causes and economic consequences of such crises (if there are multiple such episodes, you can focus on one of them). Aspects of international trade we have studied in the previous assignments should inform your discussion and analysis. (See also required readings for Week 10 in the course syllabus.)

There is considerable flexibility in terms of the main theme that you can discuss, ranging from international risk sharing to causes and consequences of financial or currency crises. However, you should be able to articulate why the thesis statement is relevant for economic and social policy. Consider developing one main idea (research question) from the literature. State why this issue is important, and what broader lessons one might draw from your research. You should think of your research as contributing to a broader literature, and articulate how your findings might improve our understanding of economically significant issues.

Data sources

In addition to those data you have collected for your previous assignments, consider using the following two data sets.

1. The annual time-series data set on financial assets and liabilities for 145 countries for the period 1970–2004 constructed by Lane and Milesi-Ferretti (2007), available at <http://www.imf.org/external/pubs/ft/wp/2006/data/wp0669.zip>.
2. The Coordinated Portfolio Investment Survey (CPIS) is conducted every two years by the International Monetary Fund. The CPIS collects information on the stock of cross-border holdings of equities and long- and short-term debt securities broken down by the economy of residence of the issuer. This data set has a shorter time coverage (starting in 1997), and has limited country coverage. It is available at <http://www.imf.org/external/data.htm>.

Stages of delivery

There are three stages to this assignment.

Stage 1: This is a preliminary draft which identifies a literature relevant for the topic, formulates a thesis statement, and outlines the arguments that you will be pursuing. You must carefully choose the scholarly works that are most closely related to your research, and compare and contrast your preliminary findings in light of this literature.

Individual. Maximum 3 pages. 3 percent. Due date: 7 March 2012

Stage 2: You will receive feedback from a reviewer on your preliminary draft, and you will comment on another draft. (See the attached guidelines.)

Individual. Maximum 3 pages. 3 percent. Due date: 12 March 2012

Stage 3: You will submit the final version, preliminary draft and the review.

Individual. Maximum 5 pages. 12 percent. Due date: 19 March 2012

References

- Cole, Harold L., and Maurice Obstfeld, 1991. Commodity trade and international risk sharing: How much do financial markets matter? *Journal of Monetary Economics* 28 (1), 3–24.
- Díaz-Alejandro, Carlos F., 1985. Goodbye financial repression, hello financial crash. *Journal of Development Economics* 19, 1–24.
- Gardner, J.N, A.J. Jewler, and A. Robb, 1995. *Your First-Year Experience: Success Strategies for Canadian Students*. Nelson Canada, Toronto, ON.
- Gourinchas, Piere-Olivier, and Hélène Rey, 2007. International financial adjustment. *Journal of Political Economy* 115, 665–703.
- Heathcote, Jonathan, and Fabrizio Perri, 2009. International diversification puzzle is not as bad as you think. University of Minnesota.
- Lane, Philip R., and Gian-Maria Milesi-Ferretti, 2007. The External Wealth of Nations Mark II: Revised and extended estimates of foreign assets and liabilities, 1970-2004. *Journal of International Economics* 61, 223–250.
- Obstfeld, Maurice, and Kenneth Rogoff, 1996. *Foundations of International Macroeconomics*. MIT Press, Cambridge, MA.
- Reinhart, Carmen M., 2010. This Time is Different chartbook: Country histories on debt, default, and financial crises. NBER Working Paper 15815. Cambridge, MA.

Macroeconomic Theory for MDE, Econ 5001**Reviewer Guidelines**

Reviewing a paper written by peers has tremendous value, both for the reviewer and the author of the paper. Reviewers learn about a country and context. This is the instructive aspect of the process. Without being an expert on the country, reviewers can still provide valuable comments. You have a shared learning experience, and exposure to a common set of tools and models. These should form the basis of the reviews. The authors need your constructive criticisms to improve their analysis and exposition. Provide perspectives and insights that would help focus the paper, rather than broad suggestions that would unnecessarily dilute the analysis.

The following guidelines are from a professional journal (*Agricultural Economics*) and are based on those thoughtfully articulated by Professor David Pannell. I read them whenever I am called to referee a paper, and I think you will find them valuable as well.

1. Read through the paper, making notes at the level of detail that is appropriate for that paper. The better the paper, the finer detail you should go to. For a paper that is excellent and needs only very minor revisions, you might even note problems with punctuation and spelling, if they are not too numerous. For a paper that is terrible, you would only note major issues, or even major groups of issues. Sometimes I get hooked into rewording sentences. You should only do this if the paper doesn't need too much of it. If bits need rewriting, say so in your review.
2. If the strengths and weakness of the paper are really obvious and you are confident about your ability to comment on the paper, you could write your review immediately after your first reading. Otherwise, leave it a few days and come back to it. Read it again, or read problem sections again, and then write your review.
3. Write the title of the manuscript at the top of your review. Your review is anonymous, so do not include any information that would help identify you.
4. Always number your comments. If you have multiple related comments, number them separately.
5. Start by saying something positive about the paper, no matter how difficult this is. Say as many positive things as the paper deserves (or one more than that if it doesn't deserve any) before you get into criticisms.
6. Provide a brief summary of the paper in a few sentences. This summary should state the take-away message of the paper as understood by the reviewer.
7. Next, note any concerns or problems at the big picture level—e.g., relating to the overall approach, the statistical methods, the interpretation of results, the quality of presentation or writing.
8. Then, start presenting specific comments on the paper. Note the page number and the line number for each comment if possible. Start with most important or serious of the specific comments, and then include any minor issues.
9. Comments such as "Have you considered this?" are not useful unless you can articulate why you think considering an alternative explanation or complementary issue is important.

10. There is no need to write a conclusion to your review.
11. If you have cited any literature, provide complete reference details.
12. At the end of a review, I write “End.” on a line by itself to make it clear that there is no further information and no lost pages.

Macroeconomic Theory for MDE, Econ 5001**Assignment 7****Due date and time: 28 March 2012, 9:35****General instructions**

In this assignment, you are asked to evaluate the long-run economic growth performance of the country of your choice and provide an analysis of the sources of growth. In assignment 1, you have already learned about the basic trends in real GDP per capita in that country. Partly building on that knowledge, in this essay, you will examine and analyze the determinants of this growth performance and implement the Solow (1957) growth accounting formula. See, for instance, Ndulu and O'Connell (1999) how such accounting can be put into good use.

This assignment requires knowledge, comprehension, *application*, and analysis.

Late assignments will be marked down by 10 percent per day.

Assignment

Background and learning outcomes.—The background knowledge of concepts for this assignment include: total factor productivity, growth accounting.

Object.—Your essay should address the following issues.

(a) In an essay format, describe and discuss the economic growth performance of the country of your choice (go as back in time as possible). Your essay should be informative about labour productivity and total factor productivity growth rates over this period, and summarize and assess the independent contributions of capital and labor to economic growth during each decade. Preferably you should be computing these statistics. If you use others' estimates, you should be able to replicate their results.

(b) While capital accumulation and growth rate of employment are important determinants of economic growth, there might be other factors that are instrumental in generating economic growth. Depending on the context, these factors might include educational attainment, natural resources, international trade, human capital, or even social capital.

Data sources

Growth accounting results are highly sensitive to the share of capital in income, capital stock, and real output estimates (see, also, Hanousek, Hajkova, and Filer, 2008).

1. *Share of capital in income.* Gollin (2002) discusses alternative methodologies to compute income shares, and provide estimates for a number of countries. In the absence of reliable data or published estimates, consider using the share of capital in income in a country that you judge to be similar in economic structure to the country of your choice.
2. *Capital stock.* The most common way to compute capital stock K is by using the capital accumulation equation (based on perpetual inventory method):

$$K_t = I_t + (1 - \delta_t)K_{t-1}, \quad (1)$$

where I is "capital consumption allowance" (investment spending), $0 < \delta < 1$ is depreciation rate, and by setting a value for the level of initial capital stock. One possible choice for this initial capital stock is based on an assumption about capital-output ratio. In the absence of any guidance from the literature, set this ratio to 1, and experiment with higher values (up to 3). In the event that you need to update the published capital stock, use the capital accumulation equation given above. Nehru and Dhareshwar (1995) produced a database on *physical capital* stock, which is especially comprehensive for developing countries. Unfortunately, this database is not actively maintained, so you will need to update it.

3. *Educational attainment*. Barro and Lee (2010) is an important database.

Several organizations publish productivity growth estimates based on their in-house research.

- The Conference Board and Groningen Growth and Development Centre maintain the *Total Economy Database* at <http://www.conference-board.org/data/economydatabase/>, which provides annual estimates of GDP, population, employment, hours and productivity for about 125 countries.
- United Nations Industrial Development Organization, UNIDO, maintains *World Productivity Database* at www.unido.org/data1/wpd/Index.cfm, which contains information on levels and growth of aggregate total factor productivity (TFP) for up to 112 countries, from 1960 onwards. See Isaksson (2009) for an overview.
- The *OECD Productivity Database* at <http://www.oecd.org/statistics/productivity> covers 26 OECD countries. See Pilat and Schreyer (2004) for an overview.
- The *EU KLEMS Growth and Productivity Accounts* at <http://www.euklems.net> include data at the sectoral level for European Union member states from 1970 onwards. See Timmer, O'Mahony, and van Ark (2007) for an overview.

Individual. Maximum 3 pages. 8 percent.

References

- Barro, Robert, and Jong-Wha Lee, 2010. A new data set of educational attainment in the world, 1950-2010. Cambridge, MA. NBER Working Paper No. 15902, URL <http://www.barrolee.com/>.
- Gollin, Douglas, 2002. Getting income shares right. *Journal of Political Economy* 110, 458–474.
- Hanousek, Jan, Dana Hajkova, and Randall K. Filer, 2008. A rise by any other name? Sensitivity of growth regressions to data source. *Journal of Macroeconomics* 30, 1188–1206.
- Isaksson, Anders, 2009. The UNIDO World Productivity Database: An overview. *International Productivity Monitor* 18 (Spring), 38–50.
- Ndulu, Benno J., and Stephen A. O'Connell, 1999. Governance and growth in Sub-Saharan Africa. *Journal of Economic Perspectives* 13 (3), 41–66.
- Nehru, Vikram, and Ashok Dhareshwar, 1995. A new database on physical capital stock: Sources, methodology and results. World Bank, Washington, D.C., URL <http://go.worldbank.org/SSDYULZH0>.
- Pilat, Dirk, and Paul Schreyer, 2004. The OECD Productivity Database: An overview. *International Productivity Monitor* 8 (Spring), 59–65.

- Solow, Robert M., 1957. Technical change and the aggregate production function. *Review of Economics and Statistics* 39, 312–320.
- Timmer, Marcel P., Mary O'Mahony, and Bart van Ark, 2007. EU KLEMS Growth and Productivity Accounts: An overview. *International Productivity Monitor* 14 (Spring), 71–85.

Macroeconomic Theory for MDE, Econ 5001**Assignment 8****Due date and time: 4 April 2012, 9:35****General instructions**

In assignment 1 you examined the basic trends in real GDP per capita in the country of your choice. In assignment 8 you discussed the determinants of economic growth through growth accounting, as well as by judicious use of economic theory and country-specific issues. Building on this knowledge, in this assignment, you will examine and analyze the determinants of economic development and economic growth performance in a comparative framework. This assignment also requires you to use the existing literature to frame the issues and identify specific measures of economic policies and institutions that might have an impact on the income levels and the growth rates that you observe in your group of countries.

This assignment requires knowledge, comprehension, *application*, and *analysis*.

Late assignments will be marked down by 10 percent per day.

Assignment

Background.—The background knowledge of concepts for this assignment include: growth versus level effects; income level accounting; growth accounting.

Object.—In this assignment, you are asked to provide a comparative analysis of economic growth or economic development in a small group of countries. In your essays, you may build on your analysis in assignments 1 and 8, but supplement those data and analysis with a discussion of differences or similarities in relevant institutions, economic policies or endowments across these countries. There are three ingredients of a successful essay in this context.

1. Using reliable and comparable data.
2. Constructing a “conceptual framework” for the analysis, which clearly distinguishes between level and growth effects. This framework must be relevant for the institutional and policy determinants of economic growth and economic development in the group of countries you are analyzing. This framework should identify and justify a set of institutional and economic policy factors that you think significantly matter for economic development and growth. Identification of such factors requires, in part, a careful reading and synthesis of the course material. Justification of these factors must include an explanation of the possible transmission mechanisms from such institutional and policy variables to income levels or growth rates.
3. Applying this conceptual framework within the specific context of the countries in your group.

Readings

The literature on comparative development and economic growth is extensive. The survey by Caselli (2005) discusses many of the factors that economists have considered to explain income *level* differentials. The survey by Temple (1999) discusses many of the factors that economists have considered to explain *growth* differentials.

Diamond (1997) is a brilliant account of comparative economic development based on geographic determinism. I would highly recommend you reading this book. Henry and Miller (2009) provide a nice comparative analysis of two island states to weigh “institutional” explanations against “policy-based” explanations. Engerman and Sokoloff (2011) examine the response of policies that directly affect the organization of production to geoclimatic endowments—personally, a great read.

Young (1995) is a provocative piece on East Asian economic growth experience. Young argues that East Asian economic growth was primarily due to capital deepening. This was not the first time that this issue was raised in the literature. Nor did this article have the final word on this topic. Nevertheless, it is highly informative. Ndulu and O’Connell (1999) apply basic growth accounting techniques to explain Africa’s growth performance in a comparative setting. You may benefit from their way of organizing vast amounts of complex data. Henry and Miller (2009) provide a nice comparative analysis of two island states to weigh “institutional” explanations against “policy-based” explanations—personally, a great read.

Lately, with a strong desire to “measure,” economists have relied on quantitative measures of highly subjective, and ill-defined concepts. Razafindrakoto and Roubaud (2010) illustrate several problems that arise in interpreting these measures in the context of corruption indexes.

Group project. Maximum 5 pages. 14 percent.

References

- Caselli, Francesco, 2005. Accounting for cross-country income differences. In: Aghion, Philippe, and Steven N. Durlauf (Eds.), *Handbook of Economic Growth*, Elsevier, Amsterdam, pp. 679–741.
- Diamond, Jared, 1997. *Guns, Germs, and Steel: The Fates of Human Societies*. Norton, New York.
- Engerman, Stanley, and Kenneth Sokoloff, 2011. Once upon a time in the Americas: Land and immigration policies in the New World. mimeo. URL http://economics.dal.ca/Files/Engerman_Evolution_of_Land.pdf.
- Henry, Peter Blair, and Conrad Miller, 2009. Institutions versus policies: A tale of two islands. *American Economic Review Papers and Proceedings* 99 (2), 261–267.
- Ndulu, Benno J., and Stephen A. O’Connell, 1999. Governance and growth in Sub-Saharan Africa. *Journal of Economic Perspectives* 13 (3), 41–66.
- Razafindrakoto, Mireille, and François Roubaud, 2010. Are international databases on corruption reliable? A comparison of expert opinion surveys and household surveys in Sub-Saharan Africa. *World Development* 38 (8), 1057–1069, URL <http://dx.doi.org/10.1016/j.worlddev.2010.02.004>.
- Temple, Jonathan, 1999. The new growth evidence. *Journal of Economic Literature* 37 (1), 112–156.
- Young, Alwyn, 1995. The tyranny of numbers: Confronting the statistical realities of East Asia. *Quarterly Journal of Economics* 110, 641–680.