**ECO 304L Exam 2 Study Guide (11am)**

**You will find questions on the exam relating to the media shown in class and used for Kahoots!**

**Exam:** Thursday March 21st, 11am-12:15pm in-class (JESS A121A)

**Please bring a pencil, an eraser and your ID card and arrive by 10:40am.**

**FAQs**

**What is the exam worth?** 240 points (24%).

**What is the exam format?** 32 multiple choice and 8 short answer questions each worth 1 point. You will get a score /40, scaled to a score /240 when grades are uploaded to Canvas.

Partial credit is available for short answer questions if your answer is wrong, but you explain your reasoning/working.

**What chapters are covered?** Chapters 11-15.

**What materials are authorised?** This is a closed book, closed notes exam. You may use a physical calculator but may not use a cell phone or any other electronic device during the exam.

**Is there a sample exam?** You will find sample exam files for chapters 11-15 on Canvas, each with approximately 50 questions.

**If you miss exam 2, the final (cumulative) exam becomes mandatory.**

**How does the 3 skips rule work?** Skip any 3 questions – short answer or multiple choice. These are counted as correct. If you don’t skip 3 questions, i.e. choose to answer all 40 questions, they are graded as per normal.

**What happens if I miss the exam?** The final exam becomes mandatory.

**What’s the best way to prepare for the exam?**

1. Watch the lecture recording for each chapter. Go to Canvas, scroll down to Lectures Online (near the bottom).

2. Take the IQ quizzes in review mode.

3. Attempt the end-of-chapter questions.

4. Attempt the sample exam questions.

5. Attend the Supplementary Instruction sessions.

6. Attend office hours if you need help. You can find the days/times for each TA on Canvas (click Modules, click office hours at the top).

My availability is Tuesday, 3/5, Thursday, 3/7 and Tuesday, 3/19, 1pm-4pm (BRB 2.102).

**There is a mid-semester break from 3/11-3/16.**

**Chapter 11: Economic Growth & the Wealth of Nations**

Economic growth matters because it correlates with a higher standard of living.

Long-run world per capita GDP resembles a hockey stick: minimal growth before the industrial revolution.

Over the last 200 years, some nations became rich; others remained poor. This chapter looks at why.

Mathematics of growth:

Rule of 70: annual growth rate is X%, size doubles in 70/x years.

Small incremental growth makes a big difference over time.

**Source of economic growth**

1. Resources: natural resources, human capital, physical capital
2. Technology
3. Institutions

Natural resources are not enough. Think of Liberia.

Physical capital is not enough because we will eventually see diminishing returns to capital.

Technology is important: ability to produce more with less.

**Institutions matter! Five important institutions**

1. Private property rights
2. Political stability & the rule of law
3. Stable money & prices
4. Competitive & open markets
5. Efficient taxes

Economists test new ideas through randomized controlled trials (RCT).

**Chapter 12: Growth Theory**

Production function is the relationship between inputs & output.

*GDP = Y = F (K, HK, L)*

K: physical capital

HK: human capital

L: natural resources

**Solow I Growth Model**

* Focus is on capital.
* Increasing tools available can increase output per worker.
* Wealthy nations have access to higher levels of capital than developing nations.
* Strong correlation between investment & GDP.

Marginal product: change in output associated with 1 additional unit of an input.

Diminishing Marginal Product

* Marginal product declines as the quantity of the resource increases.
* Because the marginal product of capital (MPK) falls as we increase the amount of capital, at some point it will be unprofitable for firms to increase their capital stock.

Production Function

* Be able to illustrate on a graph
* Movement along a production function: changes in the level of capital.
* Shift in the production function: changes in land, labor, technology.

Implications of Solow I Growth Model:

1. Steady state: no new net investment; no change in capital stock or real GDP.
2. Convergence: GDP across nations should equalize as nations approach steady state. Poor nations should catch up quickly because they start with lower levels of capital where MPK should be higher; return on investment higher.

Evidence of Solow I Growth Model

1. Many poor countries not growing
2. Wealthy countries continue to grow.

No sign of recent convergence.

**Solow II Growth Model**

* Focus on capital & technology.
* With technology, we can increase MPK & shift the production function up.

𝐺𝐷𝑃 = 𝑌 = 𝐴 × 𝐹(𝐾, 𝐻𝐾, 𝐿)

K: physical capital

HK: human capital

L: natural resources

A: technology

Technology is viewed as exogenous: not related to what is happening inside the economy.

Policy Implications of Solow II Growth Model

* Low-income countries need access to the latest technology.
* Wealthy nations can help by funding capital investment in poor countries.
* Mixed evidence: some countries received billions in aid & are no better off than they were in 1960; other countries received almost no aid & have grown rapidly.

**New Growth Theory**

* Technology now considered endogenous.
* Endogenous growth is driven by factors inside the country.

𝐺𝐷𝑃 = 𝑌 = 𝐴 × 𝐹(𝐾, 𝐻𝐾, 𝐿, 𝐼𝑛𝑠𝑡𝑖𝑡𝑢𝑡𝑖𝑜𝑛𝑠)

K: physical capital

HK: human capital

L: natural resources

A: technology

The right institutions lead to economic growth

* Positive institutions: transparency, private property rights, stable money & prices.
* Negative institutions: corruption, political instability.

**Chapter 13: AD-AS**

**Aggregate Demand**

Understand the components of AD

Why does the AD curve slope downwards?

1. Wealth effect
2. Interest rate effect
3. International trade effect

Movement along the AD curve vs a shift in the AD curve

**Aggregate Supply**

Long-Run Aggregate Supply (LRAS): period of time for all prices to adjust

* Level of Q where u = u\* (natural rate of unemployment)
* Depends on the economy’s resources, technology & institutions.

LRAS is vertical

* Implications: change in price only affects SRAS.

Shifts in LRAS (changes in):

1. Resources
2. Technology
3. Institutions

LRAS shifts right: more Q at u\*

LRAS shifts left: less Q at u\*

Short-Run Aggregate Supply (SRAS): period of time in which some prices have not **yet** adjusted

SRAS is upward sloping for 3 reasons:

1. Sticky input prices
2. Menu costs
3. Money illusion

When the LRAS curve shifts, the SRAS curve automatically shifts.

Factors that only shift the SRAS curve

1. Changes in resource prices
2. Changes in expectations of prices
3. Supply shocks

Long-Run Equilibrium

* AD = SRAS = LRAS
* At this point u = u\*

**Short-Run and Long-Run Effects**

* You should be able to explain & illustrate the following.

**1. Recession (negative demand shock)**

SR: output ↓, unemployment ↑, price level ↓

LR: output & unemployment stay the same (return to their original level) & price level ↓

**2. Shift in AD (expansion in AD)**

SR: output ↑, unemployment ↓, price level ↑

LR: output & unemployment stay the same (return to their original level) & price level ↑

**3. Shift in SRAS (negative supply shock)**

SRAS shifts left (no change in LRAS)

SR: output ↓, unemployment ↑, price level ↑

LR: output, unemployment & price level stay the same (return to their original level)

**4. Shifts in LRAS (technology shock)**

LRAS & SRAS shift right: output ↑, employment stays the same, price level ↓

COVID-19

* Atypical shock: LRAS, SRAS & AD all shifted to the left:
* Effects: output ↓, unemployment ↑, price level stayed the same (2019-2020)

**Chapter 14: Recessions, Expansions & Debates**

What causes recessions?

Declines in AD: short-run v long-run effects (same as chapter 13).

Declines in AS: can be caused by a shift in both long-run & short-run AS curves.

Decline in long-run AS leads to permanent changes in an economy.

Illustrate declines in AD, short-run AS & long-run AS.

**Great Depression**

* Know the basics: time period; deflation, unemployment & GDP figures; longevity.
* Primary cause was a decrease in AD from the stock market crash.
* Faulty policy contributed to the severity: contractionary monetary policy, government allowed banks to fail.

**Great Recession**

* Know the basics: time period; unemployment & GDP figures, longevity.
* Primary causes were a decrease in both AD & long-run AS.
* Property market collapsed in 2007, causing a major liquidity crisis.
* Negative wealth effects from real estate & stock market collapses.

**Coronavirus Recession**

* Understand the basics: time period, effect on GDP, unemployment.

**Great Depression & Economic Theory**

* The Great Depression led to major changes in economics.
* Keynesian economics challenged the conventional wisdom of classical economics.
* Understand the distinctions between both schools in terms of: key time period, price flexibility, savings, key side of the market, market tendency & government intervention.

**Chapter 15: Federal Budgets**

Government Outlays: trend over the last 50 years

Difference between mandatory outlays & discretionary outlays

Mandatory outlays: > 60% of total expenditure.

Social Security & Medicare/Medicaid are taking an ever-growing share of the federal budget because:

1. People are living longer.
2. There are far more workers retired & drawing down entitlements.
3. Baby boomers have gone into retirement.

Workers per social security beneficiary was 5:1 in 1960; it’s now c. 3:1 and will be 2:1 by 2050.

**Possible solutions to the Social Security and Medicare Problems**

1. Increase retirement age from 67 to 70.
2. Adjust benefits using CPI instead of average wage levels (best years from working years).
3. Means-test for benefits.

**Government Outlays**

* Trend is upward over time.
* Huge spikes during the Great Recession & COVID-19 recession.

**Budget Deficits v Budget Surplus**

* Understand the relationship between outlays & revenue.
* U.S. federal budget typically in deficit.
* Gap has widened over time.
* Spending way above long-term average; revenue stagnant.

Deficits v Debt

Deficit: outlays > revenue

National debt: total funds borrowed by the government. Part owed to the public; part owed to government agencies.

Debt to-GDP ratio is the most common metric used for putting debt into perspective. It shows the ability of a nation to pay down debt.

**Foreign Ownership of U.S. Debt**

* 70% of debt held domestically.
* 30% of debt held internationally.
* Foreign lending increases the supply of loanable funds & helps lower interest rates.