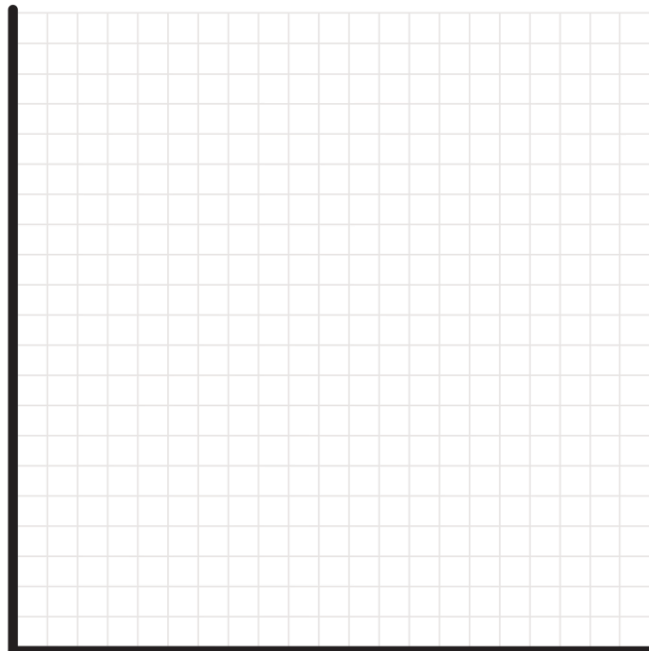


AP Macro Review: A Look at Japan

Part I: Current Economic Indicators

	2023 Q1 Data	Source
Potential Growth Rate	.62%	Bank of Japan
GDP Growth Rate	1.8%	FRED
Inflation Rate	3.3% (as of July 2023)	Bank of Japan
Unemployment Rate	2.6%	FRED
Natural Rate of Unemployment	3%	NBER (page 1)

- Based on the data above, which state of the economy (positive output gap, negative output gap, or full employment) would you characterize the Japanese economy as being in? Use the data to defend your response.
Potential Answer: The Japanese economy is in a positive output gap as the GDP growth rate exceeds the potential growth rate and the unemployment rate is less than the NRU, which indicates there is no structural or cyclical unemployment.
- Based on your answer to #1, draw a correctly labeled graph of the Japanese economy using the AD-AS model.
Answer should show a positive output gap.



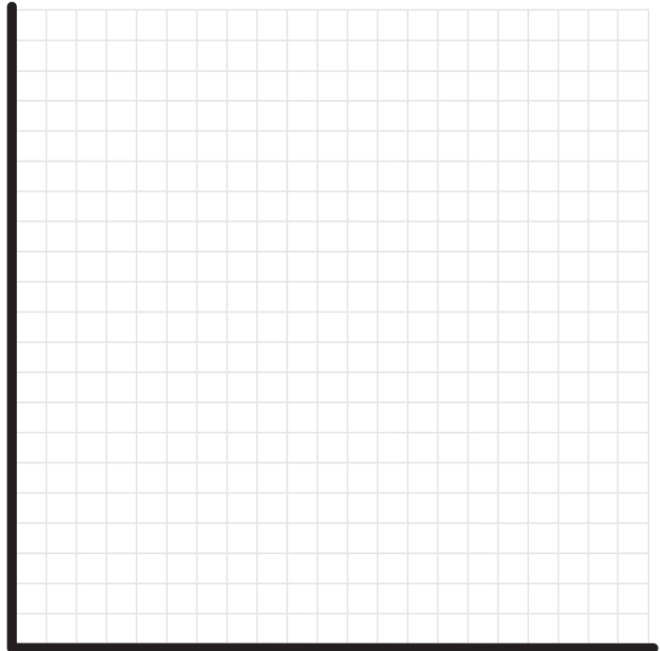
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Part II: Shocks to the Japanese Economy

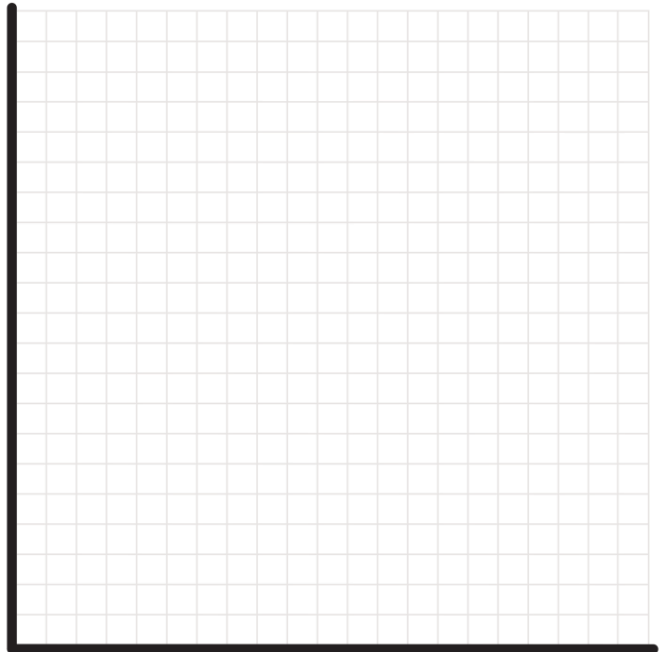
1. Japan lies on two plates, the Pacific plate and the Philippine plate, which make it particularly vulnerable to earthquakes. In 1923, Japan experienced the Great Kanto Earthquake, which had a magnitude of 7.9. As a result of this earthquake, over 105,000 lives were lost and it caused serious damage to the infrastructure of Japanese cities. Draw the SR impact of this earthquake on the Japanese economy using the AD-AS model. Assume Japan starts at full employment.

SRAS will decrease. Since the earthquake damaged infrastructure, this likely caused the price of inputs for firms to increase. Additionally, the loss of life would decrease the amount of labor available, which would also result in the price of labor increasing.



2. To assist in the fight against climate change, many Japanese companies have invested in green technology to reduce their carbon footprint and improve the efficiency of their production processes. Draw the impact of this increased investment on the Japanese economy using the AD-AS model. Assume Japan starts at full employment.

AD will increase. This is an increase in business investment.

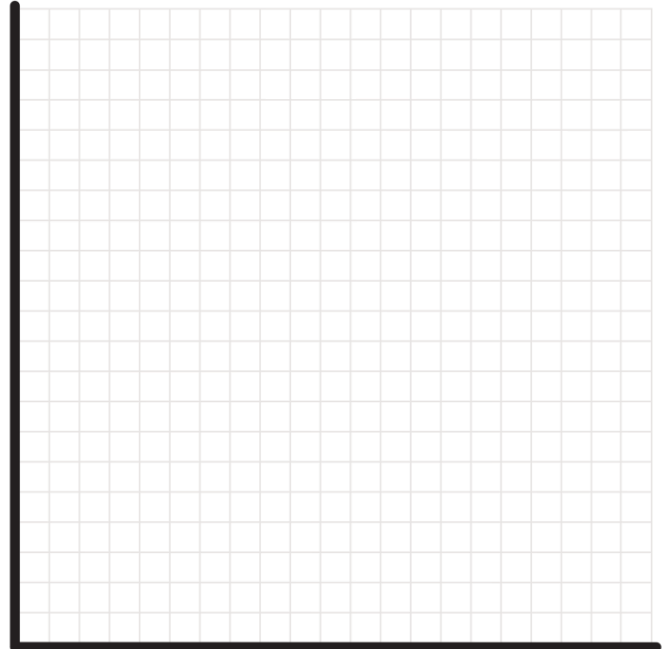


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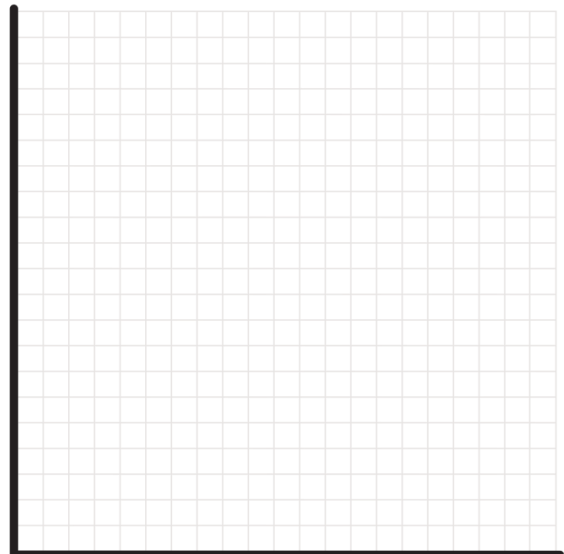
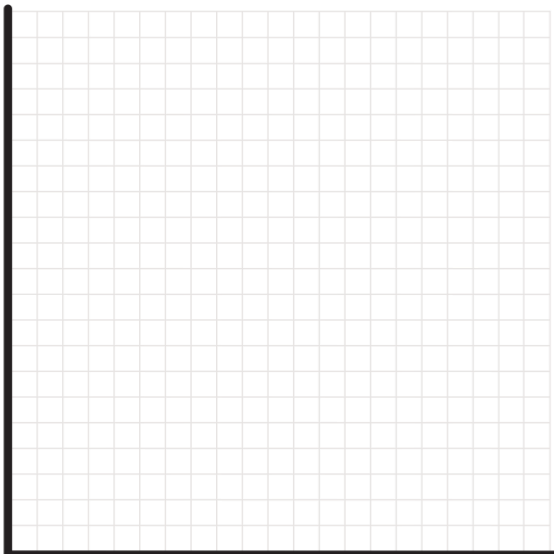
3. Japan's fertility rate has been declining since the 1970s and currently is about 1.4 children per woman. Draw the SR impact of this declining fertility rate on the Japanese economy using the AD-AS model. Assume Japan starts at full employment.

SRAS should decrease. Declining fertility rates will reduce the # of workers available, which will cause the supply of labor to decrease. A decrease in the supply of labor will result in the price of labor (wage) to increase.



4. Since 2016, the Bank of Japan has practiced expansionary monetary policy by lowering its key interest rate. Using the money market model (assume the BOJ is operating under a **limited reserve system**), demonstrate how the BOJ accomplishes this low interest rate. Then draw the impact of the expansionary monetary policy on the Japanese economy using the AD-AS model. Assume Japan starts at full employment.

Money Market Graph – Supply should shift to the right, resulting in the interest rate decreasing.
AD/AS Model – Students should shift AD to the right.



5. Since March 2022, the US Federal Reserve has aggressively raised interest rates in the United States from near 0 to over 5% as of 2023. In contrast, the Bank of Japan has maintained its expansionary monetary policy stance and has left interest rates at -.1%.

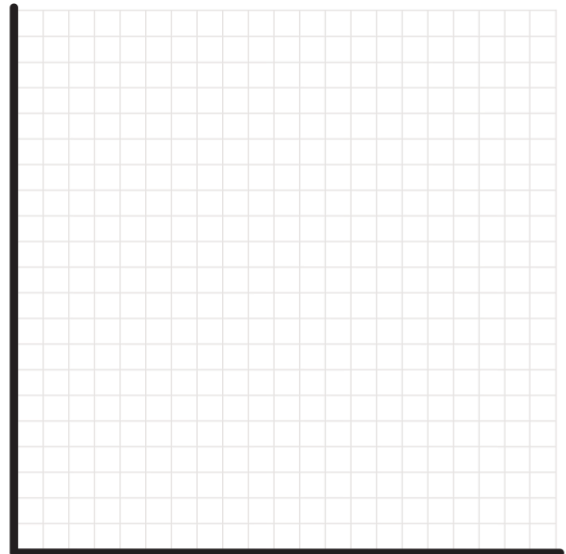
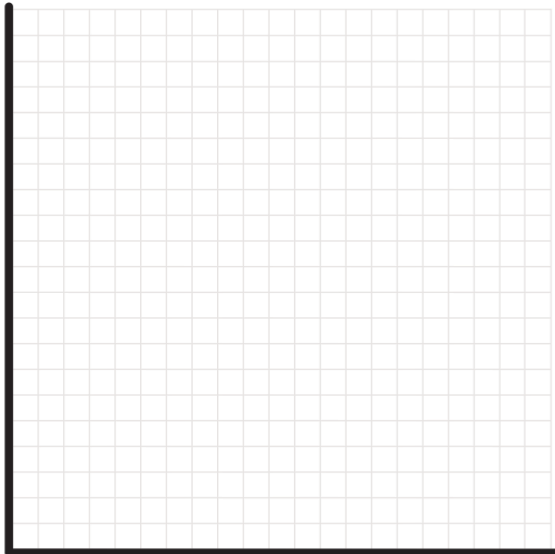
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- a. Draw the impact of the US' relatively higher interest rates on the foreign exchange market for both the USD (right graph) and the Japanese Yen (left graph). Under each graph, write whether the currency appreciates or depreciates.

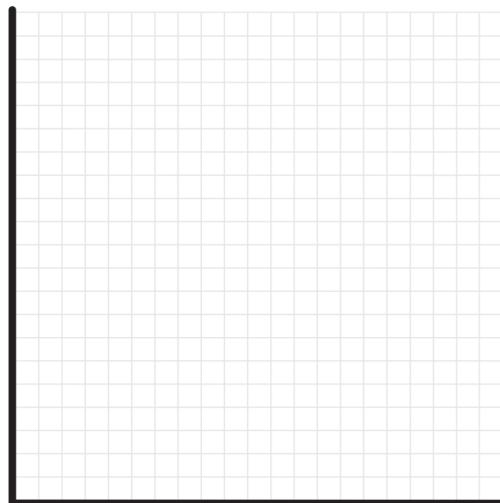
Market for USD — Demand for USD should increase and supply of USD should decrease. (USD appreciates)

Market for Yen — Demand for Yen should decrease and supply of Yen should increase (Yen depreciates).



- b. Solely based on what occurred to the value _____ of the currency, draw the impact of the currency's appreciation/depreciation on the Japanese economy using the AD-AS model.

AD should increase. A cheaper Yen means exports should increase, which will increase Net Exports.



6. Japan's public debt to GDP ratio has risen from 63% in 1990 to 255% as of 2021.

GDP ratio has risen from 63% in

- a. On the right graph, draw the impact of this increase in government borrowing on the market for loanable funds.

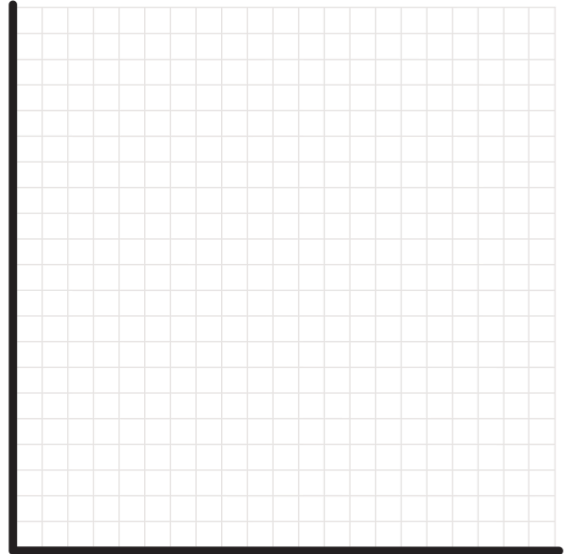
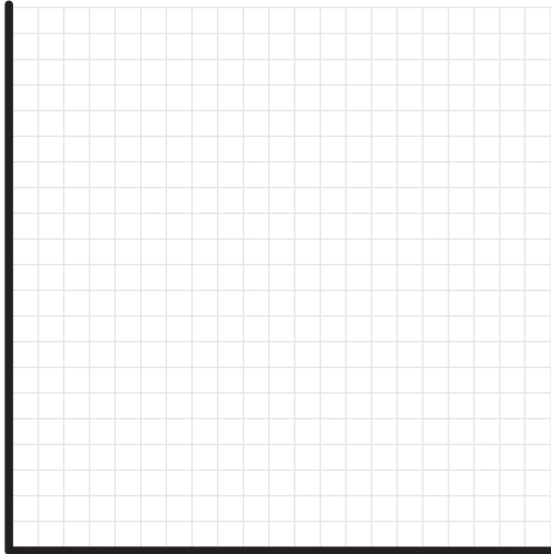
Market for Loanable Funds — Demand for Loanable Funds should increase OR Supply of Loanable Funds should decrease. Interest rates should increase (crowding out).

Name: _____

Date: _____

- b. Based on what occurred in the market for loanable funds, draw how this affects the Japanese economy using the AD-AS model. Assume the Japanese economy starts at full employment.

AD/AS Model — AD should decrease. Higher interest rates discourage investment/consumption.



Part

III:

Long Run Impacts on the AD/AS Model

7. Assume the Japanese government decides to increase its public expenditures on tertiary education from its current level of .49% to 1% in 2024. Draw the SR and LR impact of this fiscal policy on the Japanese policy using the AD-AS model. Assume the Japanese economy starts at full employment.

AD should shift to the right (increase in government spending) + increases in SRAS (education increases productivity of workers) + LRAS should increase as well.

