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Macroeconomics Final Exam

1. **What did Keynes mean by "Paradox of Thrift? Why is this notion central to Keynes' argument for the necessity of government intervention when an economy experiences a serious reduction in economic activity?**

The *paradox of thrift* describes the phenomenon in which an increase in savings (by individuals) often leads to a decrease in spending (output), which causes a recession, lowering total spending (GDP). It is a paradox because when it comes to individuals, saving is meant to increase the amount of money you have. However, when applied to the economy as a whole, individuals and firms saving (decreasing spending and investment) begins a downward spiral that depletes the GDP. This is related to the *fallacy of composition* which is the error of assuming that what is best for an individual is best for the whole.

This downward spiral is called a Keynesian multiplier and occurs as followed:

⇒ Individuals fear a recession and begin saving. As a result, consumption (spending) falls
⇒ The GDP is lowered. This leads to a decrease in demand (demand curve shifts left)
⇒ Less demand leads to less need for labor/resources, causing unemployment/layoffs
⇒ Demand slides further back and the cycle continues

It is this tendency for the economy to downward spiral when people begin saving (and stop spending and investing) that Keynes argues for government action to prop up aggregate expenditures, balance out the GDP equation and prevent the GDP from decreasing. In other words, Keynes thinks in times of low consumption and investment, government should increase spending to offset the effects.

GDP = C (consumption) + I (investment) + G (government spending) + (X – M)

If C and I both fall, and (X-M) stays the same, in order for GDP to be unaffected, G must raise to keep the equation balanced.

2. **If an economy is experiencing an unemployment rate of 12% and an inflation rate of 2% what macro policy (ies) might you suggest? Would your recommendations change if the numbers were 12% unemployment and 12% inflation? Explain.**

Inflation is a continual rise in price level. When something is experiencing inflation, say a particular asset like real estate, it means that confidence in the asset is increasing, but the value of the asset is not necessarily increasing. This leads to increasing investments in the asset. It can quickly spiral out of control and become an asset price bubble (that will inevitably burst when confidence in the asset falters).

The main lesson from the previous paragraph is that expectations of inflation play a key role in the inflationary process. When people expect price levels to continue rising, they invest more in that thing, and the price level rises. When they worry that the price level is about to drop, they pull their investments, and the price level falls.

An inflation rate of 2% is very low. Having low inflation actually benefits the economy in some ways. For example, having a changing unit of account helps the country maintain certain illusions that keep people happy (for example, a falling wage may not look like a falling wage with low inflation). With these illusions in place, relative price changes can occur more easily than they otherwise would have. The illusions also prevent people from pulling investments because the country appears wealthier and better off than it really is, which encourages investment. Another benefit is that a low inflation rate allows for more expansionary monetary policy by allowing for negative interest rates. If the nominal interest rate is 0%, and the inflation rate is 2%, then the real interest rate is actually -2%. An inflation rate of 12% is significant. It means price levels are rising too quickly.

Unemployment shows us how many more workers are available to add to the workforce. An unemployment rate of 2% is extremely low, and it would be difficult to get any lower (some people will always choose not to work, people can be between jobs at any given time, and there will always be people who cannot work for various reasons). An unemployment rate of 2% tells us that the economy is probably near potential output, as almost everyone who can work is. An unemployment rate of 12% tells a different story. It shows that a great deal of those who can work, aren't working.

In the case of a 12% unemployment rate and a 2% inflation rate, I would suggest expansionary macro policy. The goal of expansionary fiscal policy is to increase the GDP and therefor decrease unemployment (AD curve shifts right). This can be done through *increasing* government spending or *decreasing* taxes. The goal here is to provide businesses owners with more money, with the hopes they will hire more people and invest more in their business. This process can increase inflation, but since the inflation rate is so low this is of little concern.

In the case of 12% unemployment and 12% inflation, I would suggest contractionary monetary policy by increasing the interest rate (AD curve moves to the left, lowering real output, and lowering price level, or decreasing inflation). It should be noted that contractionary policy will not help unemployment and may make it worse for a period of time.

3. What is money? What determines the value of money?

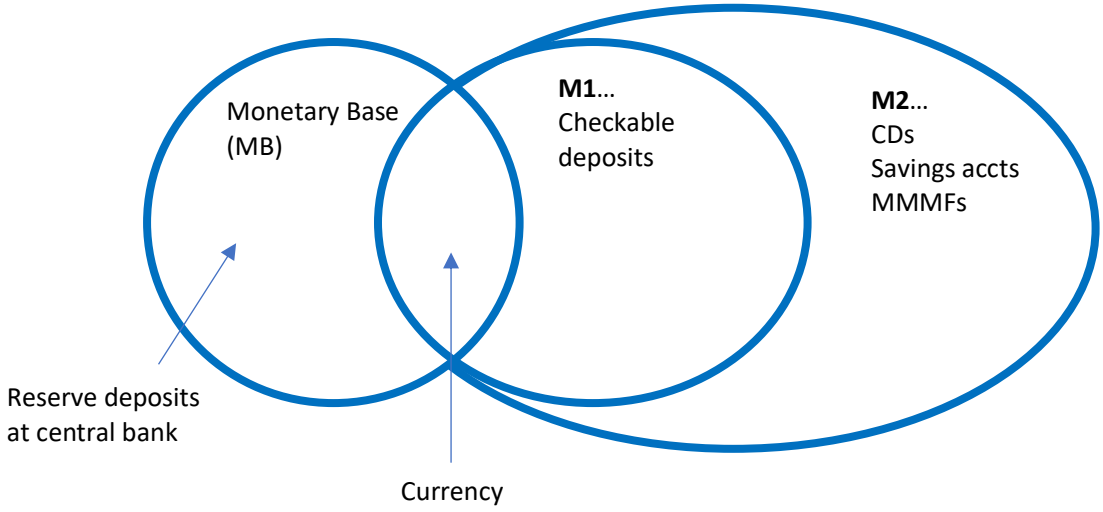
Money is a highly liquid financial asset that's generally accepted in exchange for other goods, used as a reference in valuing other goods, and can be stored as wealth. It is considered highly liquid because it is easily exchangeable into other assets and goods.

The main functions of money are as a medium of exchange, a unit of account, and a store of wealth. As a medium of exchange, it allows for trading without bartering. As a unit of account, it serves as a measure of value, and makes it easier to compare the price of one good compared to another. It is a store of wealth because you can hold your wealth in money to use later. It should also be mentioned that as long as money is a medium of exchange, it automatically acts as a store of wealth.

The value of money is determined by the faith of the people using it, or in other words its general acceptability to others. As long as sellers are willing to accept money for payment of their goods, money has value. Therefore the value of money is determined by the supply and demand for money. Money is supplied by the Fed (who print/create money, and then influence the supply with reserve ratio requirements). This is intersected by the demand for money which is determined by many factors. Inflation and deflation effect the value of money. By looking at exchange rates you can determine how much one currency can buy of another currency.

The equation of exchange states the following: MV=PQ (where M=money supply, V=velocity of money, P=price level, and Q=quantity of goods sold).

Money can be any of the following (listed in order from most to least liquid): currency, checking accounts, savings accounts, and money market mutual funds. The US money supply can be explained as follows:



4. **Two US Senators, Libby and Coney, agreeing upon the dangers of the ever increasing federal deficits and debt, discussing policies to reduce deficits in the future without cutting spending, cuts are political suicide.**

   Libby: "It is obvious, if not enough tax revenue to cover expenditures, raise taxes to increase revenue."

   Coney: "You are crazy, the best chance of reducing future deficits is to cut taxes."

   How can two seemingly rational individuals propose completely opposite solutions?

It is extremely common for people, especially politicians, to disagree (sometimes drastically) on the proper solution to an economic problem. In general, Republicans tend to argue for lower taxes and minimal government intervention in the economy, while Democrats tend to argue for more government spending and intervention and raising taxes.

In the case of the increasing federal deficits and debt, both options (cutting and raising taxes) have pros and cons that are complicated and not limited to economics. For example, while raising taxes would indeed increase government revenue which would help cover expenditures and potentially pay off debt, tax increases are not something the average individual is hoping for. Tax increases leave individuals feeling like they have less money in their pockets for spending, investing, or a rainy day. Depending on what is being taxed (income, property, goods, etc.), individuals can feel as though they are being stolen from by the government. Because tax money is used for welfare programs, lower-middle class Americans can feel gypped by the system, as they don't qualify for government help but still have to help those poorer than them. For people barley getting by, this is a difficult reality.

Tax increases are not politically attractive. When democrats campaign, they often don't come right out and say they want to increase taxes. They focus on the benefits the tax revenue will create. Republicans tend to openly campaign for tax cuts, as this is attractive to individual Americans as well as large corporations.

The argument for cutting taxes holds logic as well. Cutting taxes makes individuals and firms feel as though they are saving money or have more money available for spending and investment. The hope is that this will lead to increased confidence in the economy and more people and firms will spend and invest, boosting the economy and increasing the GDP. Going further, it is theorized that by raising the total GDP, taxes will naturally rise to make up for revenue lost through the tax cuts. In history, however, this has not exactly panned out (consider the Reagan era for example.

Cutting certain taxes could also be desirable to foreigners hoping to do business in America. A domestic example of this can be seen in Texas, where low property taxes are extremely attractive to tech companies who usually do business in Silicon Valley. This has led to an area of Austin, Texas being deemed "Silicon Hills" as more and more tech companies are moving their businesses from California to Texas.

5. **As an economist, how would you assess the federal government's actions in response to the economic slowdown, or near shutdown, carried out primarily through the Federal Reserve Bank, of injecting up to $6 trillion into the economy? Where did the $6 trillion come from? What are the benefits of this policy and what potential negative effects do you feel might arise in the future?**

If I were to assess the actions of the federal government in response to COVID-19 and the related economic (near) shutdown, I would say that mostly they did the best they could, given the circumstances, but regardless there will be long term consequences for these actions that may affect generations to come.

The $6 trillion injection into the economy comes from a combination of fiscal and monetary expansionary policy. The fiscal piece comes from the US Treasury issuing government bonds to the private sector in order to finance deficit spending. The government uses the money it made issuing bonds to cover government spending, in the case of COVID-19, the government is spending money on income support programs such as unemployment insurance, small business assistance, and pay roll guarantees.

The monetary piece comes from the Fed buying Treasury bonds held by private banks. Banks prefer to hold bonds instead of money, because bonds carry interest and earn the bank a profit, while holding money does not. The Fed attempts to change banks portfolios by purchasing the Treasury bonds that banks hold. This leads to banks holding more money, which, as mentioned banks don't like to do. Because they don't like holding money, they will be incentivized to lend this influx of money, because loaning money earns them a profit.

People want bonds when they have a high interest rate, because they will provide the highest return on investment. Therefore, bond prices and interest rates vary inversely. When the Fed buys mass amounts of Treasury bonds, demand raises quickly, which raises the price level of the bond. Since bond prices and interest rates vary inversely, when the price level of bonds rise, the interest rate will be lowered. By purchasing Treasury bonds, the Fed lowers the interest rate (in this case to 0%).

It should be noted that just because banks have money that they want to lend, there is no guarantee individuals or firms will be interested in borrowing, even with attractive low interest rates. Fear of unemployment or recession can be enough to scare people away from investment when the future is unclear. The hope is that flooding the banks with money will lead to borrowing and investment (and therefore an increase in the money supply), but it is possible people will not want to borrow, and the money supply will not increase.

The benefits of the government's action are mostly related to immediate survival. Our economy has not completely crashed—yet. Many Americans received stimulus checks or unemployment benefits which helped people temporarily (or permanently) unemployed because of COVID-19 to pay their bills or buy groceries. The stimulus bill attempted to help small businesses, though many (including me) feel like the bill did not provide enough for this group.

The main consequence we will see will likely be inflation. When you lower interest rates, you boost the economy, but risk inflation. A related consequence could be the depreciation of

the US dollar. This could happen due to low interest rates, which are not attractive to foreign investors, leading to a lack of confidence in the US dollar. This means the demand for our currency shifts back, depreciating its value. This wouldn't fare well for the US because we import so much of what we consume, and with a depreciated US dollar, our imports would become more expensive (our exports would also become more competitive, but this would not offset the increase in price of imports).