Title: Principles of Economics

Money Growth and Inflation

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So in the previous chapter, we discussed the absolute amount of money that was available in the economy.

Now, we will look at the determinants for the amount of money and consequences of the amount of money.

We will distinguish long run and short run consequences.

First of all, let′s start with the long run case.

We can say that in the long run, the amount of money in the economy only affects prices in the economy, but not the real economic transactions that take place in the marketplace.

So, in the previous chapter, we studied money supply. We said that the central government and the banking system create money.

We should also think that the demand for money comes from consumers in the economy and from borrowers, so we should think that the interest rates that the borrowers have to pay on the loans will determine how much investors and borrowers are willing to take from the banks.

And the average level of prices in the economy will determine how much consumers are willing to borrow and really even how much investors are willing to borrow to invest in the economy.

And as I said before, really, money is just like any other commodity and in the marketplace we can imagine a downward sloping demand curve for money.

Now, this graph taken from the textbook is... might be a little bit confusing.

It has two vertical axes.

So let′s look at each of these axes one at a time.

Let′s look first at this graph here. It shows a negative, maybe inverse relationship between the quantity of money on the horizontal axis and value of money on the vertical axis.

And here, the simple interpretation is that the more money there is available in the economy, the less people value money.

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We could think of the theory of consumer preferences, we could think that simply holding more money in their pockets or when consumers are richer, they have lower value of marginal dollar in their pocket.

So, we may think that this is an intuitive relationship between quantity of a commodity and a consumer′s value of that commodity.

On this side of the graph, we see, let′s say we see a positive relationship.

Here, it is confusing that price level is low at the top of the graph, and price level is high at the bottom of the graph.

But generally we would say that there is a positive relationship between the amount of money in the economy and price level.

Right? If the amount of money is high, price level tends to be high as well.

The simple intuition is that the more money there is in the economy, the more money we have, that the more money chases the same amount of commodities and services that are produced in the economy.

So, consumers will have more money chasing after the same stock of goods and services and they will bid up prices for those goods and services.

So the positive relationship makes intuitive sense.

And we will say that in the long run, there is this dichotomy between real variables in the economy and nominal variables.

Real variables are the amount of output, employment rate, the amount of...the effective amount of investment and saving that goes on.

Nominal variables are the properties in the marketplace expressed in current monetary units.

And we say that in the long run, the amount of money has only effect on nominal variables through the changing price level. But money does not have an effect on real variables.

So we can say that in this view of the economy, money is neutral. The amount of money in the economy has no effect on the actual amount of economic activity in the marketplace.

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And this idea of monetary neutrality should make intuitive sense from what we discussed in previous chapters.

In the previous chapters when we discussed national output, productivity, unemployment rate, we talked about real determinants of these variables.

We didn′t discuss prices or the amount of money as determining the levels of output, unemployment and productivity.

Especially in chapter 25, when we discussed productivity, we said that the amount of output in the economy and productivity of inputs only depends on the amount of factors of production available in the economy.

If it depends on the capital, labor and so on, the price level or the amount of money is not a factor in production.

So we should think that there is some... that given the resources available in the economy, the output that can be produced is fixed.

And...so no matter what the price level or what the amount of money that the government prints out should not have an effect on the amount of output in the economy, at least in the long run when the market can adjust.

In the next few slides, I will talk a little bit about problems in short run adjustments of the economy.

But let′s look at this relationship coming from the classical dichotomy.

So, we can summarize our understanding by writing this relationship between velocity of money, or we can say that this is the number of transactions or the number of times that a typical money bill is being exchanged in the economy during a time period.

As a function of how many goods and services are there in the economy to be exchanged, and what′s the money stock.

So we can say that if there is a certain amount of goods and services available in the economy at certain market values or market prices, but we have only this much money stock, in order for all of these goods and services to be transacted or sold in the marketplace, each typical dollar has to be exchanged V number of times.

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That′s the simple interpretation of this equation. If we right it a little bit, we can say that the amount of money times the number of times that it is exchanged in the economy, should be equal to national output in nominal terms.

So if there is an increase in the quantity of money either because of the workings of the banking system or because of government policy, in this equation we should say that if M increases, one of these three variables will also have to change.

Which one will that be? Well, I′ve said so far that the amount of output should be relatively constant in the economy.

It is given by the real factors of production not by monetary, not by prices or the amount of money available in the economy.

So if the government suddenly increases the amount of money that should not have an effect on output.

How about velocity of money? Here, you should think that well, if we have constant amount of output in the economy, and if consumers and producers have relatively stable preferences or relatively stable habits, velocity of money should be relatively constant over time.

You should think that consumers have relatively stable pattern of spending, consumers make similar amount of transactions roughly every year, so velocity is relatively constant.

As a result, if M in this expression increases we would expect P, the price level in the economy, to be most easily changeable so if the government increases the quantity of money in the economy, the first and greatest reaction that we should observe is the change in the price level.

That′s the central finding in this chapter, that at least in the long run when we can ignore some problems with adjustment, if everybody in the economy understands that the amount of money has increased, all consumers and producers will adjust their behavior and the amount of real behavior, real variables in the economy will not change. And only price levels will change in the long run.

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So basic conclusion should be that in the long run, money is neutral, money has no effect on people′s behavior, there is no inefficiency cost by an increase or decrease in money supply.

But it turns out that at least in the short run that is not the case.

Increasing money supply and creating inflation can result in real inefficiencies or resources being wasted.

We can talk at least about six reasons why inflation has real...causes real problems in the economy in the short run.

One, the shoeleather cost, if there is inflation in the economy, consumers don′t want to hold too much cash in their hands, they try to keep money in the bank so that it would earn interest or people want to go to market place very often to exchange money for real goods before the value of money depreciates.

In that way, we can think that inflation changes consumer′s behavior and introduces some distortion.

Menu costs, if prices in the economy keep changing, producers have to update their menus, they have to check prices with their competitors frequently and this introduces real resource burdens on producers.

Relative price variability, if there is some uncertainly about the amount of money in the inflation going on; prices of different goods can increase at different rates which affects consumer′s preferences between different commodities, producer′s preferences between what exactly to produce.

This result in shuffling of resources in the economy and it could happen that some resources are not being used in their best uses.

So resources might not be applied to their most beneficial applications and real inefficiency or distortions can happen.

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Tax distortions, in the real world, government usually taxes nominal values.

Government usually taxes nominal prices or nominal incomes or nominal capital gains or interest earnings regardless how much inflation there was.

If there is high inflation in the economy, and the government taxes fixed amount of interest earnings, that could create distortion because people would not be willing to invest in longer term capital because investing money in longer term capital means that the value of investment loses, depreciates more overtime and investors might be more willing to invest in shorter term projects rather than longer term projects.

So again, there is some reshuffling between investment between longer term projects and shorter term projects and this may not be completely efficient.

So you could think that this is similar to relative price variability because on the consumers side or producer side, decision makers are making a little bit different decisions because of the relative prices, relative price difference between different options.

Confusion and inconvenience, if decision makers don't know how much inflation there will be, they might hold on too much cash or too little cash, and this might result in inefficient decision making by people in the economy.

Also if we think that there are some broader damages because of the unhappiness or confusion that people face, we could think that that′s an additional source of inefficiency due to unknown inflation rate.

And finally inflation causes arbitrary redistribution of wealth, we can think that if we compare lenders and borrowers, we can think that borrowers benefit from inflation.

They borrowed money when it was its value was high, and they have to repay relatively similar amount of money when the value of money is very low.

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On the other hand, lenders put the money in the bank when the money was very valuable and receive after some period of time received money which is relatively worthless and they are becoming worse off.

So if we value welfare, if we care about equity in the society, we might be worried about this source of this consequence of inflation as well.

Let me run through this slides but I have basically discussed them already.

Finally I forgot to mention that I've mentioned that inflation causes some confusion.

If is not certain what the inflation rate will be, it could be very difficult to compare money today, the value of money today and the value of money in the future and in that sense, decision makers in the economy could make wrong choices.

So, I already said that even in the present, some commodities or ways of investing could become cheaper than others and people in the economy could change their decision making could change their purchases or investment decisions even among the options today.

Now because it is unclear what the value of money is in the future, decision makers could also choose wrong option in their intertemporal choice.

When people choose whether to consume today or consume in the future or whether to invest today or invest tomorrow, it is important to know value of money or prices in the future and if future price levels are unknown, people could be making wrong decisions.

So, this concludes our discussions of quantity of money and the way that money is created and why money is demanded in the economy.

We've discussed the consequences of the increase in money supply in the economy and we distinguished the long-run and short-run consequences.

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In the next chapter that we will cover chapter 31, we will look at, we will step back and look at the overall economy and we will try summarize everything we've learned so far.

We will talk about national output, employment level, prices and we will continue this discussion of differences between short-run and long-run economic equilibrium in the market place.