

Title: Principle of Economics

Saving and investment

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Let's recall from chapter 23 that the country's gross domestic product can be written as a sum of 4 different levels of consumption or expenditure.

The consumption by private households, the consumption or the investment carried out by companies and corporations in the economy, consumption by government and net exports.

If we assume that the economy is closed so that it doesn't trade with other countries, or alternatively we could assume that the amount of imports just equals the amount of exports so that net exports are effectively 0.

We can simplify this expression by saying that the amount of output or income in the economy is a sum of private consumption, corporate investment, and government purchases.

And if I rearrange this expression a little bit, I can write the stream of money on consumption on one side of the expression, and the amount of investment in the economy on the other side of the expression.

So the left-hand side of the expression gives us what's left over from the nation's income after we subtract private consumption and government consumption.

So you can think that the similarity between C and G is that both are thought to be short-term consumption streams, no value for the future.

And on the right-hand side, we are told that the difference between income and short-term consumption is the amount of investable resources.

So we can say that the left-hand side of this expression represents the amount of saving by members of the economy, and the right-hand side is the amount of investment.

And here, we should think that, that means that if all of the leftover parts of income, all of the leftover resources are effectively invested in the economy.

We will have this equality of saving and investment in the economy.



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As a side note, you should think that this equality of saving and investment may not hold if individuals in our domestic economy can invest money abroad, in which case saving could be greater than the amount of investment in the domestic economy.

So you can think that if the balance of investment between the domestic economy and the rest of the world is not 0, this equality may not be satisfied.

In other way, another implicit assumption that we are making here is that all of the resources that exist in the society are put into use.

So, people don't put the leftover of their income under the pillow.

They, consumers always go to the bank, and save the money with the bank where the funds can be further invested.

So when we talk about the national saving, all of the saving done in the economy, we can distinguish private saving from public saving.

Private saving is just the difference between individuals' income, private consumption, and the taxes paid to the government, and public saving is tax revenues minus expenditures or consumption done by the government.

And we can further say that public saving can be positive, which happens when the government runs a budget surplus.

Or it can be even a negative number if the government runs a budget deficit.

Let's talk a little bit more about the private market for loanable funds.

So, in this discussion, we will talk about how much funds are available for investment by private individuals, and how much funds private or corporate industry demands after we ignore the role of the government.

I will turn to the role of the government toward the end of the discussion.

So we will say that how much individuals are willing to supply in the loanable funds market, and how much companies want to demand, want to land out, depends on the interest rates that exist in the market place.

We should think that the interest rate is the effective price or the effective benefit that savers receive on saving, and it's the effective price that borrowers have to pay on their loans.

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And, in particular, here we could distinguish nominal interest rate from real interest



rate, and we should realize that both the lenders and borrowers will account for the effect of inflation when they make saving and investment decisions.

So it's the real interest rate that determines the value of saving and investment in different time periods, rather than the nominal interest rate.

So now we can draw the supply and demand diagram for the loanable funds market, where we recognize that the individuals who save money are willing to save more money if the real interest rate in the economy increases.

It should be intuitive.

It comes from the law of supply that the greater prices or the greater interest rate is in the market place, the greater incentives individuals have to save money.

On the other hand, the demand for loanable funds by corporations is a downward sloping line.

That comes from the law of demand that when prices increase that reduces the incentive of companies to take out loans.

And, so we can think that in this model, with the existing supply and demand curves for loanable funds, the market price will adjust to the level where the quantity supplied is just equal to quantity demanded, just like in any market.

And so we will say that the equilibrium real interest rate will get established at this level.

Thinking about the real world.

You may think that if banks are setting their interest rates, the interest rate that they choose, will equate the amount of funds that individuals are willing to save with the bank with the amount that other banks or corporations are willing to take out from the bank.

If the government tries to influence the loanable funds market, there are a number of tools that the government can use to do so.

And here I want to remind you of the previous chapter, chapter 25 which said that investment increases the amount of production and productivity in the marketplace.

So the government might have an incentive to intervene in the loanable funds market to promote more investment.

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One policy would be to give incentives to lenders, perhaps through a subsidy to lenders.



Another one would be to provide a subsidy for borrowers such as investment tax credit under which corporations would get reductions of their tax rates and so on if they take out loans.

Finally, the government can directly intervene in the loanable funds market by either taking out money from the loanable funds market or injecting money into the loanable funds market.

We will talk about these three policies in turn.

So, one possible policy is to offer savings, saving incentives by giving lenders a subsidy.

The government effectively lowers the supply curve in the market.

Why is that? Think of a particular consumer who is requiring a particular interest rate to save a marginal unit of funds.

If the lender is expecting a subsidy from the government, he, he doesn't require this interest rate anymore.

He would require a lower interest rate because he knows the lender knows that in addition to this interest rate, he will receive a subsidy from the government.

So this is the supply curve of loanable funds effectively falls by the amount of the subsidy.

Similarly, if the government offers investment incentives, notice that the demand curve shows us the maximum willingness to pay of corporations for loans.

If the corporation expects a subsidy from the government, the corporation knows that it could be even a little bit more for the loan.

Because it will receive some of the payments back from the government.

So we can say that with a subsidy for investment, the demand curve for loanable funds goes up by the amount of the subsidy.

And finally on the previous two slides, I want you to think that taxes and subsidies are kind of indirect, market-based policies introduced by the government.

There is a direct, kind of command and controlled policy where the government directly intervenes in the loanable funds market.

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If the government borrows money from the private loanable funds market, suppose the government takes out this much money from the loanable funds market to fund a particular budget deficit.



You should think that in that case, the supply curve in the private loanable funds market will shift to the left because fewer resources, so fewer loanable funds are available at all possible interest rates.

And as a result, the market equilibrium in the private loanable funds market will change from this original point to this final point.

We can say that by borrowing money from the private loanable funds market the government crowds out private borrowing, because the amount of borrowing in the private loanable funds market falls.

And a small side note on this topic is that really the amount of crowding out is not the entire amount of government borrowing.

We said that the government borrows this much funds from the private loanable funds market but we would notice that the equilibrium private amount of borrowing only falls by this much.

So, as a side note, I want you to think that the amount crowded out is not the same, it's slightly less than the amount borrowed by the government to fund budget deficit.


And, as another reminder, I want you to keep in the back of your head that this discussion applies to only the private loanable funds market, so it ignores what the government does.

Here I also want you to think that this amount of saving and investment is only talking about private activities.

We don't know what the government does, with the amount of borrowed.

If the government invests it in a beneficial way in the economy, this topic of crowding out may not be detrimental to GDP and productivity in the economy.

Only if the government uses this borrowing in a wasteful way, then we should be really concerned about this topic of crowding out.

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So now that we have covered national income, national output and the growth of these variables over time.

We will look at some particular sectors of the economy.

In the next chapter we will look at the labor market, and unemployment rate.

In the next few chapters, we will look at the financial market and the amount of money in the economy.

And finally we will bring all of this discussion together to discuss aggregate supply



and aggregate demand in the economy and the government's role in that discussion.