May 2020

recitation_IS19_20160420_Seg01.pdf

Participants: IS19 (ita, dark shirt) S1 (male student, not pictured)

Context: IS19 is teaching a recitation at the whiteboard.

0:00
xxx IS19: ((undecipherable, the microphone is interfering))
0:22
xxx and uh (.1)
xxx investment function.
xxx ((pause))
xxx and also uh (.)
xxx the values for the government purchases and the tax.
xxx which are both (.) one hundred.
xxx so first we need to derive the i s curve.
xxx so,
xxx I believe you are (.) all familiar with the procedure.
xxx I mean we just begin from this (.) equation,
xxx the income equals to the expenditure,
xxx which is consumption plus investment plus government
xxx expenditure,
xxx (.2)
xxx so we plug (.2) the function for consumption and investment
xxx into the (.) righthand side.
xxx (.3)
xxx so it's two hundred plus,
xxx ((pause))
xxx three quarters times,
xxx y minus (.) the tax (.1) which is one hundred in this case.
xxx and investment (.1) two hundred minus (.) twenty five r,
xxx plus (.1) government expenditure which i-is one hundred.
xxx and from this equation we can (.) get a (.) relationship
xxx between the income and the interest rate.
xxx so the result is
xxx (.3)
xxx one thousand seven hundred minus (.)
xxx one hundred times the interest rate.
xxx ((pause))
xxx and also we need to plot it (.) in a graph,
xxx so.
xxx ((pause to draw))
xxx so the y axis is interest rate and the (.) x axis is (.)
xxx income.
xxx r-uh-f-

xxx and we need to plot it from a range of zero to eight for
xxx interest rate.
xxx (.3)
xxx so:
xxx when the interest rate is zero,
xxx from this equation, we know the income is (.) one thousand
xxx (.) seven hundred. (.3)
xxx and when it is eight,
xxx ((pause))
xxx the income will be
xxx ((pause))
xxx I mean-
xxx ((pause))
xxx nine hundred.
xxx so. (.3)
xxx here.
xxx ((pause))
3:00
xxx so we
xxx (.3)
xxx connect these two (.) points
xxx and this is our i s curve.
xxx ((pause))
xxx and for (.) part b,
xxx (.2)
xxx we are given a (.) real money demand,
xxx ((pause to write))
xxx money supply,
xxx and uh price level.
xxx which is two.
xxx so we need to solve the (equilibrium) in the (monetary
xxx market)
xxx for this (.) uh (l m) curve.
xxx so in- in equilibrium the (.1)
xxx money supply (.1)
xxx equals to the (.) money demand.
xxx (.1)
xxx so we plug in the values,
xxx it’s (.) one thousand over two equals to
xxx the expression for money demand.
xxx ((pause))
xxx so we (arran-) we (arranged) this equation we can get
xxx (.2)
xxx the equation for the (l m) curve.
xxx so it’s y equals to five,

xxx and we plus (.1) one hundred r.
xxx and we plot it in the same graph,
xxx again from the range of eight to- uh: eight to zero.
xxx so when r is zero,
xxx (.2)
xxx y equals to five hundred.
xxx (.2)
xxx and when (.) r is (.) eight,
xxx y equals to (.3) thir-thirty-thirty eight hun-hundred.
xxx ((pause))
xxx so.
xxx it's something like this. ((draws))
xxx this is our l m curve. (.3)
xxx and for part c,
xxx we need to find the equilibrium point.
xxx so we just solve these two equations together,
xxx S1: ((coughs))
xxx IS19: and we can solve for the equilibrium levels.
xxx ((pause to write))
xxx so for the i s curve, (.)
xxx we use this equation.
xxx so y equals to
xxx ((pause))
xxx one thousand seven hundred minus (.)
xxx one hundred r.
xxx and for the l m curve,
xxx it's y equals to (.)
xxx five hundred plus (.) one hundred r.
xxx (.2)
xxx we have (.)
6:00
xxx two equations for two unknowns.
xxx so we can solve for the equilibrium.
xxx (where) the value for the income is
xxx ((pause))
xxx eleven hundred.
xxx and (.) for the interest rate is- it is (.2)
xxx six.
xxx so this point is-
xxx ((pause))
xxx it's our equilibrium.
xxx (.2)
xxx a:nd, (.1)
xxx for part d,
xxx ((pause))

xxx now we have a fiscal policy.
xxx the government produces (rates) from (.) one hundred to
xxx one hundred fifty.
xxx so the government expenditure go from (.)
xxx one hundred to one hundred fifty.
xxx so the change (.) in the government expenditure
xxx delta g equals to (.) fifty.
xxx and remember that when there is a- when there's a g,
xxx (or) the change in the government expenditure,
xxx we have a (.) change in eq- government purchase,
xxx then this whole (.) i s curve
xxx will shift (.) with a value of (.)
xxx one over one minus,
xxx marginal propensity for consumption,
xxx times this (.) change.
xxx and in this case the mpc equals to (.) this value.
xxx point seventy five.
xxx so it equals to
xxx one over one minus point seventy five times fifty.
xxx which is (.) two hundred.
xxx and you can (.) check this.
xxx so that means this whole curve will shift to the right (.)
xxx by two hundred units.
xxx ((pause))
xxx and it will be parallel to the old i s curve.
xxx ((pause to draw))
xxx so this is our (.) new i s curve.
xxx denotate as (.) i s prime.
xxx ((pause))
xxx and also we can (.2) express it by equation so.
xxx since it increase by two hundred,
xxx so the original one is y equals to (.1)
xxx uh this value minus one hundred r.
xxx and now since it increase by two hundred,
xxx now this new curve becomes
xxx (.3)
xxx this (.3)
xxx i s prime (.1) becomes y equals to
xxx (.2)
xxx one hundred- uh one thousand nine hundred plus-
xxx minus one hundred r.
xxx ((pause))
xxx because it shift to the right by (.) this value.
9:01
xxx by two hundred.

xxx so we add this two hundred to this number.
xxx and to solve for the-
xxx (.2)
xxx for the equilibrium,
xxx for the new equilibrium,
xxx we use the uh previous l m curve.
xxx which is this one.
xxx so it's y equals to (.)
xxx five hundred plus (.) one hundred r.
xxx and by solving these two equations,
xxx we can get (.) the income (.) equilibrium is (.1)
xxx twelve hundred.
xxx and interest rate equilibrium is (.1)
xxx seven.
xxx ((pause))
xxx so this new equilibrium.
xxx ((pause))
xxx twelve hundred and seven.
xxx ((pause))
xxx °so.
xxx ((pause))
xxx this is our (.) i s curve in part a, and
xxx ((pause))
xxx this is the l m curve °in part b.
xxx ((pause))
xxx so in the next part,
xxx we are given a (.) monetary policy.
xxx so the money supply↑
xxx goes up from (.) one thousand to (.) one thousand two
xxx hundred.
xxx so now we will get a new (.) uh l m curve.
xxx but um the i s curve will be the same.
xxx because there is-
xxx (no) there is only a monetary policy.
xxx so in order to solve for the new l m curve,
xxx again we use these (.) uh formula that
xxx the equilibrium the money (.)
xxx demand equals to the money supply.
xxx but now we have a new money supply which is
xxx one thousand two hundred. (.1)
xxx over the price level two.
xxx which equals to the (.) money demand
xxx and it's also the same.
xxx (.2)
xxx so: by solving this, we can get a new l m curve.

xxx (.3)
xxx so that we call it l m prime,
xxx which is y equals to (.) six hundred plus (.) one hundred
xxx times °r.
xxx ((pause))
xxx a:nd
xxx since the money supply (.) goes up,
xxx this will cause an l m curve shift to the right.
xxx so,
xxx in the graph,
xxx uh (.) this curve this l m curve,
xxx will shift (.) to the right.
xxx ((pause to draw))
12:00
xxx so this is our (.1) new l m curve.
xxx and to solve for the new equilibrium,
xxx under this monetary policy,
xxx so we nee- we need to solve for the intersection of
xxx (.2)
xxx this new l m curve (.)
xxx with this (.) uh original i s curve.
xxx so we need to solve for this point.
xxx (.2)
xxx because now we only have a monetary policy.
xxx we do not consider this (.) two policies together.
xxx so the two (.) equations we use is
xxx the original (.) i s curve
xxx which is (.) y equals to one thousand s-seven hundred
xxx minus one hundred r.
xxx and we use the new (.) l m curve.
xxx y equals to six hundred plus (.)
xxx one hundred r.
xxx and then we can solve the equilibrium,
xxx (.2)
xxx and we can get the income equilibrium is
xxx (.3)
xxx one thousand one hundred fifty.
xxx ((pause))
xxx and the interest rate is (.)
xxx five point five.
xxx (.3)
xxx so this (.) intersection is
xxx ((pause))
xxx eleven fifty and (.1) five point five.
xxx ((pause))

xxx a:nd for (.1) part f,
xxx ((pause))
xxx with the (.1) initial value for
xxx (.3)
xxx uh money ((undecipherable)) fiscal policy suppose that uh
xxx the price level
xxx (.1)
xxx rises from two to four.
xxx so,
xxx (.2)
xxx now the only difference is in the price level.
xxx so that may cause a (.1) change in the l m curve.
xxx so. (.2)
xxx initially the (.) i s curve is (.)
xxx y equals to (.)
xxx one thousand seven hundred minus one hundred r.
xxx a:nd now with the- (.) with the new uh price level,
xxx and the same uh (.) money supply,
xxx which is one thousand,
xxx we can get a new l m curve.
xxx so:.
xxx first we can derive it (.) again using the same formula,
xxx so
xxx (.3)
xxx money supply↑ (.) divided by price level,
xxx equals to
xxx ((pause))
15:00
xxx money demand.
xxx one minus one hundred r.
xxx and by solving it (.) we can get the new l m curve is
xxx y (.) equals to
xxx (.2)
xxx two hundred fifty plus one hundred. (.)
xxx times the °interest rate.
xxx ((pause))
xxx and by solving these two equations,
xxx we can get
xxx (.2)
xxx the equilibrium
xxx (.3)
xxx is uh:
xxx income is nine seventy five and interest rate is (.) seven
xxx point twenty five.
xxx so because the price level (.) rises from two to four,

xxx the real money supply actually decrease.
xxx so this l m curve will shift to the left.
xxx so that’s why w-we will get a (.) lower income and a higher
xxx interest rate in equilibrium.
xxx ((pause))
xxx so that’s the answer for what happens (.) with respect to
xxx this (.)
xxx rise in price level.
xxx ((pause))
xxx so that’s for (.) part f and for the last part,
xxx we need to derive the aggregate demand curve.
xxx ((pause))
xxx °so.
xxx ((pause to erase))
xxx so to de- (.) to derive this aggregate (amount),
xxx we also need to find out what is the
xxx (.3)
xxx i s curve and the l m curve.
xxx the equation for these two curves.
xxx but here notice that (.) for the aggregate (amount),
xxx we have- now we are in the long run.
xxx so the price level is- is not fixed.
xxx now it is flexible.
xxx so we cannot plug into our certain level for the price.
xxx and instead we use this (.) just use this p to denote the
xxx price.
xxx so for the i s curve now what we (.2) get is
xxx I mean the- i-initial one
xxx y equals to (.) one thousand (.) seven hundred minus (.)
xxx one hundred r.
xxx and for the l m curve,
xxx ((pause))
xxx we need to write it in the- (.1) in the sense of the
xxx uh (.3)
xxx supply equals to demand.
xxx so now that supply is (.) one thousand over p,
xxx because now p is flexible.
18:01
xxx a:nd
xxx the amount is the same,
xxx so that’s the two (.) equations we use (.) to solve for the
xxx aggregate demand.
xxx and (.) from these two uh equations we can cancel out (.)
xxx uh the interest rate.

xxx and what we left is a relationship between the income y and
xxx the price level.
xxx so that’s exactly what- what we want to get.
xxx so.
xxx ((pause))
xxx (and we uh:) (will need) the procedure and (.2)
xxx so following this (.) logic you can get
xxx um the aggregate (.2) demand curve is (.)
xxx y equals to (.) eight hundred fifty, plus (.1)
xxx five hundred over p the price.
xxx so it’s a function of y with respect to the price level.
xxx and (.) let me draw this curve in a graph
xxx ((pause))
xxx so now we have a- have the same x axis.
xxx as in the ((undecipherable)) model.
xxx which is the income.
xxx but for the y axis, it is different.
xxx it is (.) now the price level instead of the interest rate.
xxx (.3)
xxx a:nd
xxx (.2)
xxx to plot this graph,
xxx we only need to get some- to (catch) some features of this
xxx function.
xxx so by the- by some simple (.) derivation we- we can see
that
xxx m: this income is decreasing in the price level.
xxx and also this function is convex.
xxx so that’s the two most important features that we need to
xxx get
xxx to draw uh- to plot this curve.
xxx so (.) basically it looks like (.) this (right)
xxx so it is our aggregate demand.
xxx ((pause))
xxx and to make it more precise we can (.) mark some points on
xxx this curve so
xxx for example when the price level is (.) ten,
xxx ((pause to draw))
xxx your income would be (.) nine hundred.
xxx (.2)
xxx and when your price level is (.) two,
xxx ((pause))
xxx your income level- uh your income would be
xxx (.2)
xxx eleven hundred.

xxx so.
xxx ((pause to draw))
21:00
xxx ((pause))
xxx so it's our a d curve.
xxx (.2)
xxx a:nd what happens to this (.) a d curve (.) uh when we are
xxx facing the fiscal and monetary policy as described in part
d
xxx and e,
xxx so.
xxx (.2)
xxx for the fiscal policy,
xxx we will get a different i s curve. and for the monetary
xxx policy, we will get a (.)
xxx different l m curve.
xxx ((pause))
xxx so basically we just analysis it using the (.) same
xxx procedure but
xxx the only difference is that (.) we use a- a price level- a
xxx fix- flexible price level p here.
xxx instead of a (.) fixed value.
xxx ((pause to erase))
xxx so under the fiscal policy,
xxx ((pause to write))
xxx we'll get a different i s curve.
xxx we would use this i s prime curve.
xxx which is (.) this one.
xxx so y equals to (.)
xxx nineteen hundred minus one hundred r.
xxx and we use the original l m curve.
xxx but (.) pay attention that here
xxx uh
xxx (.3)
xxx we- we use the p instead of the level two.
xxx so we need to derive it.
xxx so.
xxx remember the (.) money supply is one thousand,
xxx and price level is p.
xxx denotate by p.
xxx and
xxx the (money demand) is y minus (.) one hundred r.
xxx ((pause))
xxx and from these two equations,
xxx (.2)

xxx you can get a function (.) of y
xxx in (.) the interes- uh- in the price level.
xxx so (.) what we get is (.) nine hundred fifty,
xxx plus five hundred over p.
xxx (.2)
xxx so (.) by comparing these two (.) equations,
xxx for the aggregate (demand) we can see that
xxx uh (.) this new- (.) I mean this- (.) this new a d curve is
xxx just shifted (.)
xxx to the right by this previous one.
xxx ((pause to draw))
xxx so this old curve shift to the right.
xxx ((pause to write))
xxx so this is our new (.) aggregate (.) demand
xxx under the fiscal policy.
24:00
xxx ((pause))
xxx and it shift to the right by one hundred.
xxx because of- you see the difference in the constant right?
xxx it is one hundred.
xxx ((pause))
xxx a:nd (.)
xxx then under the monetary policy,
xxx ((pause to erase and write))
xxx the i s curve is the original one, which is
xxx y is equal to (.)
xxx one thousand seven hundred minus one hundred r.
xxx and l m curve is the- (.) is the one (.) after the (.)
xxx policy- after the monetary policy.
xxx so the new money supply is
xxx one thousand two hundred.
xxx it’s this one.
xxx divided by price level equals to the real money supply-
xxx uh amount.
xxx y minus- uh: y minus one hundred r yes.
xxx and (.) by eliminating the interest rate,
xxx we can get the aggregate (demand)
xxx is y equals to (.) eight hundred (.) fifty plus
xxx six hundred over p.
xxx ((pause))
xxx so (.) in the graph, (.1)
xxx this m- this may also cause a (.) shifting to the right (.)
xxx from the (.) previous- from the original curve.
xxx so.
xxx ((pause to draw))

xxx so this may be our
xxx ((pause to draw))
xxx so this is our (.) aggregate (amount) under the monetary
xxx policy.
xxx ((pause))
xxx because we have a increase in the money supply,
xxx so this- (.1) this whole- uh the whole aggregate demand
will
xxx shift to the right.
xxx and the sames things happens when we have a (.)
xxx increase in the (.) in the fiscal- wh-when we have a
xxx stimulating fiscal policy.
xxx when the (.) government purchase increase or- (.1)
xxx or the tax decrease.
xxx ((pause))
xxx so
xxx that is for (.) the last part.
xxx so do you have any question about the first one?
27:00
xxx ((pause))
xxx so for question two and three, I will just briefly talk-
xxx discuss about the-
xxx some key points
xxx about these two questions and
xxx you need to read the slides and the textbook
xxx and to write down your own understanding.
xxx so.
xxx ((pause to erase))
xxx first for question two,
xxx ((pause))
xxx first you- you need to answer what is the (.)
xxx (short run) policy object.
xxx ((pause))
xxx I mean ob-ob-objective.
xxx so it is simple because the objective is just to: stabilize
xxx the economy.
xxx ((pause to write))
xxx because from the analysis of the i s (r m) model,
xxx ((pause to draw))
xxx so all we are discussing is about when we face a shock,
xxx what can the government or the central ((undecipherable))
do
xxx to- I mean to mitigate the- the shock and to let this (.)
xxx income level go back to with previous level.
xxx ((pause))

xxx so that is the objective for the policy, (.)
xxx and second you need to answer the difference between active
xxx (.3)
xxx a:nd passive policy.
xxx ((pause))
xxx so the difference is only about the timing of the-
xxx of responding to certain shocks.
xxx so for example if you respond to the shock immediately,
xxx in a short time, then it is an active policy.
xxx but if you wait for a while and you want to check what is
xxx the problem,
xxx you want to wait to see what- what is actually happens,
xxx and you do not conduct a policy immediately,
xxx then it is a p- I-I mean a passive policy.
xxx so it's only about-
xxx um.
xxx I would say the (.) timing of the (.2)
xxx of conducting the policy.
xxx ((pause))
xxx but I mean do not just copy it you can write your own
xxx understanding as long as it (.) makes sense.
xxx so.
xxx ((pause))
xxx and then with your arguments for and against the (.1)
active
xxx policy.
xxx ((pause))
30:00
xxx for and against.
xxx so for just means uh the advantage of uh conducting active
xxx policy.
xxx so one reason may be that,
xxx uh:
xxx (.3)
xxx so if we: uh
xxx if we respond to certain shocks actively- immediately,
xxx then it may (.) uh (.) it may reduce the-
xxx I mean reduce the cost of the whole society because
xxx I mean if we have a recession,
xxx if we wait for sometime and (it may cause) a recession,
xxx and then (.) it will cost a lot for this whole-
xxx uh for this whole society.
xxx it may cause the hardship for the public,
xxx and based on this i s- i s ((undecipherable)) model,
xxx we can figure out what we can do when we are facing a-

xxx a shock.
xxx so if there is a shock that cause this i s curve (.)
xxx shift to the left,
xxx then we can for example increase the money supply,
xxx so that this income level will go back to its initial level.
xxx so that's- that's what we can do.
xxx so if we can I mean conduct the right policy,
xxx then it makes sense to conduct some active policy.
xxx so that is one reason (.) for the active policy.
xxx a:nd (.)
xxx against (.) I mean the disadvantage of (.)
xxx this kind of policy is that there are-
xxx I mean there are lags
xxx so and this lags comes from two parts.
xxx one is inside and the other one (.) comes from the outside.
xxx ((pause to write))
xxx so inside lags and outside lags.
xxx ((pause))
xxx so inside lags means (.)
xxx first (.) you may need some time to-
xxx to figure out what is the- what is the specific shock.
xxx and (.) then after you find out what is the shock,
xxx and (.) you need some time to (pass a law) to-
xxx to really conduct- to implement that policy.
xxx and both of these two aspect will take some time.
xxx and outside lags means after you implement the policy,
xxx it may take some time to- for the policy to really work in the economy.
xxx and (.) there are some (.) transition period (.)
xxx during the implement-implementation of the policy.
xxx so for example if the government
xxx um conduct a fiscal policy,
xxx and it want to uh increase its uh government purchase
xxx to build some in-infrastructure,
xxx then,
xxx so they may need some time to hire new workers,
xxx and to buy some materials from the-
xxx uh from the (plants),
ccc and plants may also need some time to buy
xxx new machines and to hire (.) new workers-
33:01
xxx new workers all of these will take some time to work.
xxx so that are the outside lags.
xxx ((pause))

xxx so:,
xxx (.2)
xxx that’s the argument.
xxx and
xxx (.2)
xxx finally we need to answer