May 2020

recitation_IS19_20160224_Seg01.pdf

Participants: IS19 (boy, blue and white shirt), S1 (male student, not pictured), S2 (male student, not pictured), S3 (male student, not pictured), S4 (male student, not pictured), S5 (male student, not pictured), S6 (male student, not pictured)

Context: IS19 is teaching a recitation at the whiteboard.

0:00

xxx IS19: so okay now let's begin our recitation.
xxx but first I want to (.) tell you my r- my new office hour,
xxx I've already posted this on blackboard
xxx under the announcements,
xxx and I want to just remind-
xxx remind you once more just in case.
xxx so now it's on Monday, from one thirty to two thirty,
xxx yeah and (.) the other one is on Tuesday,
xxx four to five pm,
xxx they are in the same room
xxx s six twenty
xxx at the sbs building.
xxx so
xxx now let's begin to talk about this week's homework.
xxx so.
xxx so the first ((undecipherable)),
xxx so now the question is that one ((undecipherable))
xxx ((undecipherable)) from the present into the future.
xxx so what is this-
xxx what is this (cause) for this function of money.
xxx so as we know uh
xxx money has three functions.
xxx ((undecipherable))
xxx so (.) the first one is (.2)
xxx uh (.) store of value
xxx and the second one is the function as (.) medium of exchange
xxx (.2) and the third one is as (.)
xxx a unit (.) of (.) account.
xxx and from the textbook we can see that,
xxx um. the statement in this question is just um the-
xxx the definition of the function of this store of value.
xxx that it transfers ((undecipherable)) and power
xxx from the present into the future.
xxx that means that if you hold the money,

xxx then you can buy uh
xxx any good (.) at-at any time.
xxx or you can buy it (at the moment), or buy it in the future.
xxx and- (.)
xxx so that's- that's why it's called the store of value.
xxx so.
xxx um.
xxx that means um:
xxx for example if you choose to hold the money,
xxx then-then maybe
xxx uh one month later, you can buy
xxx uh (.) approximately the same amount of good.
xxx but if you choose to hold some uh physical good
xxx for example such as the apple,
xxx then the apple may-may turn bad,
xxx after a month.
xxx so:
xxx it is not a very good way to store the value.
xxx and (.) holding the money is-
xxx relatively an easy way to- to hold the value.
xxx so that's for the function (as) the
xxx store of value.
xxx and the second one is the medium of exchange
xxx that means that we can use the money to buy goods or
xxx services.
xxx so.
xxx for example if you only hold the apples,
xxx then if you want to buy some pears,
xxx then (.) the-
xxx the individual who owns the pears may not want your apples.
xxx so the transaction may not (.) happen.
xxx but if you take- hold the money,
3:01
xxx then the money can serve as a medium of exchange
xxx and you can buy any good as you want.
xxx so that is its function as a medium of exchange.
xxx and
xxx the third one is the-
xxx uh is the unit of account.
xxx so a-all the prices are
xxx labeled by the-by-uh- by the money
xxx and- or it can be used to record the (data).
xxx so uh for example a car may be uh
xxx twenty thousand dollars
xxx and uh an apple may be one dollars.

xxx so (.) that's the third function of money.
xxx so now let's go through the four questions
xxx the first one is store of value which is the right choice.
xxx and the third and fourth is the other two functions of
xxx money.
xxx and for b uh in the index of inflation,
xxx so money is now tied into the index of inflation.
xxx and
xxx so
xxx can you name another index (.)
xxx that can serve as an (.) index of inflation?
xxx from what you have learned?
xxx ((pause))
xxx S1: cpi?
xxx IS19: yeah. °mhm
xxx but uh the growth rate of cpi to be precisely.
xxx because the inflation is a
xxx kind of growth rate of the price level
xxx so the cpi,
xxx uh can be used to present the- the price level.
xxx or so you can use the growth rate of cpi.
xxx or the gdp deflator.
xxx to represent the-
xxx an index of inflation.
xxx so that's for question one.
xxx ((pause))
xxx so we- we choose a for this question.
xxx and for (.) question two,
xxx of all (.) of the following that could be used as money,
xxx which would be most likely to be characterized as fiat
money
xxx so.
xxx what is fiat money?
xxx fiat money uh does not have any (.) intrinsic value.
xxx so there is no in(.)trin(.)sic value
xxx of fiat money.
xxx so when you go ((undecipherable))
xxx among all these four choices
xxx which one does not have a intrinsic value?
xxx so the first one is the-
xxx and-and what is the intrinsic value?
xxx so
xxx uh
xxx if a ((undecipherable)) as a intrinsic value then it may
xxx give you some satisfaction,

xxx or some (.) utility
xxx it may (.) give you (.) you know.
xxx ((undecipherable))
xxx so for example,
xxx for the first choice the chocolate bars,
xxx uh then it has intrinsic value because
xxx you know you can eat it.
xxx and it-it can increase your utility or satisfaction.
xxx and the second one is silver jewelry,
6:00
xxx and si-it also has uh intrinsic value because
xxx it makes you look good and makes you feel happy.
xxx so (.) that's four.
xxx silver jewelry.
xxx and the third one the gum wrappers.
xxx so basically (.) the gum wrappers
xxx uh doesn't have any intrinsic value. so.
xxx it's useless and it can- can-
xxx it cannot give any utility to you.
xxx and the last one is a salt.
xxx again, you know it can add flavor to your food and-
xxx and it can give you some satisfaction.
xxx so for this one you choose (.) c.
xxx because (.) it does not have any (.) intrinsic value.
xxx ((pause))
xxx so you have any questions ((undecipherable))?
xxx ((pause))
xxx okay.
xxx for the- for the third one,
xxx ((pause))
xxx so in the long run,
xxx if money's value increases by three percent,
xxx then (.) there are four statement
xxx and we need to figure out which one is correct.
xxx so: in order to (.) solve this problem, we need the- uh
xxx quantitative formula.
xxx which is m times v equals to p times y.
xxx and here m is the (.1)
xxx money supply. (.1)
xxx and v is the (.)
xxx velocity of money. (.3)
xxx and p is the (.) price level. (.3)
xxx and y is the real output.
xxx ((pause))
xxx so and from this uh quantitative equation we can get that

xxx uh.
xxx the growth rate of-of the money,
xxx plus (.2)
xxx the growth rate of the- of this velocity,
xxx equals to the (.3)
xxx growth rate of the price level.
xxx which is the (.) inflation. (.3)
xxx plus (.1)
xxx the growth rate of uh real output.
xxx and in the long run we don't add this-
xxx this velocity, and
xxx this real output is fixed.
xxx so the growth rate of these two terms is zero. (.2)
xxx and now as the money supply increase by (.) three percent,
xxx we know that um (.) the price level or the inflation
9:00
xxx increases by three percent.
xxx so we choose b
xxx because it says the price level increases by approx-
xxx approximately three percent.
xxx and
xxx for a,
xxx it says real income increases by approximately three
xxx percent.
xxx it's not true because in the long run,
xxx all the real terms will-
xxx all the real variables will- uh will stay constant.
xxx so.
xxx a is not true.
xxx it will be constant in the long run.
xxx the real ((undecipherable)) is the y here.
xxx and for c,
xxx the real interest rate increases by three percent.
xxx it's also wrong because it is a real variable.
xxx and it will not (.) uh change in the long run.
xxx and the last one is the
xxx nominal interest rate is now affected.
xxx so,
xxx from the-
xxx ((pause))
xxx from the fisher (.) equation,
xxx which is (.)
xxx nominal interest rate equals to the
xxx inflation plus the real interest rate.
xxx uh as we know the inflation,

xxx has increased by three percent.
xxx and this real (.)
xxx uh interest rate is constant.
xxx so this nominal interest rate will also increase by (.1)
xxx three percent.
xxx so it is not (.) affected.
xxx so we do not choose b.
xxx so the answer for (.) three (.) b.
xxx ((pause))
xxx so any questions from (.) °this? ((trails off))
xxx ((pause to erase whiteboard))
xxx a:nd next one
xxx the cost of holding money is equal to what?
xxx so the inflation rate or real interest rate or growth rate
xxx of money or um interest rate.
xxx so now, uh(.)
xxx the cost of holding money is a kind of opportunity cost.
xxx because you choose to hold the money,
xxx then you will lose a opportunity to
xxx buy some for example government bonds
xxx which can give you some interest.
xxx and- so this nominal interest that you- that you lose is-
xxx is the kind of cost of holding money.
xxx so (.) we choose (.) d which is the nominal interest rate.
xxx ((pause))
xxx and
xxx ((pause))
xxx before we choose the ((undecipherable)) a inflation rate
xxx so. again from the (.) fisher (.) equation,
xxx the nominal (.) interest rate equals to the inflation (.)
12:02
xxx plus the real interest rate.
xxx so the first two choices only
xxx covers parts of the- parts of the answer.
xxx so both of them consists of the nominal interest rate.
xxx so.
xxx it is not equal to the cost of holding money.
xxx it ((undecipherable)) just part of the cost.
xxx and for c, the growth rate of money supply.
xxx so it will
xxx only influence the inflation and (.) it is not
xxx relevant to this question.
xxx so it was c for °question four. ((trails off))
xxx okay are we (.) clear?
xxx ((pause))

xxx so:
xxx now let’s move to question five,
xxx ((pause))
xxx so one effect of an unexpected rise in inflation
xxx is that wealth it is redistributed from-
xxx uh from where to where?
xxx so from borrowers to lenders? or
xxx from ((undecipherable)) or-
xxx or from young people to old people or
xxx from ((undecipherable)) to ((undecipherable)).
xxx so.
xxx we also need to refer to this uh
xxx fisher equation.
xxx ((undecipherable))
xxx so.
xxx first we need to know that (.) you know
xxx when you (.) uh
xxx settle a-settle a loan agreement between the borrowers and
xxx the lenders,
xxx °so here is the borrowers.
xxx ((pause))
xxx here’s the lenders.
xxx so they need to set a-a nominal interest rate.
xxx which is i.
xxx and keep it fixed,
xxx and after a (.) period of-of time, the borrowers will give
xxx the money back to uh the lenders plus the nominal interest.
xxx so.
xxx when they-uh- when they set this-this nominal interest
rate,
xxx they actually use this formula.
xxx i equal to
xxx this e pi is the expectation of inflation rate.
xxx and this is the real interest rate.
xxx so for example, the lenders may want uh
xxx real interest rate which equals to r- r now.
xxx and (.) his expectation of the inflation is-
xxx is this-is this e pi.
xxx so they will set
xxx uh the nominal interest rate equals to this i.
xxx but after the-the agreement is settled,
xxx then the inflation (.) rate will-will fluctuate.
xxx so
xxx for example i time t after the agreement is settled,
xxx again from this uh fisher equation,

xxx we can get i t equals to (.1)
15:00
xxx pi t.
xxx which is the
xxx inflation rate at that moment.
xxx at period t,
xxx plus (.) the real (.) interest rate at that time.
xxx and this i t is equals to (.) i because (.) this is fixed.
xxx so now,
xxx we can do some
xxx exam- add and substract uh
xxx some items from this equation.
xxx ((pauses to write on whiteboard))
xxx and notice that this (.) e pi-
xxx so a-add and subtract that e pi from this
xxx uh inflation rate at this moment
xxx and plus the same item.
xxx and then do the same thing for the-
xxx for the real interest rate at the beginning
xxx so notice that this e pi plus (.)
xxx r now equals to-
xxx just equals to i° right?
xxx and we also have our i (.) in the other side
xxx so these two terms canc-cancel out.
xxx ((undecipherable))
xxx ((pause to erase board))
xxx so now we got
xxx zero equals to ((pause))
xxx i t minus e pi
xxx plus r t minus r zero.
xxx and we put these two terms to the other side.
xxx °so it's r zero ((trails off))
xxx so why do we need this difference in the real interest rate?
xxx because now we want-
xxx our question is about the redistribution of wealth.
xxx and to decide this redistribution,
xxx we need this real- uh- this real (return).
xxx because
xxx (when we) um concerns about uh- uh- the wealth,
xxx we need to (heed) this real payment.
xxx so.
xxx now there is an ↑un↓expected rise.
xxx so this is your expectation,
xxx and uh

xxx unexpected rise in inflation is that this term is positive.
xxx so from this equation we know this is also positive.
xxx so that implies that
xxx the real interest rate um
xxx currently at this moment,
xxx is less (.)
xxx than the
xxx interest rate that you want to earn at the beginning.
xxx that means that
xxx uh the lenders (.) you know this real return
xxx is- is paid to the lenders right?
xxx so.
xxx this means that the wealth of the lenders is (.)
18:01
xxx actually decreased.
xxx so their- the wealth is re-redistributed from the lenders,
xxx uh to the borrowers. (.1)
xxx or put it differently because there is a
xxx rise in the inflation,
xxx the money is not as valuable as before.
xxx so uh as the borrowers only need to pay back the money,
xxx so you just pay back something that is less valuable as
xxx before.
xxx so the wealth just-
xxx is redistributed from the lenders to the borrowers. (.1)
xxx or you can see more explan- ((undecipherable))
xxx from this- from the-
xxx ((trails off while pointing to his writing on the board))
xxx so we choose b for this question. and for c and d,
xxx so
xxx that's- that will depends because
xxx if the young people are lenders,
xxx then their wealth is-is redis- i-is redistributed to the
xxx (loan owners). to the old people.
xxx and the same thing-
xxx the thing is the same for the ((undecipherable)) and
xxx ((undecipherable)).
xxx it all depends on whether it is a lenders or borrower.
xxx ((pause))
xxx so.
xxx does it make sense?
xxx °(can help you)?
xxx ((IS19 is quiet when asking for questions))
xxx ((pause))
xxx so then- so let's move to question six.

xxx ((pause to erase board))
xxx so question six is about a classical dichotomy.
xxx ((pause to write))
xxx so: according to the classical dichotomy,
xxx ((undecipherable)) variables is affected by monetary policy.
xxx ((IS19 pronounces “variables” like the word “reliable”))
xxx so according to this theory,
xxx all variables can be
xxx uh (.2) divided into uh two parts
xxx real variables,
xxx and the nominal (.2) variables.
xxx so:
xxx for example the:
xxx the real wage
xxx or the real interest-
xxx ((pause))
xxx interest rate
xxx or the real gdp
21:00
xxx they are all real variables.
xxx they are measured in quantity
xxx so in some uh physical limits
xxx and uh for the nominal variables,
xxx they are measured in-in terms of the money.
xxx so for example the price level.
xxx or the (.2)
xxx nominal gdp or
xxx the nominal (wage).
xxx so that-they are defined in terms of the money
xxx so they are nominal variables.
xxx and these classical dichotomy um states that
xxx uh.
xxx the-the real variables will only be affected by the-
xxx the other real variables.
xxx and all the nominal variables will only be affected by money
xxx because they are (.) defined in terms of °money.
xxx so.
xxx this question just asks you
xxx which of these variables is affected by money, (um c).
xxx so: it’s the same to-
xxx that you’ll find which variable is nominal variable.
xxx °for this question.
xxx so the first one the price level

xxx it is the nominal variable.
xxx a:nd
xxx the second, the third, and the last one,
xxx they are all real variables.
xxx so (.) you choose a for this question.
xxx ((pause))
xxx questions?
xxx ((pause to erase board))
xxx S2: the-the nominal variables only affected by the- uh: money.
xxx IS19: yeah.
xxx ((pause))
xxx so you can.
xxx you know o- uh examine the variables separately.
xxx so when you examine these real variables,
xxx ((undecipherable)) other real variables.
xxx and when you (.) consider these nominal variables,
xxx you only consider other variables.
xxx S2: yeah.
xxx IS19: you do not need to consider other real variables.
xxx (.3)
xxx so they can be studied separately based on this (.) theory.
xxx ((pause to erase board))
xxx so now for question two,
xxx the newspaper article once reported that uh:
xxx the US economy was experienced a low rate of inflation.
xxx it said that low inflation has a downside.
xxx forty five million recipients of social security and other
xxx benefits will see their checks go up by just two point
eight
xxx percent next year.
24:00
xxx so this is um words from an article,
xxx a:nd the- (.1)
xxx the first one asks you,
xxx why does inflation affect
xxx uh the increase in social security and other benefits.
xxx so.
xxx uh.
xxx first we need to- uh we need to know how these payments
from
xxx S3: ((sneezes))=
xxx IS19: =social security are set.
xxx so
xxx as we know the:
xxx legislators always want to ensure that

xxx the real value of the payment
xxx uh (.) is the same.
xxx so. it will not be affected by the inflation.
xxx so.
xxx uh-uh as this uh nominal,-
xxx uh-uh I mean as this payment from social security is
xxx nominal payment.
xxx so. we also know that nominal payment
xxx over the price, (.) equals
xxx to the real payment.
xxx so the-the payment from the social security is a type of
xxx nominal payment.
xxx and it is adjusted by the inflation.
xxx so.
xxx both of these terms will (.) increase in the.-
xxx at the same rate of the inflation.
xxx so.
xxx that implies that this real payment
xxx will not be affected.
xxx so- and the question asks you
xxx why does the inflation affect the increase.
xxx so that's just because
xxx you know the- the government want to ensure the real value
xxx (.) of the payment (is not affected).
xxx so.
xxx if there is a-
xxx if there is a change in the price level,
xxx in the- uh in the inflation rate,
xxx then the nominal payment for.-
xxx for this- uh for this payment from social security,
xxx for this particular question,
xxx will also uh growth in the (.) same rate.
xxx so ((undecipherable))
xxx ((long pause to write on board))
xxx S4: ((clears throat))
27:00
xxx IS19: so because they want to keep the:
xxx real value of benefits (.) constant.
xxx so (.) the payment will grow,
xxx at the same speed with this uh inflation.
xxx ((pause))
xxx so that's only a reference for you and ((undecipherable)).
xxx ((pause to erase))
xxx then the (.) second one,
xxx is this effect a cost of inflation as the article suggests?

xxx why or why not?
xxx and (.3)
xxx so first what happens to in-in this-in this question.
xxx uh with the article.
xxx what is the phenomenon?
xxx so the phenomenon is that
xxx (you know) the inflation just increases in a-in a lower rate
xxx and the low (growth) rate.
xxx and that implies that the nominal payment,
xxx or the payment from the social security,
xxx also uh (.) go ↑up by-
xxx by a low percent.
xxx so.
xxx this is the effect.
xxx and is this a cost of inflation?
xxx it is not.
xxx so why is that? because.
xxx you know the payment is-
xxx h-have the same rate of the inflation.
xxx and
xxx the real payment will not be affected.
xxx so it will keep constant.
xxx (um) through different years.
xxx so.
xxx as the real payment is constant
xxx so the inflation doesn't um take-doesn't make any cost
xxx for this-uh for this society or to the economy.
xxx so.
xxx that's why (.) it is not a cost of in- of inflation.
xxx so the cost of inflation is that
xxx so uh.
xxx a higher speed of inflation may cause your real-
xxx may erode your real payment.
xxx may make your real-real value or-or the real output shrink,
xxx so but now,
xxx as the nominal payment is
xxx increase at the same speed as the inflation.
30:00
xxx so the ↑real payment will not be (.) affected.
xxx so (.) there is no cost of (.) inflation.
xxx and ((undecipherable)) ((mumbling))
xxx ((long pause to write))
xxx so.
xxx I just put it simple uh although your nominal,-

xxx your nominal payment is- uh:
xxx does not increase uh ve-very high,
xxx but- uh (.) but your real payment is the same.
xxx so your purchasing power is the same as before.
xxx so there- that's why there is a- no cost of inflation.
xxx so when you consider the cost of-of inflation,
xxx S5: ((coughs))
xxx IS19: we need to concentrate on the-on the real value.
xxx ((pause))
xxx °so are we good with this? ((points to the board))
xxx S6: yeah I'm confused on why the real payment should be fixed
xxx cause the: question didn't mention about this?
xxx IS19: yes thas is- how this nominal payment-
xxx how this payment from social security is set up.
xxx S6: so they just set up (we need) to the real payment,
xxx to like be equal [every year,
xxx IS19: [uh huh
xxx S6: and if the price- like the money (they can) like increase
xxx we just need to increase the inflation rate?
xxx IS19: ((nods)) yeah.
xxx S6: so (.) does it work to every problem?
xxx so like-
xxx IS19: no it's only work for the benefits of the social security.
xxx S6: oh so just for social security the real payment is fixed.
xxx IS19: yeah.
xxx S6: okay thank you.
33:00
xxx ((pause))
xxx IS19: okay so um the last question.
xxx ((pause to erase))
xxx in this question you are given a (.)
xxx money demand function,
xxx and k- the k-
xxx the (parameter) in this function is a con-is constant.
xxx and
xxx you know the money supply grow by twelve percent per year,
xxx and real income grow by four percent per year.
xxx and.
xxx the first part asks you what is the average inflation rate.
xxx so now we
xxx uh there we need to refer to the quantity equation.
xxx which is m v equals p y.
xxx and remember it
xxx implies the growth rate of
xxx money,

xxx plus the,
xxx growth rate of velocity of money,
xxx equals to the
xxx growth rate of price, plus the,
xxx growth rate of y.
xxx real output or real income.
xxx and from the question we know the
xxx uh money supply, (.) grows by twelve percent,
xxx and this-and this v is ((undecipherable)) and
xxx it is al-always constant.
xxx so the growth-growth rate is zero.
xxx and.
xxx also the growth rate of the real income,
xxx is (.) four percent,
xxx so based on simple calculation we know that
xxx growth rate of the price level,
xxx which is the inflation,
xxx is eight percent.
xxx so that's the answer for part one.
xxx ((pause to erase))
xxx so: for part two,
xxx it ask you how do you interpret the parameter k.
xxx so now
xxx we write down the real money demand (.) function first.
xxx so this is the parameter k.
xxx and this is you:r
xxx uh real money demand.
xxx ((pause to write))
36:00
xxx and this is your real output.
xxx ((pause to write))
xxx so this parameter is just uh
xxx the ratio of the real money demand divided by the (.)
xxx real output.
xxx so
xxx uh it means that for each amount of real output you hold,
xxx how-how much money you-you-
xxx how much money will you hold for each-
xxx uh for each a-amount of the real output.
xxx because this k is the.- (.3)
xxx is the ratio of this two things.
xxx ((pause to look at paper))
xxx °so it's
xxx ((long pause to write))
xxx so this is the interpretation for k.

xxx and what i-
xxx what is- is relationship to the velocity of the money?
xxx which is the v in that equation.
xxx so.
xxx ((pause to erase))
xxx so now we need a (condition) that the money-
xxx the real money demand
xxx equals to the real money supply.
xxx and then we use these two (.) equations.
xxx we can get uh. (.1)
xxx this k times y equals to (.1)
xxx y over (.)
xxx °g ((pause))
xxx and these two are (.) cancelled out.
xxx so. (.1)
xxx so we get k equals to one over v or
xxx we can write it as v equals to one over k.
xxx so these two parameters are reciprocal in pattern.
xxx and how to interpret this.
xxx so. remember this k is the-
xxx is the- is the amount of money that one wants to hold,
xxx for each amount of uh income.
xxx and this v,
xxx this v is the- the number of (fact) that y unit of-
xxx ((undecipherable))
xxx or y unit of the money,
39:00
xxx is used in this economy.
xxx is used for the transactions that happen in this economy.
xxx so.
xxx ((pause to write))
xxx ((mumbles while writing)) (always change) ((undecipherable))
xxx or enters the °economy.
xxx so that means that
xxx uh if-if the ↑k is more,
xxx which means that for each amount of
xxx income you want to hold less money,
xxx then. (.) the number of times a dollar is used,
xxx that- that a dollar changes (hand),
xxx it in this economy will increase will be larger.
xxx so.
xxx let me give you an example.
xxx so for example you have uh
xxx one hundred apples in this economy.

xxx and (.) the k,
xxx uh equals one uh for each amount of apple you want to hold.
xxx one dollars.
xxx and then,
xxx suppose there are (.) totally one hundred dollars
xxx in this economy.
xxx which is the m here.
xxx and let's just (normalize) this p equals what.
xxx so (.) this one hundred- this one hundred is the y,
xxx and this is the (.) k,
xxx and this is the (.) money.
xxx so.
xxx uh.
xxx and now this um velocity is uh-
xxx also equals to one.
xxx this is the v.
xxx so now let's uh assume that
xxx uh the money supply is constant.
xxx it's still one hundred dollars.
xxx but,
xxx but the-the output may-may increase to two hundred.
xxx and now
xxx and this param-parameter is also one dollars.
xxx and then,
xxx uh: ((pause))
xxx and because uh this-this y increase,
xxx and this-this m is uh-this m is constant,
xxx then you need to use uh
xxx ((talking to self)) °uh no. not this is increase.
xxx so for example the k, uh:
xxx the k decrease.
xxx so for each of-uh-each of amount of output,
xxx the amount you hold is is point five dollars.
xxx uh: then this-this v will increase because
xxx uh
xxx because as uh
xxx now you want to hold less money.
xxx then every dollar should be used twice
xxx a-as before.
xxx so it will be used for mo-for more times.
42:00
xxx ((pause))
xxx °so.
xxx ((pause))
xxx is-is it (.) clear? ((undecipherable))

xxx ((long pause))
xxx are you clear with this concept of the velocity of the-
xxx of the money?
xxx (.2)
xxx so that means that
xxx for y unit of the output,
xxx so.
xxx the times of the-
xxx of the- of each amount of money is used in this economy.
xxx ((students are packing up))
xxx so now-now let’s fo-focus on this equation.
xxx so.
xxx (nominalize) this one, and
xxx this m is-is constant,
xxx so if (.) y increases-increases,
xxx then this v also increases.
xxx because
xxx uh.
xxx each-each dollar should be used more times.
xxx because of the (.) increase in this output.
xxx ((pause))
xxx so.
xxx that’s all for today and if you have question um
xxx I'll stay for a while.