Topics for Today

1. The Domestic Money Market
   - Definition of "Money"
   - Money Supply
   - Money Demand
2. Monetary Policy Strategies
   - Money Supply vs. Interest Rate Control
3. Short-Run Equil. in the Money Market (P constant)
   - Comparative Statics
4. Simultaneous Equil. in the FX and Money MKts.
   - "Asset Market Equilibrium"
5. Monetary Policy & Exchange Rates (in Short Run)
   - (P, Y, and E^e constant)

The Domestic Money Market

What is "money"?

Money is an asset that serves 3 functions!

1.) **Medium of exchange**

- Need to overcome 'double coincidence of wants' problem

Without money, every time an Economist wanted to go out to dinner, he would have to find a chef who wanted to hear an economics lecture.
$\Rightarrow$ Starvation!

2.) **Unit of Account**

- What matters to decisions is relative prices.

Rather than say a laptop costs 500 pints and a trip to Hawaii costs 2 laptops and 1000 pints, it's more efficient to say a laptop costs \$1000, a pint costs \$2, and a trip to Hawaii costs \$2000.

3.) **Store of Value**

- Unless money holds its value over time, it cannot be a medium of exchange!

It's easy too see how intrinsically valuable, durable, and easily transportable commodities (e.g., gold + silver) might take on the role of money. But what about pieces of paper with pictures of Queen Elizabeth on them?!

Fiat Money is a confidence game. It only has value as long as people think it has value!

Practical Defn. of "Money":

Money = Currency + Checkable Deposits

What about credit cards? Are they "money"?

Money Supply

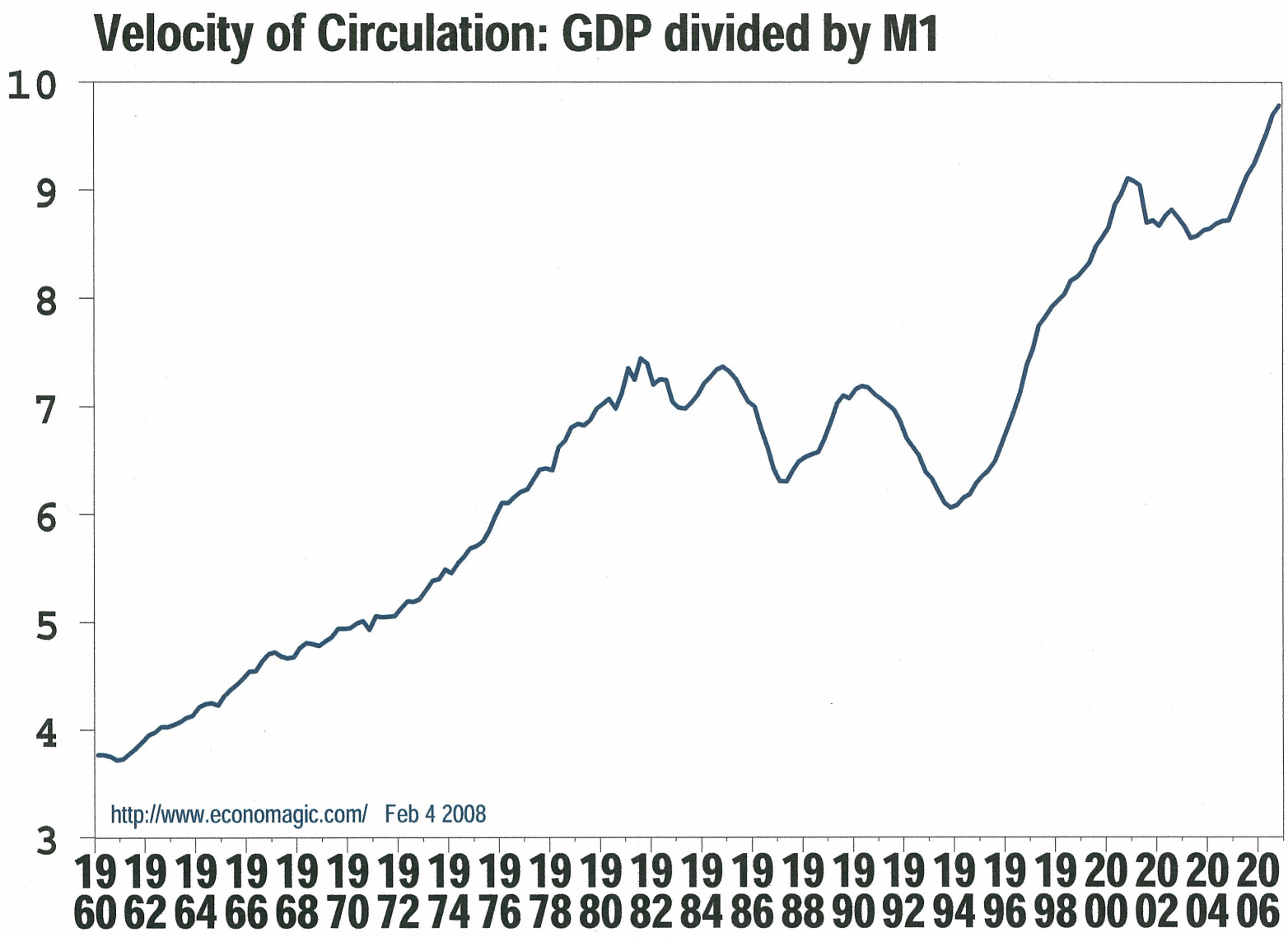
Money is nearly costless to produce (per unit). Yet it sells for a lot more. Making money is a profitable business!

Not surprisingly then, it is also a government monopoly!

Central Banks control the money supply via open market operations.

Open Market Purchase $\Longrightarrow$ Money Supply Increases
(central bank pays for its bond purchase by printing money)

Open Market Sale $\Longrightarrow$ Money Supply Decreases
(private sector pays for its bond purchase by giving money to central bank)


Velocity of Circulation: GDP divided by M1
10
9
8
7
6
5
4
3
http://www.economagic.com/ Feb 4 2008
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
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1988
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1994
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2002
2004
2006

Money Demand

Money Demand depends on 3 Key factors:

1.) Interest Rates (R).

$R\uparrow \Rightarrow$ opportunity cost of Holding Money $\uparrow$
$\Rightarrow$ Money Demand $\downarrow$

2.) Income (Y).

$Y\uparrow \Rightarrow$ More transactions
$\Rightarrow$ Money Demand $\uparrow$

3.) Price Level (P).

$P\uparrow \Rightarrow$ Goods cost more
$\Rightarrow$ Money Demand $\uparrow$

We can summarize this by writing,

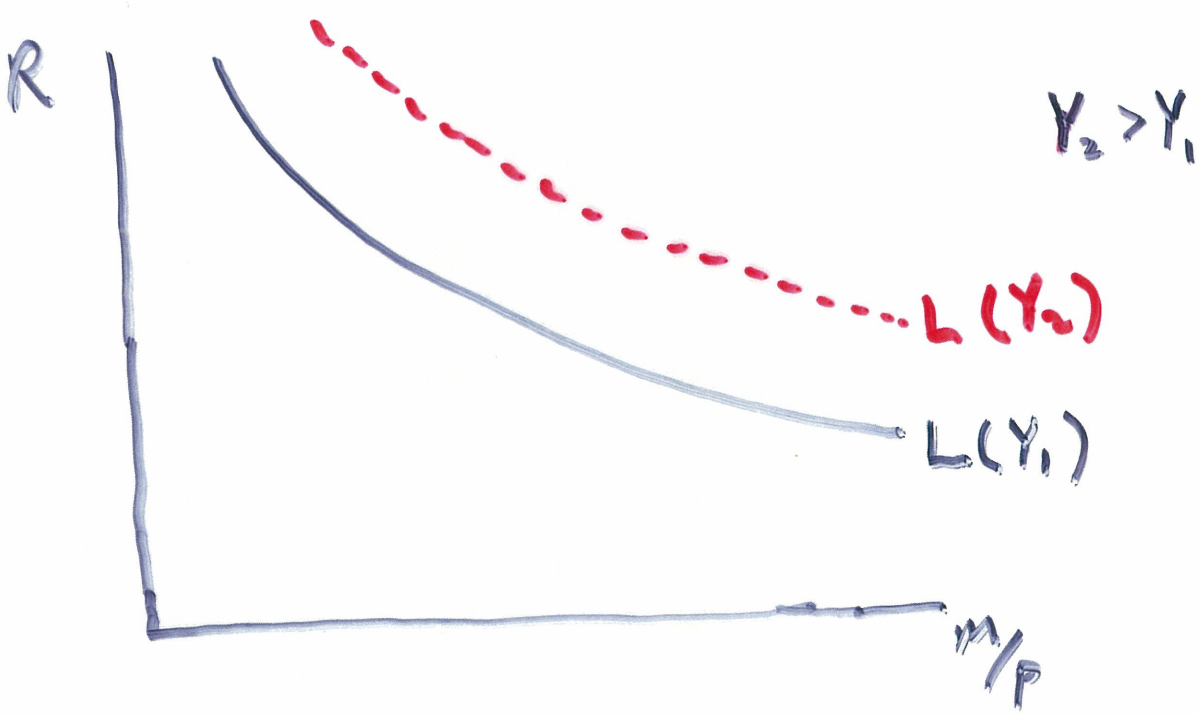
$$M^d = P \cdot L(\overset{+}{Y}, \overset{-}{R})$$

or,

$$\frac{M^d}{P} = L(Y, R)$$

demand for "real balances"

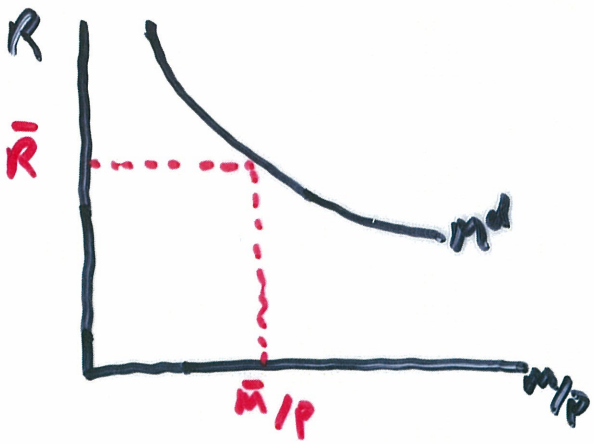
Graphically,



Monetary Policy Strategies

The Central Bank cannot simultaneously control the money supply and the interest rate. Its actions are constrained by the money demand curve.

If the Central Bank has a good estimate of the money demand curve, it doesn't matter whether it sets the interest rate or the money supply.



It can either set R directly at $\bar{R}$, which leads to the equil. money supply, $\bar{m}$

or,

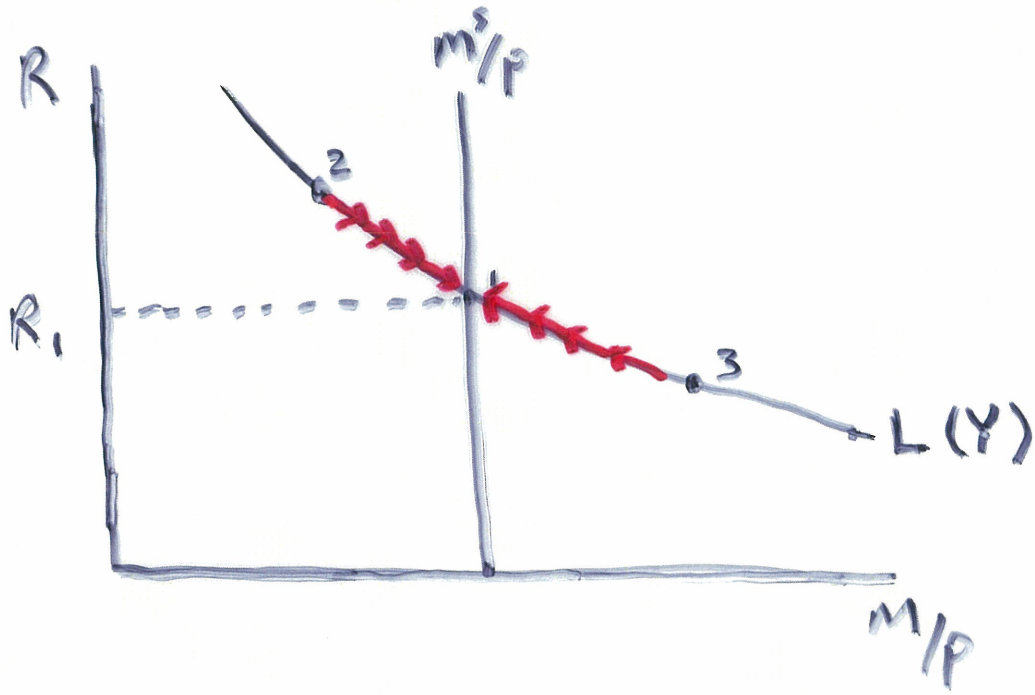
It can supply just the right amount of money, $\bar{m}$, to make $\bar{R}$ the market-clearing interest rate

In practice, money demand is variable and hard to estimate. Since interest rates are what most directly influence people's decisions, most Central Banks set interest rates, and then let the money supply endogenously adjust.

Warning: Central Banks only control directly very short-term (overnight) interest rates!

Money Market Equilibrium

Equilibrium Condition : $M^s = M^d$



At Pt. 2 : $M^s > M^d$

People try to reduce money holdings
(Buy bonds, Lend Money)

Interest Rates Bid Down
(Bond prices bid up).

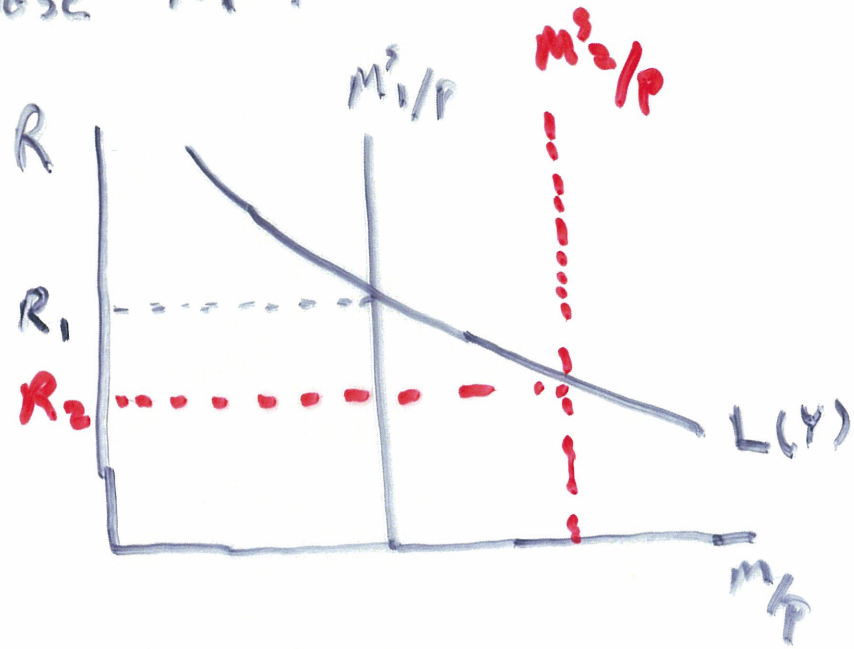
At Pt. 3 : $M^s < M^d$

People try to increase money holdings
(Sell bonds, Borrow Money)

Interest Rates Bid Up.

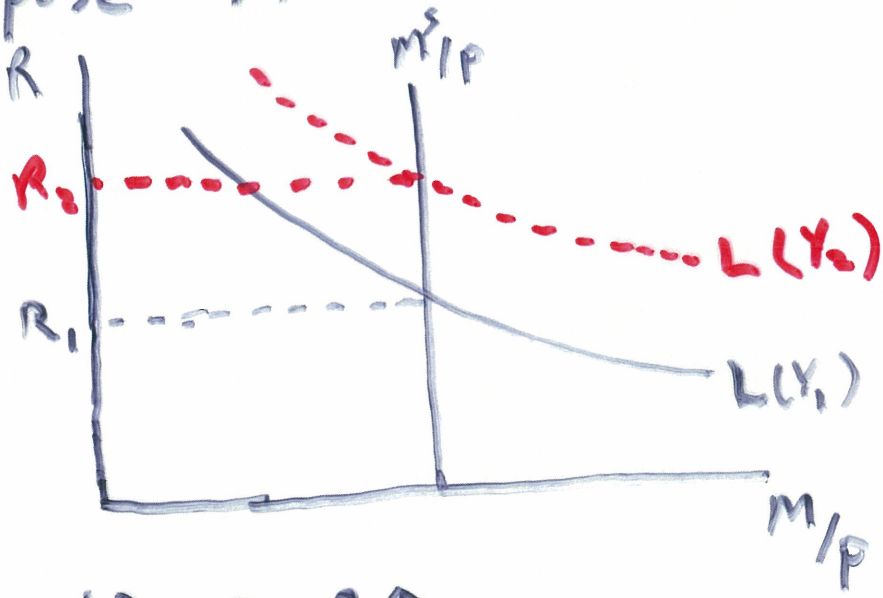
Comparative Statics

1.) Suppose $M^s \uparrow$



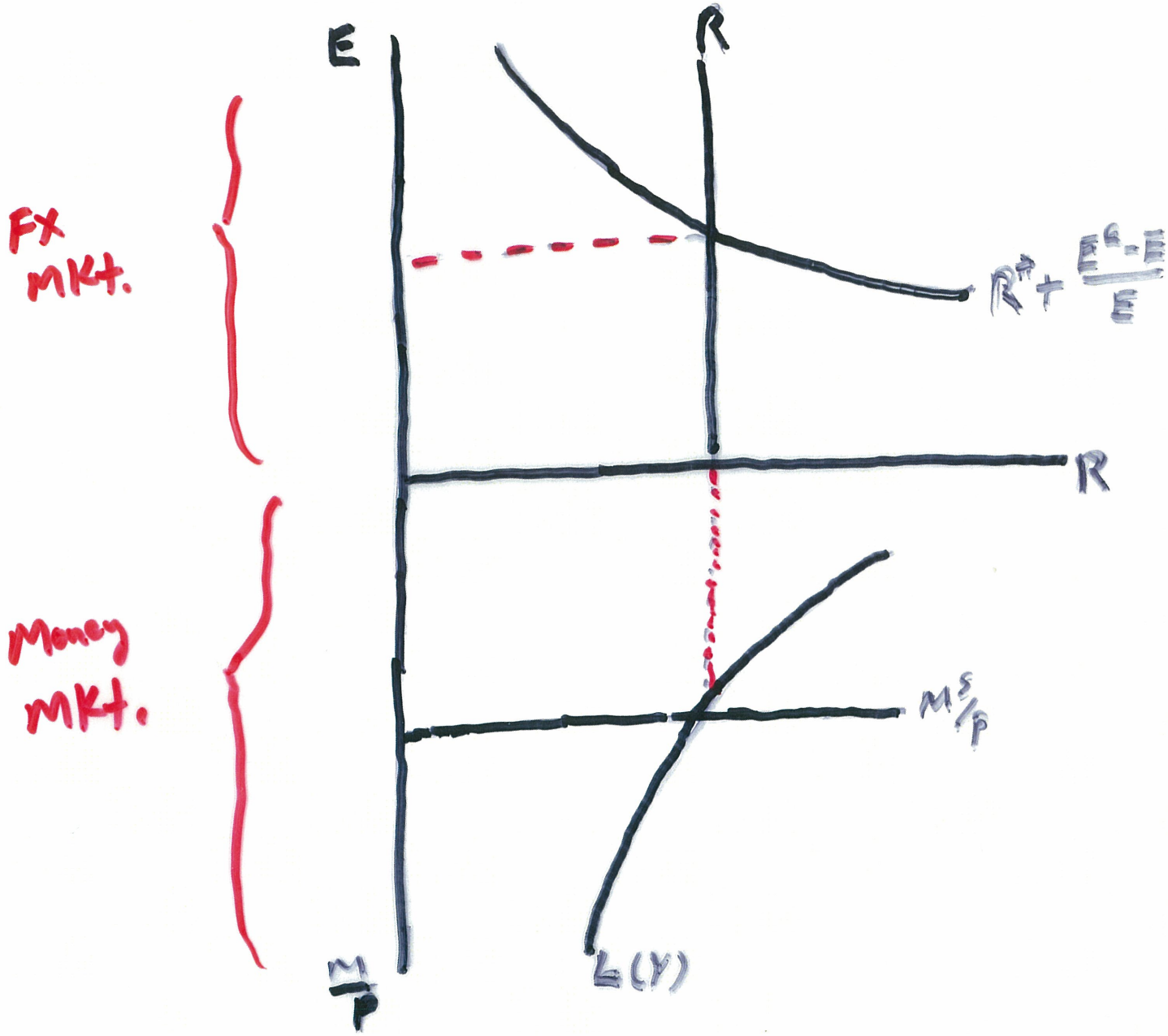
$M^s \uparrow \Rightarrow R \downarrow$

2.) Suppose $Y \uparrow$

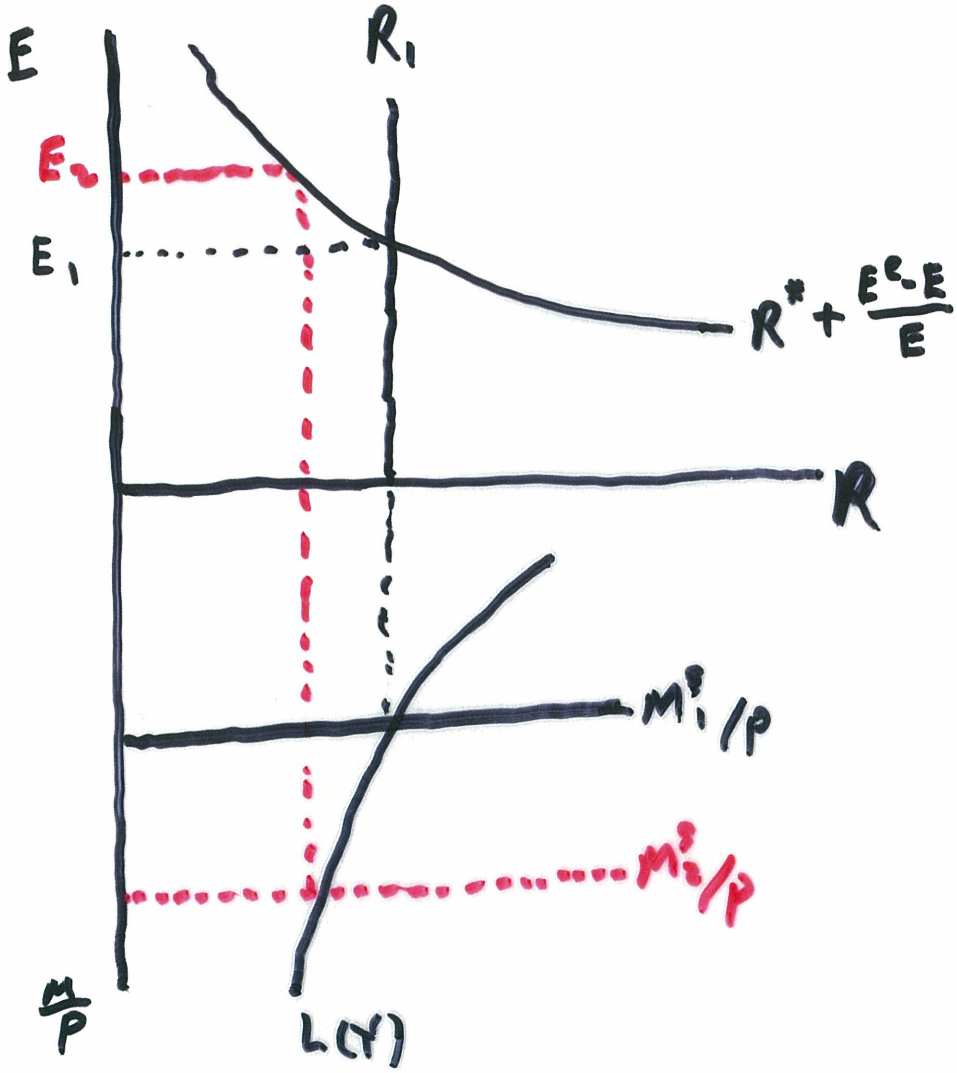


$Y \uparrow \Rightarrow R \uparrow$

Asset Market Equilibrium



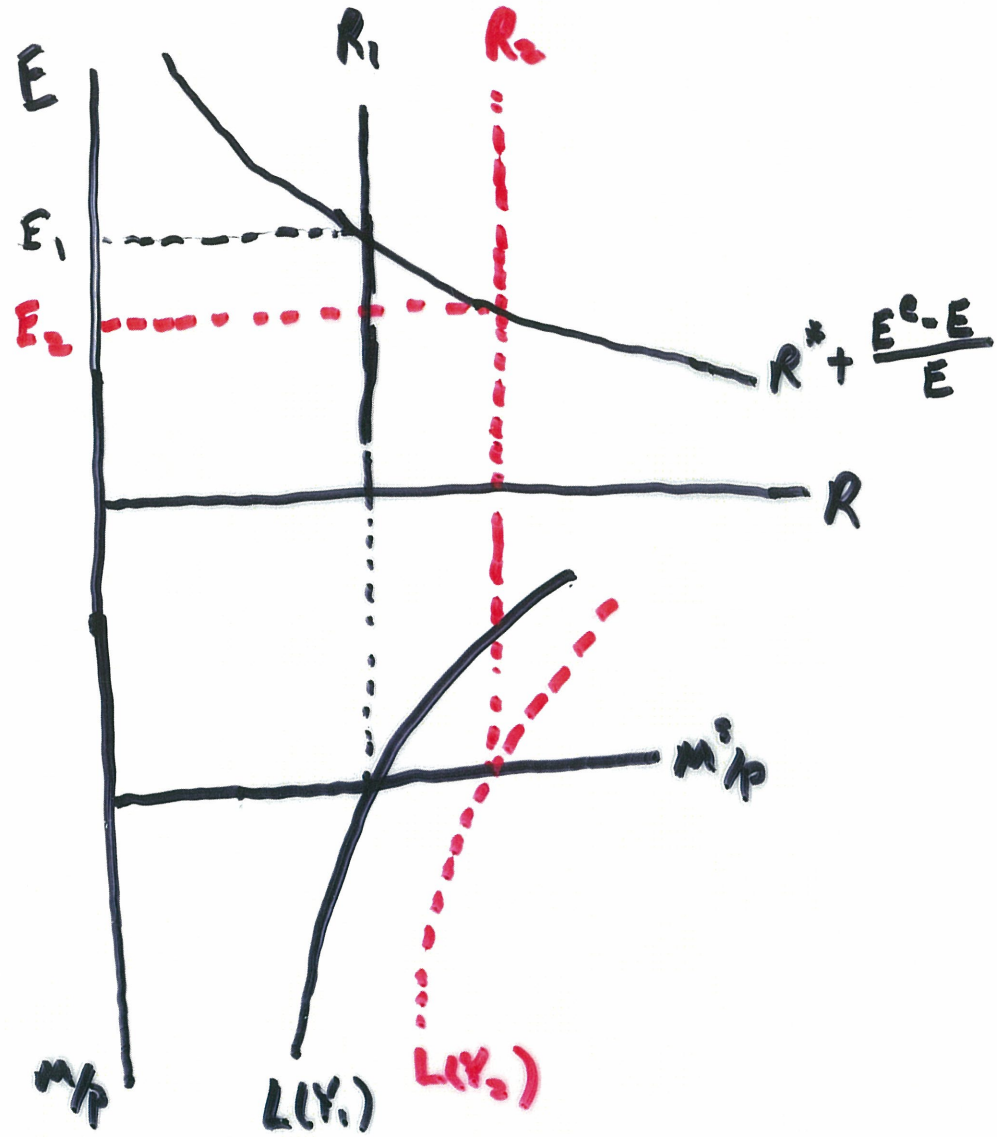
Now suppose $M^s \uparrow$ (P, Y, E^e constant)



$M^s \uparrow \Rightarrow R \downarrow \Longrightarrow E \uparrow$

An increase in the domestic money supply depreciates the domestic currency

Now suppose $Y\uparrow$ (P, E^e constant)



$Y\uparrow \Rightarrow R\uparrow \Rightarrow E\downarrow$

An increase in domestic output appreciates the domestic currency