Lecture 8

Half of Chapter 11

- Planned investment depends on the interest rate (r)
- The AS curve
- The IS curve
- The Fed rule—introduction

Planned Investment

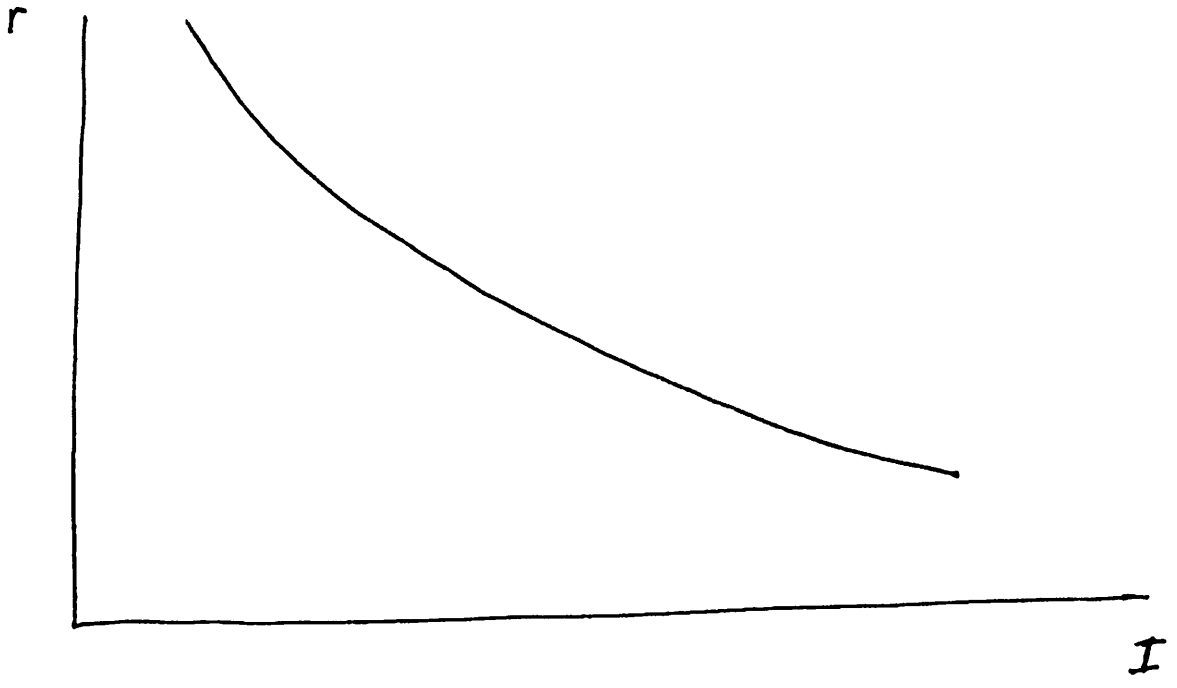
I depends on r

$r \uparrow \Rightarrow I \downarrow$

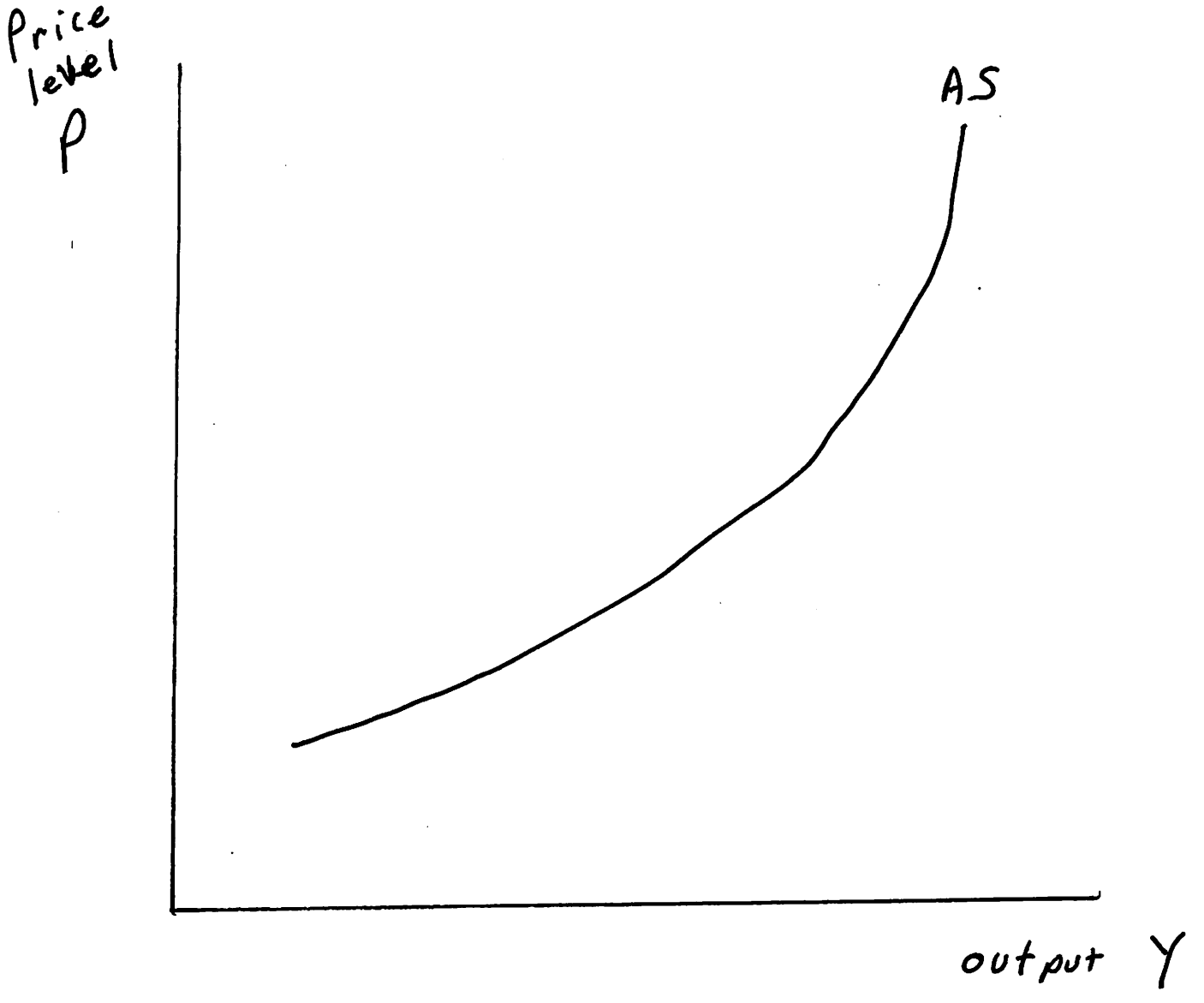
$r \downarrow \Rightarrow I \uparrow$

$$V_1 = -100 + \underbrace{\frac{25}{1.05} + \frac{30}{1.05^2} + \frac{35}{1.05^3} + \frac{22}{1.05^4}}_{99.4}$$

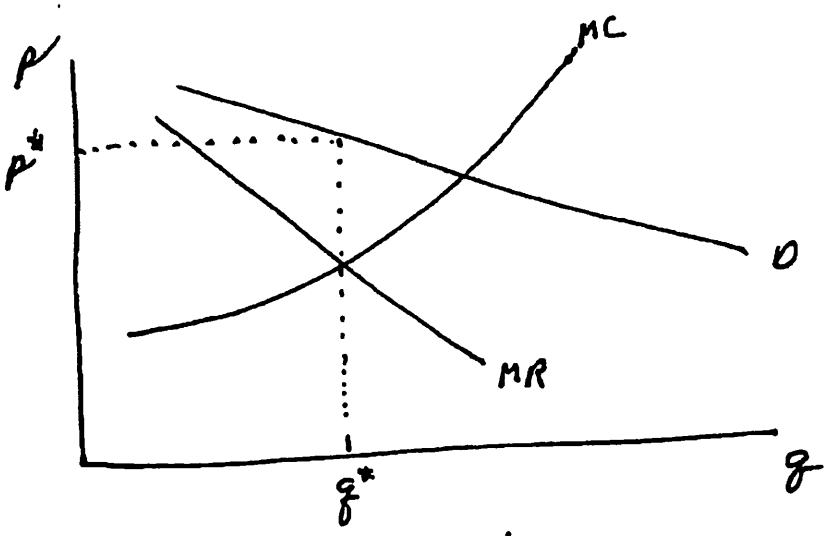
$$V_2 = -100 + \underbrace{\frac{25}{1.04} + \frac{30}{1.04^2} + \frac{35}{1.04^3} + \frac{22}{1.04^4}}_{101.7}$$

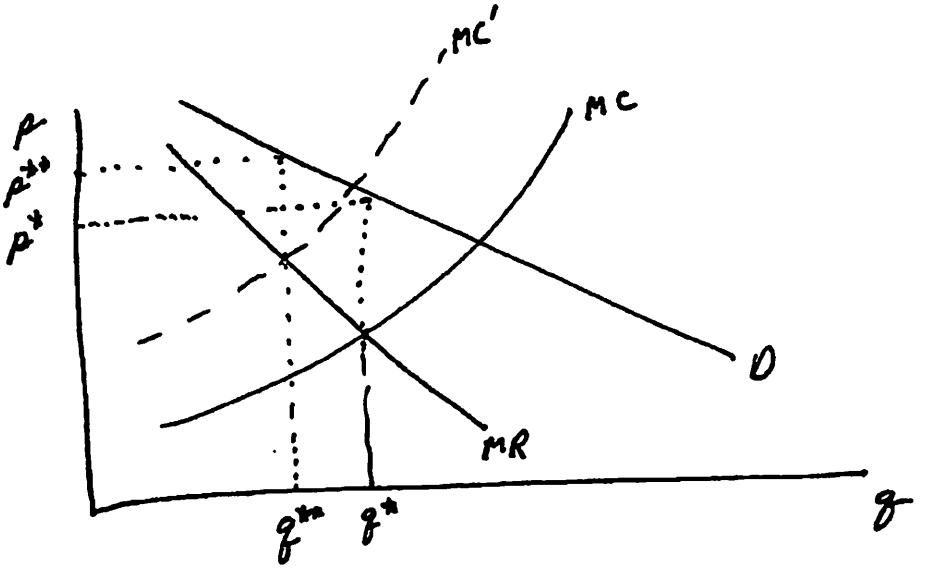


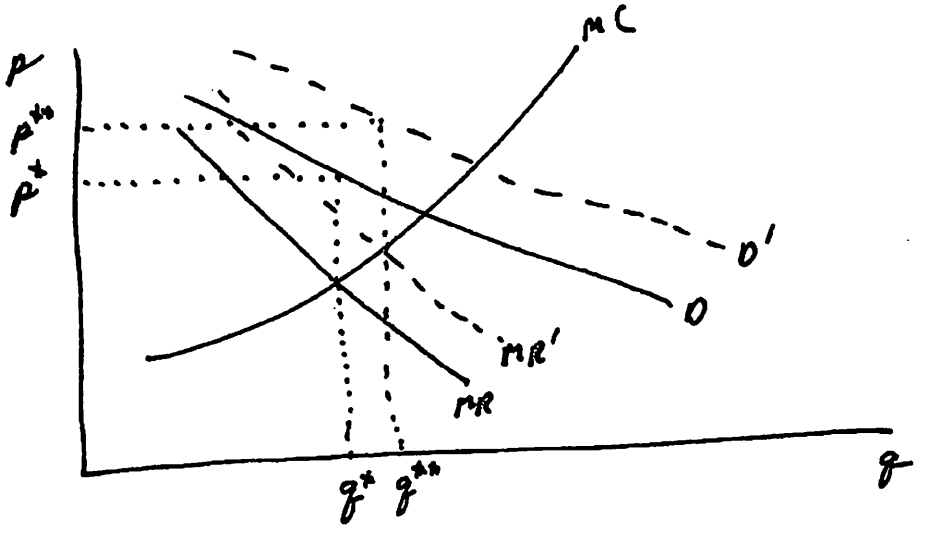
AS Curve



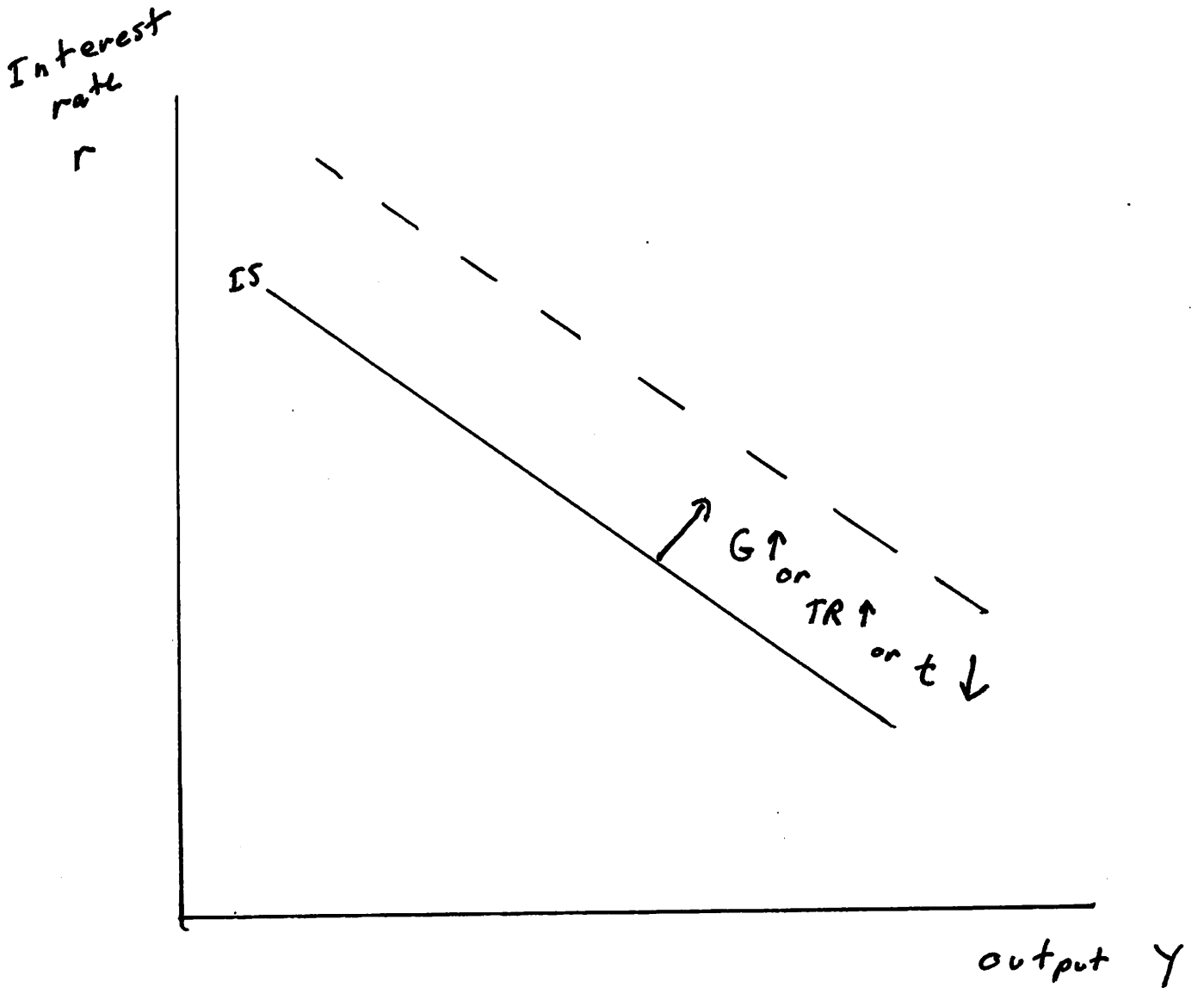
An individual firm : p & q decision







IS curve



NOTATION

- Y output or income
- C consumption
- I investment
- G government purchases of goods and services
- TR government spending on transfer payments (a negative tax)
- t tax rate
- TAX taxes
- T net taxes ($TAX - TR$)
- Y_d disposable income ($Y - T$)
- r interest rate

MULTIPLIER MODEL, T ENDOGENOUS, I ENDOGENOUS

- $Y_d \equiv Y - T$ Definition
- $C = a + bY_d$ Behavioral
- $I = d - e \cdot r$ Behavioral
- $Y = C + I + G$ Equilibrium condition
- $TAX = tY$ Behavioral
- $T \equiv TAX - TR$ Definition

SOLUTION

$$Y = C + I + G$$
$$= a + b(Y - tY + TR) + d - e \cdot r + G$$

Reduced form equation if r exogenous:

$$= \frac{a}{1-b+bt} + \frac{b}{1-b+bt}TR + \frac{1}{1-b+bt}G + \frac{d}{1-b+bt} - \frac{e}{1-b+bt}r$$

Note that r has a negative effect on Y in the reduced form equation.

If $b = .75$ and $t = \frac{1}{3}$, then $\frac{1}{1-.75+.25} = 2$ and $\frac{.75}{1-.75+.25} = 1.5$

Fed Rule

- $r = \alpha Y + \beta P + \gamma Z$