



Economists have proposed a simpler way of handling welfare, called the negative tax system: if your income falls below a certain minimum you get taxed a negative amount, that is, you receive money from the government on your pay check. This is an improvement from the current welfare system because (1) it eliminates the administrative costs associated with running welfare programs – in this case the IRS would handle the welfare directly, and (2) unlike the welfare system, it encourages people to work.

Can think of the negative income tax, t_0 , as approximating automatic social programs like: welfare, unemployment insurance, turned income tax credit etc.

I. Full Model 3

$$Y = C + I + G$$

Accounting identity

$$C = a + bY_D$$

Consumption schedule

$$Y_D = Y - T$$

Disposable income

$$T = t_0 + t_1 Y$$

Tax schedule

$$Y = (1/(1-b(1-t_1)))(a - bt_0 + I + G)$$

Income

$$\text{Multiplier} = 1/(1 - b(1-t_1))$$

$$\text{Let } b = 3/4 \text{ and } t_1 = 1/3$$

$$\text{Multiplier} = 1/(1 - 3/4(1-1/3)) = 1/(1 - 1/2) = 2$$

Notice that the multiplier is now 2, compared 4 earlier. So with progressive income tax system the size of the multiplier is reduced. Now as investment fluctuates, GDP does not fluctuate as much. Social programs are automatic income stabilizer, combined with the progressive income tax we are able to stabilize the economy. This is the reason why we haven't had another great depression since the last one in the 1930's.

Raising the tax rate will reduce the multiplier.

If you cut the tax rate a little bit you raise the multiplier and are able to boost GDP from every unit increase in investments.

II. Eisenhower Economy

Data:

$$a = 50, \quad b = 3/4, \quad G = 750, \quad t_0 = -200, \quad t_1 = 3/8, \quad I = 500, \quad Y_F = 3000$$

$$Y = (1/(1 - b(1-t_1)))(a - bt_0 + I + G)$$

$$= (1/(1-3/4(1-3/8)))(50 - 3/4(-200) + 500 + 750)$$

$$= 32/17(1450)$$

$$= \$2,729 \text{ billion}$$

Note: $32/17 = 1.88$ is the multiplier

$$Y_F - Y = 3000 - 2729 = \$271 \text{ billion (the GDP gap)}$$

$$T = -200 + (3/8)(2729) = \$832 \text{ billion (Tax)}$$

$$T - G = 523 - 750 = \$73 \text{ billion (Budget Surplus)}$$