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Department of Economics
ECONOMICS 131

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Answers to Problem Set #5

1. The Treatment of Charitable Contributions

a. A deduction reduces taxable income by a certain amount. (It is therefore worth more to those in higher tax brackets.) In contrast, a tax credit is subtracted from the tax liability—not taxable income. (It therefore reduces taxes paid dollar-for-dollar regardless of tax bracket.)

b. The principle of vertical equity states that tax burdens should be distributed "fairly" across people with different abilities to pay. This view holds that a deduction, which is worth more to those with higher incomes (those in higher tax brackets), provides a larger subsidy to the well-off than to the poor, which might be found to be "unfair."

c. Haig-Simons income is the money value of the net increase in an individual's power to consume during a period. In other words, it is the value of consumption plus the change in real net worth.

d. Charitable contributions could be regarded as an obligation which reduces funds available for consumption. (This assumes that the contributions themselves are not viewed as a form of consumption). Then it is appropriate to allow a deduction. This will ensure than a person with a certain income and no obligation to make charitable contributions pays the same tax as a person with $X more in income and $X in required contributions (since incomes after the contribution are the same). This is what horizontal equity requires: that people with the same ability to pay (measured by Haig-Simons income here) bear the same burden.

e. One way to make this argument is to note that a person with a certain income level can choose to donate to charities or instead to spend an equal amount of money on consumer goods. Since these two people have the same opportunities, the principle of horizontal equity would require that they should pay the same tax—the person choosing to make contributions should not pay less as a result of a deduction or credit.

2. Capital Gains and the Haig-Simons Definition

a. The Preferential Rate: While ordinary income is taxed at progressive rates as high as 35% (plus phase-outs), the tax rate on most long term capital gains for assets held more than 12 months is 15% (5% for those in the lowest tax brackets). Haig-Simons (H-S) would allow no preferential treatment of any particular form of income, so all income (whether capital gains or from any other source) would be taxed at the same rate.

b. The Deferral Effect: capital gains are not taxed at accrual (when the "paper profits" occur); they are only taxed upon realization (when the asset is actually sold). H-S regards any change in real net wealth as income, whether realized or not, and so would tax all accrued gains as they occur.

c. The Succession Effect: capital gains on assets acquired as an inheritance are only taxed to the extent the gain occurred after the death of the decedent; that is, the taxable capital gain is the value when sold minus the value at the death of the decedent (this "stepped-up basis" is used in lieu of the decedent's original cost or basis). H-S would regard the gain during the lifetime of the decedent as income (since it is an increment to wealth), and would tax it as it accrues.

d. The Inflation Effect: the tax code taxes nominal gains, rather than real gains. In inflationary times this results in taxation of the component of the gain which is merely attributable to inflation. H-S would only tax the *real* gain, since only the real gain is an increment to real net wealth.

3. Inflation and the Measurement of Capital Income

a. The formula for the real, after-tax rate is:

$$i_r = (1-t)i_n - \pi,$$

where

i_n is the nominal interest rate;
π is the inflation rate; and
i_r is the real, after-tax interest rate.

In this case we have

$i_r = (1-.40).10 - .05$

$= .06 - .05 = .01.$

b. $i_r = (1-.40).14 - .09$

$= .084 - .09 = -.006.$

Because nominal interest is taxed, an increase of 4% in the nominal interest rate yields only a 2.4% increase after taxes. Thus in this case equal increases in the nominal rate and inflation make the real after-tax rate of interest negative.

c. $.01 = (1-.40)i_n - .09$

Solving for i_n, we have

$i_n = (.01+.09)/.6 = .1666.$

We therefore see that when inflation increased by 4 percentage points, the nominal interest rate would have to increase by 6.66 percentage points to leave the real after-tax rate unchanged at 1%.

d. To get the formula to find the nominal interest rate, i_n, needed to generate a real after-tax rate of i_r, begin with the following formula and solve for i_n:

$i_r = (1-t)i_n - \pi,$

$i_n = (i_r + \pi)/(1-t).$