**Chapter 17**

**Appendix**

1. Tax theory as it relates to tax reform

 a. Economists believe the goal of tax policy should be social welfare maximization in a lifetime context

 1). Much uncertainty about what the appropriate social welfare function should be, described in Chapter 4

 b. The four main broad-based tax proposals

 1). Broad-based income tax with no exclusions or deductions—only a personal exemption: Haig-Simons income

 2). A consumption or personal expenditures tax

 3). A consumption tax in the form of a retail sales tax--Kotlikoff's "Fair Tax proposal at a 23% rate replacing all federal taxes and requiring some reduction in government spending to be budget neutral

 4). A consumption tax in the form of a cash flow tax on business and a wage tax on individuals

 --Hall/Rabushka "Flat Tax": 19% flat tax on wage income with personal exemption that varies with family characteristics

 --Bradford "X Tax": graduated tax rates on wage income, with the cash flow tax set at the highest wage tax rate

 c. Two main theoretical results in tax literature for choosing among them not helpful

 1). The optimal tax rule: 

 --requires knowledge of contemporaneous and intertemporal substitute effects, about which little is known

 2). The equivalence of all the broad-based taxes in a baseline static, competitive, one consumer economy, with linear taxes; the details matter in choosing among broad-based taxes:

 --the introduction of time in thinking about lifetime incidence

 --the possibility of nonlinear taxes, either through graduated tax rates or a single tax rate ( a so-called flat tax) combined with a rebate or exemption

 -- individuals vary along a number of dimensions such as tastes, skills, and their position in the life-cycle, particularly whether they are working or retired

 --future incomes are uncertain

 --existence of various market imperfections such as market power and credit constraints.

 3). Perhaps the tax structure matters more than choice of tax base, as suggested by the social welfare framework

 d. The OLG modeling following Auerbach and Kotlikoff is inconclusive

 1). Personal consumption tax generates the largest steady-state gains in output and individual welfare

 2). By transferring resources from older to younger generation, increases saving and investment and, in U.S., moves economy closer to Golden Rule of Accumulation

 3. The transition to the steady state matters

 —moving to a consumption tax hurts the elderly

 4). Attempts to protect the elderly (e.g. continue to allow them to depreciate their existing assets) or the poor (with personal exemptions) remove most of the gains from consumption taxes

2. Should income from capital be taxed?

 a. Two results arguing against taxing income from capital

 1). Atkinson/Stiglitz model of N consumer goods and labor

 --if labor weakly separable in the utility function, taxing labor is optimal (alternatively, tax all N goods at the same rate)

 --viewing the N goods as one good consumed over N time periods implies no taxation of interest income

 2). Judd/Chamley result— in a representative consumer, infinite horizon Ramsey model with linear taxes, the tax on income from capital should be zero in the long run

 --Intuition: MRT is (1+r) from i period to next, MRS is (1 + r(1-t)) where r = marginal product of capital

 --because income from capital is repeatedly taxed each period, wedge between MRT and MRS grows to , which becomes large without limit as 

 b. More recent literature argues in favor of taxing income from capital—two examples:

 1). Future income may be uncertain-tax on income from capital under progressive taxation acts as insurance mechanism, which has value to individuals

 2). Saez found that propensity to save is positively related to individuals' skills or ability

 --therefore, taxing income from capital increases redistribution through taxation, if redistribution desirable

 c. On net, economists no longer assume capital and labor should be taxed at the same rate, contrary to the Haig-Simons prescription, but no consensus on the rate differences

 d. Practical issue on how to remove capital from taxation under a personal tax if choose to do so; options:

 1). EET: Exempt the saving, Exempt the returns as they accrue, Tax the withdrawals (e.g., IRAs in U.S.)

 --turns income tax into a consumption tax

 2). TEE- Tax the saving, Exempt the returns as they accrue, Exempt the withdrawals (e.g., Roth IRAs in U.S.)

 --turns income tax into a wage tax, since income from capital never taxed

 3). EET and TEE equivalent in world of perfect certainty

 -- the value of an investment would just equal the anticipated present value of its returns over time

 4). With uncertain returns, EET captures unanticipated abnormal returns (or losses) whereas TEE method does not

 5). In Auerbach/Kotlikoff OLG framework

 -- EET method transfers resources from the older to the younger generations because of the taxation of existing wealth as the elderly draw down their wealth to consume in retirement—an investment incentive

 -- TEE method transfers resources from the younger to the older generations since income from existing capital is untaxed after the reform—not as potent in increasing saving and investment

 6). Mirrlees Commission recommended three different methods depending on assets

 - -EET for pension savings accounts since they were already taxed on that basis

 -- TEE for bank accounts to capture the otherwise untaxed services these accounts offer

 --A hybrid TiE for all other assets above a certain value;

 Tax the savings, allow a deduction as the returns accrue equal to the safe return on the assets as measured by a predetermined short-term interest rate (as opposed to deducting/exempting all the accruing returns), and then Exempt the withdrawals from the assets; tax on wage income plus any abnormal returns to capital (less any abnormal losses)

3. Boadway distinction between classical and newer tax theory

 a. Classical: assumes perfect information and the government has a fixed number of tax instruments at its disposal

 1). Optimal commodity taxation

 b. Newer theory: begins with imperfect information

 1). Introduction of incentive compatibility constraints

 2). New interpretation of old results—relax incentive compatibility constraint on high ability taxpayers

 --Saez taxation of saving: since high ability people want to save more, less willing to pose as low ability to save taxes

 --Corlett-Hague: taxing goods complimentary to leisure, high ability less willing to take more leisure time since leisure activities more heavily taxed

 3). Leads to search for new things to tax: things related to unobserved – ability in line with contract theory—e.g., Saez call to tax saving since related to skills

4. Varying tax rates by age—the Kremer proposal—argument rests on three points

 a. Labor supply elasticities vary by age, higher for younger taxpayers

 b. Income distribution varies by age

 1). Consider hazard rate at income x for each age group, defined as , where F is the cumulative density function of income

 2). Hazard rate at low X five times larger for 17-21 age group than 31-64 age group, since older age group has so many more people earning higher incomes

 --if raise tax rates on X for older group, it is an inframarginal effect for the large numbers of taxpayers with incomes above X— no efficiency loss for them

 3). Income earned at the younger ages is almost completely uncorrelated with income earned at the older ages

 --therefore, varying tax rates by age redistributes lifetime income from high to low income taxpayers

 c. Height also positively related to income but taxing on the basis of height might offend people's sense of horizontal equity

 1). In contrast, age applies to everyone

5. Commitment

 a. Difficult for government's with imperfect information

 b. Common example is announced one-time tax on wealth, a lump-sum tax

 1). Once people invest, a tax on wealth next period is also lump-sum so government has incentive to renege on one-time tax

 2). Knowing that, people reluctant to invest

 3). Government and investors could engage in a principal (government)/ agent (investors) game in which agents understand that government's cannot commit and government knows how the taxpayers will respond to its policies

 --has an equilibrium, but with much higher taxes and lower investment and wealth than if government could commit to a one-time wealth tax

 c. Commitment a general problem since applies whenever incentive compatibility constraints are used to get people to self-select by ability

 1). If constraints effective, government then knows the abilities and can tax them lump-sum

 2). Problem generally ignored in the taxation literature

 3). In fact, governments do usually commit to their tax policies for long periods, for reasons that are unclear.