University of Toronto
Economics 336Y – Public Economics (Taxation)

Final examination
April 4, 2005

Part A. Answer SEVEN of the following questions. For each question you choose, indicate whether the statement is TRUE, FALSE, or UNCERTAIN. Justify your answer, and DEFINE EACH OF THE TERMS IN ITALICS. *(12 points each.)*

1. FALSE: By definition, the present value of an individual's lifetime consumption and bequests is equal to the present value of her lifetime income (including inheritances). So the change in basis would have no effect on vertical equity.

2. TRUE: If the system includes a refundable credit paid to all (a demogrant, or an income exemption amount), then then average tax rate function is $A(Y) = G - t/Y$ which is increasing in Y. Therefore this system is progressive.

3. UNCERTAIN: A move from conventional welfare to negative income tax would reduce marginal tax rates on recipients, which increases efficiency, but causes more individuals to face positive marginal tax rates, which reduces efficiency. Which is better on efficiency grounds therefore depends on the elasticity of labour supply and on the number of people in the various income ranges. The change would equally ambiguous effects on equity. Some recipients would have higher utility under the NIT (since they would have labour income in addition to benefits). But some would have lower utility (since they would receive a lower benefit if the reform is to be revenue neutral). Empirical evidence suggests that welfare benefit rates have small but positive effects on caseloads. Thus there is some evidence that incentives matter to efficiency.

4. FALSE: Firms pay dividends instead of retaining earnings, or relying on debt finance, despite the fact that dividends are not tax deductible for the corporation. Note that shareholders can always construct "homemade dividends" in firms that retain all earnings, simply by selling some shares. In Canada there is the DTC, but it is probably not large enough to explain the reliance on dividends, instead of a strategy of either debt finance, or equity finance with retentions, and perhaps share repurchases if cash must be distributed periodically to shareholders.

5. UNCERTAIN: Carroll and Summers argue that Canada's richer RRSP system can explain this. But Sabelhaus disagrees.

6. FALSE: A SOE is one that cannot affect the rate of return required by investors. So a tax causes pre-tax return to rise by full amount of tax, which lowers output and reduces wages paid by domestic firms. The income of savers is unaffected, since they can always save in the international capital amrket to avoid the tax.

7. UNCERTAIN: Imputed income: the value of housing services received by owner-occupiers, equivalent to the rent they would otherwise pay to the owner if they were renting. Corlett-Hague principle: tax complements to leisure more heavily, because leisure itself cannot be taxed. So the principle says that housing should be taxed more than other goods, if housing is complementary with leisure, and less if they are substitutable.

8. TRUE: UCC is the required pre-tax rate of return on investment. A BCT is a tax on all revenues from investment, with an immediate deduction for investment costs; such a tax leaves the UCC unchanged from pre-tax level. If the firm uses debt finance, and true economic depreciation is exactly equal to the capital cost allowance, then the user cost of capital (pre-tax rate of return on firm's capital required to pay the investor his/her required *after-tax* rate of return on saving) is unchanged. So if CCA exceeds depreciation the user cost actually falls as a result of the tax system. If the investment is equity-financed, there is no deduction for the cost of capital, and the UCC may rise.

Part B. Answer ONE of the following questions. Show your calculations for partial credit in case of wrong answers. *(16 points.)*

9. $C_1^* = Y_1/2, C_2^* = (1+r)Y_1/2, S^* = Y_1/2$. The tax has a positive deadweight losseven though savings is unaffected. Income effect increases savings, which cancels out the substitution effect – but the substitution effect alone determines the deadweight loss.

10. $\Delta\%(1-t_Q) = -\Delta\%(1-t_O) = 10\%$; so $\hat{\epsilon} = (15-5)/(10+10) = 0.5$. Problems: (i) mean reversion in income (not so relevant here); (ii) differing trends in income in the two provinces.