

AUSTRALIAN NATIONAL UNIVERSITY

Mid-Semester Examination - September 2001

APPLIED TAX POLICY (ECON 2040)

Study Period: 15 Minutes

Time Allowed: Ninety Minutes

Permitted Materials: Nonprogrammable Calculators, English and Foreign Language Dictionaries

Answer ALL questions. All questions are worth EQUAL marks.

1. In a 1988 paper in the *Australian Tax Forum* criticising economists who had argued for cuts to marginal tax rates to lower the excess burden of labour income taxation, an author wrote ' . . . the typical response of taxpayers to the imposition of taxes is unknown. Some may increase their earnings to make up for the loss of income through tax, in which case the excess burden, as measured, threatens to become a positive benefit.'

Consider the case of Ron who can work as many hours as he wishes at a fixed wage rate, \bar{w} .

- Draw a diagram showing Ron's feasible set of choices of income and labour supply in the absence of a tax. Indicate on your diagram Ron's favoured choice.
 - Suppose that a tax on labour income at rate m is introduced and that because of this tax Ron works longer hours than he did previously. Indicate on your diagram his new choice of labour supply and income.
 - Use this diagram to carefully explain whether this tax can produce a 'positive benefit'. Carefully identify tax revenue and any excess burden in your diagram.
 - Repeat your analysis in a diagram with labour supply curves. Carefully relate your diagram to answers given in previous parts of this question.
2. Consider an individual who lives for two periods and earns fixed amounts of income, I_0 in period 0 and I_1 in period 1. The individual and the government can both borrow or lend as much as they wish on international bond markets at the interest rate, r . All tax revenue is raised to finance foreign aid in period 0.
- Initially suppose that there a tax on interest income only at rate m (labour income is untaxed). Show in a two-period Fisherian diagram the amount of interest income tax collected and the amount of period 0 foreign aid that this revenue can finance.
 - Now suppose that this tax is replaced with a GST at the same tax rate in each period which leaves *utility* unaltered. Find the effects of this tax switch on the

level of consumption in each period, on tax collections in each period and on the amount of period 0 foreign aid that tax collections in each of the periods can finance. Can you say whether private savings in period 0 would increase or decrease? Can you say whether national savings would increase or decrease?

3. Suppose that there are two assets bonds and rental housing. The real income from rental housing is taxable so if the real pre-tax yield is ρ , the real post-tax yield to a taxpayer on a marginal rate of m is $\rho(1-m)$. The nominal yield on bonds is taxable so that if they provide a real pre-tax yield of r , their real post-tax yield is $r(1-m) - m\pi / (1+\pi)$ where π is the inflation rate. Suppose that $r = 0.1$, $\rho = 0.08$ and $\pi / (1+\pi) = 0.03$.
- Initially suppose that the quantities of both bonds and of rental housing that an individual holds must be greater than or equal to zero (ie, borrowing is not permitted). Explain how an individual's choice of whether to invest in bonds or rental housing will depend on her marginal tax rate. How would the proportion of real income earned from these assets that is paid in tax depend on marginal tax rates?
 - Now suppose that borrowing is permitted and nominal interest is deductible so the after-tax cost of borrowing to invest in rental property is $r(1-m) - m\pi / (1+\pi)$. Would borrowing a dollar to invest in rental property be an attractive investment for an individual on a 50 per cent marginal tax rate? How much tax would this save the individual? If marginal tax rates fall with taxable income, what should individuals on a 50 per cent marginal tax rate do in this economy? How might such an economy come to equilibrium?
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