

**Public Finance Field Exam  
January 2012**

**Directions:** Answer both questions, in whatever order you prefer.

- I. In the developing U.S. presidential campaign, the issue of fundamental tax reform has been raised. Two key elements of many proposals would be a shift from income to consumption as the primary tax base and a flattening of the marginal tax rate schedule.

Three potential variants of a low-rate consumption tax are:

- 1) A single-rate tax on all retail sales to U.S. consumers.
- 2) A single-rate value-added tax (VAT) which would tax value added as it occurs. The full tax would be rebated on items sold to final purchasers other than U.S. consumers, and would be imposed on U.S. imports.
- 3) A “flat” tax. The flat tax would consist of two parts, one on individuals and one on businesses. The base of the tax on each individual would be all labor compensation in excess of a high threshold. The base of the business tax would be cash flow, equal to receipts of all U.S. operations less the sum of labor compensation and purchases of materials and capital goods. The two taxes would be levied at a single tax rate.

- A. Show that the tax bases of the retail sales tax and the VAT are the same. Discuss why the two systems might have different effects in practice.
- B. Discuss the differences between the flat tax base and the bases of the other two taxes. Assuming that all three taxes would raise the same amount of revenue, how would you expect these differences to affect economic outcomes?
- C. A variant of the flat tax would allow two or three marginal tax brackets for the individual tax, with the marginal tax rate on highest-wage individuals being equal to the marginal tax rate on businesses and higher than the marginal tax rates on lower-wage individuals. Discuss the impact of this generalization on the efficiency and distributional (both inter- and intra- generational) consequences of adopting a flat tax.
- D. Many countries currently have VATs. In practice, these taxes impose rates that vary across commodities, with necessities such as food typically taxed at a lower rate. Discuss the desirability of such tax rate variation. How would this common approach to implementing the VAT compare to combining the VAT with a universal demogrant (a uniform lump-sum transfer payment to all taxpayers)?

II. Let us assume (for simplicity) that the current income tax has the following simple structure. Married couples can deduct \$30,000 from their incomes, and singles (single or widowed adults or single parents) can deduct \$15,000. Income less this deduction is called taxable income. Taxable income faces a marginal tax rate of 20% up to \$100,000, and of 30% above \$100,000.

- a. Explain why such an income tax system generates a marriage penalty, and how it can potentially discourage labor supply of secondary earners.

Suppose that the government decides to eliminate the marriage penalty by taxing all incomes at the individual level according to the tax schedule for the singles described above (that is, married individuals would be taxed separately according to their own income).

- b. Assuming no behavioral responses to this tax change, describe which couples would lose and which couples would gain from the reform. Do you think that the new tax system will be more or less redistributive than the previous one? Is the government likely to gain or to lose tax revenue from this reform (assuming again no behavioral responses)? [be as precise as you can about the statistics you would need to answer quantitatively]
- c. Suppose now that the reform affects labor supply but not marriage decisions. Explain which labor supply responses this reform is likely to generate. Suppose you have cross-sectional data on family structure and incomes (for each member of the couple for married households) before and after the reform, and that male labor supply is not affected by the reform. Describe a simple differences-in-differences methodology that would allow you to estimate the labor supply elasticity of married women with respect to the net-of-tax rate (one minus the marginal tax rate). What are the potential biases of the method you just described and how would you check the validity of the method if more data were available?
- d. Suppose you now want to distinguish between the extensive labor supply responses (participation in the labor market) and the intensive labor supply responses (level of earnings on the job). Explain how cross-sectional data (before and after the reform as in question c. could allow you to estimate the extensive elasticity of labor supply of married women. Explain why, in the presence of extensive labor supply responses, cross-sectional data does not allow the estimation of intensive labor supply responses.
- e. Suppose you now have access to panel data following the same individuals before and after the reform. How would you use the data to estimate the intensive labor supply elasticity of married women?
- f. Suppose now that marriage decisions are potentially affected by the reform. Explain how you could use panel data before and after the reform to assess the effects on the tax reform on marriage decisions.