1

Question 1 - True/False Questions (20%)

You need to explain your answer, just a true/false or “it depends” statement without any arguments, is not rewarded.

Question 1a

The altruistic model of intergenerational transfers implies that children may receive different amounts of transfers from their parents.

Question 1b

Prior to 2006 in Norway, owners of small businesses found it profitable to switch to widely held firm organization.

Question 1c

In labor supply, the substitution effect is larger than the income effect.

Question 1d

Equivalent variation (EV) is a more comprehensive measure of change in well-being, due to for example a tax reform, than change in income.

2

Question 2 - Optimal Commodity Taxation (40%)

Suppose the government must raise a given amount of revenue using commodity taxes.

Answer the following, with increasing depth:

Question 2a

Briefly describe the government's optimization problem in the theory of optimal commodity taxation.

Question 2b

Explain the intuition behind the Ramsey rule or inverse-elasticity logic.

Question 2c

Why does the theory emphasize compensated rather than uncompensated demand elasticities?

Question 2d

Explain why, in a simple efficiency-oriented framework, goods with less elastic demand may face higher tax rates. Relate your answer to the marginal efficiency cost of raising revenue.

Question 2e

Discuss at least three reasons why actual policy may deviate from the simple inverse-elasticity prescription.

Question 2f

Reflect briefly on whether differentiated commodity taxes are always desirable. In your answer, discuss equity concerns and the role of other tax instruments, such as labor income taxation.

3

Question 3 - Elasticity of Taxable Income (40%)

Table 1 is also available as an external resource at the bottom of the page.

A key parameter in public economics is the elasticity of taxable income with respect to the net-of-tax rate (ETI), which is defined as $\varepsilon = \frac{1-\tau}{z} \frac{\partial z}{\partial 1-\tau}$.

Question 3a

Explain what ε measures and why it is important in public economics.

Question 3b

We can differentiate between real responses and reporting responses when estimating ε. Explain what is meant by a “real response” and a “reporting response”, and refer to types of legal and illegal reporting responses.

Question 3c

Kleven and Schultz (2014) find consistently higher ETI estimates for self-employed than for wage earners (see rows 2–4 in Table 1 below). Provide one possible mechanism for this result using your answer from (b).

Question 3d

A common approach for estimating the ETI is using a simulated instrumental variable approach, where the mechanical change in τ is used as an instrument for the observed change in τ. Explain:

- (i) what “mechanical change” means in this context.
- (ii) why we need an instrument for the observed change in τ.

Question 3e

One concern when estimating the ETI is mean reversion. Explain what “mean reversion” means in this context and how it is typically addressed in ETI estimations. Which row(s) in Table 1 address this concern?

Question 3f

Matikka (2018) uses changes in municipal income tax rates as an instrument for overall changes in marginal tax rates to estimate the ETI. What is the key characteristic of these municipal tax rates and why is this an advantage for the ETI estimation?

Table 1: ETI estimates (Kleven and Schultz (2014), Tab. 3)

	Panel A. Wage earners		Panel B. Self-employed	
Socioeconomic controls	No	Yes	No	Yes
Pre-reform income controls				
(1) No pre-reform income controls	−0.203***	−0.191***	−0.171***	−0.155***
	(0.002)	(0.002)	(0.015)	(0.013)
(2) log base-year (period s) income	0.065***	0.060***	0.102***	0.095***
	(0.002)	(0.002)	(0.016)	(0.015)
(3) Splines of log base-year (period s) income	0.044***	0.042***	0.112***	0.100***
	(0.002)	(0.002)	(0.014)	(0.013)
(4) Splines of log $s-1$ income and log deviation between $s-1$ and s incomes	0.049***	0.046***	0.094***	0.090***
	(0.002)	(0.002)	(0.015)	(0.014)
Observations	29,568,870	29,568,870	1,646,270	1,646,270

Notes: The table shows elasticity estimates based on 2SLS regressions, where standard errors (shown in parentheses) are clustered by individual. The dependent variable in all specifications is the three-year growth rate in real wage earnings. The independent variable of interest is the three-year growth rate in the marginal net-of-tax rate, instrumented using the three-year growth rate in the simulated marginal net-of-tax rate under base-year behavior (i.e., mechanical tax variation from tax reforms). All elasticities in the table are based on specifications without income effects. Socioeconomic controls include labor market experience, experience squared, age, gender, marital status, number of kids aged 0–18 years, educational degree, industry, municipality, and local unemployment rate. All specifications also include base-year fixed effects. Regressions are weighted by labor income and restricts the sample to individuals with positive labor income (in addition to the sample restrictions described in Section III). "Splines" refer to a flexible piecewise linear functional form with ten components. Taxpayers close to kink points are defined as those who have an income within 5,000 DKK of the top kink, 3,000 DKK of the middle kink, or 2,000 DKK of the bottom kink.
***Significant at the 1 percent level
**Significant at the 5 percent level
*Significant at the 10 percent level.
(This is an extract from Table 3 in Kleven and Schultz (2014) with the original table notes, including only the columns for the broader sample definitions that comprise all taxpayers with positive income.)

References

Kleven, Henrik Jacobsen and Esben Anton Schultz (2014). "Estimating Taxable Income Responses Using Danish Tax Reforms". *American Economic Journal: Economic Policy* 6.4, 271–301. doi: 10.1257/pol.6.4.271.
Matikka, Tuomas (2018). "Elasticity of Taxable Income: Evidence from Changes in Municipal Income Tax Rates in Finland". *The Scandinavian Journal of Economics* 120.3, 943–973. doi: 10.1111/sjoe.12236.