The theory of taxation/3 (ch. 19 Stiglitz, ch. 20 Gruber, ch.15 Rosen)

- Desirable characteristics of tax systems (optimal taxation)

Optimal Taxation: Desirable characteristics of tax systems

- *Optimal taxation* studies tax policies that reduce distortions by minimising the DeadWeight Loss of the tax system.

Desirable characteristics of tax systems

- A “good” tax system must have the following characteristics:

1. **Economic efficiency**: it should not distort individuals’ economic behaviour and minimise the DWL.
2. **Fairness**: it should treat individuals in similar circumstances similarly (horizontal equity) and it should impose higher taxes on those who can better bear the burden of taxation (vertical equity)
3. **Administrative simplicity**: it should have low costs of administration and compliance
4. **Flexibility**: the tax system should be easy to adapt to changing economic and social conditions
5. **Transparency**: taxpayers should be able to easily ascertain what they are paying for.

Optimal *commodity taxation*: the Ramsey Rule/1

- The key question is **how to minimize the DWL per dollar of tax revenue**.
- **Ramsey Rule**: considering that **DWL= - (1/2)t^2 η Q/P**, the Ramsey rule states that:

$$t_i^* = -\lambda / \eta_i$$

where λ is the value of additional government revenues and depends on the budgetary needs of the government.

This means that the relative tax rates should be inversely related to demand elasticities.

Optimal *commodity taxation*: the Ramsey Rule/2

- This implies that we need to balance two factors:

- **Inverse Elasticity rule**: since the DWL is directly related to demand and supply elasticities, to improve efficiency **commodities with lower demand elasticities (low η) should be taxed more (because the DWL would be low) and vice versa.**

  → **equity problem**: commodities with low demand elasticity are usually **primary goods** which are largely consumed by low income consumers and this rule might have with negative distributional (equity) effects.

- **The Broad base rule**: it is better to tax a wide variety of goods at a moderate rate, rather than to tax few goods at a high rate (***tax smoothing***), because the marginal DWL from a tax rises with the tax rate.

Optimal *income taxation/1*

- *Optimal income taxation* consists of a set of tax rates and income transfers across income groups or individuals so as to **maximise social welfare, subject to a government revenue requirement.**
- **Trade off between equity and efficiency**: the goal is to rise a certain amount of revenue, while maximising social welfare. Society may be willing to pay the price of higher inefficiency (DWL) in return for a more equal distribution of income.
- However we have to consider that rising the tax rate may reduce labour supply and thus reduce tax revenues (*Laffer curve*). We have to consider the **distributional consequences of taxation and the effects of taxation on labour supply** (which in turns affects the level of income).

Optimal *income taxation/2-*

- The tax rate should be set so that:

$$MUi/MRi = \lambda ,$$

  i.e. the marginal loss of utility per euro of tax revenue raised should be the same for all individuals**.**

- Since **Marginal Utility** declines as individual consumption rises (principle of diminishing marginal utility of consumption), **higher taxes, reducing consumption, increase the MU of consumption for individual i.** Furthermore, higher tax rates affect labour supply and might reduce the tax base and tax revenues (Laffer Curve).

- Due to the principle of diminishing marginal utility the optimal tax system has thus to balance **vertical equity** with **behavioral reponses**.

Optimal income taxation/3-implications

- **Vertical equity**: social welfare is maximized when those who have a high level of consumption - and thus a low MU- (the rich) are taxed more heavily, while those who have a low level of consumption (and thus a high MU), the poor, are taxed less heavily.
- **Behavioural responses**: however as taxes rises, individuals may reduce labour supply and earn less income. **So there is a t* that maximise tax revenue, additional increases in taxes (t > t*) will rise less tax revenue, because income (the base of taxation) becomes smaller** due to reduction in labour supply**.**

  Since taxation affects labour supply, we have also to consider the **elasticy of labour supply** and tax less individuals with very elastic labour supply (elasticity of labour supply is usually higher for women and for high income people).

Optimal income taxation/4 - implications

- A *progressive taxation on income* (usually adopted for equity reasons) is less efficient than a *proportional income tax*, because more progressive taxes have higher marginal tax rates for successive bands of income which produce higher substitution effects and are more likely to introduce disincentives to work and higher DWL. However a reduction in top tax rates is contrary to equity rules.

Marginal and average tax rates

- if my income is 2500 euro and the tax rates are:
  - 5% for income up to 1000 euro
  - 6% for income between 1000 and 2000 euro
  - 7% for income above 2000 euro

  I have to pay in total 145 euro: the MTR is 7% the ATR is 5,8%.

With progressive taxation: MTR>ATR

Regressive taxation: MTR<ATR

Proportional tax: MTR=ATR

Fairness in practice: horizontal vs vertical equity

- **Horizontal equity**: individuals with the same characteristics should be treated the same and pay the same taxes. Non discrimination principle.

  Problems: which characteristics should we consider (preferences may differ)? How do we define equal treatment?

- **Vertical equity**: individuals with higher *ability to pay* should be taxed more or individuals who receive more from the government should pay more taxes.

  Problems: how do we define the ability to pay (it is not observable)? How much more should those considered better off pay?

Fairness in practice: different basis of taxation/1

- It is possible to tax only measurable variables:

a. Income

b. Consumption

c. Benefits

Income (or lifetime income)

- It is the most used basis for taxation, but it is an indirect and imperfect measure of an individual ability to pay, because it penalises those who work harder.
- How do we consider differences in characteristics such as health (deductions in medical expenses), marital status (individual vs household income taxation), presence of children (deductions for the costs to rise children)?.

Fairness and different basis of taxation/2

Consumption (or lifetime consumption) measures what one consumes (takes out of society) rather than what one contributes: **C=Y-S**. The question is then if savings should be exempted from taxation.

Benefit approach: individuals should pay taxes in relation to the benefits they receive from public services. This approach is adopted for some services where fees may be charged to users. Difficult to apply for pure public goods and for low income individuals. In addition benefit taxes (fees) introduce distortions in the use of public facilities

To summarise

- **Optimal commodity taxation**:
- Ramsey Rule: $\mathbf{t_i^* = -\lambda / \eta_i}$. Optimal tax is inversely proportional to the elasticity of demand.
- Tradeoff: DWL rises with η_i but also with $t^{2.}$
- **Optimal income taxation**:
- Trade-off between equity and efficiency: the goal is to rise a certain amount of revenue, while maximising social welfare
- There is a **t*** that maximises revenue, if t>t* tax revenue will decrease (Laffer curve).
- At t* the **MUi/MRi=** λ for all individuals