Dear Student

This document contains the following:

- specific questions and answers

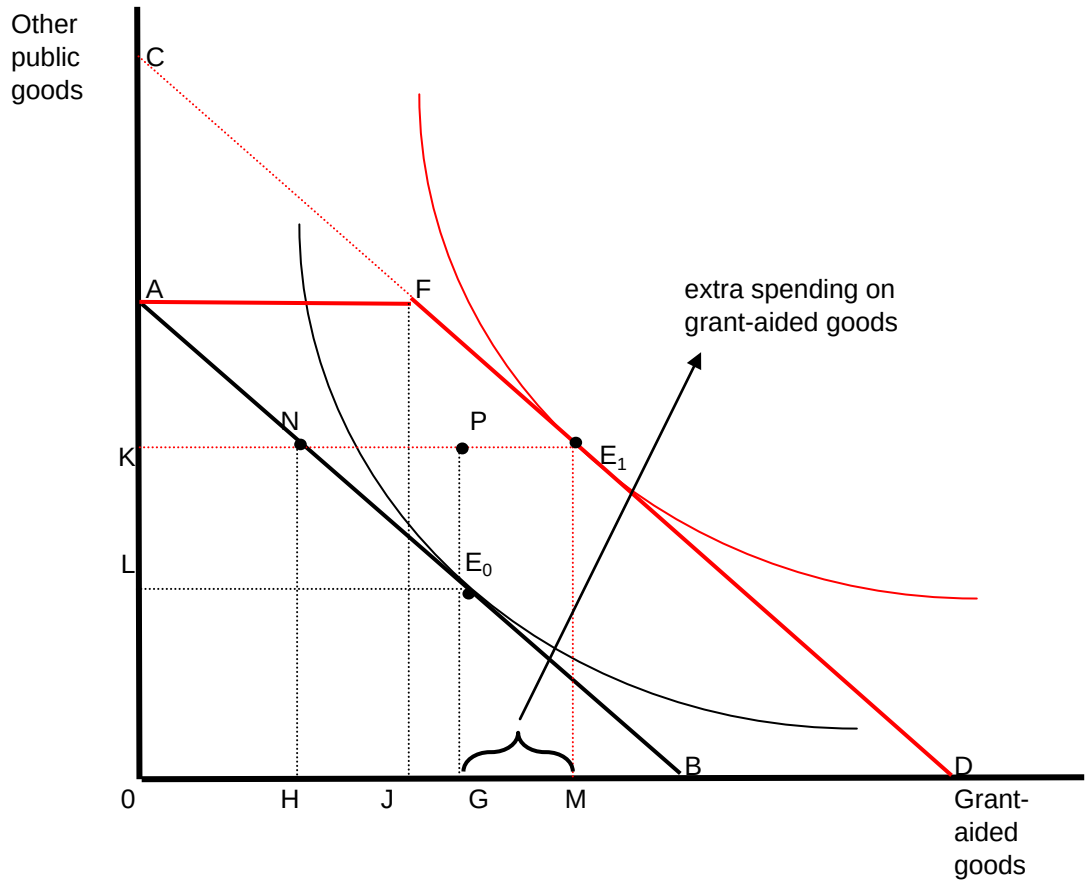
SPECIFIC QUESTIONS AND ANSWERS

Please work through these questions and answers and familiarise yourself with the concepts. These long questions are important for the upcoming examination in October 2018. Note that the examination paper is a fill-in examination paper. The purpose of the abridged answers is to give you an indication of how the questions have to be interpreted and what information has to be included in the answers.

QUESTION 1

(a) Evaluate the impact of an intergovernmental conditional non-matching grant with the aid of a diagram. What would the rationale be for such an intergovernmental transfer? (10)
Answer:

- grant = AF (or HM = NE_1)
- new budget line AFD
- spending on grant-aided public goods
  - before grant = 0G
  - after grant = 0M
  - extra spending = GM (=PE_1)
- spending on other public goods
  - before grant = 0L
  - after grant = 0K
  - extra spending = LK
- part of grant is used on other public goods
- appropriate for activity that is low priority for sub-national government but high priority for central government



(b) Discuss the economic impact of a tax on personal income (**do not** use a diagram). Refer to the following in your answer: (a) work effort and empirical evidence (b) excess burden of the tax. (10)

Answer:

- tax has income and substitution effect
  - income effect – increase in tax rate causes lower after-tax income
  - work effort increases to compensate for losses
  - substitution effect – opportunity cost of leisure = wage
  - tax causes after tax income to decrease, i.e., opportunity cost of leisure decreases
  - consume more leisure at lower price
  - work effort decreases
- combined effect important
- elasticity of supply of males less sensitive than elasticity of supply of married women
- relative prices are distorted (price of earning income vs. price of leisure)
- has excess burden

QUESTION 2

(a) Use a table to compare the key characteristics of public and private goods. (10)

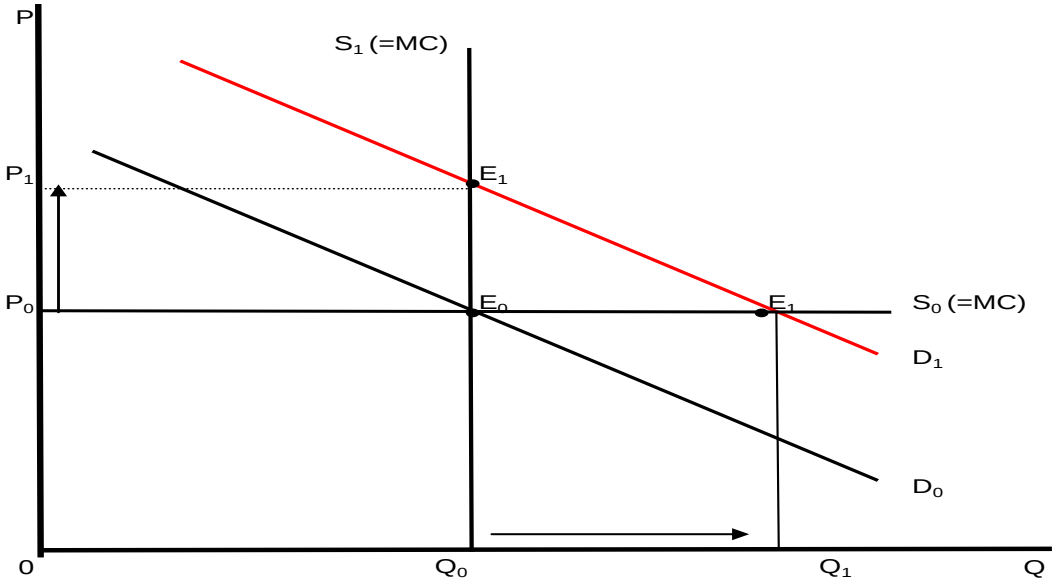
Answer:

Criteria	Public	Private
Property rights	Non-excludable	Excludable
Consumption	Non-rival	Rival

Aggregate demand curve	Vertical addition of P	Horizontal addition of Q
Equilibrium	∑MU =MC	MU = MC
Pricing rule	∑P = MC	P =MC

(b) Use a diagram to explain the potential benefits of a government housing subsidy for poor buyers if housing supply is (i) inelastic and (ii) elastic. (10)
Answer:

Diagram (4 marks)



- if supply is perfectly inelastic (vertical) – short run case
  - purchasing power increases
  - demand curve shift (D_0 to D_1)
  - prices of houses increase (P_0 to P_1)
  - benefit of subsidy shifted to existing homeowners (capital gains)
- if supply is perfectly elastic (horizontal) – long run case
  - demand curve shift (D_0 to D_1)
  - quantity supplied increases ($0Q_0$ to $0Q_1$)
  - price unaffected
  - no shifting of benefit – new owners get the benefit of subsidy

QUESTION 3

Discuss the assignment of spending and taxation responsibilities to national and sub-national governments. (Use the three broad economic functions of government as a point of departure.) [20]

Expenditure (10 marks)

- stabilisation

- monetary policy and fiscal policy a central government function
- open economies … expansionary policy… benefits to other regions
- printing of money to finance expenditure?

- allocation (central and provincial and local – public goods… national or local)
  - static
  - accommodates diversity of tastes (regional gov)
  - spatial characteristics of public goods
  - lower-tiers have more information on needs
  - diseconomies of scale if bureaucracy or region is too large
  - dynamic
  - decentralisation stimulates innovation
  - capacity at local level?
- redistributive
  - central government function… eg higher taxes… mobile labour exits

Taxation (10 marks)

- taxes should complement expenditure assignment
- equity criterion – vertical and horizontal equity across regions
- efficiency criterion – minimise market distortion and cost of collection
- progressive taxes to central government
- macroeconomic stabilisation taxes (income taxes and VAT) – centralised
- unequal tax bases (mining) to central government
- taxes on mobile factors to central government (eg company tax)
- residence-based taxes (excises) to regional governments
- property taxes (immobile) to local authorities
- user charges (all levels)

QUESTION 4

(a) Discuss any <u>one</u> of the following models of public expenditure growth:

(i) Baumol's unbalanced productivity growth model (a micro model)

OR

(ii) Musgrave and Rostow's stages-of-development approach (a macro model)(10)

Baumol's unbalanced productivity growth

- ✓ Govt expenditure increase (↑) disproportionately because ↑ prices of inputs used by public sector relative to those used in private sector
- ✓ **Progressive sector**: technologically progressive activities e.g. innovation, capital formation & economies of scale – all contribute to rise in level of output
- ✓ Important feature: cumulative increase in productivity of employees, justifies increases in wages and salaries
- ✓ **Non-progressive sector**: inherent features only permit sporadic changes in productivity
- ✓ Technological structure of a sector therefore determines the increase in its labour productivity
- ✓ Labour is only one of the inputs in progressive sector; in non-progressive sector often the end product

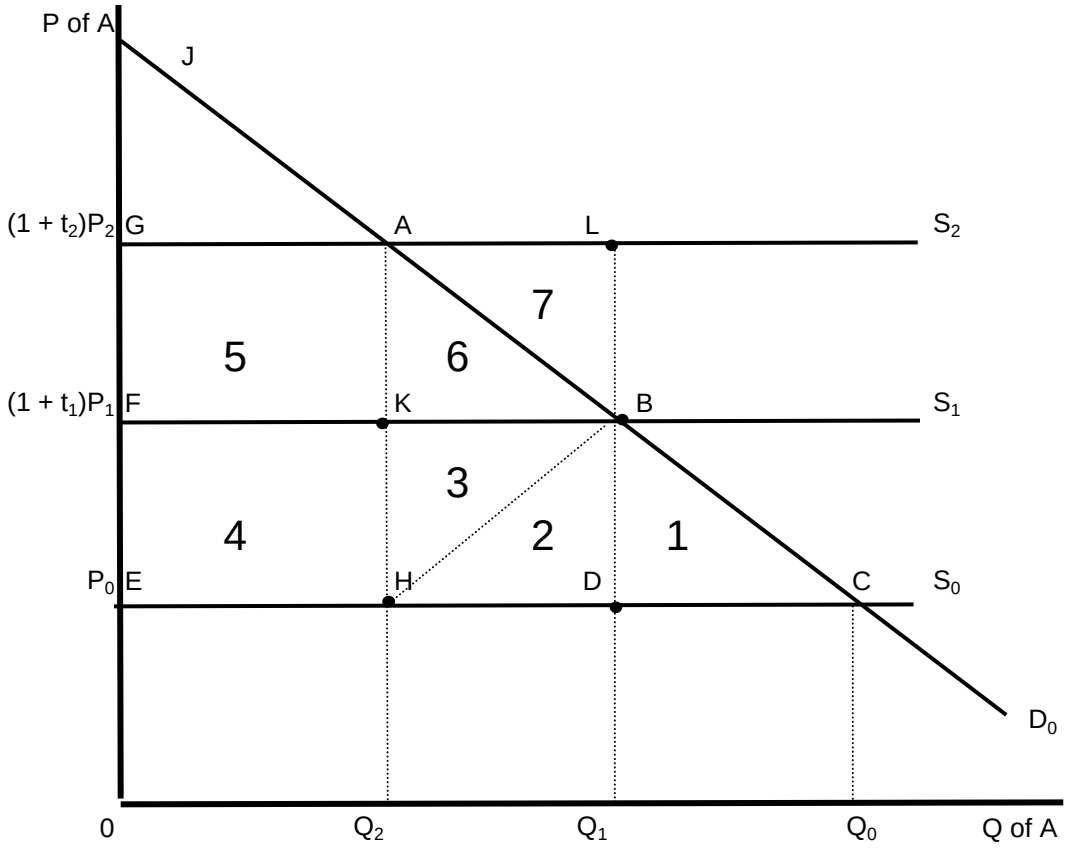
- ✓ In non-progressive sector. a limit to productivity increases – largely determined by labour-intensive nature of the service. N-p sector usually consists of services. Applies especially to public sector – labour important – e.g. education, law & order
- ✓ Technological changes have smaller effect on productivity in n-p sector. Only sporadic improvements in productivity in n-p sector compared to relatively rapid increases in progressive sector
- ✓ Wages & salaries in both sectors need to move together to prevent labour leaving n-p for progressive sector
- ✓ This raises relative costs of the n-p sector, because salary increases are not accompanied by same increases in productivity as in the progressive sector.
- ✓ Baumol may have underestimated the opportunities for technological advancement in the public sector OR Not tested empirically in RSA

Musgrave & Rostow's stages

- ➢ Explains how G tends to increase when economy develops from a subsistence or traditional economy to an industrial one
- ➢ In **1st stage of development**
  - important to get investment (I) going
  - Private sector still small, thus government may have to participate actively by providing basic infrastructure necessary for an environment conducive to economic development
  - In this 1st stage, capital expenditure will feature strongly in government expenditure
- ➢ During **middle stage of development**
  - government will still undertake investment, whilst private I will also commence
  - Private I stimulated by positive external effects of government I during 1st stage
  - However, development of private sector gives rise to market failures, which government must address, thus increasing G
- ➢ During **last stage of development**
  - capital expenditure by government (as % of GDP) decreases because most infrastructure already in place
  - Expenditure on education, health, welfare programmes and social security will tend to increase due to high income elasticity of demand for such expenditures
- ➢ Overall result is continuous increase in the share of government in the economy
- ➢ During early stages of South Africa's industrialization e.g. until 1960s and 1970s, these trends were also noticeable
- ➢ Subsequent decline in government investment does not indicate last stage of development – better explained in terms of other theories [e.g. Peacock and Wiseman, or Meltzer and Richard]
- ➢ Many rural areas in country have not even entered 1st stage of development

(b) Government currently levies a selective tax of t_2 on a good A, causing an excess burden. "However, there are implications for economic efficiency and government revenue if this tax rate is halved." Discuss this statement with the aid of a diagram, the consumer surplus approach and by assuming a constant-cost supply. (10)
[20]

Diagram (5 marks)



Discussion (5 marks)

- at t_2 tax revenue = 4 + 5 and excess burden = 1 + 2 + 3 + 6
- at t_1 tax revenue = 4 + 3 + 2 and excess burden = 1 + 2 + 3
- excess burden much less and revenue did not halve
- tax at low rate on a broad base
- consumer surplus increased from JAG to JBF

QUESTION 5

Discuss two key tax equity principles. What are the advantages and shortcomings of each? (10)

Answer:

benefit principle

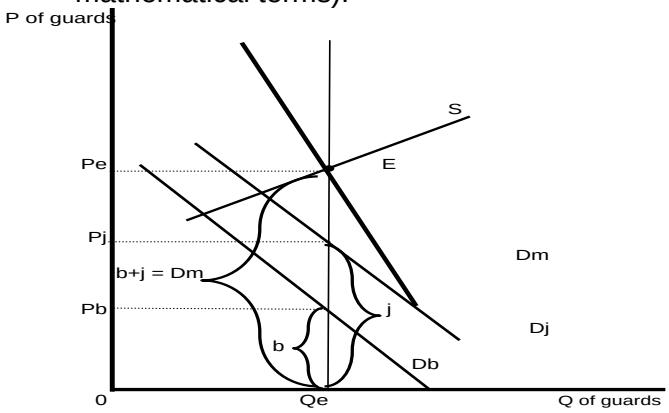
- user pays for benefits
- expenditure linked to revenue
- resource are efficiently allocated (benefit taxes = prices)
- benefits must be excludable
- existing distribution taken for granted

ability-to-pay

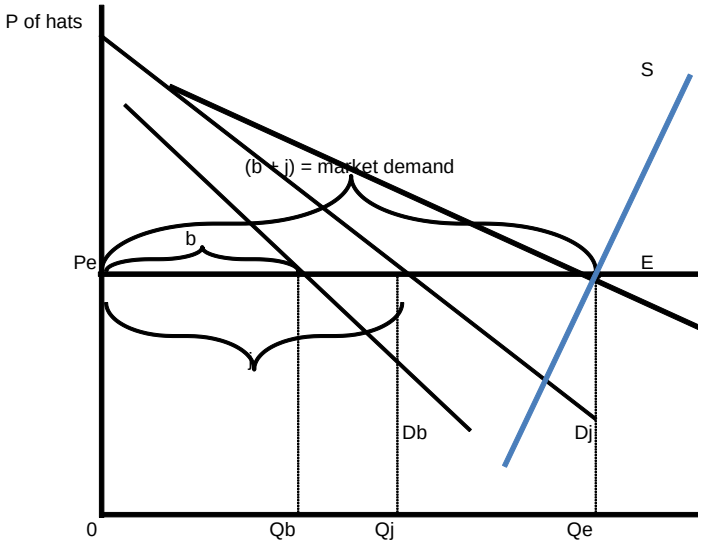
- linked to capacity
- horizontal – persons with same income pay the same tax amount
- vertical – persons with higher income pay higher tax amount
- is income a good measure of ability?
- problem of determining vertical equity and rate structure (how progressive or what?)

QUESTION 6

(a) "The fundamental difference between the public and private good cases is the manner of deriving the market demand curve". Discuss this statement with the aid of two diagrams. Also state how the respective equilibrium conditions for optimal provision and pricing differ (in mathematical terms). (15)



- pseudo demand curves (Dj and Db)
- non-excludability - quantity the same for b and j
- consumers are price adjusters/quantity takers
- sum of prices = market demand (vertical addition)
- at equilibrium (efficiency rule): MUb + MUj = MC
- efficient pricing rule: Pb + Pj = MC



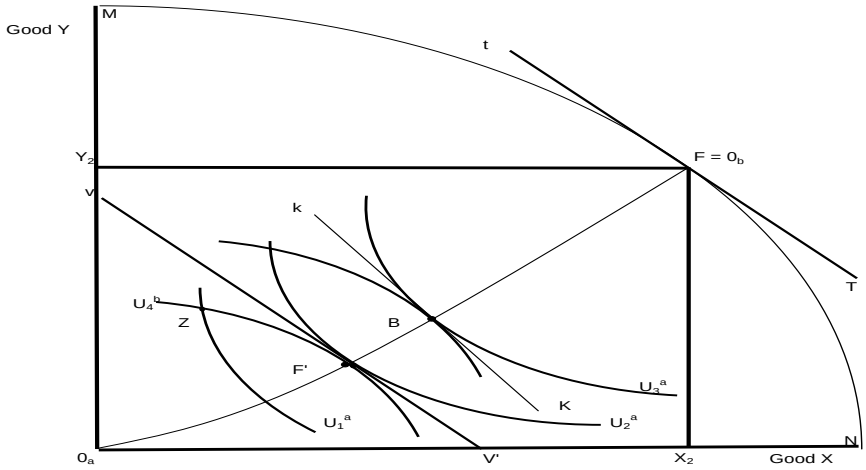
- market demand… consumers are price takers/quantity adjusters (2 marks)
- sum of quantities = market demand (horizontal addition)
- at equilibrium (efficiency rule): condition for provision: MUb = MUj = MC
- efficient pricing rule: P = MC

QUESTION 7

Discuss Condition 3 (top-level simultaneous equilibrium) of the benchmark model of resource allocation as follows: (10)

(i) $$MRPT_{xy} = \frac{MCx}{MCy} = \frac{Px}{Py} = MRS^{a}{}_{xy} = MRS^{b}{}_{xy}$$

(ii) Diagram: [5]



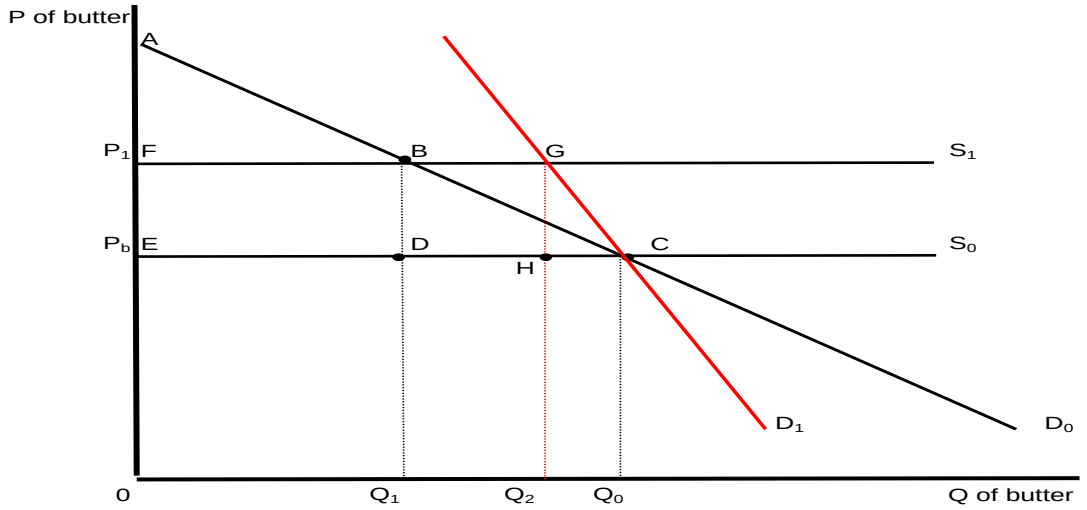
(iii)

- F or F'
- Impossible to increase utility of A or production of X without decreasing utility of B or production of Y or vV is parallel to tT

QUESTION 8

(a) Explain with the aid of a diagram why it would be efficient to rather tax goods with price-inelastic demands instead of price elastic goods (assume a horizontal supply curve). What are the implications for tax revenue and equity of this elasticity rule? (15)

- Demand D_0 is more elastic than D_1
- Assuming constant returns the supply is S_0
- Impose selective tax and supply shifts to S_1
- In the case of (price) sensitive demand curve D_0 quantity demanded decreases to Q_1 and for the (more) insensitive demand curve D_1 it decreases to Q_2
- The excess burdens are BCD (for D_0) and GCH (for D_1)
- Where demand is inelastic the excess burden is less for the same tax rate change – (economically) more efficient
- The government revenue for D_0 is FBDE and for D_1 it is FGHE
- From an efficiency and revenue perspective it is again better to tax price inelastic commodities
- Price inelastic goods are necessities often and taxing these would be inequitable

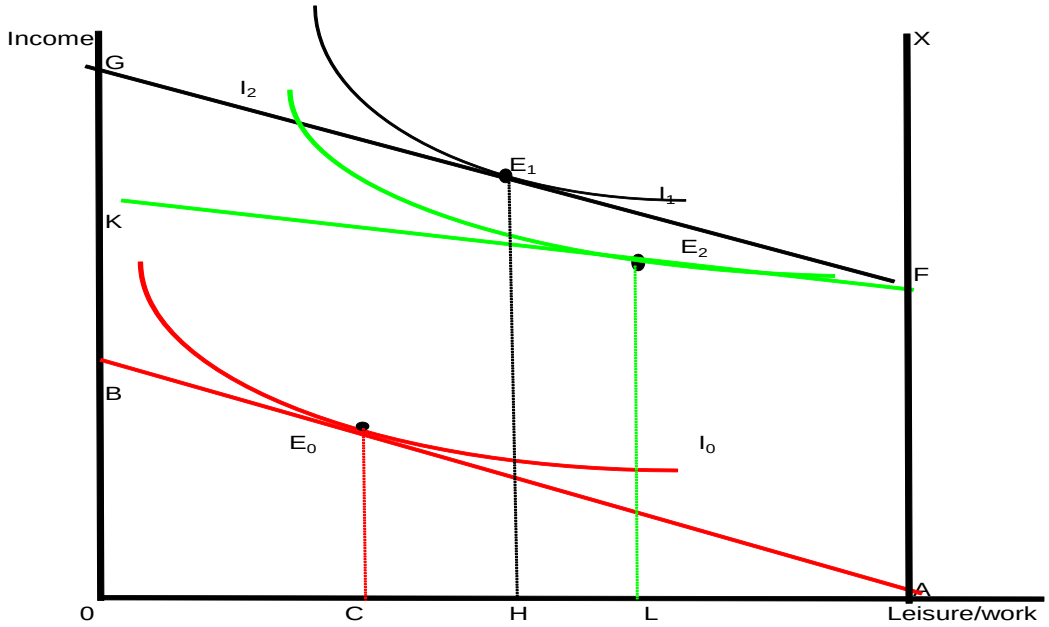


(b) Briefly discuss the relationship between the personal income tax rate and tax revenue popularised by Arthur Laffer. (**Do not** use a diagram). (5)

- higher income tax rates will not necessarily produce more revenue
- tax revenue = tax base X tax rate
- low rates increases...income effect dominates... work more... tax base increases... revenue increases
- at high rates subsitution effect dominates... work less... tax base decreases... revenue decreases.

QUESTION 9

(a) Explain with the use of a diagram what the effect of a cash transfer is on work effort. How does the funding of the cash transfer using a personal income, impact on work effort? (15)



- AB combined budget and time constraint and equilibrium at E0 work CA
- income transfer... budget constraint shifts parallel to GF
- equilibrium at E1 on higher indifference curve I1
- work fewer hours = HA
- due to income effect
- income tax to finance transfer reduce opportunity cost of leisure
- budget line swivels to KF
- new equilibrium E2 on lower indifference curve
- work effort even less = LA
- due to income and (stronger) substitution effect of income tax

(b) By making a few assumptions it can be shown that an additive welfare function (e.g. $W = U_a + U_b + ...$) will require that government redistributes income completely equally. Discuss these assumptions critically. (5)

1 - individuals have same utility functions ...income only
- utility cannot be measured

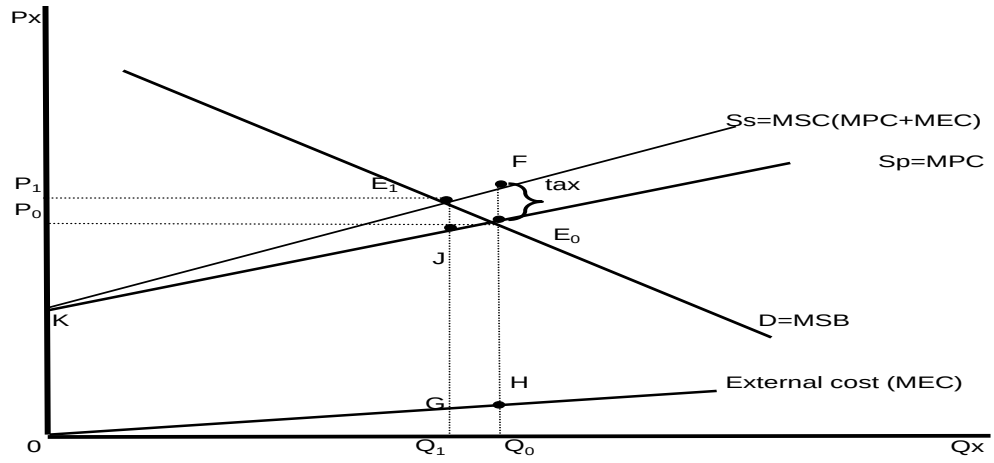
2 - MU ↓ as income increases
- difficult to prove

3 - total income is fixed
- work effort and savings may decrease reducing the size of the cake

QUESTION 10

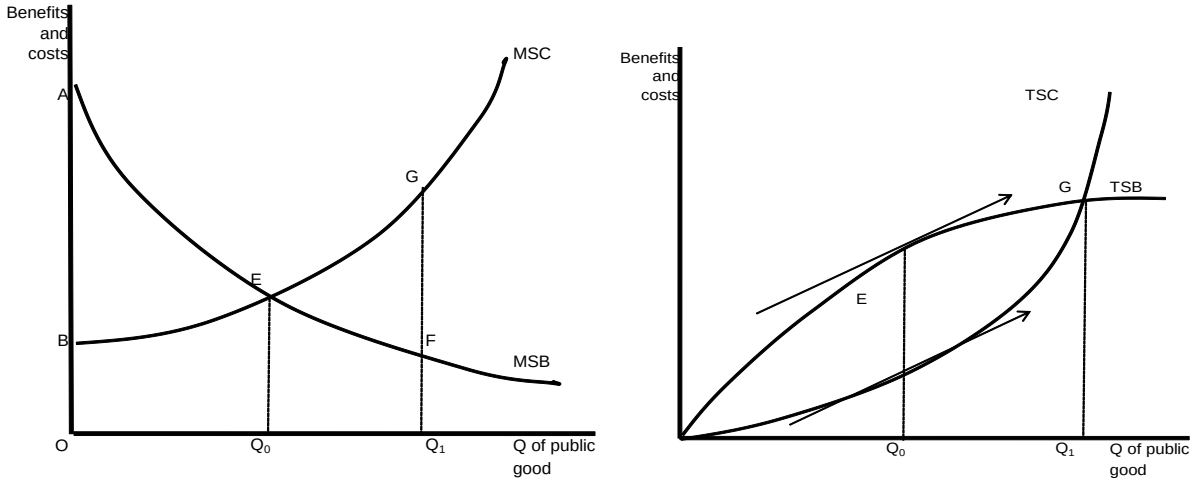
Discuss with the aid of a diagram, why government should intervene when a factory producing paper pulp causes a negative externality (e.g. pollution). This question could also be asked in terms of education which serves as a positive externality. Please look in the text book for positive externalities. The answer for negative externality is as follows: (10)

- causes external costs (MEC) = area KE_oF
- private equilibrium at E_o ... MPCosts (supply) = MPBenefits (demand)
- MSC = MPC + MEC
- MSC > MPC
- social equilibrium at E_1
- external costs = KJE_1
- private equilibrium inefficient (over-provision and under-pricing)



QUESTION 11

Explain using two diagrams how the maximising behaviour of bureaucrats could contribute to an oversupply of public goods (the Niskanen model of bureaucratic failure). (10)



- Salaries, power, prestige positively related to budget size
- Total costs rises at increasing rate
- Total benefits increase at a decreasing rate
- The slopes of total costs and benefit curves determine marginal rates of change
- Social optimum level where where distance between TSB and TSC (at Qo) is greatest (distance E) or MSC = MSB (at Q_0)
- Bureaucrat maximises budget where TSB = TSC (Q_1) and here MSC > MSB = GF
- $Q_1 > Q_0$

Wishing you all the best with your studies.

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