Ec355 Autumn 2010
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Formative assessment 2010-2011
Answer guidelines, rough sketch
Slightly edited 10 May 2011 – see italics

Please answer *all* questions, but only turn in your answer to one question. I will mark your answer to this question "as on a final exam." I will provide answer guidelines to this Formative Assessment and we will revise these in the final exam revision class.

Please note that although this formative assessment resembles a final exam, the final exam questions will be a bit shorter, and more "polished." However, the level will be similar to that of these questions, perhaps slightly easier.

1. **Answer *both* parts (a) and (b) of this question.**

(a) Is a work of fiction (a play, a story, a novel) a 'pure public good'? Explain why or why not.

AG: A pure public good must be non-rival, i.e., given the amount produced one person's consumption doesn't reduce the potential for others' consumption. It also must be non-excludable, i.e., it is impossible (or prohibitively expensive) for the producer, owner, or purchaser of the good to keep other "non-purchasers" from enjoying it in full.

The answer to this question depends on how you look at it, but it probably would not be seen as a pure public good, although it has some of the characteristics. A work of fiction (i.e., the information content, the words contained therein) is certainly non-rival (although there is congestion in the auditorium for a live performance of a play, and a physical copy of a book may be read by only one person at a time). It can be experienced, read, and performed by any number of people without other people's enjoyment of it being diminished (in fact, the utility of reading a book may be increased by knowing others have read, and can discuss it). However, the contents of a work of fiction can be carefully guarded by a publisher via copyright, forbidding the printed or electronic distribution of the content without permission or fees paid. Still, given the extent to which these works can be shared on the internet and via copying, and this is hard to control, it may be becoming non-excludable (although companies such as Amazon would fight this).

<u>*Consider*</u>*:* What is an "impure" public good?

(b) Suppose there are 20 individuals. Each individual can divide their income m between a contribution g_i to a public good and the purchase of a private 'numeraire' good, x, at price p_x=1 per unit. The total amount of the public good provided is $G = \sum_i g_i$. Ten of the individuals, the 'A' individuals, have the utility function $U_A(x,G)=x+\ln(G)$. The other ten, the 'B' individuals, have the utility function $U_B(x,G)= x+4\ln(G)$.

(i) Give the function that describes an 'A' individual's marginal benefit of the public good. Give the function that describes a 'B' individuals' marginal benefit of the public good. Give the function that describes the social (total) marginal benefit of the public good.

AG: An 'A' individual's marginal benefit of the public good (in utility units, and, equivalently here, in units of the private good), is the derivative of her utility with respect to G, i.e., $MB_A(G) = d(x+\ln(G))/dG = 1/G$.

A 'B' individual's marginal benefit of the public good (in utility units, and, equivalently here, in units of the private good), is the derivative of her utility with respect to G, i.e., $MB_B(G)=d(x+4\ln(G))/dG = 4/G$.

The social marginal benefit function "adds up" the individual marginal benefit functions for all individuals (equivalently, we of course could have added up the utility functions and then taken the derivative), here, ten A's and ten B's.

Thus: SMB(G) = 10*MB_A(G)+10*MB_B(G)=10/G + 40/G = 50/G

(ii) What is the socially optimal provision of the public good? Explain why this amount is socially optimal.

AG: Consider the Samuelson condition for the Pareto optimal provision of public goods (sum of marginal benefits = social marginal benefit = marginal cost) (this is a necessary condition, which is also sufficient if we are maximizing a concave function, the net benefit function, that goes positive at some point in its domain, as we have here).

Intuition: If less than this amount is provided, we can increase the amount provided somewhat at a cost less than its social benefit. If this were paid for by individuals whose marginal benefit exceeded the cost (at the original level) this could be a Pareto improvement. If more than this amount were provided we could make a Pareto improvement (similar argument) by reducing the amount provided somewhat.

Since the cost of providing a unit of the public good is here set equal to one. Here the Samuelson condition implies 50/G=1, or G=50.
(Note that at this level each A individual's marginal utility is 1/50 and each B individual's marginal utility is 4/50. So no *individual* would want to supply this much, and if this were the amount provided each individual would like to reduce her own contribution and free ride.

Consider: What does this tell us about the standard prediction for the free market's provision of the PG?

(iii) Suppose no one contributed anything to the public good. Would this profile of strategies constitute a Nash equilibrium? Why or why not?

AG: This would *not* be a Nash equilibrium. When a public good has linear benefits the Nash Equilibrium typically involves free-riding, but here both A type and B type individuals have a concave utility function in the public good. The first marginal unit of the public good is essentially of infinite value to any individual (consider the marginal benefit functions for G "very small"). So this "no one contributes" profile would not be a Nash equilibrium because any individual would prefer to deviate to making some positive contribution (holding others' zero contribution constant.)

Note: With homogeneous individuals (unlike here) the individual essentially sets individual marginal benefit = 1/N * social marginal benefit = marginal cost. Note that each of these functions (SMB and MC) take the total amount of public goods provision as an argument.

(iv) **Suppose all ten B individuals contributed g_i =0.4 units (leading to a total contribution of G=4), and all A individuals contributed nothing. Would this profile of strategies constitute a Nash equilibrium? Would it be Pareto optimal? Explain and discuss the implication of your finding for the government's role in providing public goods.**

AG: Here the marginal benefit is 4/4 = 1 for B types and ¼ for A types. At the margin, the *benefit* of increasing or decreasing the contribution is equal to the cost for B types, so they will not deviate. For the A types the cost of supplementing the public good exceeds the benefit, but they are not contributing anything, so they cannot reduce their contribution, so they will not deviate. Thus, this *is* a Nash Equilibrium.

We know that this is not Pareto optimal as the public good is undersupplied/underconsumed (we already determined that the optimal level was 50). We could see a marginal Pareto improvement if, e.g., *all* A types also contributed a tiny amount. This would benefit each of them at a rate 10*1/4 =2.5 per marginal unit but only cost them at a rate of 1 per unit.

This suggests a role for government intervention in providing public goods, even if some amount is provided in the absence of government intervention. Even though a positive amount of the PG is provided in equilibrium, it

is not "enough." The government could mandate the optimal provision. (Of course, this requires the government to be benevolent, and to know people's preferences over public goods, which is difficult).

2. **Answer *all* parts (a), (b) and (c) of this question.**

(a) Depict a consumer's choice of insurance using a 'state-space' diagram with a 'good' and a 'bad' state. If the consumer is risk-averse and the price of insurance is actuarially fair, how much insurance will she buy? Explain.

AG: This is depicted in Munro and Connolly, fig 6.2. Vertical axis is income in "bad" state 2, horizontal axis is income in "good" state 1. N: endowment point . 45 degree line – full insurance (same income in each state). (Note: This depiction tells you nothing about the probability of each state.) UU: indifference curve. Convex because of diminishing marginal utility of income, i.e., risk aversion (roughly speaking). NF: budget constraint, determined by π, the price of insurance.

She will fully insure (as depicted in diagram); as it is "costless" to transfer (expected value) resources between each state, she will "fully insure" to set marginal utility the same in each state.

Advanced algebraic explanation: Budget constraint, determined by π, the price of insurance: Purchasing a unit of insurance costs π in both states of the world, but yields 1 in the bad state (nets $1-\pi$). Hence the slope of the BC is $-(1-\pi)/\pi$.

MRS (negative of slope of indifference curve, how much Y2 the consumer must get to be willing to give up a unit of Y1) can be derived by totally differentiating $EU(...) = (1-p)U(Y1)+pU(Y2)=0$ and solving for $-dY2/dY1 = (1-p)\,U'(Y1) / pU'(Y2)$

Optimal insurance: As usual, the maximizing consumer sets MRS equal to the negative of the slope of the budget line (for interior optimum), hence tangent to the indifference curve. Thus $(1-p)\,U'(Y1) / pU'(Y2)=(1-\pi)/\pi$. With actuarially fair insurance the cost of an insurance policy is the expected value of a payoff, which occurs with probability p. So the cost π of a unit of insurance (pays 1 if bad state occurs) is the probability of the bad state. I.e., $\pi=p$.

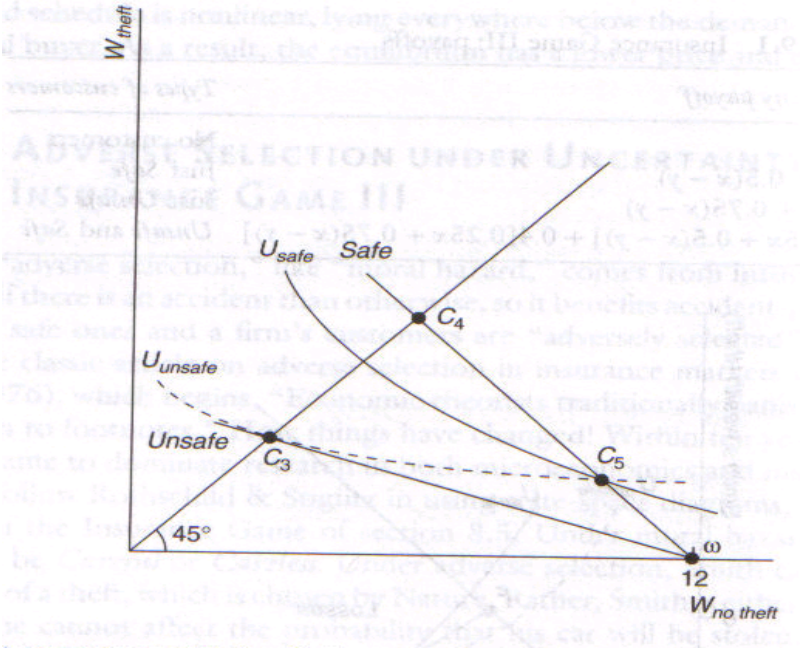
With a competitive insurance market firms must make no expected profits, hence with no transactions or administrative costs, this must hold. If insurance is actuarially fair, the consumer will choose the amount of insurance z to set the relative marginal benefits of income in each state equal to the relative marginal cost of income in each state $(1-p)\,U'(Y1) / pU'(Y2)=(1-\pi)/\pi$ which if $p=\pi \rightarrow$ $U'(Y1) / U'(Y2) = 1$.
This only holds (given our assumptions of concave utility) where Y1=Y2. Hence the consumer will "fully insure."

Note, this also requires 3. Consumers have accurate perceptions of risk. 4. The insurance company also knows the chances of a loss with the same accuracy as the consumer. 5. Any actions that affect the risk are observable to the insurer.

(b) Depict two consumers' choices of insurance using a 'state-space' diagram with a 'good' and a 'bad' state. Let one consumer have a probability of a loss of ½ and the other consumer have a probability of a loss equal to ¼. Assume these probabilities are consumers' private information. In this context, depict a competitive market for insurance with a "separating equilibrium" in which each consumer chooses a different level of insurance.

AG: A separating equilibrium, in which the "low risk" type accepts less than full insurance (e.g., through co-payments) in exchange for a lower premium, is depicted below. The vertical lines represent the actuarially fair insurance rates for each type. Note that the slope of this line for the unsafe type is precisely half that of the safe type *(note: the diagram below actually depicts probability of losses more like ½ and ¾, if we assume that X and Y axes are the same)*. As a loss is twice as likely, this consumer must give up precisely twice as much in the "good" (no-theft) state to get compensated by a certain amount in the "bad" (theft) state.

Since the insurance firm(s) do(es) not know the consumer's type, it can not gear insurance specifically to a consumer, and thus cannot offer an unlimited amount of actuarially fair insurance to each. Actuarially fair insurance (offered in unlimited quantities) for the safe type would be attractive to the unsafe type. Instead, the firm offers insurance that is actuarially fair to the unsafe type, who chooses to fully insure (point C3), and also offers a contract with partial insurance that is actuarially fair for the safe type (point C5). Note that these are on the line of actuarial fairness for each type; thus the firm is making a zero profit. Note that neither consumer could do better by choosing the insurance meant for the other (the unsafe type is indifferent).



(Aside: If you look carefully you will see that no firm can set an insurance contract that would draw either type of consumer and make a profit, this, given these slopes and utility functions, "cream-skimming" is not possible here, but this will not always be the case; under some environments there will be no equilibrium outcome that is robust to cream-skimming.)

(c) Explain why adverse selection can to a "separating equilibrium" in the market for insurance, and why this leads to an inefficient outcome relative to the perfect information case.

AG: Only an outcome with full insurance for all consumers is efficient, presuming the insurance company is risk-neutral, i.e., willing to bear risk at no cost, and the consumers are risk-averse.

[Technical explanation: If the consumer is risk-averse this implies that she has declining marginal utility (essentially). Hence, holding expected income constant her expected utility is maximised by equalising income (hence utility and marginal utility) across each state. If insurance is actuarially fair the consumer can purchase insurance that yields any allocation between the states that preserves the original value of expected income. Thus she will equalise income across states, purchasing enough insurance to fully cover the loss (i.e., if the loss is L, she will purchase L units of insurance at cost p*L, where p is the probability of the loss). This is the "full insurance result." It can be depicted graphically, noting that the slope of the budget line (-1-p)/p will be tangent to the indifference curve at the "full insurance" point that is the point chosen; where the slope is the marginal rate of substitution.]

In the outcome above, the lack of full insurance is inefficient (presuming these individuals are more risk averse then are the insurers.)

As figure 6.3 and 6.4 in Connolly and Monroe (point G) illustrates, there can be a single "pooling" (at full coverage) contract that is Pareto efficient and yields zero profit. However this is not a competitive equilibrium in the sense that it is not robust to a firm offering a "cream skimming" policy, such as at point R, that will attract low-risk types. On the other hand, if all consumers are mandated to fully insure, no other policy along the 45 degree line of full-insurance could *draw away just the low-cost consumers (and make a profit)*, thus this is a stable equilibrium with a higher level of total welfare.

(d) With reference to the problem of 'adverse selection,' present a case for government intervention in the health care market, with reference to the UK National Health Service or health care systems in other countries.

AG: Here adverse selection involves individuals of differing health status, but where the health insurance companies cannot observe this or cannot discriminate on this basis. As illustrated in the "Adverse selection: two-type, two event model and (simple) insurance" in lecture slides "ec355lecr7_asymmetric.ppt" on the CMR (depict this state-space diagram) The insurance company can choose a menu of policies with distinct prices and

payouts; i.e., they can choose points in the state space to offer. The insurance company could offer a single policy that they intend both types to buy ("pooling"), or they could offer two distinct policies each intended for a different type ("separating"), or they could offer a single policy that only one type will choose, and "shut out" the other type (also "separating"). [Technical note: in general, pooling can never be profit-maximising unless there are costs to offering different "menu items" or legal restrictions.] Because of "cream-skimming", a pooling equilibrium may not be robust to competition, as illustrated in the lecture notes and in fig 6.4 of Munro and Connolly.

As a different diagram in M&C illustrates, there can be a single "pooling" (at full coverage) contract that is Pareto efficient and yields zero profit. However this is not a competitive equilibrium in the sense that it is not robust to a firm offering a "cream skimming" policy, such as at point R, that will attract low-risk types. On the other hand, if all consumers are mandated to fully insure (or the government fully insures them directly, basically as in the NHS), no other policy along the 45 degree line of full-insurance could draw away other consumers, thus this is a stable equilibrium with a higher level of total welfare.

Other sources of inefficiency (in the private market for insurance) include monitoring costs, administrative costs, and legal costs incurred by patients and insurers in the battle over who should pay for what claim, and in what risk pool an individual should be placed (hence how high their premium will be).

Also consider: Recent NHS changes, systems around the world, recent increases in health care costs, particularly in the USA

3. **Answer *all* parts (a), (b), and (c) of this question.**

   (a) **Discuss the evidence that extreme poverty around the world has increased or decreased during the second half of the 20th century.**

AG: See evidence and discussion from latter part of lecture notes on cmr "ec355lecr5.ppt". Cite evidence from Besley and Burgess (2003). Bourgingon and Morrison (2002) and Maxim Pinkovskiy, Xavier Sala-i-Martin (2009) are also relevant. Be sure to emphasize extreme poverty, inter and intra-country inequality, patterns of convergence and divergence, the recent reduced poverty in China and stagnant poverty in Africa, Be sure to note the measures of poverty you are considering.

Also consider: Patterns in inequality within and between nations.

(b) According to Amartya Sen, what are the axioms that a satisfactory measure of poverty should satisfy? Consider the measure "percent of the population whose incomes are below half of the mean income." Which axioms does this measure satisfy or fail to satisfy and why?

AG: Focus: changing the income of someone above the poverty line should not effect P
Monotonicity axiom: P should rise (other things held equal) if the income of a poor household falls (some element of vector y declines).
Weak transfer axiom: A transfer of income from a poor household to a poorer household should decrease P (and vice/versa).
Anonymity/symmetry: labeling doesn't matter

The measure "percent of the population whose incomes are below half of the mean income" (henceforth PHM) fails the Focus axiom – for example raising the income of a billionaire will raise the mean income and may increase PHM, as some individuals will fall below half of this new mean.
PHM fails Monotonicity – if someone is already below the half the mean income and their income decreases PHM need not change, and could actually decrease (as mean income will thus decline).
PHM also fails the Weak transfer axiom – e.g., a transfer from a poor individual below half-mean income to a poorer individual that leaves them both below half mean income will leave mean income unchanged and both of these will remain below half mean income, thus PHM is unchanged.
PHM satisfies anonymity.

Also consider: Inequality measures.

(c) Define a 'Rawlsian' social welfare function and a 'Utilitarian' social welfare function. Which of these will be more concerned with inequality in the upper half of the income distribution and why?

AG:
Utilitarian: W = U1+ U2 +..
This one is very general. Remember that this is not the same as expected income maximising, and it can embody a great deal of inequity (risk) aversion, if utility functions are very concave.

Rawlsian: W=min{U1, U2,…}

The Rawlsian measure will not be affected by inequality in the upper half of the income distribution (presuming none of these individual's are close to being the lowest-utility individual in society).
The Utilitarian measure will be more affected by this: if there is generally diminishing marginal utility to income then a more skewed distribution of income in the upper tail implies passing income from those with a higher marginal value of it to those with a lower marginal value of it, and reducing the sum of utilities.

4. **Answer *all* parts (a), (b) and (c) of this question.**

(a) Define 'allocative efficiency' (the 'top-level condition'). Explain intuitively why this condition is necessary for Pareto efficiency.

AG:
Iii. Allocative efficiency or "top level" efficiency: Given the choices of outputs along the production possibility frontier, the "best" combination of outputs is chosen. In other words, no other choice of outputs could be distributed so as to make any consumer better off without making other consumers worse off. This is necessary for Pareto efficiency because otherwise a different output bundle could be produced that could be distributed so as to yield a Pareto improvement.

More formally [not asked for], assuming a concave ppf and convex indifference curves, a necessary and sufficient condition is that the rate that consumers are willing to trade off X for Y (which is the same for each consumer by exchange efficiency) must be the same as the rate of tradeoff in production.

$$MRSXY^{A} = MRSXY^{B} = MRTXY$$

To motivate the above equation, suppose at the current levels of production the producers, at the margin, can make 2 pies per cake. However, given the current supply of pies and cakes, consumers are indifferent between another pie and another cake. Here a welfare improvement could be made by producing somewhat more pies and fewer cakes.

Illustration of how a Pareto improvement may be achieved even where exchange and productive efficiency have already been attained (this one is a bit tricky, as B's indifference curves would be shifted in the new EB).

Also consider: Exchange and production efficiency, what they mean and why they are necessary for Pareto efficiency

(b) Now explain this using an Edgeworth box, (2 consumers, 2 goods), nested in a production possibility frontier. Show how and why, in the absence of allocative efficiency, an outcome can not be Pareto efficient.

AG:
See figure 2.9 in Connolly and Munro

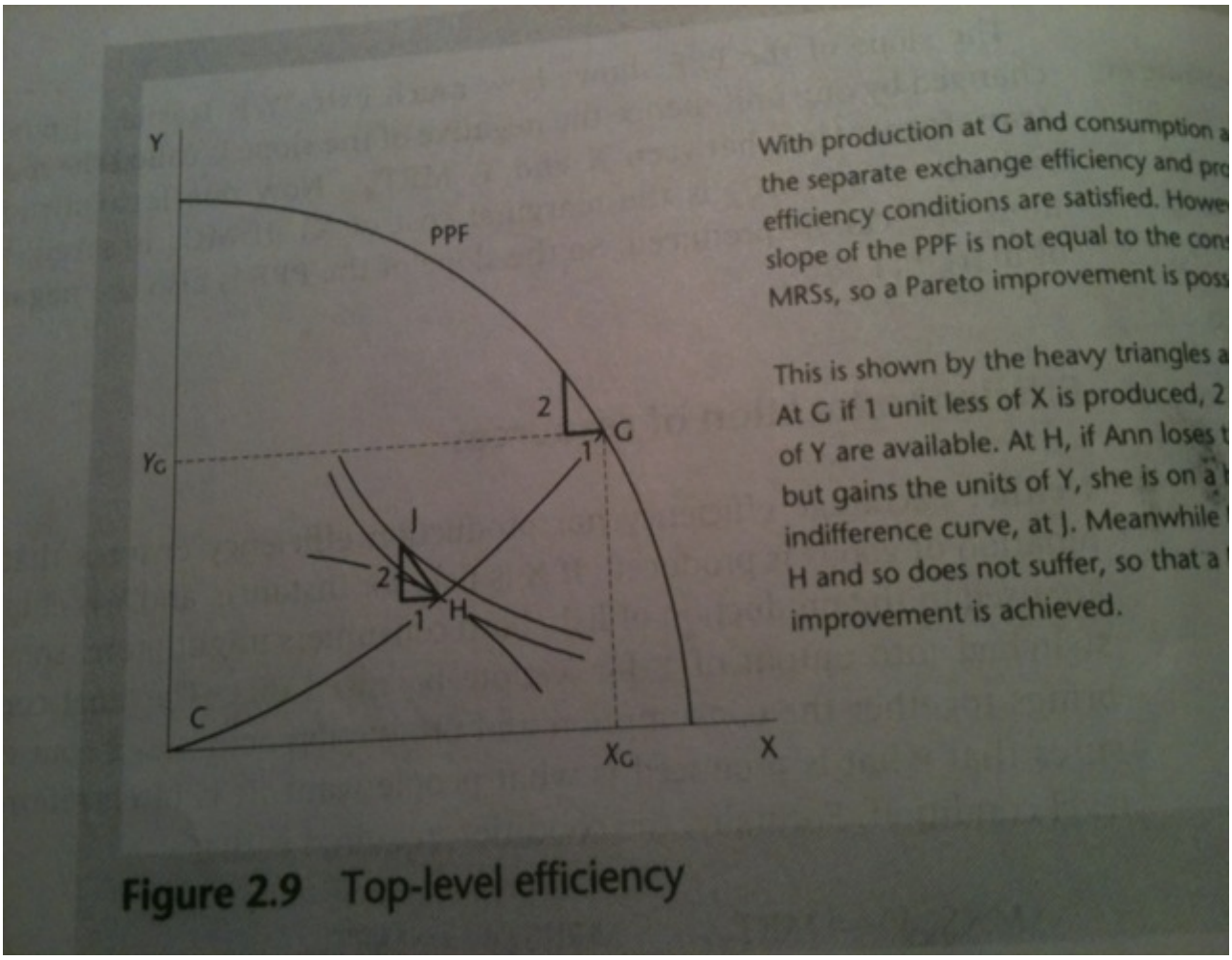


Figure 2.9 Top-level efficiency

Note that in the diagram above the change in production is felt only by Ann, who moves from H to J (and is thus better off) while Bill Remains at H.

The production choice (along the PPF) defines the boundaries of the Edgeworth box.
The slope of the PPF (MRT) must equal the MRS for allocative efficiency. Otherwise production could be reallocated along the PPF to make at least one consumer better off without making any others worse off, as the tradeoff between outputs in production at this point would not equal the rate at which consumers were willing to trade these off.

(c) Explain how a general competitive equilibrium (under the standard assumptions) will achieve allocative efficiency.

AG:
Profit maximisation → Top-level efficiency

$$PX = MCX$$

$$\& \; PY = MCY$$

(from profit maximisation of price-taking firms)

$$\rightarrow MRTXY = MCX/MCY$$

(basically definitional)

$$= PX/PY$$

(rearranging the above)

$$=MRSXY^{A} = MRSXY^{B}$$

(Essentially, the producers will pay attention to the signals sent by prices of inputs and outputs generated by the markets for each.)

(d) Explain why the assumptions underlying the fundamental welfare theorems may not hold, and why this may lead to 'market failures'.

"Popular" violations of these assumptions include (explain in some detail):

- Public goods
- Externalities
  - (Are markets complete? Could all possible goods/contingencies be specified?)
- Asymmetric information
- Increasing returns
  - (Technical: Equilibrium need not exist with concavities). See also non-convex preferences.
  - Can lead to monopolies, imperfect competition
- Bounded rationality (merit goods, myopia, etc.)

Public goods (e.g., environmental preservation of the commons, defence) can be directly supplied by the government. This is discussed in ec355lecr6.ppt. The problem of externalities can be solved either through making all relevant resources privately owned (but this may involve expensive monitoring) or through regulations. Bounded rationality may lead, e.g., to under-consumption of "merit goods" or myopia, each of which may lead ot undersavings or under-consumption of health care.

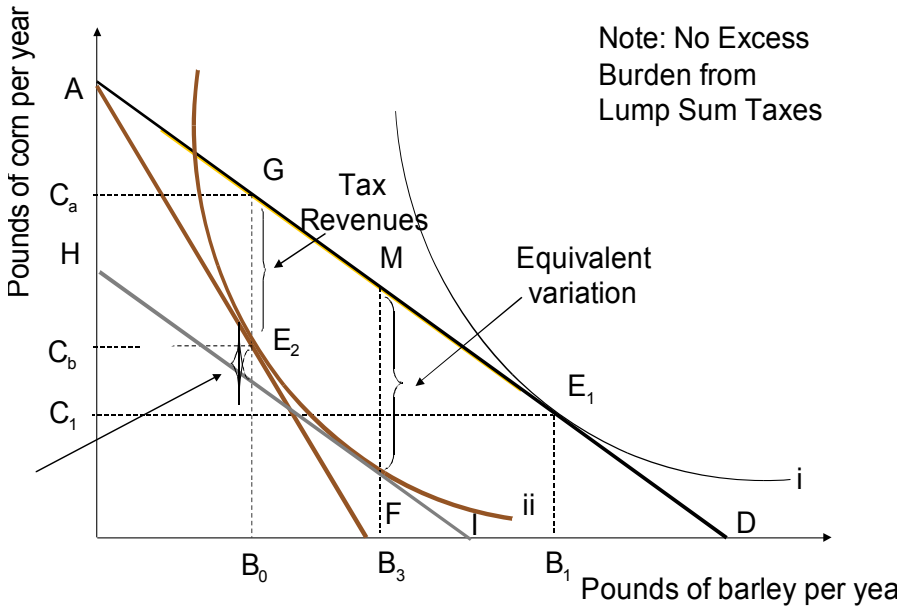
5. **Answer *all* parts (a), (b) and (c) of this question.**
   a) Suppose a lump-sum tax is impossible. As a second-best, should all commodities be taxed at the same rate? Why or why not? Consider the theory of optimal taxation, and consider issues of efficiency and equity.

AG:

Invoke the inverse elasticity rule here or the idea of Ramsey taxation. Assuming leisure can not be taxed, taxing all commodities equally will still lead to a price distortion, as the price of consumption relative to leisure is increased, and thus will not reflect the tradeoff in production.

To the extent that consumption is distorted, consumer surplus is lost, creating a deadweight loss. This can be illustrated graphically, as below, depicting either the loss of consumer surplus relative to a lump-sum tax that raises the same revenue, or the revenue lost relative to a lump sum tax with the same cost to utility:

Excess Burden of the Barley Tax



It can also be illustrated via algebra and intuition: MRTS=MRS for top-level efficiency, which is (basically) ensured by: MRSbc (for all consumers) = pb/pc=mcb/mcc = MRTbc for any pair of goods b and c. Otherwise a different set of goods and services can be produced along the PPF (note – this includes "leisure") that would increase some individual's welfare without decreasing another's. But a tax on a good means the amount the consumers pay is less than the amount the producer receives. Thus, with tax tb on b consumers now set MRSbc = (1+tb)*pb/pc where pb and pc represent the prices received by the producer.

Suppose we cannot have a lump sum tax. → Set a tax on each commodity to minimise the total excess burden. To minimise the DWL, the MCPF should be the same for taxes on each taxed good. If not, could reduce taxes on the good with the higher MCPF and increase taxes on the good with the lower MCPF and increase welfare. If MCPF starts at zero (for the infinitesimal tax) and increases in the tax rate, each commodity is taxed somewhat. (Note: DWL increases in the size of the substitution effect)

Excess burden is approximately proportional to the change in compensated demand. Thus this should be equalised across goods. If there are no cross-price effects then this implies the *Inverse Elasticity Rule:* As stated in C&M: $t_i/q_i = k/\varepsilon_i^c$ for all goods I, where t is the tax rate on the good, q the after-tax price, k a constant determined by the revenue required, and ε^c the compensated own-price elasticity of the good.

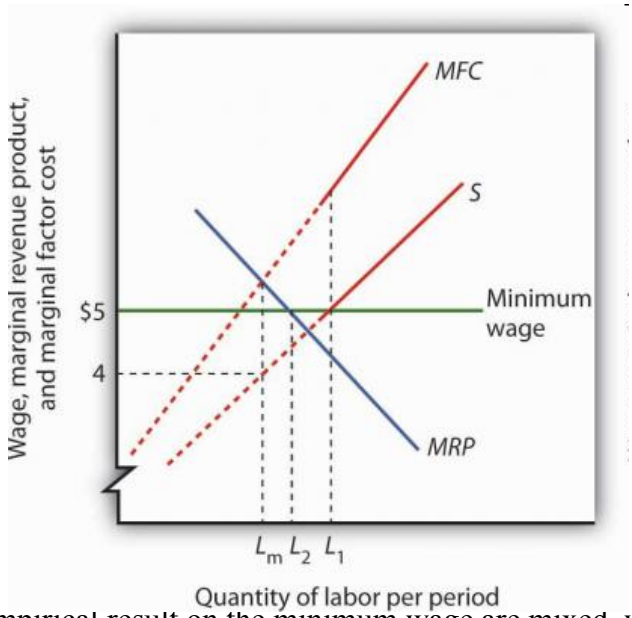
However, the Ramsey rule may tend to tax goods more heavily that are "necessities" and thus a larger share of consumption for poorer people. Thus, these taxes may tend to be "regressive" and, while promoting efficiency, may be harmful from an equity perspective. An inequality averse social welfare function suggests lower taxes on goods consumed by the poor (or those with low human-capital endowments). → Higher tax on goods with higher income elasticities (i.e., luxuries). These may come into conflict as necessities like food and water are disproportionately consumed by those on lower incomes. → Tradeoff between these. Suggests high taxes on goods consumed by the wealthy that are also price inelastic. For a formalisation of this tradeoff, see H&M 14.6: "The proportional reduction in the compensated demand for a good will be smaller if it is consumed primarily by the poor consumer" … [those with a high marginal utility of income]

b) When might a minimum wage decrease employment, and when might it increase it? Show this diagrammatically. Explain the empirical evidence on this question.

AG:

Present the standard model (with an upward sloping or vertical labour supply and an a downward sloping aggregate labour demand) and can note the consequent unemployment, deadweight loss, and a higher wage for some. This may increase inequality (making some unemployed and some wealthier), although in the context of a social safety net this may not be the case. .

Present the model with a monopsony (or oligopsony) employer (see diagram below). Here the correctly chosen minimum wage can increase employment and increase surplus. It will can also be presumed to decrease inequality, as it boosts the lowest wages without increasing unemployment, and puts people to work.



Empirical result on the minimum wage are mixed, with some suggesting it increases unemployment and some suggesting it does not.

Empirical results are mixed. [Discuss Card, etc., and the nature of his evidence, doing a difference in difference on two adjoining states, one which had an increased minimum wage, and also comparing those firms that were affected by the minimum wage to those that were not. Finds evidence consistent with the monopsony story].

Fuchs et al. (1998) polled labor economists at the top 40 research universities in the United States on a variety of questions in the summer of 1996. Their 65 respondents split exactly 50-50 when asked if the minimum wage should be increased. Minimum wage is a blunt tool – may help in some sectors, hurt in others, especially those that can switch to cheaper labour markets (perhaps we need a global minimum wage?).

UK minimum wage introduced in 1999. The Low Pay Commission found that, rather than make employees redundant, employers have reduced their rate of hiring, reduced staff hours, increased prices, and have found ways to cause current workers to be more productive (especially service companies).

c) What does your answer in part b imply for the welfare implications of a minimum wage? Consider issues of efficiency and equity, and consider the idea of an "unemployment trap."

AG:
Efficiency and equity issues are largely explained above.

Particularly in the monopsony (or oligopsony) employer case, a minimum wage may help alleviate the unemployment trap. Welfare benefits may make an individual's supply of labour function very steeply sloping, particularly for the first few hours worked, as the individual is giving up benefits (as well as leisure) by working. A higher minimum wage might be necessary to induce them to work.

d) Discuss recent measures and reforms in the UK and in other OECD countries to minimise the problem of an "unemployment trap."

AG:
See lecture notes and readings... The 'negative' income tax is an important measure, and in general countries have tried to avoid a sharp cutoff in benefits to those who re-enter the workforce, particularly in terms of child care.

Also: Consider the evolution of the welfare state in the UK and elsewhere, as well as recent measures under Thatcher and "New Labour."