

Education and Research

1. Market Failures and Research
 - a. Pure public goods
 - i. Perfectly shareable
 - ii. Not excludable
 - iii. Knowledge is an example
 - iv. Research is an example (what is the difference between knowledge and research?)
 - b. Increasing returns
 - i. The more you produce, the cheaper it is to produce it.
 - ii. Research is an example
2. Education is about acquiring knowledge
 - a. It is an investment
3. Market Failures and Education
 - a. perfect competition.
 - i. **credit market failures** (can you borrow as much as you want at 4.5%?)
 - ii. Can children borrow money at all? Do parents always do right by their children?
 - iii. scale economies may lead to natural monopolies in small places.
 - (1) most small towns have one high school.
 - b. externalities
 - i. productive: people may work better together if they are all well educated.
 - (1) production externalities may be of the following form: educated people make everyone more productive.
 - (a) Moretti (2004, J Econometrics) has a nice result: by comparing wages for people of different education levels living in different cities (with different quantities of educated people), he shows that a 1% increase in the college-educated proportion increases the wages of dropouts by 1.9%, HS grads by 1.6% and college grad wages by 0.4%. (His clever instrument is the presence of a land-grant college, which influences the college graduate population, but does not directly influence productivity.)
 - ii. tax dividend for current public investors.
 - (1) is a tax dividend a real dividend? After all, taxes are just moving money from one person to another....
 - (2) the tax dividend is a dividend *only if* you need the revenue for other public financing or production that is justified in some other way.
 - (3) for example, if all the conditions held for the first theorem, then the tax dividend is kind of a crazy argument—what do you want all that tax revenue for?
 - iii. child care and child socialisation. noncrazy kids are the funnest.
 - iv. cultural externalities. Fine arts students make all our lives better (or worse, depending on how much you like turtlenecks and berets.)

- c. information problems
 - i. future value of education is uncertain, and maybe we can't even define probabilities.
 - ii. children are uninformed, and may not be the decision makers.
 - iii. private production with private financing is inefficient, and information problems may even lead to missing markets.
 - iv. individual decisions may lead you away from efficient outcomes if people don't have knowledge about the future;
 - v. if they cannot borrow money to make current investments;
 - vi. if the individual making the decision is not the individual who is getting the education (eg, children).
 - vii. people have preferences about education that are in some sense "wrong", eg, book learnin'll never help you fix a tractor.
 - d. distribution
 - i. There is nothing in the first fundamental theorem that guarantees a fair distribution of outcomes in the market.
 - (1) the king with all the doughnuts is efficient.
 - ii. education is the most important determinant of lifetime income, and is very unequally distributed at higher levels.
 - iii. maybe we redistribute in kind to ensure that poor people actually spend on educating their children...
 - iv. high- (or medium-) quality publicly provided education gives everyone an equitable 'start' in life.
4. Regulation in private production may include:
- a. mandatory attendance
 - b. teacher and school certification.
 - c. subsidies (to deal with distribution and externality issues).
 - d. doesn't include anti monopoly action, because of scale economies.
5. Everyone has public production and public finance of primary and secondary education.
- a. Almost all countries have public production and mixed finance of universities.
6. Reform of primary/secondary school
- a. Vouchers
 - i. Friedman:
 - (1) voucher of up to the average school cost
 - (2) Top ups are okay.
 - (3) Parents choose schools, and schools choose kids.
 - ii. Jencks:
 - (1) voucher is equal to the average school cost plus a little extra for poor parents.
 - (2) Top ups are not allowed.
 - (3) Parents choose schools, but schools must choose kids (or at least part of them) randomly.
 - iii. vouchers that allow top ups may exacerbate social class reproduction and streaming. Likewise allowing schools to choose students (eg, the richest

- and brightest).
 - b. central control and rationalisation of curricula
 - i. push out the bad eggs. Spread the right ideas and good practises.
 - c. vs local management.
 - i. less politicisation of education. More faceless bureaucrats who might have better information. There is some evidence that this is an improvement.
- 7. why is university different from primary/secondary school?
 - a. students generally choose for themselves and have a little knowledge of what they want.
- 8. Reform for universities:
 - a. vouchers.
 - b. changing the credit market:
 - i. private credit markets fail because
 - (1) slavery is illegal,
 - (2) there is no real collateral
 - (3) human capital is not saleable or transferrable;
 - (4) no resale value
 - (5) lots of uncertainty (more than for machines)
 - (6) social conditioning against borrowing.
 - ii. income contingent student loans: state lends the money; student pays back at a rate related to income until the money (and interest) is paid back.
 - iii. graduate tax: state gives the money; students pay extra tax at a rate related to income forever.