

Education, Equity, Economics: Can these words be in the same title?

Arthur Sweetman

Queen's University
School of Policy Studies

Sweetman@post.queensu.ca

Dec 14, 2004

Democratic societies face many challenges in making decisions about allocating resources across alternative needs, for example between health care and higher education. It has been well known since at least Arrow (1951), and discussed in some circles since the Marquis de Condorcet (1785, reprinted 1973), that, in general, voting cannot uniquely aggregate underlying individual preferences into a single decision.¹ Hence, the outcome of a vote reflects both the particular voting mechanism employed and the individual preferences of the voters.

Still, decisions are made in democratic societies and a set of normative theories have developed to describe and/or proscribe approaches to the questions at hand. Similarly, economists have developed concepts that help to clarify various aspects of the decision-making process. This paper provides a very basic discussion, from an economics perspective, of various viewpoints on some of these approaches with reference to educational access and funding. Clearly, these ways of thinking about the world sometimes conflict, and one theory and /or concept sometimes applies to a particular issue more readily than another. After surveying the relevant concepts, I take an eclectic strategy (some would say an inappropriate strategy, since I alternate between world views that can be at odds with each other) and employ alternative rationales to address a few diverse questions that are relevant to post-secondary access. The set of questions addressed is meant to be broad and representative of larger sets of issues, and is meant to promote discussion as much as offer possible implementation strategies.

1. Views on Equity

Economists usually begin by noting that there is frequently a trade-off between equity and efficiency; enhancing equity in post-secondary access, therefore, may have real costs and make all of society less well off materially. Reducing equity is frequently defined as reducing the variance, or some measure of the spread, of some outcome of interest. However, it can also refer to altering the distribution of access to some good or service so as to increase the outcomes of an under-represented party. While a trade-off does not always follow from such actions – sometimes increasing equity improves efficiency – it is important to be aware of any costs that are being generated. Most often, and most relevant, the costs follow from disincentives associated with redistribution, social insurance, and/or similar equity enhancing government activities. One broad area of economics concerned with equity and allocation issues is sometimes called social choice, which combines philosophical underpinnings with economic aspects of social decision-making.²

It is also worth noting that most observers agree, in theory if not in practice, that even severe inequality does not, on its own, justify government intervention. Government action must be expected to be able to improve the situation. It is not unheard of for government programs to have deleterious impacts on their intended beneficiaries, or on

¹ Of course, if voters hold only limited classes of preference types then voting can uniquely aggregate preferences.

² Note that the adjective “social” in economics should almost always be taken to mean “of society”, not “socialization”. Hence, social choice looks at the choices societies make.

others in the community. See, for example, the discussion by Smith and Sweetman (2002) of impacts in the context of employment training programs.

While not discussing them in any depth, I begin by recognizing three distinct and very widely known philosophical approaches to equity and redistribution, and one pragmatic alternative to the first two approaches. The three are first introduced to many economics students in the very common first year undergraduate economics text by Mankiw, Kneebone, McKenzie and Rowe (1999, Chapter 20) as utilitarianism, liberalism and libertarianism. Utilitarianism (associated with Jeremy Bentham, John Stuart Mills and a host of others) is interested in maximizing individual levels of satisfaction or utility. Liberalism, as it is called in that textbook, follows in part from the ideas of John Rawls and suggests that social decisions should be made behind a “veil of ignorance” as if each person were equally likely to obtain each initial endowment of resources, and each possible set of preferences. Rawls extends this idea under the assumption that people are extremely risk averse and arrives at a criterion that maximizes the endowment of the worst-off individual. Much “social choice” economics is (usually implicitly) associated with these two world views, though the application may be quite distinct from that envisioned by those named above as being associated with each approach. For example, many economists appear not to find it credible that people are as risk averse as Rawls seems to believe. However, both these approaches support redistribution to make society more satisfied/better off and frequently support what is called welfarism.³

An opposing voice to these first two approaches, not presented in first year texts of which I am aware, but which appears to be very common in practice is termed “extra-welfarism”. It is discussed at some length in the health economics/health policy literature (see Hurley, 2000, for a survey). This approach is more communitarian (or dictatorial / paternalistic / maternalistic) in that, unlike welfarism, it does not concern itself with what individuals might choose of their own accord but seeks to maximize some decision-maker’s objective. For example, it might seek to maximize health, or high school completion rates, without (much) regard for individual preferences.⁴

Libertarianism, associated with Robert Nozick, is an alternative approach. It rejects the idea of society having any ownership of the output of production that would justify redistributing individual resources, and argues instead for ensuring that the allocation process is (or the many processes of society are) “fair” and evenly enforced. Equality of opportunity, and private ownership, are central features of this approach.

Although not emanating from Nozick, and standing quite independent of libertarianism, two concepts of “fairness” or equity are worth considering at this point. These concepts, used most commonly in the economic field of public finance, are “vertical” and

³ Some economists, however, note the limitations of these approaches, pointing out that interpersonal utility comparisons are not possible. Much of Nobel laureate Amartya Sen’s early work has looked at this issue.

⁴ Ontario’s recent *Panel on the Role of Government’s* final report takes a decidedly welfarist perspective for the most part, but then also advocates increasing the compulsory schooling age, which is clearly extra-welfarist. The report recognizes the contradiction, but is sensible enough to allow it to exist in the pursuit of good public policy. To alleviate conflicts of interest, it should be declared that Sweetman (2003) is the *Panel’s* underlying research paper that argues for increasing the compulsory schooling age.

“horizontal” equity. Boadway and Kitchen (1999, p. 53 – parenthetical comments added) summarize horizontal equity, saying that “a tax (or subsidy) is said to be horizontally equitable if two persons who have the same level of well-being before the tax (or subsidy) is imposed still have the same level of well being after it is imposed”. This is not to say that a horizontally equitable tax cannot alter the relative wealth of taxpayers; redistributing from high to low income implies making the high income person worse off and the low income person better off. However, these two persons are not in the same situation before the tax is imposed. (Of course, well being has to do with more than only income.) In considering education, the same principle applies to subsidies; two students who are in the same situation prior to a loan or subsidy should be in the same situation after. This concept can be interpreted broadly. It supports, for example, indexing tuition fees so that students in different years face the same real (i.e., after inflation) price for the same education. Similarly, it raises questions about intergenerational equity when tuition is raised dramatically so that the pre-tuition increase generation receives a generous subsidy for their studies from the public purse, while the next receives no subsidy or a very small one. This problem is made more severe when debt financing is employed to subsidize the first generation’s subsidy. Then the non-subsidized generation has to pay their own full (or nearly full) costs and contribute to the previous generation’s debt payments. Clearly, horizontal equity is not satisfied; of course, other intergenerational transfers may have a counterbalancing effect.

Vertical equity is concerned with how to treat individuals with different levels of well-being and is tied to the issue of how progressive the tax and transfer system should be. Much research suggests that behavioural responses to taxes and transfers place important limits on the degree of redistribution that is possible.⁵ See Boadway and Keen (2000), and Boadway and Kitchen (1999) for discussions of the issues.

2. A Few Relevant Economic Concepts

Externalities are usually defined as the benefits or costs not fully taken into account by a decision-maker in the decision-making process. (Note that “fully take into account” is much stronger than “be aware of” – it is not enough to simply know that a potential cost or benefit exists.) Their existence implies that what appears to be an optimal decision from a private agent’s perspective is not the optimal one for society as a whole since not all the costs and benefits are taken into account.

A slightly expanded definition is sometimes, however, more appropriate and best described with an example. A decision maker may be aware of all the costs and benefits for the various parties that will follow from a decision. Further, the decision maker may take these costs and benefits into account in making that decision so as to create the maximum net benefit for society. However, if the winners never actually compensate the losers, a type of externality can still be said to have followed from the decision in that there are some individuals with uncompensated costs.

⁵ Of course, the economic and legal incidence of taxes/ subsidies are not believed to coincide in most cases since all sides of a market adjust to their existence.

In the context of decisions regarding access to post-secondary education, the more limited definition applies to the individual potential applicant who does not take into account that there are, on average, substantial benefits (and some costs) to society. I will not address the “spillovers” of individual education to the broader society in any detail since they are addressed by Riddell in this volume. The usual “solution” is to recognize that education, or at least some people’s education, should be subsidized by society.

However, if the latter, more expansive, definition is employed, then some quite interesting issues arise, especially if post-secondary institutions, or provincial governments, are seen as the decision makers. If tax revenue from non-postsecondary attendees is used to fund a benefit for those who attend, then an externality is created if the former group is not compensated.

Finally, it is important to understand what many consider to be the largest externality of education, that is, the development and dissemination of knowledge that leads to advances in technology and practice, and in our social and cultural fabric.⁶ As discussed further below, education is arguably foundational to both the technological side of advanced societies, and the democratic process.

Financial liquidity constraints exist if a person who would go to post-secondary is prevented from doing so because of an inability to access the required financial resources. This funding issue is broader than simply not having sufficient funds for tuition and includes all direct costs of education (but not the opportunity cost). A person who has access to some, but insufficient, financing is still liquidity constrained. Although in popular discussion these ideas are commonly confounded, at least at a conceptual level if not so easily in practice, the concept of a liquidity constraint needs to be differentiated from the costs of education and borrowing since they have different policy levers.

First, a person who has access to financing may elect not to attend post-secondary because the direct costs are too high to make it worthwhile. Second, a person may elect not to attend because, while financing is available, the interest rate on the loan is too high. Of course, the first and second issues here really need to be considered as a pair. A high tuition may be acceptable if the interest rate is low enough, while a low tuition may not be low enough if borrowing charges are sufficiently high.⁷ While price and borrowing cost issues are important and clearly influence post-secondary attendance decisions, they are not the same as the extreme issue of liquidity constraints.

⁶ Interestingly, and perhaps sadly, the Ontario Postsecondary Review mandate as articulated on page 5 of the Review discussion paper does not extend to research. It is clear that the authors of the paper and the mandate are aware of research since on the same page the paper mentions that the commercialization and research agenda is being studied independently. Although there may be disciplinary differences, at least for universities it is not clear how easily teaching and research can be separated in designing a system. It is also unclear how easily the two activities can be separated at the level of the individual student and faculty member. If this omission from the mandate is not at least indirectly addressed, it is not clear that any sensible advice can be provided by the Review with respect to system design.

⁷ Formally, what matters is the net present value of the investment in education. This combines not only the relevant price, stream of benefits, and borrowing interest rate, but the timing of each.

If the “true” expected costs and benefits of education were known and accounted for (i.e., all potential externalities are internalized), and a person had access to loans at the “socially correct” interest rate, then that person might still elect not to attend citing excessive tuition and/or the high cost of financing. This is not a liquidity constraint, but a reasonable decision in the face of the true costs and benefits of post-secondary. In practice, people probably do not face the “right” prices or interest rates, but those are different issues from liquidity. Liquidity constraints justify providing loans for the “true” costs at “true” interest rates (adjusted for taxation). Other motivations, such as externalities or moral imperatives are required to justify subsidizing the costs and/or borrowing rates.

Risk aversion and information asymmetries abound in the educational decision making process. Debt aversion seems to be related to the combination of these problems. First, individuals may not understand the magnitude of the benefit that accrues, on average, to those who pursue higher education. Even the private return, which is easier to measure than the social one (and by definition smaller given that both are positive), is very substantial (see Riddell and Sweetman, 2000). Second, individuals, especially those from disadvantaged backgrounds, may be risk averse and disinclined to take the risk associated with higher education investment or may not understand its value. Dicks and Sweetman (1999) show that differences in ethnic group level educational outcomes can take three or four generations to converge in Canada. Further, even if potential students understand the average benefit, they also realize that there is substantial variance around that average. This can cause underinvestment relative to that which should be optimally undertaken.

At a minimum, there is a need for information about the true costs and benefits, and the range of costs and benefits, associated with higher education. Moreover, since governments should be risk neutral in this environment they can also offer forms of educational insurance, such as income contingent loans, to increase attendance to its optimal level and distribution. Subsidies can also be justified. However, interventions using this justification should recognize that potential students also have private information. For example, many have a better sense of their chances of completing post-secondary than does the government.

Hysteresis is a word brought into the economics lexicon from engineering and physics. It implies that history, or the path taken, continues to matter after the particular path is traveled. There is sometimes a particular focus on the persistence of effects resulting from idiosyncratic or chance events. In considering policy and the procedures around post-secondary access, path dependence is clearly crucial, especially for those on the margins of access. Many potential post-secondary students are not accepted into university and college at all, or not into their program of choice. For those individuals on the margin of acceptance, access is life-altering and can have massive implications for not only standards of living, but a host of other issues throughout their lives (it can even, on average, impact the duration of life until death – see Riddell in this volume); further, the effect may also alter their children’s outcomes.

Many who have served on post-secondary admissions committees would concur, I believe, that the quality of the information on which decisions are made is not always very good and that there is, therefore, an element of randomness in the process. Riddell (2003) speaks to the relevance of good information at the secondary level for improving procedural fairness in access to post-secondary.

3. A few recent findings from economics

A few recent findings in the economics literature are relevant to this discussion since they affect the way the issue is framed. Some of these are discussed by Riddell in this volume.

3.1 Is the return to higher education higher?

First, the idea that students who drop out of school/ do not pursue college have a low economic rate of return to education has been challenged recently. This is relevant to equity, but also to efficiency. It appears to be commonly believed that those who “ought” to have the resources required to attend college and undergraduate post-secondary focused on them are those who are the most academically able. This is operationalized by ranking applicants according to marks/GPA and then, starting from the top of the list, admitting students until the number of available spots is filled. However, as summarized by Card (1999, 2000), there is consistent evidence from several countries suggesting that the “causal” labour market return to education is at least as large, and quite possibly larger, for those who, for example, want to drop out of high school but are forced by compulsory schooling legislation to attend, or those (primarily from disadvantaged backgrounds) who attend because they face particularly low costs due to the proximity of a postsecondary institution. This suggests that the economic return to some types of remedial programs is much higher than understood previously. However, Warburton and Warburton (2002) show that not all types of remedial training programs have significant impacts.

Unfortunately, we do not understand these relationships with any precision. Further, there is no evidence on how far this argument can be pushed, but it seems unlikely that it applies to research-oriented programs. They have a different motivation, and a different set of externalities.

Note that while the evidence is not comprehensive, it has a strong interpretation and is not about correlations, but about “causality” defined in the same way as it would be for random assignment trials in medical research (see Smith and Sweetman, 2002). It is this causal impact that matters for formulating policy. It is not that those with high levels of education obtain high levels of earnings, health and other outcomes, but that those outcomes are higher than they would have been without the education that matters in justifying investments. It is the impact (value-added) of the policy/education that matters. Graduates may have strongly positive outcomes, but low impacts, if they would have had similar outcomes even in the absence of their schooling. Other graduates may have poor

outcomes, but substantial impacts, if those individuals would have had very poor outcomes had they not pursued their education.

3.2 Field of study

The focus of much economic research on education ignores post-secondary field of study and similar details of higher education, and focuses on simple measures such as years of schooling or degrees obtained. Recent work by McBride and Sweetman (2003) looks at post-secondary field of study and finds (perhaps unsurprisingly) that many of the generalizations about levels of education do not follow automatically once detailed fields of study are recognized. In particular, while community college graduates may, on average, have poorer outcomes than university graduates, some college fields of study have superior earnings and related outcomes than some university ones. Average earnings are higher, and social benefit receipt lower, among trades and technology graduates from community college than among university graduates from some humanities, social sciences and related fields. Although post-secondary education is about much more than earnings, this part of the story needs to be more fully communicated.

That the economic returns to various fields of study differ has implications for income contingent financing and graduate tax frameworks. Relatedly, it raises questions about whether governments should be primarily interested in equalizing the costs of, or the rates of return to, education. Of course, since these field of study results are correlational and not causal, it is not clear what fraction of the differences in earnings across fields represents the causal impacts of education, and what fraction represents earnings differences following from, for example, compensating differentials reflecting the characteristics of jobs, or the economic structures of jobs (e.g., economic rents following from monopolies).

3.3 Innovation and economic growth

There is an increasing understanding of the role of knowledge generation in economic growth and the improvement of standards of living over time. And, of course, knowledge generation relies crucially on higher education. See Riddell in this volume or Sweetman (2002) for a fuller discussion of the issues, which are not discussed here. Further, an older tradition in economics points to the importance of entrepreneurship and innovation among a very small fraction of the population as making crucial contributions to social and economic growth and generating massive externalities. Together, these views strongly support vibrant graduate programs that in turn support advanced study leading to technological and social progress, and economic growth leading to increases in well-being.

Taken together, these three findings from the economics literature point to the complexity of the post-secondary system and remind us about how little we really know. But, where do we go from here?

4. Conclusions, discussion and recommendations

1) Overall, there is support for some redistribution/subsidization in an effort to improve equity if one follows a welfarist, or even a non-welfarist, approach. Although there is less support from a libertarian perspective, it, along with the others discussed, can still be interpreted to support redistribution in an effort to maximize the wealth of society by alleviating externalities as long as there is compensation (although Nozick might disagree). It is hard to argue against some redistribution to solve under-investment problems where there are clear social benefits and compensation.

Redistribution is perhaps the central normative issue in public policy regarding post-secondary access (and much of what government does). Although some particular (secondary) externalities may be generated by government actions to improve access, the benefits to society of taxing broadly to support some individuals pursuing post-secondary education is almost universally thought to be worthwhile since other, larger, externalities are alleviated and broader issues of equity are addressed. Nevertheless, redistribution implies cross-subsidization and it is crucial to understand exactly who is subsidizing whom.

It is particularly worthwhile to contrast the graduate tax, proposed by Carmichael, with income contingent loans as discussed by Barr (both in this volume – see also articles in Beach, Boadway and McInnis, 2004). One (perhaps the) essential difference is who is doing the subsidization. In most formulations income contingent loans have a subsidy that derives from all taxpayers, and graduates pay more only inasmuch as they have, on average, high incomes. In contrast, a graduate tax keeps all of the cross-subsidization within the group of post-secondary attendees, with high graduates who realize high earnings subsidizing low earning ones and no educational subsidy from non-attendees (though research might be subsidized). In effect, it can be thought of as a form of insurance that students offer to each other, although it might well not be actuarially fair given what we know about predicting individual earnings potential and earnings by fields of study. Income contingent loans, on the other hand, can motivate redistributing educational costs from low earning graduates to all of society by pointing to the externalities that are created.

2) While the evidence on the causal impacts of education is not as detailed and precise as one might like, it suggests an empirical regularity. It seems likely that, on average, individuals who would drop out of high school, or would be unlikely to attend post-secondary in the absence of financial incentives or other inducements have substantial economic and social returns to that education. At the post-secondary level, community colleges typically provide this type of programming and it is frequently focused on those from disadvantaged backgrounds. (See Finnie, Lascelles and Sweetman (2004) for an analysis of the effect of family backgrounds on post-secondary attendance and dropping out.) Together, this suggests the need for a strong community college system. Further, research on postsecondary field of study shows that, for example, community college level trades and technology, and health profession, fields have remarkably high private economic returns.

However, many of the greatest spillovers or externalities in terms of economic and social growth built on technological and cultural advances appear to accrue from higher education, especially graduate education at the masters and PhD levels. In the long (and even the medium) term, the associated accumulation and dissemination of knowledge has substantial implication for the overall well being of society and it is hard to overestimate its importance.

3) Unless one has a strongly extra-welfarist approach, we need to recognize that post-secondary education need not be a good investment for everybody. Well informed students facing the “true” costs and benefits might well decide that pursuing post-secondary is not in their best interest. However, as discussed above, that the economic returns to attending is so high for those who would drop out implies that either non-economic issues tilt strongly in the other direction, or that decisions are not being made well. Many observers believe the latter and suggest that information problems are crucial.

Providing education and information to pre-postsecondary students to facilitate their decision making seems crucial. Although conducted in the United States, a survey by Betts (1996) suggests that even first year undergraduates know shockingly little about the connection between their education and the labour market, especially in relation to field of study. This suggests an important role for government. Moreover, it reinforces the idea that good decisions require potential postsecondary students to face the “true” costs and benefits of their decisions, even though they are made under uncertainty. This does not rule out subsidies, but they are best made explicit, not hidden, and well targeted.

4) A major contribution of the libertarian view is to make us focus more closely on the fairness of postsecondary processes. If we are to take post-secondary seriously, and are concerned about equity, then the post-secondary system must look carefully at the equity implications of its own administrative and decision-making processes. They need to be “squeaky clean”. The hysteretic nature of post-secondary admission decisions makes this all the more important.

An example of a crucial process with important equity implications is admissions. Anyone who has looked at university admissions, including applications for graduate studies, is all too aware of the poor quality of the information available for decision making. Since enrolment is limited – that is, some applicants are denied admission while others are accepted – it is crucial that admissions decisions be the best possible and based on good information. There has recently been a reform and standardization of high school report card formats in Ontario, which attempts to improve information flows, and Riddell (2003) points to the need for consistent measures to allocate postsecondary spaces both more efficiently and more equitably.

In contrast to the reforms at the secondary level, university transcripts remain difficult to interpret. A reform of this information device would be very helpful for the graduate studies admissions process. In particular, class averages or means, and quantiles of each class’s mark distribution (e.g., 25th and 75th percentiles), where class size is sufficiently large, would be valuable standards. However, Anglin and Meng (2000) point to more

difficulties. Grade inflation, which they observe to be substantial in Ontario universities makes interpreting marks a challenge. Further, the rate of change appears to differ across fields of study, and perhaps universities. Universities appear to not be overly concerned about equity in the sense of process, or do not take themselves very seriously.

5) Following from the randomness that appears to result in the admissions process, a broader ethical question arises, especially in the presence of subsidies. Is it horizontally equitable that some individuals are subsidized to attend multiple programs at the same level of post-secondary while others are denied access? While some education is cumulative, and that is not at issue here, some repetition also appears to occur. In some contexts this is not an issue, but given the combination of subsidization, random elements in admission, and limited access, the case for ongoing subsidization is not straightforward. This is an interesting issue for debate.

6) Finally, it is worth looking closely at who is subsidizing whom, and at the appropriate degree of subsidy. Issues of vertical and horizontal equity are common in postsecondary funding, but are frequently not addressed very clearly. Partly this results from the complexity of the system and our corporate ignorance regarding the magnitude of various externalities and causal impacts. However, for example, the intergenerational aspects of many funding decisions have the potential to be sizeable. Current students are being asked to carry a very large burden of the costs of their postsecondary education, without being excused from carrying a share of the burden of the education of earlier generations who were heavily subsidized. This is an area where much more research and discussion is required.

References

- Anglin, Paul M. and Ronald Meng. (2000). "Evidence on Grades and Grade Inflation at Ontario's Universities." 26(3): 361-368.
- Arrow, Kenneth. (1951). *Social Choice and Individual Values*. New York: Wiley, 1951.
- Beach, Charles M., Robin W. Boadway and Marvin McInnis, eds.. (2004). *Higher Education in Canada*. John Deutsch Institute, Queen's University: McGill-Queen's University Press.
- Betts, Julian R. (1996). "What do Students Know About Wages? Evidence from a Survey of Undergraduates." *Journal of Human Resources*, 31(1), 27-56.
- Boadway, Robin W., and Michael Keen. (2000). "Redistribution" *Handbook of Income Distribution*, Vol. 1. Eds. Anthony B. Atkinson and Francois Bourguignon. Amsterdam: North-Holland. 753-72.
- Boadway, Robin W. and Harry M. Kitchen. (1999). *Canadian Tax Policy*, 3rd. Ed. Toronto: Canadian Tax Foundation.
- Card, D. (1999). "The causal effect of education on earnings." In *Handbook of labor economics volume 3A*. Eds. O. Ashenfelter and D. Card. Amsterdam: North Holland.
- Card, D. (2000). Estimating the return to schooling: Progress on some persistent problems. NBER Working Paper 7769, June.
- Condorcet, Marquis de. (1785). *Essai sur l'Application de l'Analyse aux Probabilites des Decision Rendue a la Pluralite des Voix*. Reprinted, New York: Chelsea Publishing Co. 1973.
- Dicks, Gordon and Arthur Sweetman. (1999). "Education and Ethnicity in Canada: An Intergenerational Perspective." *Journal of Human Resources*, 34(4), 668-96.
- Finnie, Ross, Eric Lascelles and Arthur Sweetman. (2004). "Who Goes? The Direct and Indirect Effects of Family Background on Access to Post-Secondary Education." Statistics Canada: *Analytical Studies Research Paper*.
- Finnie, Ross, Alex Usher, and Hans Vossensteyn. (2004). "Meeting the Need: A New Architecture for Canada's Student Financial Aid System." IRPP Policy Matters, 5(7), 3-47.
- Hurley, Jeremiah. (2000). "An Overview of the Normative Economics of the Health

- Sector.” *Handbook of Health Economics*, Vol. 1, Eds, A.J. Culyer and J. P. Newhouse. Elsevier Science.
- Junor, Sean, and Alexander Usher. (2002). *The Price of Knowledge*. Montreal: Canada Millennium Scholarship Foundation, Research Series.
- Mankiw, N. Gregory, Ronald D. Kneebobe, Kenneth J. McKenzie, and Nicholas Rowe. (1999). *Principles of Microeconomics*. 1st Canadian ed. Toronto: Harcourt Brace.
- McBride, Stephan and Arthur Sweetman. (2003). “Immigrant and Non-Immigrant Earnings by Postsecondary Field of Study.” *Canadian Immigration Policy for the 21st Century*. Eds. Charles M. Beach, Alan G. Green, and Jeffrey G. Reitz, Montreal & Kingston, John Deutsch Institute for the Study of Economic Policy, McGill-Queen’s University Press, 413-62.
- Panel on the Role of Government. (2004) “Investing in People: Creating a Human Capital Society for Ontario.” Ontario.
- Postsecondary Review, Ontario. (2004). “Higher Expectations for Higher Education: A Discussion Paper.”
- Riddell, Craig. (2003). “The Role of Government in Post-Secondary Education in Ontario.” Background Paper for the Panel on the Role of Government in Ontario.
- Riddell, W.C., and A. Sweetman. (2000). “Human Capital Formation in a Period of Change,” in *Adapting Public Policy to a Labour Market in Transition*, W.C. Riddell and F. St-Hilaire, eds. Montreal, QC: Institute For Research in Public Policy. 85-142.
- Smith, Jeff and Arthur Sweetman (2002). “Improving the Evaluation of Employment and Training Programs in Canada” Prepared for HRDC’s conference “From Theory to Practice”. Paper available at: http://www11.hrhc-drhc.gc.ca/edd-doc/ftp/conf_paper.shtml.
- Sweetman, Arthur. (2003). “Ontario’s Kindergarten to Grade 12 Education System: Some Thoughts for the Future.” Research Paper (25), Panel on the Role of Government, Ontario.
- Sweetman, Arthur. (2002). “Working Smarter: Productivity and Education” in *The Review of Economic and Social Progress: Productivity*, eds. Keith Banting, Andrew Sharpe and France St-Hilaire (Montreal and Ottawa: CSLS and IRPP), 157-180.
- Warburton, William and Rebecca Warburton. (2002). “Should the government sponsor training for the disadvantaged?” in *Towards evidence-based policy for Canadian*

education, ed. P. de Broucker and A. Sweetman. Kingston: McGill-Queen's University Press., p. 69-100.

Education, Equity, Economics: Can those words be in the same title?

Arthur Sweetman
Queen's University
School of Policy Studies



Outline

- Access, equity and redistribution
 - 3 world-views
 - Horizontal and vertical equity
- Three Concepts
 - Externalities
 - Financial Liquidity Constraints
 - Hysteresis
- What about “facts”?
 - Who has the highest rate of return to education?
- Conclusion and Recommendations



Access, Equity and Redistribution

- Background: Arrow's Impossibility Theorem
- As has been well known since the 1950s that, in general, there is no way to aggregate community preferences into a single decision using a voting mechanism
- So, in a democracy, we never know how much of what we decide depends upon the desires of voters, and how much depends upon the particular voting method employed
- In post-modern terms: societies decisions stand always under erasure



Access and Equity Implies Redistribution -- Ethical Models Underlying Redistribution

- First year undergrad econ text presents 3 (non-exhaustive) world views (loosely called)
 - Utilitarianism (Bentham, Mills etc.)
 - Liberalism (Rawls etc.)
 - Libertarianism (Nozick etc.)
- Most “social choice” economics follows some combination of the first two, but tends to focus on summing individual utilities & allowing for individual freedom to choose (Welfarism)



- Welfarist Approach: looks at individual utilities -- or levels of happiness-- to maximize
 - The total happiness of society (utilitarianism)
 - The happiness of the least happy person (liberalism)
- Key issue here is that individual decisions are respected

- Many economists are also sympathetic to the third, which focuses on a fair/equitable process – has many implications for post-secondary access



ALTERNATIVE: Extra-welfarism

- Extra-welfarism is more communitarian
- (and perhaps more dictatorial/paternalistic/maternalistic)
- Goal is not to maximize individual happiness, as reflected in individual choices, but to maximize the decision-maker's objective
- (e.g. to maximize the high school graduation rate)



Two commonly used tests for equity

- Vertical equity
 - Should redistribute from those with greater ability to pay
 - In post-secondary context issue about potential ability and realization

- Horizontal equity
 - Should tax those in similar circumstances similarly



Three Concepts

- Externalities
- Financial Liquidity Constraints
- Hysteresis



Externalities

- **Common Definition**
 - Benefits or costs not (fully) taken into account by a decision-maker
- **Extended Definition**
 - Externality may still exist if all costs taken into account, but those experiencing a (net) cost not compensated by those who gain
- **Interesting to think of government as decision-maker**
 - Who pays for education? Who benefits? Is there compensation? Is it adequate?



In case of education...

- Almost everybody agrees that there are positive externalities
- Hence value of education to society is greater than that to private decision-makers, and in the absence of a subsidy under-investment occurs
- NOTE: Externalities motivate subsidization, but the subsidization may cause further externalities
- Need to understand who is subsidizing whom



Financial Liquidity Constraints

- Definition
 - Potential student is unable to access (sufficient) resources to pay for *direct costs* of education (can't get a loan)
- Need to conceptually differentiate between the direct cost and/or the interest rate faced, and a liquidity constraint



- More than an issue of degree
- Liquidity constrained individual cannot get a (sufficient) loan and, hence, cannot attend post-secondary (this is yes or no)
- However, some individuals may be able to get a loan, but may elect not to attend because the loan size is too large, and/or the interest rate too steep (this is a magnitude issue)



- Most positive direct costs and/or positive interest rates (for sufficient loans) will probably cause some individuals to rationally choose not to attend post-secondary
 - welfarist happy to allow this, extra-welfarist might not be
- If “true” social costs and benefits used, and “right” interest rate charged, then some people would elect *not* to pursue post-secondary (it’s not worthwhile for that person)
- This is not a liquidity constraint, though it is sometimes confused with one since this person would (correctly) argue that if loans were less expensive or tuition lower s/he would attend



- Key: need to differentiate, at least conceptually, between those for whom education is a good investment, but they face a cash flow problem
- And those for whom it is not a good investment
- Of course, not possible to observe “right” decisions in practice (uncertainty)
- Welfarist tries to get direct costs and interest rate “right” to facilitate optimal decision-making
- If charge too much, too few will attend; if charge too little, too many will attend
- This is a field of study specific question



Hysteresis

- Definition
 - Path Dependence; or, history matters
- Being accepted into post-secondary, or a program of choice, can be a life altering event
- It is a piece of personal history that continues to matter for a lifetime
- Libertarianism: Need to make sure this decision is made well and fair



Facts(?): The Gradient of Economic and Social Returns to Education with respect to “Ability”

- It is commonly assumed that those who will personally benefit most from post-secondary education, and/or those with the greatest social benefit, are the most academically able
 - Goal: maximize size of the pie, then redistribute
- This is operationalized by ranking applicants according to marks/GPA and admitting those with the higher marks into a program



However (part 1),

- The evidence supporting this is not as strong we might like to believe
- While it may be true that those with higher marks have better outcomes, on average, it is not clear that the “causal” impact of education on labour market and other outcomes is always greater for this group



-
- Recent research looking at compulsory schooling laws, and a few other policy reforms that affect would-be drop outs, shows that those who *would* drop out, but are prevented from doing so, have very high causal economic and social rates of return to those years of schooling
 - These rates are plausibly higher than those for an “average” person



- Though not causal, corroborating this is evidence that many community college fields of study have, systematically, equal or better labour market outcomes (higher earnings, lower social assistance use) than many university fields of study while the screening/filtering goes in the other direction
- Also, massive differences in labour market outcomes by field



However (part 2),

- It is also argued that much innovation and progress (including technological and social change) in our society derives from a small subset of the population – some argue as low as 1%
- Stimulating this “entrepreneurial” class (not restricted to business entrepreneurship) is an important function of the higher education system



Not Contradictions

- These two patterns are NOT contradictory
- Rather, they point to the complexity of the environment and the multiple goals that must be considered in designing the post-secondary system
- ALSO, unfortunately, we do not know exactly where the cut-offs are and who has what return to schooling



CONCLUSION:

Negotiating these issues is **VERY DIFFICULT**

- E.g. high *causal* returns to forced education for would-be drop outs suggests optimal resource allocation is not straightforward (& not always for most able)
- AND compulsory schooling laws (current main solution) are not easily motivated by dominant welfarist approach
 - see e.g. Panel on the Role of Government
 - Unless we argue that the state knows the potential drop-out's tastes better than s/he knows him/herself
- However, such laws follow naturally from an extra-welfarist perspective



Recommendations (despite many uncertainties)

- 1) Evidence on returns to basic schooling for would-be dropouts suggests that strong remedial programs can have substantial value (usually by community colleges)
 - Also, on average, some community college fields have better labour market outcomes than some university fields of study (Although less tangible outcomes may go in other direction - unknown)
- 2) Evidence on growth & innovation suggests a need to strongly support very high end of the educational spectrum – graduate studies



- 3) Unless we want to take a strong extra-welfarist approach, we need to recognize that post-secondary/university is not an appropriate investment for everybody (in terms of labour market outcomes and/or happiness), but want to make sure right decisions are made
- Potential students need better information to make better decisions
- Try to set right subsidies and structure to facilitate “good” decisions (reflect true costs – after externalities taken into account etc.)
- Further, it appears that many of these prices and incentives are field-of-study specific (with some fields having quite poor labour market outcomes – though perhaps high returns on other dimensions)



- 4) Although I only addressed it tangentially to this point, if libertarianism has any relevance, then the process of allocating post-secondary access needs to be “squeaky clean”
 - Hysteresis strengthens this idea
 - Combined with ideas re innovation, this is especially important for access to graduate programs
 - One concrete action to address this in practice would be to reform university transcripts to improve their information content (e.g. by providing course means, 25th and 75th percentiles etc.) – recently done for K-12 system



-
- 5) Following from libertarianism, and the errors that occur in the admissions process, should there be limits of the subsidies to individuals in terms of the number of same-level programs subsidized?
 - e.g., should prices go up for a second undergraduate degree?
 - How do we distribute the limited number of slots among applicants?



-
- 6) Finally, worth looking more carefully at exactly who is subsidizing whom
 - Are some (potential) students receiving insufficient funding? (see Finnie)
 - Does tax and subsidy system redistribute the right amount from those who do not attend post-secondary towards those who do?

