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SOCIAL DISADVANTAGE AND EDUCATION EXPERIENCES

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Stephen Machin is Professor of Economics at University College, London, Director at the Centre for the Economics of Education, and Research Director at the Centre for Economic Performance of the London School of Economics. A version of this paper was discussed at the meeting of the OECD Working Party on Social Policy in November 2005. This paper was prepared in the context of the OECD project on the "Social Outcomes of Learning" project, which is led by the centre for Educational Research and Innovation. The author wishes to thank Leon Feinstein, John P. Martin, Sandra McNally and Marco Mira d'Ercole for many helpful comments on a preliminary draft of the paper.

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EXECUTIVE SUMMARY

1. This paper discusses how social disadvantage affects the learning experiences of households with fewer economic resources, at each stage of the individuals' life-course, and on some of the "social" effects of such learning. It argues that while education can be an escalator out of social disadvantage — leading to better job prospects for youths facing greater risks of poverty and reducing the prevalence of income poverty in adult age — educational failure can reinforce it: a significant minority of students in several OECD countries do not even complete compulsory education; students' test scores in lower secondary education are strongly shaped by family characteristics; and the expansion of university education has most often benefited households with better educated parents. Far from "equalising" opportunities, education can be a powerful driver of social selection. When returns to education increase over time, this may lead to greater inter-generational persistence of poverty and less equality of opportunities.

2. The paper discusses the role of policies that pay special attention to the learning experiences of individuals from disadvantaged backgrounds, as part of a broader strategy to fight poverty and social exclusion. These policies fall into two main categories:

- ***Educational policies***. These policies can be designed with the aim of offsetting some key aspects of family disadvantage that hold back educational achievement, and these policies do not necessarily hold back students' achievement at the higher end of the proficiency scale. Some OECD countries have much more equitable policies regulating school admission than others, and sorting of students by proficiency levels occurs at a later age. Interventions that aim to bolster both cognitive and non-cognitive skills of students from disadvantaged backgrounds can play an important role in limiting social exclusion and facilitating the task of social policies at a later stage of the individuals' life-course.
- ***Social policies.*** These policies can be designed so as to strengthen their learning content. Emphasis is here placed on policies that offer cash transfers to families with children that are conditional on sending children to school; learning programmes targeted at youths who dropped out of formal schools; adult training targeted to individuals with lower educational attainment; policies that provide recognition for competences learned on-the-job; as well as programmes that aim to alter parental attitudes to education (e.g. parenting programmes) or that offer out-of-school programmes that can influence peer groups of children.

3. A crucial feature when designing programmes focused on the learning experiences of individuals is their *timing*. Over the years, a substantial body of evidence has accumulated that testifies to the importance of programmes targeted to *pre-school* children from disadvantaged background. This is less agreement on the effects of programmes targeting disadvantaged individuals in a later stage of their life-course. The paper reviews evidence from three such programmes: school based programmes targeting disadvantaged students, financial support and 'mentoring' provided to disadvantaged students, and programmes for adults and high-school drop-outs. Evidence from programme evaluations suggests that such programmes can improve both employment and earnings prospects of individuals from poor families when they are properly designed, well-targeted, adequately financed, and monitored through appropriate evaluation strategies.

RÉSUME

4. Ce document présente une analyse de la relation entre désavantage social et parcours éducatifs des individus issus d'un milieu familial défavorisé à chaque étape de leur vie, et décrit certaines des conséquences de ces parcours pour la société dans son ensemble. Une conclusion générale est que si la formation peut servir d'ascenseur social — en offrant de meilleures perspectives d'emploi aux jeunes les plus menacés de dénuement et en réduisant la prévalence de la pauvreté économique à l'âge adulte — l'échec scolaire peut en revanche renforcer le désavantage social : dans plusieurs pays de l'OCDE, une minorité importante d'élèves n'arrive même pas au terme de l'enseignement obligatoire ; dans le premier cycle du secondaire, les résultats des élèves aux tests dépendent beaucoup des caractéristiques de la famille ; et le développement des études universitaires a le plus souvent profité aux ménages dont les parents étaient relativement mieux instruits. Loin d' « égaliser » les chances, l'éducation peut être un puissant moteur de sélection sociale. Dans un contexte où le rendement de la formation augmente avec le temps, cette dynamique pourrait conduire à une persistance de la pauvreté de génération en génération plus accentuée ainsi qu'une diminution de l'égalité des chances.

5. Ce rapport analyse aussi le rôle des politiques qui sont plus particulièrement axées sur les parcours d'apprentissage des personnes issues des milieux défavorisés, dans le cadre d'une stratégie plus vaste de lutte contre la pauvreté et l'exclusion sociale. Ces mesures peuvent être groupées dans deux grandes catégories:

- ***Les politiques d'éducation***. Ces politiques peuvent être conçues dans le but de compenser certains aspects essentiels des désavantages dus au milieu familial, qui freinent la réussite scolaire, sans pour autant nécessairement entraver celle des meilleurs élèves. Dans certains pays de l'OCDE, les règles d'admission à l'école sont beaucoup plus équitables que dans d'autres et la répartition des élèves par niveau de compétence se fait à un âge ultérieur. Les mesures destinées à renforcer les compétences à la fois cognitives et non cognitives des élèves issus des milieux défavorisés peuvent jouer un rôle important en limitant l'exclusion sociale et en atténuant le recours à des mesures sociales à un stade ultérieur de la vie des intéressés.

- ***Les politiques sociales***. Ces politiques peuvent dans leur conception avoir un contenu formation plus important. Sont en l'occurrence privilégiés : les politiques qui prévoient l'octroi de ressources financières aux familles à la condition que ces dernières envoient leurs enfants à l'école ; les programmes de formation ciblés sur les jeunes sortis prématurément du circuit scolaire ordinaire ; la formation pour adultes ciblée sur les individus ayant un faible niveau d'instruction ; les politiques de validation des acquis professionnels ; ainsi que les programmes dont l'objet est de modifier l'attitude des parents à l'égard des études (programmes de formation à l'art d'être parents, par exemple) ou qui proposent des activités extra-scolaires, pouvant exercer une influence sur des groupes d'enfants du même âge.

6. Un aspect essentiel des programmes axés sur les parcours d'apprentissage est le *stade de la vie* auquel ils sont mis en oeuvre. Au fil des ans, on a accumulé une masse considérable de données qui témoignent de l'importance de cibler les programmes sur les enfants issus des milieux défavorisés dès la *préscolarisation*. Il y a moins d'accord pour ce qui est des effets des programmes ciblés sur des personnes défavorisées à un stade ultérieur de leur vie. Ce document passe en revue des données factuelles concernant trois types de programmes : les programmes mis en oeuvre dans les établissements scolaires en faveur des élèves défavorisés ; les aides financières et le mentorat assurés à ces élèves ; et les programmes pour les adultes et les personnes qui ont abandonné leurs études dans le deuxième cycle du secondaire. Les évaluations disponibles suggèrent que lorsque ces programmes sont correctement conçus, bien ciblés, adéquatement financés et suivis grâce à des stratégies appropriées d'évaluation, ils peuvent améliorer à la fois l'emploi et les perspectives de gains des personnes issues de familles démunies.

SOCIAL DISADVANTAGE AND EDUCATION EXPERIENCES

I. Introduction

7. Education is a key driver of economic and social success for individuals, employers and nations. Writers in many disciplines have noted that education can enhance social welfare, impact upon economic growth and be a key factor in the design and implementation of economic and social policy. In many quarters education is believed to offer a route where people can escape from disadvantaged family backgrounds and climb the social ladder. There are, in short, social benefits of learning beyond the economic ones that accrue to each individual (Box 1).

8. However, education experiences remain strongly associated with social disadvantage. In many countries there are large numbers of people with very low education levels whose family origins were impoverished and characterised by disadvantage. Whilst education can break such intergenerational cycles of disadvantage, it can also act to reinforce them: for example, if education policy is not designed with egalitarian notions in mind. This is one of the reasons why the ability of education to operate as a mechanism with the potential to offset social disadvantage is important.

9. Empirical evidence from studies conducted by social scientists makes it clear that there is significant scope for education to play a role in influencing the economic and social situations of people. In cross-country comparisons of education and economic growth, formal schooling plays an important role in enhancing economic growth (Barro, 1997, Barro and Lee, 1993, and Krueger and Lindahl, 2001). Education has been shown to significantly raise labour market earnings and employment probabilities (Card, 1999) and to significantly impact upon health (Currie, 1995), crime (Lochner and Moretti, 2004) and a range of other social capital outcomes (Hammond and Feinstein, 2004).

10. Most of this work concerns itself with the 'average' effects of education. For example, by how much more does a country's GDP grow if average years of schooling rise? Or by how much on average do earnings rise for another year of schooling? There is a lot of evidence in this vein in a very rich and highly developed empirical literature. There is more limited research looking at the experience of disadvantaged groups. I consider both sets of evidence in this paper.

Box 1. **OECD work on the "social outcomes of learning"**

A large body of empirical literature has looked at the economic returns that investments in education bring to individuals. Such returns are, however, only part of the bigger picture. In addition to economic returns (in the form of labour market advantage), learning experiences — both in and outside school setting — bring other types of benefits. Some of these benefits accrue to individuals, as in the case of better health conditions; others may affect the broader community in which individuals live, as in the case of better parenting practices, greater involvement in community life and lower crime. For the purpose of better identifying and measuring these effects, the OECD Centre of Educational Research and Innovation launched in 2004 a project on the "Social Outcomes of Learning". This paper contributes to this project as part of the broader OECD work on resource distribution".

There are two main reasons why discussions about the "social outcomes of learning" are of direct interest to the social policy community in OECD countries:

- First is the attention recently given to the notion of "active social policies". Such notion — which featured prominently at the April 2005 meeting of OECD social policy ministers — emphasises the importance of shifting from a remedial approach in social policy to one that privileges the goals of 'making work pay' and of facilitating people's integration into the labour market. This shift of emphasis calls for greater attention to those learning experiences that can either enhance or hamper the employment and career prospects of individuals at greater risk of social exclusion. The more social policy makers pitch their strategies to 'integration into the labour market', the less they can afford to ignore how learning shapes the labour market outcomes of poor people.

- The second reason for investigating the social outcomes of learning relates to the traditional goal of social justice embedded in most social programmes. While, traditionally, these programmes have focused on measures of income poverty and inequality at a given point in time, growing attention is being paid today to the inter-generational transmission of such inequalities. The existence of such transmission has implications for both social justice and for economic efficiency, to the extent that able and motivated youths from disadvantaged backgrounds may be denied the opportunities provided by a modern market economy.

11. Because the existing empirical literature is less focused upon the scope for education to offset social disadvantage, it is worthwhile organizing the discussion into a two-stage process. There are large bodies of evidence first on how disadvantage affects learning experiences and second on how learning experiences affect outcomes in adulthood. It is the combination of the two links (in a world where the economic or social premium to education is increasing over time) that may worsen the conditions of those from disadvantaged families. Because of this, I motivate my discussion of the evidence by appealing to this life-course, or sequential, approach which splits the impact of education into a two-stage process: first, the impact of disadvantage on education over the life-course; second, the impact of education on adult economic and social outcomes. Even if both of these are 'average' effects, this sequential approach still tells us about the role education can play as a transmission mechanism.

12. Because educational experiences and achievement are increasingly important in shaping people's life chances, especially their ability to get a good job offering a decent career, this has significant implications for social policies in many OECD countries. The increased focus of active social policies on 'making work pay' and integrating people into the labour market, coupled with education mattering more, means that governments need to focus more on education and education policy, to make sure that a group of disadvantaged individuals are not left behind. How the evidence on education and social disadvantage links to this policy debate will also be considered in this paper.

13. Discussing the evidence on the impact of education, and linking it to an appropriate policy perspective, is a highly challenging and important task. This is the aim of this paper, which is structured as follows. Section II discusses the evidence on how educational experiences are related to social disadvantage and other family characteristics. Section III considers research findings on the impact of education on economic and social outcomes in adult life. Section IV places the discussion into its

appropriate policy perspective, together with a discussion of evidence from education evaluations, whilst Section V concludes.

II. Education and social disadvantage over the life-course

14. Education is linked to various dimensions of social disadvantage throughout an individual's life span. This includes their time in pre-primary education, in the compulsory schooling system during their childhood years, as young adults in post-compulsory education and during the years of adulthood. In this Section I consider empirical evidence on the connections between education and social disadvantage for each of these life phases in turn. The aim of this section is to discuss and summarise the evidence on how different dimensions of social disadvantage shape learning experiences during the life-course.

15. Much of the work in this area draws upon longitudinal data sources that follow children as they grow up and collect various data on their educational skills and experiences in these years, but also information on their parents and area where they were raised. The usual approach is to present findings from statistical regressions that relate measures of education to the disadvantage indicator of interest whilst controlling for other relevant factors. This research approach then shows the average links between education and disadvantage. Somewhat less common, though highly appealing from a research methodology perspective, is to assign children or adults to particular learning programmes (either through randomized controls, or through quasi-experimental routes offered by policy changes): this approach allows to carry out comparisons of affected individuals as compared to those not affected to deduce the impact on economic and social outcomes.

Early childhood education

16. Gaps in cognitive and non-cognitive skills arise before children go to school. A huge, and sometimes contentious, research literature looks at many of the links between early child development and social disadvantage. Recognition of the importance of this connection is confirmed by the existence of active policies like *Head Start* in the United States or *Sure Start* in the United Kingdom, which are designed to level the playing field at or near school entry age for children from less privileged backgrounds.

17. Much of the work by economists and social policy researchers relates early age test scores of children to family background and uncovers important correlations. Some of the work, like that on early childhood programmes like *Head Start* (see the discussion in Currie, 2001), is of an experimental nature in that some children participate in a programme whereas others do not. The analysis thus compares a 'treatment' group (those in the programme) with a 'control' group (those not in the programme) to evaluate the impact of the programme.

18. It is clear from this literature that test score gaps emerge across children from different family backgrounds at early ages. For example, a recent review by Meyers *et al.* (2004) documents sizable disparities in pre-school enrolment between children from high and low education parental backgrounds. Evidence shows that early childhood education programs narrow test score gaps between ethnic minority children and whites in the United States (Currie, 2001); and that attendance at pre-school confers a cognitive advantage on children before they enter school (see Magnusson *et al.* 2004, for the United States and Sammons *et al.* 2002, for the United Kingdom).

19. The observation that a significant amount of inequality of cognitive and non-cognitive skills can be tracked to the early years, and that these early age skills are key drivers of subsequent economic and social success or failure, makes some conclude that this is the time and place where education interventions need to occur. See, among others, a strong statement of this nature from Heckman and Wax (2004) who

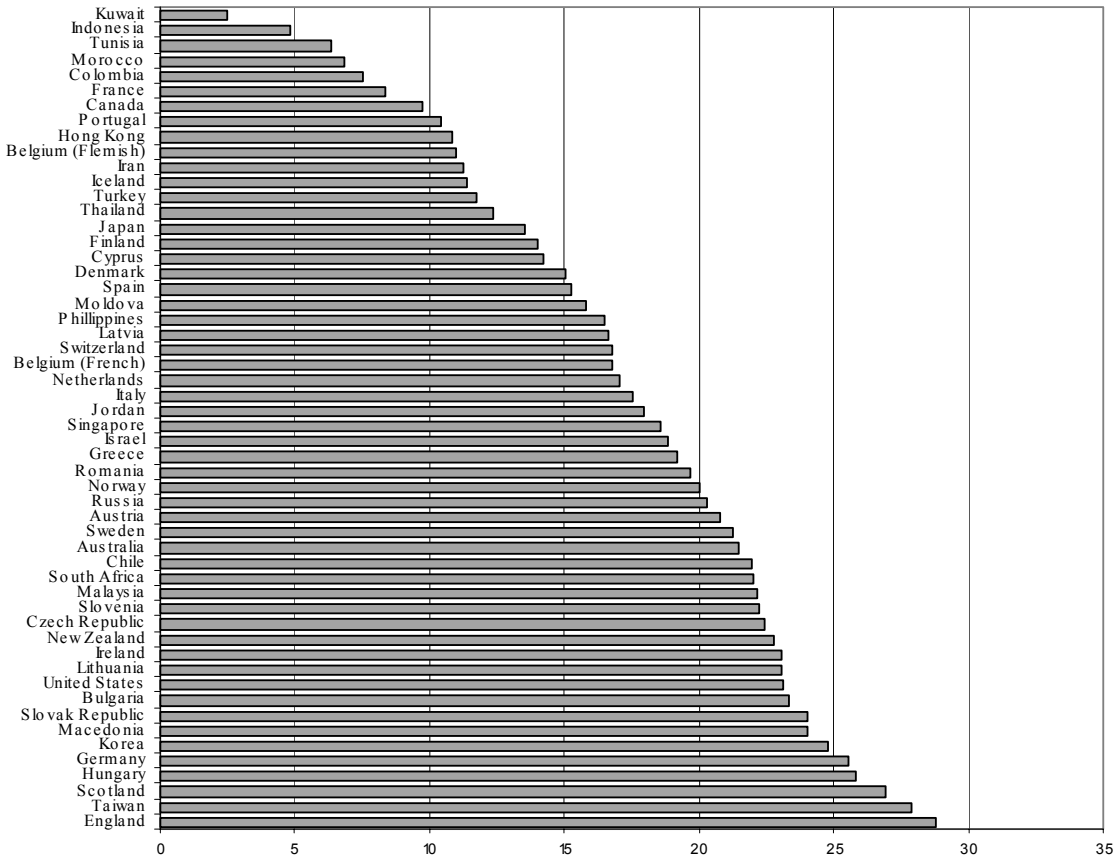
state: "Like it or not, the most important mental and behavioural patterns, once established, are difficult to change once children enter school". The argument is that there is a higher return to investments made in the early years, as compared to later on in the life course. This is controversial, and will be partly discussed in the policy section below. One important issue is whether gains from early interventions persist or tend to decay if not supplemented by further measures, and this is an issue that remains far from resolved. However, at this juncture, the key point to take away is that there exist significant gaps in cognitive and non-cognitive skills that arise even before school, that the gaps are strongly linked to social disadvantage and family background, and that 'quality' early childhood education may play a role in narrowing them.

Compulsory education

20. The test score gaps evident in the early years continue to develop and widen in the school years. In academic work and in the policy arena the links between education experiences and measures of childhood disadvantage have long been recognised. Empirical research on education and social disadvantage has often linked observable measures of educational achievement to various aspects of disadvantage. These include (among others): child poverty; parental education and income; parental attitudes; neighbourhood factors. There is a by now sizable body of evidence (Currie, 1995; Gregg and Machin, 1999, 2001) that educational achievement is significantly lower for children from disadvantaged backgrounds. This includes a higher probability of dropping out of school, lower qualification attainment and lower test scores at various ages through the school years. These gaps are present even in studies that condition on the early age (pre-school or at or near school starting ages) test scores of children.

21. There is a lot of evidence showing that children from relatively disadvantaged backgrounds do worse in terms of educational attainment through the school years or in terms of education levels achieved at the compulsory school-leaving age. Much of this comes from studies based upon single countries. However, with some of the data sources on international test scores of school-age children one can draw some international comparisons to illustrate the almost universal strong links between pupil achievement and family background. Figure 1 shows family background effects on test scores from an interesting recent paper by Schuetz, Ursrpung and Woessman (2005). This uses cross-country data from the Third International Mathematics and Science Study (TIMSS) from 1995 and its repeat survey from 1999. In 53 out of 54 countries the family background effect is statistically significant and the implied gaps in test scores are large. Moreover, the estimates are internationally comparable and show very large family background effects in some countries. The largest family background effects are in England and, whilst all show an important family background gradient, there is a fairly wide range of estimates (and the relative positions may be sensitive to the use of TIMSS data as compared to other survey data on pupil achievement).

Figure 1. **Estimated effects of family background of students' test scores across countries**



Note. Family background effects are based on reported measures of the number of books at home; test scores are average maths and science scores from TIMSS. The family background effects are estimated from statistical regressions explaining standardised test scores based on the number of books at home. As standardised test scores have an international standard deviation of 100, these effects can be interpreted as percentages of an international standard deviation by which test achievement increases if the number of books is raised by one category. The authors validate these estimates by also looking at other measures of family background from the 2001 Progress in International Reading Literacy Survey (PIRLS).

Source: Scheutz, Ursprung and Woessman (2005).

22. A recent interesting strand of work in this area focuses on non-cognitive skills (like social skills and motivation) and their role in affecting education and life chances. A body of work by Heckman and colleagues (Carneiro and Heckman, 2003, Heckman and Rubinstein, 2001, Heckman and Vtylacil, 2001) has shown that better non-cognitive skills, including many developed in the early years of life, also lead to improved educational outcomes. This confirms that the better development of cognitive and non-cognitive skills has scope to enhance educational performances.

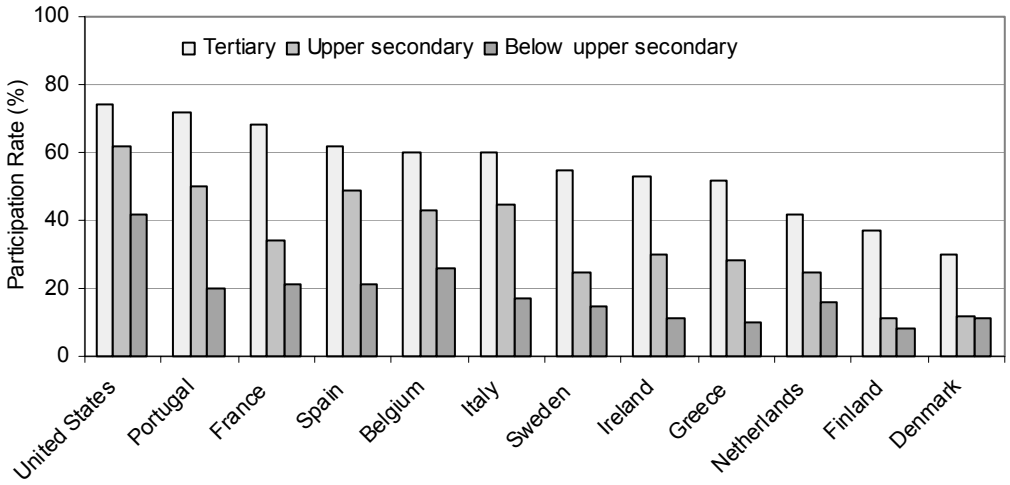
Post-compulsory education

23. Social disadvantage also matters for the phase of post-compulsory education, where it is evident that educational inequalities linked to family background tend to persist and become larger (Feinstein, 2004). The likelihood of staying on after the compulsory school-leaving age is linked to family background and social disadvantage in many countries. Since participation in higher education enhances life chances

and success as an adult, this compounds the already wide inequalities linked to social disadvantage that arise in the childhood years.

24. There are a range of issues pertaining to the way in which social disadvantage lowers the probability of participating in higher education (or pushes people from such backgrounds into the lower quality end of the spectrum). Work looking at participation in higher education, or more specifically university attendance, has shown that people from lower income backgrounds have significantly lower participation rates (two recent example are Blanden and Gregg, 2004, for the United Kingdom; and Black and Sufi, 2002, for the United States). Whilst there are problems of comparability across countries, owing to data differences and to the different nature of higher education systems, Figure 2 shows difference in participation in tertiary education by parents' level of education for a range of countries. In all of them there are sizable gaps between participation rates of those from families with parents who themselves have tertiary levels of education as compared to parents with lower education levels.

Figure 2. **Youths participating in tertiary education by educational attainment of their parents, 1994-95**



Note: Participation rates of 18-24 year olds.

Source: EURYDICE (1997).

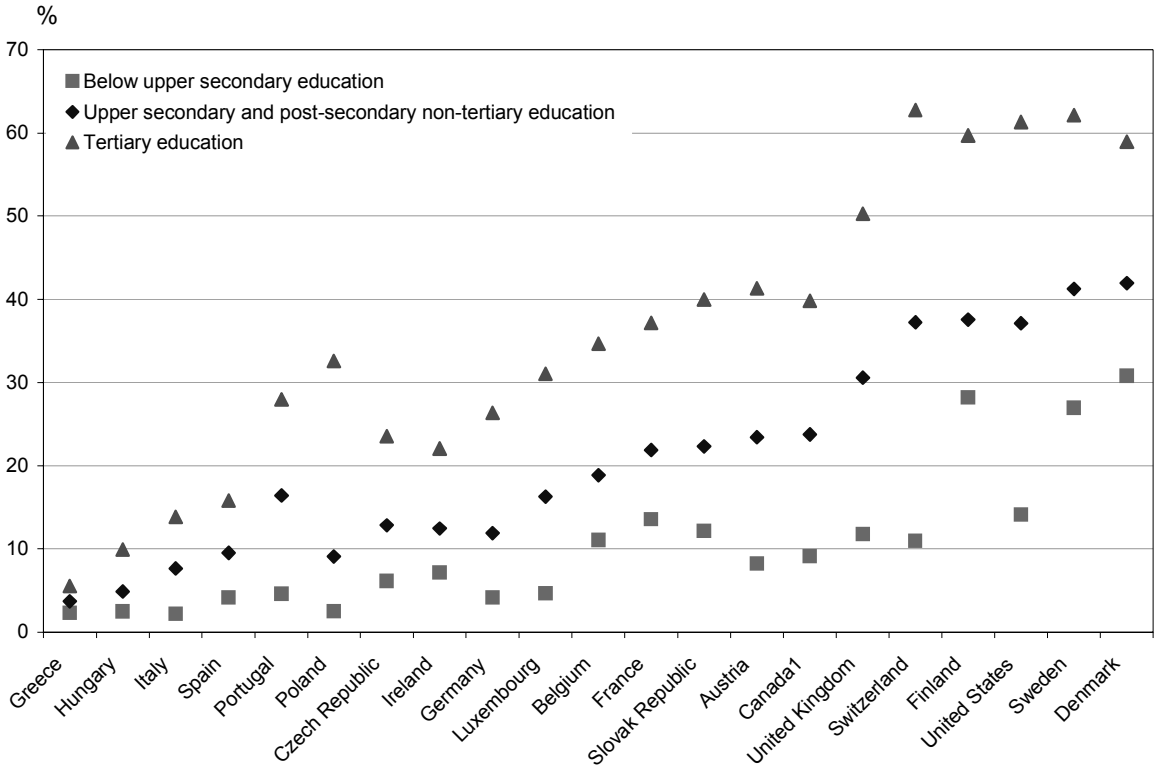
25. The other feature of post-compulsory education and its connection to social disadvantage is that people from poorer backgrounds who do participate tend to enrol on courses, or in institutions, that yield lower economic and social benefits. This includes a lower likelihood of studying at "elite" universities (Chevalier and Conlon, 2003) and also a higher probability of studying for a vocational qualification rather than an academic qualification (Conlon, 2002).

Adult education and lifelong learning

26. Social disadvantages experienced earlier in life also impact strongly on adult life chances (Bynner and Feinstein, 2004). This is clearly bad for them and for national prosperity, and research has shown that education is an important factor in explaining why these basic skills deficiencies arise. Studying the characteristics of the low basic skills group amongst the adult population shows them to very clearly be those who left the school system at the compulsory school-leaving age, who typically have no educational qualifications, and who come from poorer and more disadvantaged social backgrounds.

27. Figure 3 shows rates of attendance in adult education by educational attainment. Participation rates are higher in all countries for the most educated. The lifelong learning process evidently is biased towards those that already have more education, and this has a reinforcing effect on the educational inequalities. Without exception, even in the Scandinavian countries where the adult education and training gap is narrower by education group, there seems less scope to alleviate problems linked to low educational levels and/or poor basic skills that emerge from the adult education system.

Figure 3. **Participation rate in non-formal job-related continuing education and training for the labour force 25-to-64 years of age, by level of educational attainment, 2003**



Note. Countries are ranked, from left to right, in ascending order of the participation rates in non-formal continuous education and training, for all levels of education, within a 12-month period.

1. Data for Canada refer to 2002.

Source: OECD (2005), *Education at a Glance*, Paris.

28. The persistence of these skills problems through adult life is not only bad news for the individuals concerned (in terms of unemployment, deprivation and so on) but also for their families, their children's educational performance and for the communities in which they live. Social disadvantage clearly has much wider and far-reaching implications since cycles of disadvantage can run across generations and through families and communities. The fact that education is so inherently connected to social disadvantage makes the scope for social policy that affects educational opportunities all the more important, even if their specific features should reflect the relative importance of the various factors that lead poor households to 'under-invest' in education (Box 2).

Box 2. **Reasons why the poor do not invest in education**

The interpretation of education gaps by family background has received a lot of research attention. A sizable, and often contentious, debate has considered whether family income in itself matters, or whether one can attribute lower education levels and post-compulsory participation to other factors of disadvantage (like those acquired much earlier on in life). For example, some authors (like Mayer, 1997) argue that it is not income *per se* that directly affects children's life chances, but rather the factors that cause parents to have low incomes. Whether this is the case, or that income does matter, it remains the case that one sees lower participation in higher education from people who grew up in a poorer, or more disadvantaged, family environment. This is therefore an important issue for social policy, although which view is more correct of course matters when thinking about an appropriate policy response.

Lower levels of access to tertiary education have also been linked to the presence of family credit constraints, to different rates of time preference amongst people from different family backgrounds and to differing attitudes to debt. These are all factors that link to social disadvantage and unravelling their relative importance in explaining lower access and participation is not straightforward on the basis of existing empirical evidence. But all are issues that need to be considered, especially when considering policy options.

III. Impact of education on economic and social outcomes

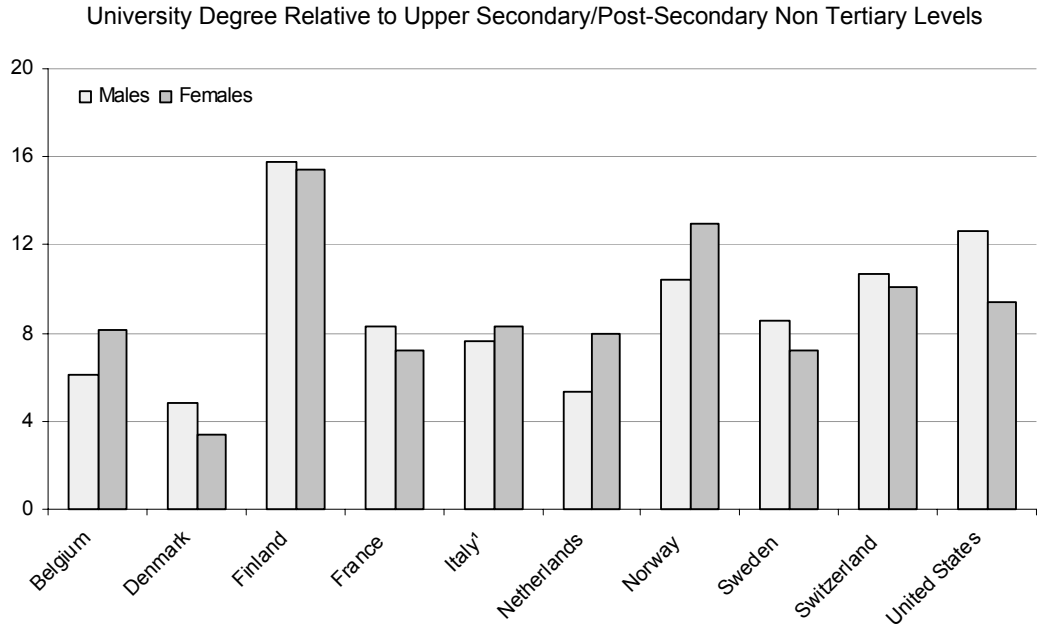
29. A large body of research over the years has studied the impact of education on a range of economic and social outcomes in adulthood. Amongst economists the principal focus has been on the way that education is valued in the labour market, especially in terms of the wage returns that accrue to higher education levels. This originates in the path-breaking work on human capital from the 1960s and 1970s (Becker, 1964) which developed an analytical framework explaining why individuals invest in education and training in a manner analogous to firms' investment in physical capital. Other social scientists have considered wider benefits from education, with particular focus placed on the connections between education and outcomes like health, crime and civic participation and engagement, often in the context of a wider agenda on social capital (with origins developed in Coleman, 1988, Putnam *et al.,* 1993, and Fukuyama, 1995).

Labour market outcomes

30. It is now well established that education is closely connected to better labour market outcomes. In economic terms, an individual's decision to invest more in education generally yields a positive and significant return to that investment (Becker, 1964, Mincer, 1974). This is, of course, a return that is private to the individual making the investment.

31. There is by now a lot of evidence that there are significant wage and employment returns to education. There is also evidence that the advantage provided by education has been increasing over time (at least in the recent past – in other periods, like the 1970s, the wage advantage from higher education actually fell in the face of rapid supply increases). Figure 4, reproduced from the 2005 OECD *Education at a Glance*, shows sizable wage differentials between those with a university degree as compared to those with upper secondary or post-secondary education levels. Table 1 shows the employment rates of graduates to be significantly higher than for non-graduates for a range of countries. Moreover, the labour market advantages of graduates are also improving over time: earnings differentials of persons aged 25-to-64 with tertiary education (relative to those of persons with upper secondary education) improved, on average, by around 3% in the four years to 2002, while earnings of persons with less than upper secondary education were stable or declining in a majority of OECD countries (OECD, 2005).

Figure 4. **Earnings differentials by educational attainment in 2002**



Note: Private internal rates of return for an individual obtaining a university-level degree (ISCED 5/6) from an upper secondary and post-secondary non-tertiary level of education (ISCED 3/4). Life-time income streams refer to people 25-to-64 years-old.

Source: OECD (2005), *Education at a Glance,* Paris.

32. There are some important issues of interpretation surrounding these labour market differentials. The empirical literature on the private wage returns to education is one of the largest areas of empirical microeconomics. Because of this, various issues of modelling and measurement are well understood.[1] One of the critical issues raised in this work is the need to ensure that there is a causal impact of education on wages so as to ensure it is education that matters in generating a 'true' return. It is important to understand the difference between the causal effect of education and simple correlations between education levels and wages (like those in Figure 4 and Table 1). As Blundell et al. put it, there is a need to "distinguish between the higher earnings that are observed for better-educated workers being caused by their higher education and individuals with greater earning capacity choosing to acquire more education" (Blundell *et al.*, 2005).

1. Very good reviews and evidence covering these issues are given in Card (1999) and in Blundell *et al.* (2000, 2005).

Table 1. **Employment rates by educational attainment**

	Pre-primary and primary education	Lower secondary education	Upper secondary education			Post-secondary non-tertiary education	Tertiary education		All levels of education
			ISCED 3C Short	ISCED 3C Long/3B	ISCED 3A		Type B	Type A and advanced research programmes	
Australia	x(2)	61	a	84	76	x(5)	80	85	73
Austria	x(2)	55	a	74	72	84	82	88	72
Belgium	36	60	a	69	74	76	82	85	67
Canada	44	63	a	x(5)	75	79	82	82	76
Czech Republic	8	45	57.1	75	77	77	81	87	73
Denmark	43	62	84	81	68	c	85	85	78
Finland	52	68	a	a	73	c	83	88	73
France	48	68	a	76	76	73	85	80	71
Germany	43	51	a	70	54	78	81	84	69
Greece	55	67	79	78	63	73	79	83	65
Hungary	12	40	a	71	72	77	[89]	83	64
Iceland[1]	83	86	89	a	88	93	93	96	90
Ireland	47	67	c	a	74	80	84	87	71
Italy[1]	33	61	69	72	72	78	x(8)	82	61
Japan	x(2)	67	a	a	74	a	71	86	75
Korea	64	69	a	x(5)	70	a	75	77	71
Luxembourg	64	56	64	69	74	82	81	86	70
Mexico	60	71	a	63	a	a	77	82	66
Netherlands[1]	48	64	x(4)	78	83	79	86	87	74
New Zealand	x(2)	63	a	85	78	82	78	84	77
Norway	c	65	a	79	79	85	90	89	80
Poland	x(2)	38	58	a	65	67	x(8)	83	61
Portugal	70	82	x(5)	x(5)	82	x(5)	79	90	75
Slovak Republic	c	30	x(4)	67	75	x(5)	82	87	67
Spain	47	67	68	73	72	72	81	82	66
Sweden	59	74	a	a	81	x(5)	83	88	80
Switzerland	61	68	75	83	75	86	92	88	81
Turkey	48	58	a	66	58	a	x(8)	75	54
United Kingdom	59	54	76	80	84	a	87	88	78
United States	54	60	x(5)	x(5)	73	x(5)	79	83	75
Average	*49*	*61*	*72*	*75*	*74*	*79*	*82*	*85*	*72*

Note. Number of 25-to-64-year-olds in employment as a percentage of the population aged 25 to 64, by level of education attained. Data in squared brackets are not statistically significant due to small sample size. The symbol "a" means that data are not applicable because the category does not apply; the symbol "c" means that there are too few observations to provide reliable estimates; the symbol "x" means that data are included in another column of the table (e.g., x(2) means that data are included in the second column of the table.

1. Data for the Netherlands refer to 2002.

Source: OECD (2005), *Education at a Glance,* Paris.

33. Various empirical strategies have been devised to identify the 'causal impact' of education on earnings and the approaches used are much better developed than in many other areas of empirical work in the social sciences.[2] Existing evidence shows that there is indeed a sizable wage return to education. This is true in studies set in different time periods, in different countries and for different demographic groups. Of course, the estimated returns do differ with observable characteristics (*e.g.* returns to university degrees vary according to university attended and subject studied), but there is clear evidence of a significant

2. Many of the methods are quite technical in nature, but the key feature is to ensure that one eliminates any possibility of reverse causation running from education to wages. Of the strategies used, there have been statistical methods to ensure education is an exogenous variable (these are known as instrumental variable, IV, strategies), studies looking at twins and siblings so as to eliminate common family effects, and those that exploit policy variations that raise people's education levels independent of their choices (*e.g.* raising of compulsory school-leaving ages, again in an IV type approach).

positive wage return to education. This finding holds true when one adopts methods to ensure the direction of causality runs from education to earnings and not the other way around. Table 2 summarises some of the key papers in the field: in all cases the "causal" impacts, where researchers try and ensure variations in education are driven by factors that do not directly impact on wages, are above the 'basic' uncorrected differentials. Moreover, with few exceptions, the difference between the basic and causal returns is of similar magnitudes for the studies considered in the Table (although they obviously differ across studies owing to different data, different countries and so on). Hence, there is robust cross-country evidence that the more educated get higher monetary rewards in the labour market.

Table 2. **Evidence on the causal impact of education on earnings**

Study	Data	Basic Return	Causal Return	Means to Generate Causal Estimate
Angrist and Krueger (1991)	US Census	5-7%	6-11%	Variations in years of education generated by different quarter of birth
Card (1995)	1966 Cohort of Young Men, United States	7%	13%	Variation in years of education from proximity to college when growing up
Conneely and Uusitalo (1997)	Finnish men in the army in 1982	8%	11%	Variation in years of education from proximity to college when growing up
Harmon and Walker (1995)	Family Expenditure Survey, United Kingdom	6%	15%	Variation in education induced by raising of compulsory school leaving age
Ashenfelter and Rouse (1998)	1991-93 Princeton Twins Survey	7%	9%	Variation in education within twin pairs
Miller at al (1995)	Australian Twins Register	3%	5%	Variation in education within twin pairs

Note: Examples taken from Card's (1999) review.

34. The evidence discussed in Section II showed that education levels are significantly lower for people from disadvantaged backgrounds. The fact that education raises earnings power in the labour market thus shows how social disadvantage works through education to generate lower income for people from less advantaged backgrounds. This is because people from disadvantaged backgrounds invest less in education than other people do and thus fewer of them accrue the wage gains associated with such investment.

Social outcomes

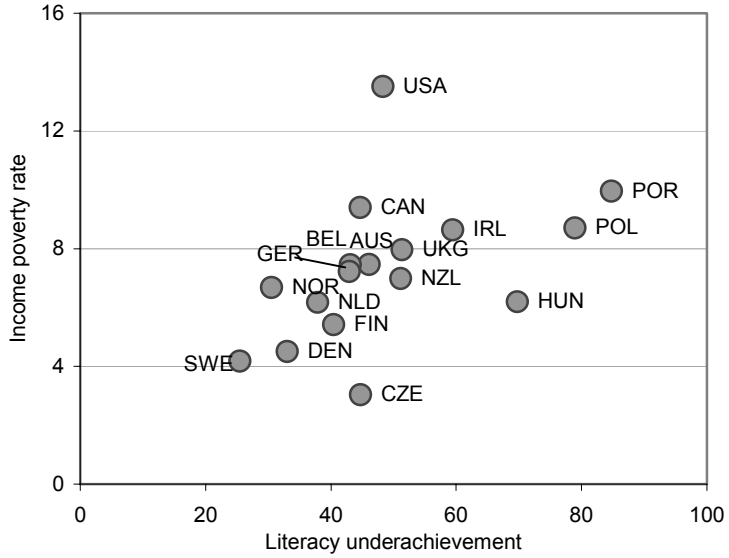
35. Returns to individuals in terms of higher wages are only one part of the story in which education and social disadvantage interact to affect individuals' livelihoods and well-being. Investment in education can clearly impact on other outcomes, and generate externalities that can cause the private and social returns to diverge from one another. One way of thinking about this is to consider the impact of education on other non-wage economic and social outcomes.

36. Social science researchers have considered the wider benefits of education by studying connections between education and outcomes like health, crime, civic engagement and intergenerational effects on children's outcomes. There is evidence of important externalities, in that education significantly improves health outcomes (Grossman and Kaestner, 1997, Kitagawa and Hauser, 1973, Lleras-Muney, 2005), is associated with lower crime levels (Lochner and Moretti, 2004, Feinstein and Sabates, 2005, Machin and Vujic, 2005) and enhances the extent of civic engagement and participation (Brehm and Rahn, 1997, Bynner and Egerton, 2001, Bynner and Parsons, 1997, Dee, 2004). Moreover, there are important intergenerational effects of education of adults on the education of their children (Black, Devereux and Salvanes, 2005). Two examples of social effects of education are discussed below.

Prevalence of income-poverty

37. How skills are distributed among the adult population can influence the prevalence and severity of income poverty. Data from the International Adult Literacy Survey (IALS) of 1995 show that countries like the United Kingdom and the United States have very dense lower tails of the distribution of literacy skills among adults (including amongst younger adults), whereas in Sweden and Germany hardly any adults are at these low levels. These data also show that this is not a problem concentrated amongst older adults, since very poor literacy and numeracy levels are present amongst 16-to-25-year-olds in the United Kingdom and the United States.[3] Across the OECD area, countries where the "tail" in the distribution of skills among the adult population is largest also tend to experience higher poverty rates in a point in time (Figure 5).

Figure 5. **Cross-country differences in income poverty rates and literacy achievement, mid-1990s**



Notes. Literacy underachievement refers to the percentage of active persons aged 25 to 65 who scored at literacy levels 1 and 2 of the document scale in the *International Adult Literacy Survey* (a survey undertaken in 23 participating countries over the 1994-98 period): according to experts, this represent a level of performance below the minimum level of competence needed to cope adequately with the complex demands of everyday life. Income-poverty rates represent the share of the population aged 18 to 65 with equivalised household disposable income below 50% of the median; data refer to the mid-1990s.

Source: (IALS) and OECD questionnaire on income distribution and poverty.

Intergenerational mobility

38. A small but ambitious body of work studies how children from different social backgrounds fare as they progress through the school years. The focus is usually on the scope to escape from disadvantage. Johnson and Reed (1996) look at cohort data from the British National Child Development Study (NCDS)[4]

3. For example, 22% of 16-25 year olds in Britain have literacy levels below IALS Level 2, compared to 19% of 36-45 year olds; comparable numbers for the United States are 26% for 16-25 year olds and 18% for 36-45 year olds. In Sweden 5% of 16-25 year olds are below Level 2, and in Germany the corresponding number is 4%. The same pattern is true of numeracy skills. See OECD (1995).

4. NCDS is a birth cohort surveying all people born in a week of March 1958 at various ages (7, 11, 16 23, 33 and 42 at the time of writing).

to study the relationship between sons and fathers and their position in the income distribution. They pay particular attention to those who start or end up near the top or bottom of the distribution and find that cohort members at these extreme ends of the distribution are particularly subject to immobility across the generations. Whilst this shows the scope to escape from a low-income background to be limited, they also show there to be a positive relationship between test scores at age seven and the likelihood of moving up the distribution among those whose fathers are at the bottom of the distribution. Thus, better cognitive skills, as measured by the NCDS test scores, are key to escaping, even at relatively early ages.

39. Other work has stressed that there are international differences in the extent of intergenerational mobility of economic and social outcomes. Countries with higher levels of social mobility also have education systems that seem to do better at ensuring educational equalities. Social mobility is higher in the Scandinavian countries, at intermediate levels in Germany, and at its lowest in the United Kingdom and the United States (Solon, 2002). Table 3 shows some recent estimates that try to ensure international comparability in terms of the outcomes of interest and the samples used. The estimates relate sons' earnings to fathers' earnings, where a higher partial correlation corresponds to a stronger cross-generation dependence of sons' earnings on fathers' earnings, i.e. lower intergenerational mobility. The Table makes it evident that countries with less intergenerational income mobility are also those identified earlier as being characterised by sizable tails at the lower end of the distributions of literacy and numeracy skills.

Table 3. **International estimates of intergenerational income mobility**

Country	Sons Born	Partial Correlation
United States	1954-1970	.348[3]
United Kingdom	1958	.260[1]
West Germany	1960-73	.180[3]
Finland	1958-1960	.147[1]
Sweden	1962	.143[1]
Denmark	1960-1973	.143[1]
Norway	1958	.139[1]

Source: Bjorklund *et al.* (2005), Table 3; Blanden (2005), Table 3.3; Blanden, Gregg and Machin (2005b).

40. Changing patterns of education and income inequalities also have implications for future patterns of social mobility. Indeed, evidence for the United Kingdom has shown that the combination of rapid educational upgrading and increased returns to human capital over time has led to falling social mobility (Blanden, Gregg and Machin, 2005a, 2005b). When education expansion favours individuals from richer family backgrounds (as in the United Kingdom, see Blanden and Machin, 2004), this acts to reinforce income persistence across generations and depress the prospects for social mobility. It is evident that this has strong implications for the design and implementation of social policy.

41. To summarise, the existence of important effects of education on economic and social outcomes strengthens what was said about the role of education, and its interaction with social disadvantage, in the context of the private wage returns. If social disadvantages can be mediated and offset by improved education, this can also generate wider benefits in terms of better health, crime and social capital outcomes, together with potential intergenerational effects that can temper the deleterious effects resulting from cross-generational cycles of disadvantage.

IV. Policy perspective

42. The research findings discussed in the previous two sections have direct implications for the design of education and social policy. The connections between education and life chances, and the myriad of dimensions of social disadvantage, mean that one needs to gear a policy discussion towards aspects of social policy that focus on education and towards aspects of educational policies that will impact on social disadvantage in later life. More generally, it is important to focus on altering the extent of disadvantage

within society. Central to this is the links to policy interventions and how they have been evaluated by social science researchers. In this respect, one needs to acknowledge that there are important, but often complex, complementarities that characterise education and social policies.

Education policies

43. Considering longer term aspects of policy, it is evident that education policies can be designed with an aim of offsetting the key aspects of family disadvantage that hold back educational achievement. At what stage of the life-cycle such interventions are targeted and at what particular aspects of education are important questions to be resolved. Similarly whether they are directed at formal types of learning, or at non-formal types of learning, is important, though relatively under-studied.

44. Remedying disadvantages in access to better quality education – both at the compulsory and non-compulsory stages of the education sequence, and indeed in the pre-school phase – can be rationalised for reasons of both social justice and efficiency, if more able children from poorer backgrounds miss out due to disadvantage. Given the evidence that educational achievement is strongly tied to both cognitive and non-cognitive skills of children, this is in line with the notion that educational policy interventions can enhance the life chances of individuals from disadvantaged backgrounds.

45. The question of timing is important. Indeed, social scientists from various disciplines (and of all political persuasions) acknowledge that high payoffs can result from spending on early childhood programs. Indeed some argue these are the only worthwhile interventions (*e.g.* Heckman's work argues inequalities in skills attributable to social and family backgrounds are already established before children enter school). But others argue that these payoffs decay rapidly unless bolstered with interventions that can continually offset social disadvantages through the whole education sequence.

46. Comparing the somewhat narrower focus on benefits considered by economists with the wider benefits from education that are considered in other social science disciplines leads to a recognition that there are aspects of formal and non-formal education that can enhance life chances. The formal route (for example, through learning mechanisms that generate educational qualifications) tends to be emphasised in the human capital work which views education and schooling as an investment that individuals decide whether or not to undertake. Non-formal learning experiences, on the other hand, tend to be more relevant to social capital discussions where individuals can glean non-monetary benefits that can enhance their life chances by participating in the learning experience itself.

47. The issue of adult, or lifelong, learning is also a relevant policy question. As the earlier discussion made clear, large numbers of adults in some countries are hampered by severe deficiencies in basic skills. Adult training and learning programmes are important aspects of education policy that can, if effective, act to offset these deficiencies to the benefit of the individuals concerned and importantly to their families. If they can offset the externality created by intergenerational persistence in low educational achievement, then these are an important aspect of education policy.

48. The different organisation of education systems across countries is also a policy-relevant factor. For example, in some countries schools have much more equitable admissions policies than in others. Of course, the role of the school itself is a hotly contested issue, especially in the education field, yet most of the school effectiveness work (Chevalier, Dolton and Levacic, 2005, Mortimore, 1991, Sammons, 1999, Teddlie and Reynolds, 1999) concludes that which school children attend does matter, even if family issues and peer effects may matter more. This can also have an important bearing on the life chances of children once they enter adulthood, especially if peer groups have a long-standing influence on economic and social outcomes.

Social policies

49. The other relevant dimension concerns policies aimed at the key aspects of social disadvantage. This is important since, as already noted above, education policies alone may not get to the causes of reduced life chances that have their sources in social disadvantage. Policies here include welfare and welfare-to-work policies that can enhance family income and lower child poverty which, in turn, can improve the educational attainment of children, subject to the debate in the academic literature about whether income per se or the characteristics of people that generate low income matter most. If the role of income is lower, and it is in fact characteristics that matter more, then structural factors like poor housing stock, the local labour market and poor transport access may matter for people in poor neighbourhoods and communities. For these individuals in impoverished situations, social policies linked to disadvantage that can have the scope to enhance children's educational performance would be those that are able to alter parental attitudes to education (*e.g.* through parenting programmes) or through community based out-of-school programmes (*e.g.* summer programmes) that can influence the peer groups of children.

50. Overall, it is how the links between education and social disadvantage generate reduced life chances that matters for the policy discussion. The academic research is able to shed light on how such mechanisms may occur and thus to provide some insight into the relative merits of educational policies or other social policies aimed specifically at social disadvantage. A careful reading of the research, together with systematic evaluations of what actual policy interventions are able to do, is key to better understanding the need for social policy to be used to offset the reduced life chances of individuals from low education and poor social backgrounds.

51. It is evident that there are some social policies that have more scope to impact on learning of people from disadvantaged backgrounds. Whilst these are different in the different educational contexts in different countries, there are several of these: scope for offering cash transfers to families with children that are conditional on sending children to school; learning programmes targeted at youths who dropped out of formal schools; adult training; and, particularly for relatively unskilled workers, policies that provide recognition for competences learned on-the-job.

Evaluation of policy interventions

52. The policy discussion above introduced various options that are relevant to the connections between education and social disadvantage, and especially to how they influence economic and social outcomes across the life course. A key aspect of policy design, however, is that policies are evaluated using rigorous and scientifically sound methods. This is important to learn what works and what does not work in ameliorating the bad effects of poor education and social disadvantage on an individual's life chances.

53. This is better recognised by policymakers in some countries and in some government departments than in others. Since governments spend sizable amounts of money on policy interventions in many areas, it is important to work out whether or not policies are cost-effective. Clearly developing policies that can be evaluated in a more systematic way is crucial to this.

54. To many people the 'gold standard' of evaluation methods for policy interventions is to run randomized experiments where some people randomly are selected into a policy and others are not. One can then carry out a comparison in an analogous way to medical trials by comparing outcomes in the treatment group (those in the programme) to those in the control group (those not in the programme). If the selection is truly random, then this should give an accurate estimate of the impact of the policy intervention.

55. However, randomized control trials are often highly specific, owing to their very costly nature and are difficult to generalise from. They often raise many ethical considerations that mean they are simply not viewed as feasible in the social science arena of many countries. Nonetheless it seems fair to say that, in the right circumstances randomization can be an attractive, and conceptually appealing, possibility and one that governments should be more open to pursue.

56. However, the line that we require random experiments to be conducted as the only means to effectively test policy interventions seems to be rather heroic. First of all, there are instances where random experiments are neither feasible nor ethical. Second, closer involvement by potential evaluators in the design of policies would seem desirable as a means to better understand what can work. Many policies are currently evaluated *ex-post*, yet a better evaluation may result if potential evaluators were involved *ex-ante*. Thirdly, there are very good examples of non-experimental evaluations that have been conducted without randomization.

Evidence from evaluations[5]

57. A lot of work looks at the evaluation of education interventions administered both in and outside school settings. For this review on education and social disadvantage, there are a number of evidence bases that are relevant. These include: school-based programmes; student support; and programmes for adults and drop outs. I consider each in turn, with an aim to generate an understanding of what we know about the effectiveness of policies aimed at improving the learning experiences of those coming from disadvantaged backgrounds.

School-based programmes

58. Lavy and Schlosser (2005) argue that, although there have been a large number of interventions targeting disadvantaged students in recent years, evidence of their effectiveness remains scanty. Most studies are based on small samples and lack proper counterfactuals and cost-benefit analyses. Particularly important is the lack of evidence on how effective high-school interventions are, given the debate over the relative merit of late versus early childhood interventions (see, for example, Carneiro and Heckman, 2003).

59. Research by Lavy and Schlosser (2005) and Lavy (2002) helps to address this problem. These authors evaluate a programme of remedial education for underperforming high-school students in Israel (implemented since 1999). The objective of this programme is to increase the percentage of students who earn matriculation certificates, mainly by means of an increase in instruction time for targeted students. Classes were held for these students after school hours and taught by the classroom teachers. Lavy and Schlosser (2005) evaluate the programme using a quasi-experimental design: they compare outcomes for a 'treatment' group and an appropriate 'comparison group' before and after the policy was implemented (*i.e.* a difference-in-differences analysis). They find the policy to be highly effective in improving outcomes at a cost of $300 per 12th grade student ($1 000 per targeted student). The group incentive programme is evaluated in Lavy (2002), where he also evaluates a more conventional programme based on providing schools with additional resources to increase teaching time, split up classes into smaller study groups and provide extra coaching for weaker students. He finds that overall the estimated effect of the resources programme is greater than the 'group incentive programme' (though not on every measure), but that the cost is over twice as high (*i.e.* > $340 per student) and is less cost-effective.

60. The positive evidence for Israel is in marked contrast to that for the United States, where there are many examples of anti-dropout programmes for American teenagers that have failed to have any impact on graduation rates. These studies are reviewed by Dynarski and Gleason (1998). The largest

5. This Section draws on, and in places reproduces, some of my work on education policy with Sandra McNally.

federal dropout grants went to efforts to re-structure schools and in general the impact on student outcomes was negligible. A criticism of why the policy did not seem effective is that funding was spread too thinly across a very large number of schools. This issue of a diffuse spreading of resources across schools is also discussed by Bénabou *et al.* (2005) in relation to a similar area-based policy in France. "*Zones d'Éducation Prioritaire*'' (ZEP; Priority Education Zones) was launched in 1982 to give greater resources to schools in disadvantaged areas. The programme was greatly extended thereafter. There was no clear basis for how money was allocated to schools or what it should be used for. The authors estimate that about three-quarters was used for teacher bonuses (not related to performance) and one quarter for extra hours of teaching. However, the policy had no discernible impact on any of the measures of student achievement. Problems include the fact that ZEP status seemed to stigmatize the school (with some reaction from parents and teachers); considerable uncertainty over budgets; and a poor targeting of resources.

61. Similar policies have been implemented in England since the late 1990s. The establishment of *Education Action Zones* (EAZ) was the first such initiative. Each zone (usually 2 or 3 secondary schools plus their feeder primary schools) was to be run by a number of 'partners', including the local authority, businesses, the voluntary sector and community representatives. The EAZ initiative was effectively replaced by the (much larger) *Excellence in Cities* (EiC) initiative after a relatively short period. The funding of both schemes is about £120 per pupil on average – although there is considerably heterogeneity between schools and not all pupils will be directly affected by the extra funding. There are a number of components to EiC (some of which have changed over time). The main strands are the employment of 'Learning Mentors', to help students overcome educational or behavioural problems; the provision of 'Learning Support Units' to provide short-time teaching and support programmes for difficult pupils; and a 'Gifted and Talented programme' to provide extra support for 5-10% of pupils in each school. There is also provision to designate more schools as 'Specialist' (*i.e.* in particular subjects) or 'Beacon' (to disseminate good practice). The evaluation evidence for EAZ is mainly qualitative (see Halpin *et al*, 2004; OFSTED, 2003) and findings are largely negative. The report by OFSTED (2003) suggests that this was due to an over-ambitious programme of activities that did not always focus specifically or radically enough on the challenges faced by schools in their areas. In contrast, evaluation evidence for EiC shows that the policy has been effective in raising pupil attainment in examinations and increasing attendance at school. Initial results suggested that EiC had a modest positive impact after about two years (Machin *et al.,* 2004).

62. In conclusion, available evidence suggests that some school-based policies can be effective in raising the performance of disadvantaged students and that this can be done cost-effectively. But, for programmes to be successful, it matters greatly how the extra resources are spent and that they are appropriately targeted.

Student support

63. Another type of measure used to increase the educational attainment of disadvantaged students is to offer financial incentives with one of more of the following aims: to improve attainment; to discourage drop-out; to encourage staying-on in education beyond compulsory school-leaving. An alternative (or sometimes additional) strategy has been to provide students with mentors.

64. In Israel, Angrist and Lavy (2002) evaluate the impact of offering students financial incentives for achieving their matriculation certificate. Such an incentive may be helpful if low-achieving students have high discount rates, reduce investment in schooling by going to work or face peer pressure not to study. The evaluation was done by means of randomized experiment. The analysis leads them to conclude that, although the evidence is not seamless, worthwhile gains in matriculation rates can be obtained by offering cash rewards in low-achieving schools. The award, worth about $1 429, was paid to 27% of the treatment group (which gives a cost of $385 per treated student). They estimate that the programme should

increase annual earnings in the treated group by about $282 per year – so the cost of the bonus will be quickly recovered.

65. In the United Kingdom, there are also (means-tested) payments given to students to stay on in education beyond the age of compulsory school-leaving. This is justified on the basis that many young people do not pursue further education because of financial constraints. The education subsidy programme, known as the *Education Maintenance Allowance* (EMA), was first piloted in a number of areas in England from September 1999. It has been carefully evaluated by means of a treatment-control design, using methods to ensure that the control group has similar observable characteristics to the treatment group in the baseline period. Dearden *et al.* (2005) report on the findings and show that the impact of the subsidy is quite substantial, with initial participation rates (at age 16/17) being around 4.5 percentage points higher than they would have been otherwise. Furthermore, this increase has drawn back to schooling young people from both employment and the inactivity group in equal parts – which shows that to a large extent the policy is not displacing individuals from work but from unproductive activities. They present a back-of-the-envelope cost-benefit analysis and suggest that the net benefits are positive.

66. There are many studies about the effect of financial aid on the probability of attending college in the United States. Dynarski (2005) argues that most of these are plagued by identification problems, with the analyses failing to control for the correlation between college costs and the unobserved determinants of schooling outcomes. She states that a handful of well-identified studies have established a strong causal link between schooling costs and college attendance. In an earlier paper where she reviews this literature, Dynarski (2002) concludes that best estimates suggest eligibility for $1 000 of subsidy increases college attendance rates by about 4 percent. However, it is not clear if the effect of such subsidies is higher or lower for low-income students.

67. Heckman and Lochner (2000) are more sceptical about the value of subsidizing low-income individuals to stay-on in education because they argue that credit constraints are not an important constraint for college-age youth from low-income families. However, they report evidence on the effectiveness of some programmes where provision of financial incentives was part of the reform package. For example, the '*Sponsor-A-Scholar*' (SAS) programme was introduced in Philadelphia to help students from high school to enter college. The programme provides long-term mentoring (throughout high school and one year beyond), substantial academic support, help with college application and financial aid procedures and financial support for college-related expenses. $6 000 was offered to all students who went to college. Johnson (1998) estimated a 22% increase in college attendant for one year after graduation from high school (which fell back to 16% after two years). Impacts were greater for youth who were initially less successful academically, were having more school problems and had less family support. However, not all mentoring programmes are effective (Sipe, 1996). Reasons for lack of success include insufficient infrastructure to screen and monitor volunteer efforts or to match youth to appropriate mentors.

68. Among the other successful programmes discussed by Heckman and Lochner (2000) are the *Quantum Opportunity Programme* (QOP), which offered four years (high school years) of social and emotional support, together with financial assistance for individuals interested in post-secondary education or training. The QOP offered disadvantaged minority students financial incentives for every hour spent in activities aimed at improving social and market skills. The evaluation (based on randomized trials) found that two years after programme completion, about one-third more QOP participants graduated from high-school (or obtained their GED) than similar non-participants. There was also a substantial reduction in crime – arrest rates for participants were half that of non-participants. The average four-year cost per participant was high, at $10 500. However, the cost-benefit analysis estimated positive net social returns (driven largely by the crime reduction aspect).

69. Finally, Heckman and Lochner (2000) discuss two other studies that they claim show that creative programmes designed to keep adolescents in school can be effective. Ohio's *Learning, Earning and Parenting* (LEAP) programme and *Teenage Parent Demonstration* (TPD) provided financial incentives for teenage parents on welfare to stay in school or take GED classes. Both programmes have been evaluated by randomized trials and show success in terms of high school graduation and earnings. Heckman and Lochner (2000) conclude that the much larger and broader benefits of QOP suggest that combining incentives with the academic and social support of a caring and qualified mentor provides the greatest promise for troubled adolescents.

Programmes for adults and high-school drop-outs

70. Many programmes have been introduced to improve the earnings of the most disadvantaged in the general working-age population. They are diverse in nature and it is somewhat difficult to form an overall conclusion regarding their effectiveness, but I consider some of them in this sub-section.

71. There have been many evaluations of adult programmes in the United States and several reviews of the evidence including Friedlander *et al.* (1997), Heckman and Lochner (2000) and LaLonde (1995). In all three reviews, it is remarked that a modest investment has yielded a modest return; but that these programmes are insufficient to have much effect on poverty rates. As Friedlander *et al.* (1997) put it "the broadest generalization about the current knowledge of government training programmes for the disadvantaged is that they have produced modest positive effects on employment and earnings for adult men and women that are roughly commensurate with the modest amounts of resources expended on them". In their view, results from the *Job Training Partnership Act* (JTPA) evaluation are most important because the programme is national in scope and the survey design was experimental (and is considered demonstrably more reliable than the non-experimental studies in this literature).

72. Heckman and Lochner (2000) discuss the few training programmes that have demonstrated a positive impact on youth earnings. The most well-known is the *Job Corps*, an intensive programme ($20 000 per participant) that provides extremely disadvantaged youth with basic education, vocational skills and a wide range of support services in a residential environment. The evaluation (Long, Mallar and Thornton, 1981) showed an increase in education, employment and earnings and estimated a net return of 8-9% (though much of this is accounted for by a reduction in violent crime). More recent random assignment evaluations (Burghardt *et al.*, 2001) show something of a more mixed picture for men (with gains occurring if they moved residence, but not for those on non-residential programmes) and earnings gains accruing to women participating the programme.

73. A similar programme, *Jobstart*, was designed to be a less intensive and less expensive version of this programme (with less intensive services in a non-residential setting). Although the cost was much lower ($6 000 per participant), so were the benefits. There was only a small overall impact on earnings, education and crime – though there were two particular sub-groups for which earnings returns were very high: men arrested between the age of 16 and programme entry; and youths who had dropped out of school for educational reasons. From their comparison of programmes, Heckman and Lochner (2000) draw the following conclusions: "you get what you pay for"; the effect of treatment may vary substantially among subgroups; and these types of programme have outcomes beyond schooling and work that should be considered such as a reduction in crime.

74. There are many training and education programmes for youth and adults in Europe (with a particular focus on the unemployed). Evaluation evidence is summarized by Ryan (2001a, 2001b). Unlike some of the US work, evaluation is not conducted using randomized experiments and generally, there is no cost-benefit analysis. However, there have been efforts to construct a valid treatment and comparison group (see, for example, Payne, 2000). In the United Kingdom, there were a number of programmes

implemented to train unemployed adults in the 1980s. Ryan (2001a) discusses evaluation of the *Job Training Scheme* (mid-80s), and the *Employment Training* and *Training for Work programmes* (1988-98). All programmes show substantial improvements in employment-related outcomes. However, they show no effect for earnings, apart from the *Job Training Scheme*, where some doubt is cast on the quality of the data and the matching of participants and non-participants in the evaluation.

75. With regard to youth programmes, evaluation evidence is extensive for France, Sweden and the United Kingdom (Ryan 2001b). In contrast to the United States, some programmes do report improvements in participants' employment prospects, as indicated by the incidence and duration of their subsequent experiences of employment and unemployment. Evidence on pay effects is mainly limited to Britain and several evaluations of the *Youth Training Scheme* have found that it reduced participants' earning power. Ryan (2001b) suggests that the difference between effects on unemployment and pay may reflect two factors: the general sensitivity of econometric findings to the choice of model and data; secondly, the tendency of European programmes to bring young people into contact with low-wage employers who offer little training, but who are prepared to hire many of them afterwards.

76. In conclusion, there is good evidence from the United States (mostly, though not exclusively, based on randomised experiments) that more intensive programmes can improve the education and skills of adults and thereby have a positive effect on earnings. Apart from a few notable exceptions, these programmes have had no impact on high-school dropouts. European evidence shows that such programmes can have employment impacts (both for adults and youth), but tend to show no positive impact for earnings (where this has been considered). General concerns in this literature are the reliability of the evaluation methodology (except for when randomised experiments are used); the short-term nature of many interventions and evaluations; wider effects that are not often considered by evaluators, such as crime and indirect effects (for example, consideration of whether employment programmes displace workers who would otherwise be employed).

V. Concluding remarks

77. In this paper I have set out a discussion of the links between education experiences and social disadvantage, with a focus on how they impinge on individual's life chances and on how social policy is closed tied to this. The evidence from empirical research is that education and social disadvantage are closely connected and that people from less advantaged family backgrounds acquire significantly less education than their more advantaged counterparts. This translates into significantly reduced life chances as individuals' economic and social outcomes as adults are significantly hampered by lower education levels owing to social disadvantage. This includes poorer labour market outcomes, and significantly worse health, higher crime levels and lower levels of social capital.

78. Social policy is highly relevant to the worsened life chances resulting from low education and social disadvantage. Social policy can be highly complementary with education policy, and in some situations the combination of both may be needed to ensure effective intervention. There is clear scope to improve economic and social efficiency through appropriately designed policy interventions, as some of the policy evaluation work I have discussed makes clear. It is, however, absolutely crucial that policymakers carefully monitor and evaluate such interventions so as to get a better understanding of what can work in enhancing life chances from better education provision via the reduction of social disadvantage. Central to this is using rigorous and well-defined evaluation strategies to ascertain the effectiveness and payoffs that can result from education and social policy interventions.

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