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Institute for Evaluation of Labour
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Transparency of human resource policy

Erik Mellander

WORKING PAPER 2014:24

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Transparency of human resource policy^a

by

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Abstract

The scope of public human resource policy is outlined. Motivation for the need of transparency in this policy is provided in terms of informational asymmetries, human capital externalities, and long planning horizons. Transparency is defined both along a time dimension – *ex ante* and *ex post* – and by a taxonomy due to Geraats (2014), referring to different facets of decision-making, implementation, and outcomes: political, economic, procedural, policy, and operational transparency. Five aspects on human resource policy relevant for transparency are considered: efficiency and equity, input utilization, learning outcomes, the dimensioning of education, and benefits and costs. Finally, suggestions for improved transparency are considered. These involve devoting resources to research on the measurement of human capital externalities, facilitation of *ex ante* benefit-cost analyses preceding human resource policy decisions, and strengthening of political accountability through intermediate follow-ups during policy implementation, combined with commitment of funds to finance independent evaluations of the policy's effects.

Keywords: Market failures, human capital externalities, long planning horizons, *ex ante* benefit-cost analyses, effect evaluations.

JEL-codes: I28, H11, H44, D62, D61, H83

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1 Introduction

In recent years, the word transparency has become increasingly more commonly used in the public debate. Often, it is used in arguments pointing to *lack* of transparency in, e.g., corporate business, political regimes, and financial instruments. While lack of transparency suggests problems associated with insufficient openness, information, and communication, negative definitions, as a rule, are not very informative. In particular, if lack of transparency is considered to be a bad thing, a request for more transparency is not very helpful, unless accompanied by an explanation of what the increased transparency would amount to.

This paper is concerned with transparency in a sphere of public policy, namely public human resource policy. The aim is to clarify the meaning of transparency relative to this policy and to consider suggestions on how to enhance its transparency.

The paper unfolds as follows. In the next, the domain of public human resource policy is considered. Section 3 discusses why there is a need for this policy to be transparent. In Section 4 a definition of transparency in public human resource policy is outlined. Section 5 elaborates on different aspects on public human resource policies that are relevant for transparency. Section 6 discusses measures to improve transparency. Section 7 provides concluding comments.

2 The domain of human resource policy

Before trying to outline the domain of (public) human resource policy it is appropriate to ask why there is any need at all for political intervention. After all, much of education and training is privately run in many countries. Still, there is real need for political governance. This need arises because the private sector or, more correctly, private markets cannot ascertain that individuals get equal chances to educate themselves according to their talents and aspirations. Neither will private markets guarantee that the total amount of education and training conducted in society is socially optimal. Both of these shortcomings are due to *market failures*, which will be further discussed in the next section.

Given that political decisions about education and training are justified, what should they concern and how far-reaching should they be? Human resource policy will here be considered as a broader concept than human capital policy, incorporating not only

policies affecting individual decisions but firm behavior, too. Thus, human resource policy can, e.g., be concerned with on-the-job training aimed at adapting competences once obtained through education to new forms of work organization. As such changes are continuously brought about by technological changes and international competition, human resources must be regarded as a dynamic, rather than a static, concept.

There is also a conceptual reason for preferring the term human resources over the term human capital. By analogy, human capital makes one think about the capacities of humans in the same way as capacities of machines, i.e. real capital. The two are quite distinct, however. While the capacity of a machine is depreciated by use, human skills are depreciated when they are *not* put to use.

Given this property of human skills, it is natural to include in the domain of human resource policy measures intended to ascertain that individuals' knowledge and competences are efficiently allocated in society, in the sense that they are exploited to their full potential. This is the problem of matching worker qualifications with occupational demands. To distinguish human resource policy from labor market policy, the relation between labor demand and the dimensioning of the educational system will be considered as a task for human resource policy while the actual matching process in the labor market will be considered to be in the domain of labor market policy and, thus, beyond the scope of the following discussion.

3 Why there is a need for transparency in human resource policy

Before going into details about the meaning of transparency in human resource policy – the issue of *how*, considered in the next section – it is reasonable to ask *why* transparency? For this purpose the general notion of transparency, i.e. openness (with information) and accountability, is sufficient.

There are three general arguments for why there is a need for transparency in human resource policy. These arguments derive from the facts that human resource policies i) concern almost everyone, ii) do so for long periods of time and iii) with respect to fundamental aspects of life. I will consider these arguments in turn.

First, as education and training in modern societies are endeavors extending over the entire life-cycle – as reflected in the concept of Life-long learning – all citizens in a country are influenced by the country's human resource policies. Indeed, due to the very

long-term consequences characterizing many human resource policy reforms, even society's not-yet born citizens are often affected. And, due to international mobility, citizens in other countries may be affected, as well.

Secondly, the impact of most human resource policy reforms extends over long periods of time. This is especially relevant from the perspective of the politicians deciding on the reform. In general, these politicians will have left office long before the full impact of the reform has been felt. Accordingly, they seldom can be held accountable if the reform fails or if it, e.g., should prove to have undesirable side effects.

Thirdly, human resource policies directly affect human well-being. As concluded by Olshanky et al. (2012), "The lifelong relationships of education and its correlates with health and longevity is striking.". Moreover, human resources are crucial determinants of economic growth – often considered *the* most important – and, hence, essential for society's prosperity.¹

In addition to these three arguments there are two aspects of human resource accumulation which are (at least) equally important. The first aspect has to do with the (partial) lack of automatic supply of information and control via the market mechanism. In a well functioning market the price system conveys all the information that agents need in order to make well-informed decisions. For some goods and services markets do not exist, however. In the context of such market failures alternative ways have to be found to provide the information otherwise channeled through prices. Market failures can be found in the human resource domain, failures which pertain both to individuals and to the society as a whole.

At the individual level, the most well-known market failure has to do with credit constraints. Specifically, an important difference between human capital and real capital is that the former does not create its own collateral [Piore (1968)]. Whereas in the market for real capital, investments can be financed through loans using the capital object as security, an individual cannot borrow on the future human capital (s)he intends to obtain through education; due to an *information asymmetry* between the individual and the potential financiers the latter cannot judge whether the student's learning capacity and future incomes will be large enough to repay the loan.

¹ Overviews of the theoretical and empirical literatures on the relation between education and growth can be found in Aghion and Howitt (1998) and Krueger and Lindahl (2001), respectively.

Fernandez and Gali (1999) have shown that under these circumstances ranking of students according to, e.g., grades provides an efficient way of allocating students of varying ability to educations of varying quality – the resulting allocation is equal to the (perfect) market allocation that would arise in the absence of credit constraints. Given efficiency considerations only, the allocation based on ranking also indicates a solution to the credit constraint problem: student loans should be extended such that this allocation becomes financially feasible. Of course, in reality the situation is (much) more complicated. For instance, that a student is capable of taking a certain degree does not imply that (s)he will actually do it, making repayment of the loan uncertain. Moreover, political decisions on student loans will be driven by equity as well as efficiency considerations.

More important from a transparency perspective is that the equality of the ranking procedure and the market allocation hinges on the proviso that there is reliable and comparable information on school quality and student ability. A critical task of a transparent human resource policy is to provide conditions supporting the compilation and dissemination of such information.

At the society level, a market failure arises because of *positive externalities* associated with human resources. These externalities often stem from characteristics of the production technology, as in Lucas (1988) and Nelson and Phelps (1966), but may arise for other reasons, too, as in Acemoglu (1996). In either case, the positive externalities will lead to under-investments in human skills.² Human resource policy can counteract this tendency by means of, e.g., subsidies to education and training. Such subsidies will, however, as a rule, cause distortions to the economy. Policy transparency cannot eliminate the distortions but possibly reduce them.

The second aspect of human resource accumulation that points to a need for transparency is its dynamic nature. In the words of Carneiro and Heckman (2003), “early investments raise the productivity of later investment” and “learning begets learning”. This implies that human resource investment decisions are *path dependent*. When making human resource investments one has to account for the fact that the present choice set is constrained by earlier investments and that future investments will be

² For completeness, it should be pointed out that theoretically human resource accumulation can also give rise to negative externalities. For examples involving relations between education and residential choice, cf. Benabou (1993).

further constrained by the investment made today. Human resource policies have to be transparent enough to enable individuals deciding on their educational and training careers to take these constraints and their long-term consequences into account.

4 Transparency of human resource policy defined

Having just ascertained, in general terms, the need for transparency of human resource policy, I go on to define more precisely what I take the concept to mean.

One important aspect of transparency is the time dimension: transparency relates both to *ex ante* and *ex post* considerations. *Ex ante* refers to the time period before the policy is put into effect. Sometimes it is desirable to partition *ex ante* transparency into transparency regarding policy formulation and transparency regarding policy implementation, respectively. This is the case, e.g., when decisions about human resource policies are taken at the EU level. The reason is that EU decisions on human resource policies are based on the Open Method of Coordination (OMC). According to the OMC, the what-to-do decision is taken at the supra-national, i.e. EU, level while the how-to-do-it decision is taken at the national level. As decisions based on the OMC are not legally binding, the nationally implemented policies can be quite different from the EU policy originally agreed upon. However, as this issue has been extensively discussed in Mellander and Håkanson (2006), it will not be pursued further here. In the following only human resources policies decided upon on and implemented nationally will be considered.³

Ex ante transparency requires that the policy be clearly announced with respect to aims, content, benefits, and costs. This is a strong, and potentially quite costly, requirement – *ex ante* benefit-cost analyses are very rare and complicated to carry out, because of the characteristics of human resource policies discussed in the previous section.

Ex post transparency concerns all outcomes once the policy has been put in place. The policy's consequences should be documented and its impacts evaluated. Finally, the benefits and costs induced by the policy should be assessed, in an *ex post* benefit-cost analysis.

³ Two-stage decision processes might occur in a national context, too; policies can be decided upon at the state level but carried out on the regional or local level. However, unlike the EU, the state can impose sanctions on regional/local bodies not complying with the policy, thereby ensuring (long-term) conformity at the regional/local level.

Taken together, these requirements mean that a transparent policy will also be an evidence-based policy. By implication, a transparent human resource policy will have the property that it builds on assessments of earlier policies. Typically, this is not what we see – in contrast, new human resource policies are often decided upon before all the consequences of the old ones have become apparent, much less evaluated with respect to their impacts.

Another way to define transparency in the area of human resource policy is to recognize that it is possible to distinguish several different facets of this concept. In particular, Geraats in this volume considers in the area of monetary policy transparency the following five: political transparency, economic transparency, procedural transparency, policy transparency and operational transparency. Their use in the context of human resource policy is best explained and illustrated by means of a specific example. Such an example is provided in Section 5.4.

5 Aspects on human resource policies relevant for transparency

When considering human resource policies, it is useful to organize the discussion thematically by examining different aspects of such policies. The following (inter-related) aspects will be considered: efficiency and equity, input utilization, skills and competences, the dimensioning of education and the labor market, and, finally, benefits and costs. The first aspect concerns two important objectives of human resource policies, while the second considers means utilized to fulfill these objectives. The third aspect concerns the knowledge that the educational and training system imparts to the students while the fourth deals with the issue of making this knowledge be put to productive use. The final aspect relates the revenues of education and training to the corresponding costs.

5.1 Efficiency and equity and human resource management principles

In economic terms, the efficiency of a system for education and training relates to its capability to promote and support economic growth. According to endogenous growth theory, human capital accumulation is the essential driver of economic growth; see, e.g., Aghion and Howitt (1998, ch. 10). At a more detailed level, Hanushek and Wössmann (2006) have considered the role of cognitive skills for economic development.

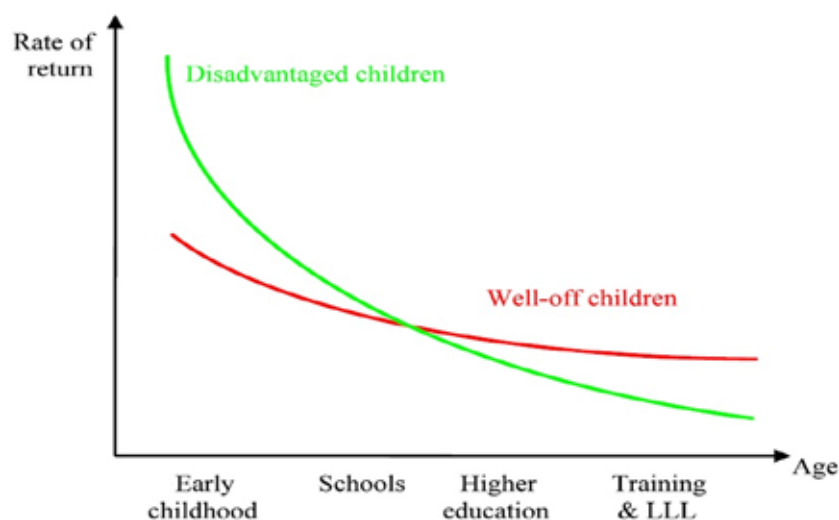
Efficiency demands that the generation of skills be maximized at a given level of resource utilization.

Equity can be defined in many different ways. Here, following Wössmann (2008), the concept of equality of opportunity proposed by Roemer (1988) will be used, as this concept appears to be widely endorsed. In the present context, equality of opportunity means that an individual's educational and training outcomes should depend on her effort but not on her circumstances – family background, gender etc.

For a long time there has been a debate about efficiency and equity in education and training. The 21st century literature appears to agree on i) that there is not necessarily a trade-off between the two objectives – some human resource policies may advance both efficiency and equity, and ii) that the answer depends on the type of education or training considered. An illuminating illustration of these points with respect to education at different stages of the life-cycle is given by Figure 1, from Wössman (2008).

As shown in Figure 1, policies targeting increased equity during the early stages of the life-cycle will support efficiency objectives, too. Specifically, investments benefiting human resource accumulation of disadvantaged children, thus increasing equity, also yield a higher return, i.e. are more efficient, than investments benefiting the human resource accumulation of well-off children. However, this concordance does not hold with respect to the later stages of the life-cycle. With respect to higher education, and training and life-long learning (LLL), investments targeted at disadvantaged groups will increase equity at the cost of a lower rate of return, implying reduced efficiency.

Figure 1: Stylized returns to different stages of education and training



Source: Adapted from Wössman (2008). Reprinted with permission of Springer-Verlag.

Another example of a trade-off is provided by Brunello and Checchi (2007), in an analysis of the long-term outcomes of tracking, i.e. allocation of students into education or training programs with different curricula, according to the students' academic abilities. On the hand, they find that tracking has a detrimental impact on educational attainment by preventing some students from tertiary level studies (the diversion effect). On the other hand, they also conclude that the curricula in vocational schools appear more effective in promoting further training and adult competences (the specialization effect), thus reducing the impact of family background on these two outcomes. Accordingly, policy has to be specific with respect to the education or training addressed, the group(s) targeted and the instruments utilized, thereby contributing to transparency regarding the choices made between efficiency and equity.⁴

Some policy instruments are straightforward and easily observed – tracking is a good example, school-starting age another. Others are more subtle, like ability grouping and individualized teaching. Moreover, as pointed out by Dupriez et al. (2008), most policies cannot be adequately described in terms of a single instrument. They therefore advocate the use of the following typology of human resource management principles, suggested by Mons (2007):

- *The separation model*: ability grouping and grade retention in primary school, ability tracking introduced from secondary school. Examples: Germany, Austria, Hungary, Switzerland, Luxembourg, Belgium, the Netherlands.
- *The à la carte integration model*: common core curriculum until age 16, intraclass ability grouping at primary level, streaming (flexible grouping based on students' performance within each discipline) at secondary level. Examples: USA, Canada, UK, Australia, New Zealand.
- *The uniform integration model*: common core curriculum at least to age 14, grade retention. Examples: France, Spain, Portugal.

The individualized integration model: no tracking, almost no grade retention, infrequent ability grouping, but differentiated and individualized teaching. Examples: Denmark, Iceland, Finland, Norway, Sweden.

This typology accounts for the fact that several instruments are often used in parallel. Moreover, it enables analyses of how specific instruments work, depending on what

⁴ Cf. also Betts (2011) for a general discussion of economic aspects on tracking.

other instruments they are combined with. For instance, as pointed out by Dupriez et al. (op.cit.), the use and meaning of grade retention will be different in the uniform integration model and in the separation model, due to the fact that the latter also incorporates tracking.

Mons' (op.cit.) typology also lends itself to a discussion about *ex ante* and *ex post* transparency. In the context of the separation model, where educational choices are made early and have far-reaching consequences, *ex ante* transparency is very important, at least for the individual student. The transparency required concerns information about the long-term implications of decisions made today, and the possibilities and costs of reversing earlier choices, in terms of, e.g., grade repetition and/or additional education.

Ex post transparency will be more important in the context of the individualized integration model. While postponing decisions concerning the level of education and field of specialization is good in terms of flexibility, it comes at a cost – in general it leads to longer periods of time spent in education and possibly to higher dropout rates. Moreover, it is not obvious that possibility to choose among more educational pathways really leads to different choices.⁵ Transparency amounts to enabling assessments concerning whether the benefits of flexibility are large enough to justify the costs.

This discussion should not be interpreted as saying that *ex ante* transparency is not needed in educational and training systems applying the individualized integration model. Likewise, *ex post* transparency is certainly required in systems featuring the separation model. Contexts differ with respect to the emphasis to be put on the two types of transparency, however. Yet, some policy instruments are used in almost all kinds of systems, albeit in different ways. Grade retention is an example at hand. With respect to this instrument both *ex ante* and *ex post* transparency are essential: *ex ante* regarding the conditions under which grade retention is imposed and the obligations it inflicts upon the student, *ex post* concerning its remedial effect, relative to other measures that possibly could prolong the expected study time by less than one year.

⁵ Hall (2012) evaluates the effects of a Swedish policy reform where two-year programs in upper secondary school were extended to three years, mainly through the inclusion of academic subjects. The intention of the reform was to make the students eligible for tertiary (university) level education. However, beside (obviously) increasing the expected study time by 50 percent, the main effect of the reform was increased drop-out rates. The possibility to continue to higher education was exploited by a negligible numbers of students.

5.2 Input utilization

With respect to input utilization, *ex ante* transparency concerns institutional settings: rules and regulations specifying minimum standards and requirements. Consider, e.g., regulations concerning student/teacher ratios: an example is provided by the so called Maimonides' rule applied in Israeli schools, and exploited by Angrist and Lavy (1999) to assess the effects of class size on student achievements. Other examples can be regulations regarding teaching equipment and study materials, premises, and subsidized transports to and from school. *Ex ante* transparency is especially important in contexts characterized by a wide variety of educational providers and different pedagogical approaches.⁶

The less binding minimum standards are the more important is information ascertaining *ex post* transparency. Such information amounts to follow-up documentation of resource use at the school level and/or at the level where decisions regarding inputs are taken. Given that student composition can be controlled for, the follow-up data should enable comparisons both within-schools (over time) and between schools.

Teachers being the dominant input, transparency is foremost essential with respect to number of teachers per student (teacher-student ratios) and teacher quality. One way to define teacher quality is through licensure. Goldhaber (2011) finds, however, that while the effects of licensure on student achievements generally are positive, they are small and uncertain. Andersson et al. (2011) obtain a similar result for Sweden. Other quality measures like the teacher's education and cognitive and non-cognitive abilities, appear to be more important than licensure. Regarding the teacher's education, Krauss et al. (2008) find that math teachers with more extensive mathematical training outscore teachers with less math training with respect to both content knowledge and pedagogical knowledge. The results in Grönqvist and Vlachos (2008) indicate that the importance of the teacher's cognitive and non-cognitive abilities differ by categories of students: non-cognitive abilities are important for low aptitude students while high-performing students benefit from high cognitive teachers.

The use of other inputs, beside teachers, could preferably be documented through expenditures.

⁶ Here, the importance of *ex ante* transparency derives from need to compare many different alternatives beforehand. In the opposite (extreme) case with only one provider there is no need for transparency – you will get this single option anyhow.

5.3 Learning outcomes: skills and competencies

The education and training system should provide the knowledge and skills students need to successfully complete their educational careers. And, ultimately, it should provide the citizens with the competences they need in their professional and civic lives. This means that transparency with respect to the outcomes of education and training will involve different time horizons, levels of aggregation and kinds of information.

Short term outcomes are especially relevant in primary and lower secondary school, in view of the large body of research that stresses the importance of adequate early investments in education and the dynamic nature of human resource accumulation; cf. Cunha et al. (2006) and the last paragraph in Section 3. Transparency can be improved by results on standardized tests, see, e.g., Geier et al. (2008), provided that the students' backgrounds and previous achievements are accounted for when the test results are assessed. Grades are another important source of information – especially when combined with results on standardized tests; cf. Klapp Lekholm and Cliffordson (2008). Depending on the type of general human resource management principle applied (cf. Section 5.1) grade retention can be another critical indicator.

Examples of medium-term outcomes are examination rates and transitions to higher level of study. At higher (tertiary) levels of education essential information includes enrolment rates, study times, and completion rates.

Long-term outcomes are, e.g., labor market experience and earnings by education (education wage premia). In addition, there are important non-economic outcomes like, e.g., civic engagement and political participation; cf. Lochner (2011).

To improve transparency and to be useful for policy-making, outcome measures have to be easy accessible and comparable over time and across space. At the aggregate, country, level, this is the idea behind internationally comparative tests like *PIRLS* (Progress in International Reading Literacy Study) for 4th grade pupils, *PISA* (Programme for International Student Assessment) for 15-year olds, and *TIMSS* (Trends in International Mathematics and Science Study) for 4th, 8th, and 12th grade students. These tests essentially capture whether skills develop according to curricula.

International tests examining long-term effects during adulthood, i.e. effects relevant for coping with working life and civic conditions, are less common. Examples include *IALS* (International Adult Literacy Survey), conducted in the 1990s, and *ALL* (Adult Literacy and Life skills survey), conducted in the early 2000s. Unfortunately, relatively

few countries participated in these surveys. That is not the case, however, with the *PIAAC* (Programme for the International Assessment of Adult Competencies), launched in 2012. *PIAAC* covers about 25 OECD countries, all of which participate in PISA, too.

PIAAC makes it possible to compare short and long-term outcomes. For instance, it can be investigated if countries that have been successful in PISA also prove to be successful when it comes to competencies of grown-ups (which was the case, e.g., with respect to Finland). Moreover, *PIAAC* provides information about whether adult education and on-the-job training are positively correlated with skills and competencies.

From a transparency perspective, it is important, however, that international comparisons are not limited to the above mentioned surveys. Fortunately, commendable work has been conducted to establish international standards in the human resource field. The international grading system for tertiary education established through the *Bologna process* is a good example. Less unified, but equally important, are the ongoing efforts in many countries to validate foreign educations and skills.

Comparability over time is another crucial issue. Publications like *Education at a Glance*, issued by the OECD, play an important role by recurrently reporting indicators on education and training that allow for comparisons of changes over time, as well as across countries.

5.4 The dimensioning of education and the labor market

While human knowledge in the sense of *Bildung* has a value in itself, the economic value of an education is determined by the value of the productive use it can be put to.⁷ This makes it necessary to consider developments in the labor market when formulating human resource policy. Doing so requires planning: most upper secondary educations extend over two or three years while tertiary educations may last four or five years. When deciding on the dimensioning of the educational system the policy maker thus has to make an assessment of the students' labor market prospects at least three years ahead, say. And the planning horizon becomes even longer, of course, if large educational reforms are considered.

For simplicity, assume that the policy parameters are the number of students to be admitted to different educational programs. We are thus abstracting from (a potentially large set of) quality facets of the programs.

⁷ For ease of exposition, nonproduction benefits of education, cf. Lochner (2011), are abstracted from here.

Essentially, the determination of these policy parameters requires three (interrelated) pieces of information: demographic projections, forecasts of economic growth, and predicted supply and demand of labor, by education. For brevity, the discussion here focuses on the predictions of labor supply and labor demand.

In most countries, short-term surveys of labor supply and demand are conducted regularly, within the context of the national Labour Force Surveys. In some countries more long-term projections are produced as well. For instance, the Nordic countries regularly provide forecasts 10-15 years ahead for a relatively large number of educational categories. Pan-European forecasts over the 10 year horizon, by broad levels of education, have also been published recently; cf. Cedefop (2010).

However, for the policy parameters of interest in the present context, quite detailed information about education is required and the prediction horizon needs to be closer to the average time needed to complete an educational program. One example of such a survey is provided by the Swedish Labour Market Tendency Survey; cf. Statistics Sweden (2012). This survey covers over 70 different categories of educations and is targeted to chiefs of staff at workplaces with at least 10 employees. Qualitative information is provided about the employers' view of the supply of labor by educational category – over-supply, supply in balance with demand, or under-supply – and their assessments of how demand will change over the three year horizon – increase, stay constant, or decrease.

To consider transparency aspects associated with the determination, implementation and resulting effects of the policy parameter “number of students to admit”, it is instructive to apply the framework suggested by Geraats (2014), involving political, economic, procedural, policy, and operational transparency.

For concreteness, imagine a planned expansion of pre-school teacher education.

Political transparency amounts to spelling out the underlying objectives. These could be, e.g., access to pre-school for children that earlier have been denied access, higher ambitions with respect to the pedagogical content in pre-school, and improved possibilities for labor force participation for young mothers.

Economic transparency means explaining the economic information that has been employed in the political consideration. Examples could be analyses of early age skill

formation like Cunha et al. (2010) and supply and demand surveys of the kind discussed above.

Procedural transparency concerns how the economic information and other types of information have been weighted together and how the decision to increase the number of students to admit to pre-school teacher education has been taken.

Policy transparency requires that details be provided about where pre-school teacher educations are to be expanded, by how much, and for how long the expansion is planned to be in effect. To be transparent also in the sense of allowing the agents affected to adjust their behavior according to the new conditions, this information should be also provided well ahead of the date when the new rules are put into effect.

Operational transparency would involve follow-ups of the relation between policy intentions and actual outcomes. To what extent is the increased numbers of available slots matched by an increased number of applying students and an increase in the number of (examined) pre-school teachers? Do the additional teachers go on to work in pre-school? Is labor force participation increased among mothers with small children?

While this discussion shows that different kinds of transparency can be identified and addressed, it should be said that the particular example considered – featuring a single, quantitative, policy parameter – has not been chosen by accident. In contexts with many interdependent policy parameters, several of which may be qualitative and hard to measure, it will, of course, be less straightforward to apply the suggested framework.

5.5 Benefits and costs

There may be many incentives to invest in human skills which cannot be expressed in money terms, like, e.g., curiosity and social standing. This section, however, considers only *economic* benefits and costs of education and training. Accordingly, since benefits and costs are measured in the same metric it will be possible to consider net benefits, i.e. the difference between the two.

While public benefits and costs naturally are more interesting from a policy transparency point of view, private benefits and costs will be considered as well. One reason is that public benefits and costs often are not available. However, as noted in Section 3, the public benefits of education and training should generally exceed the private benefits, due to the existence of positive externalities. An education or a training program that can be justified based on private benefits and costs is thus likely to be

justified from a social point of view, too, provided the public costs are not very much larger than the private costs. This brings us to the other reason for considering both public and private benefits and, especially, costs: most types of human resource investments involve funding from both the public and the private sector. Moreover, the shares of each may vary substantially between different types of education and training. For example, primary and lower secondary schools are (entirely) publicly funded in many countries while on-the-job training often is only privately funded. Tertiary education provides a common example of combined public and private funding.

In the following, benefits and costs arising at the various stages of education and training will be considered, from pre-school to adult education and on-the-job training.

For pre-schools, there are not many benefit-cost analyses. This is unfortunate as there seems to be a wide-spread consensus among researchers about the importance of early human capital investments; cf. Carneiro and Heckman (2003), and Kilburn and Karoly (2008). However, a recent article by Karoly (2012) contains both a review of the literature on early childhood interventions and a framework for standardized benefits and costs measurement, aimed at supporting greater transparency in benefit-cost analyses. The recommended standards concern, i.a., disaggregation of benefits and cost for different stakeholders, the valuing of outcomes, and sensitivity analyses.

Continuing with the regular educational system, i.e. primary, secondary and tertiary education, there are two dominating approaches to benefit-cost analysis: estimation of wage premia or computations of internal rates of return. The wage premium measures how much an individual's wage increases due to an increase in education, *ceteris paribus*. In principle, estimation of the wage premium is straightforward: for a sample of individuals wages are regressed on (years of) education and a set of control variables – age, gender, work experience etc.⁸ Estimation of the internal rate of return, on the other hand, requires knowledge of all the discounted revenues and costs associated with the education. The internal rate of return is the discount rate that makes the discounted revenues equal to the discounted costs. It thus provides the interest rate at which the

⁸ In practice, credible estimates of the *causal* effect of education on earnings can be quite difficult to obtain, however. Causal estimates need to account for the fact that well-educated individuals have generic skills – abilities – that make them more likely than others to be successful in school and in the labor market. Otherwise, the wage premium will be over-estimated, cf. Card (1999). Unfortunately, ability data are seldom available; information about the individual's family background (parents' education and earnings etc) is often used to proxy for the missing ability. However, Mellander and Sandgren (2008) show that family background variables either tend to reduce the positive bias in the estimated wage premium very little or, if education is measured with error, instead can give rise to substantial *negative* bias, i.e. under-estimation of the wage premium.

individual's investment in education breaks even. For an interest rate higher than the internal rate of return, the investment would not be worthwhile.

Under certain conditions, the wage premium and the internal rate of return will coincide. The most important of these conditions is that the only cost associated with the education is the individual's foregone earnings, while studying. Another condition is that income taxes can be disregarded, i.e. that the gross wage can be taken as a valid measure of the individual's earnings.

The economics literature abounds in estimates of wage premia. Even when considering internationally comparable estimates only, one can find everything from aggregate premia measuring the extra earnings from one extra year of (any kind of) education [Psacharopoulos and Patrino (2004), Peracchi (2006)], down to premia for educational differences among sub-categories of specific professions [Mellander and Skedinger (1999)].

With respect to internal rate of return calculations, the OECD publication *Education at a Glance 2012* provides an example. For a large number of countries estimates of both private and public benefits and costs are provided, as well as internal rates of return. Private benefits consist of earnings increases and reduced probability of becoming unemployed. Private costs include foregone earnings while studying, tuition, books etc, increased future taxes and lost transfers; grants are treated as negative costs. Public costs include public spending on education, public grants and stipends, and lost tax receipts during education. Public benefits are measured in terms of additional (post-education) tax payments and transfers saved. Unfortunately, no attempt has yet been made to capture the most important public benefit, i.e. the positive externalities associated with human capital investments noted in Section 3. Some attempts have been reported in the research literature, however. According to Acemoglu and Angrist (2000), the externalities are modest with respect to secondary school; they find social returns to be 1-3 % in excess of private returns. Moretti's (2004) results regarding college education point to much higher returns, with spillover effects corresponding to 1.5 times the effects on the individuals obtaining college degrees.

After leaving the regular system of education, individuals will sooner or later be extending or updating their skills, through (formal) adult education or (non-formal) one-the-job training. The incidence and costs of adult education and on-the-job training are

rather well documented, and often also internationally comparable, see, e.g., Eurostat's *Adult Education Survey* and Bassanini et al. (2005). Less is known about the benefits.

Jenkins et al. (2003) and Stenberg (2011) are two of the few studies assessing the benefits of adult formal education. Both find positive effects for adults with low initial level of education. The former study estimates the benefits of obtaining an academic or vocational degree in the UK in the 1990s, among adults aged 33-42. It finds positive effects on wages only for men that left school with low-level qualifications and took a lower academic degree. Stenberg (op.cit.), analyzing a large Swedish adult education program in the late 1990s yielding upper secondary qualifications, estimates the average increase in annual earnings to 4.4 %. In a simulation study, Albrecht et al. (2009) analyzed the program's aggregate effects – which can be given an externality interpretation – and found them to be about 1.5 times the effects on the program participants, i.e. of the same magnitude as Moretti's (op.cit.) estimate mentioned above.

Regarding the private effects of on-the-job training there is a large number of studies. In a meta-analysis based on 71 studies, Haelermans and Borghans (2011) find the average wage effect to be 2.6 % per course. The impact on firm performance is reviewed in a study by Cedefop (2011) that comes to the conclusion that the effects on productivity generally are positive while the effects on company costs are insignificant.⁹

Adult education and on-the-job training are part of life-long learning. The examples just mentioned show that life-long learning can be associated with both private and public net benefits. Life-long learning is an important area for human resource policy, because of the credit constraint problem associated with human resource investments and because of technological changes that require skill updating. Policy transparency is essential, as life-long learning involves long planning horizons, both regarding the possibilities to be on leave from work and with respect to the build-up of (private and company) funds to finance the education/training. Individual learning accounts have been proposed as a means to support lifelong learning, cf. Schuetze (2007). However, lifelong learning concerns not only individuals but firms and organizations, too. Håkanson et al. (2003) show that there are tax and accounting rules reducing the volume of lifelong learning and obstructing it from being conducted in economic downturns,

⁹ This conclusion is somewhat odd as productivity effects should be mirrored by cost reductions. The long run effect of training on productivity can be directly derived from its impact on firm costs, cf. Kazamaki Ottersten et al. (1999).

when workers more easily can be spared in production than during booms.¹⁰ These mechanisms are not well known among politicians; transparency would benefit from extended discussion.

6 Measures to improve transparency

In this section I suggest four ways to improve transparency. What, then, is to be understood by improved transparency? Already the simple observation that *increased* transparency generally involves more information implies that more transparency cannot always be preferable, given limited resources, as additional information comes at a cost. Furthermore, increased transparency can in some cases be harmful from a social point of view; consider, e.g., Gugler (2014), showing how increased transparency in competition policy runs the risk of facilitating collusion. My suggestions will therefore be followed by comments in which I reflect on possibly negative consequences that the suggestions may induce.

1. The preceding section has shown that there is a lack of information regarding the empirical importance of one of the primary reasons for human resource policies, namely the existence of positive human capital externalities. Educational researchers need, therefore, to devote more efforts to the estimation of these externalities.

Comment: It is not obvious that this measure will improve transparency – the effect estimates needed are difficult to obtain and bound to be subject to considerable uncertainty. In the long run, some methods are likely to be considered more trustworthy than others, however. At that stage transparency will be improved, in the sense of making available relevant, but previously non-existent, information.

2. It is desirable to change the human resource policy making process such that *ex ante* benefit-cost analyses are facilitated. Given the far-reaching and long-term consequences of changes in the system of education and training, the tax-payers have a right to expect that these consequences have been appropriately considered before the policy is implemented.

¹⁰ These problems derive from the fact that, unlike machines and structures, the firm cannot treat its human resources as an asset. This implies, i.a., that it cannot write off its human resource investments over an extended period of time and that it has to finance them internally.

Comment: The extra work that this suggestion imposes on the policy makers is likely to have the impact that some policies that would otherwise have been implemented will not be attempted at all. In quite a few cases that is likely to be a positive consequence. But, taken to the extreme, it might have the effect of conserving existing structures. Also, in some instances expenditures on *ex ante* benefit-cost analyses are likely to be wasted – when the analyses involve so much uncertainty that they provide no decision support. This is why it is suggested that *ex ante* benefit-cost analyses should be facilitated; whether such an analysis is worthwhile in a specific situation must be judged against the particular prevailing circumstances.

3. Measures should be taken to increase accountability. One possibility is to make the full implementation of long-term policy decisions contingent upon the outcomes of intermediate follow-ups and progress reports. That might reduce the hazards associated with the fact that politicians can decide on reforms whose effects extend far beyond their political mandate. Moreover, the policy decision should include the setting aside of a small part of the reform costs (0,5 – 1,0 percent, say) for follow-up and evaluation of the reform, thus ascertaining an *ex post* benefit-cost analysis, too.

Comment: While intermediate progress reports will limit the possibilities to transfer responsibility to politicians elected later they also involve the risk of sub-optimization, i.e. a shift of effort to satisfy intermediate goals, at the expense of final outcomes. This calls for careful choices of intermediate output indicators and is also the reason why the intermediate assessment should be combined with a commitment to evaluate the entire reform.

4. Support compilation of impartial data and the building up of infrastructures enabling national, regional and local comparisons of education and training benefits and costs.

Comment: When easy to use, comparable data can be effective in promoting good examples, i.e. human resource policies that work well. Moreover, given sufficient local and international mobility they can be instrumental in weeding out inefficient policies through *Tiebout competition*, i.e. by voters expressing their opinions by choosing place of residence. However, data can also be used

incorrectly or irresponsibly in which case the information may be misleading or counterproductive. This is not unusual in, e.g., school rankings. Good infrastructure in the form of proper documentation and expertise regarding data quality and handling can mitigate this problem, though, by facilitating judicious use of data.

7 Concluding comments

This paper has established that there is a need for increased transparency in human resource policy. Human resource policies profoundly affect most people in society during most of their lifetimes and essential information regarding education and training will not be supplied automatically because of institutional shortcomings (market failures). Since learning is a dynamic process where choices today impose constraints on future decisions, transparency for planning and decision-making purposes – *ex ante* transparency – is necessary as well as transparency with respect to realized outcomes – *ex post* transparency.

Five aspects on human resource policy have been identified that are particularly important for transparency: equity and efficiency, input utilization, skills and competences, the dimensioning of education and the labor market, and benefits and costs.

With respect to equity and efficiency in education and training, the discussion has shown that there can be, but need not be, a trade-off between the two; it depends on the kind of education or training considered and for whom it is intended. Transparency thus demands that the type(s) of education and training that the policy involves be clearly delineated and that the target groups be well defined.

Regarding input utilization, it has been noted that the less regulated the provision of education and training is, the more important is *ex post* transparency. Of course, this point is all the more valid if education and training is supplied by many different kinds of providers. Secondly, the teachers should be focused as they constitute the, by far, most important input. In addition to student-teacher ratios there are important quality dimensions like the teacher's subject matter knowledge and non-cognitive skills; licensure does not appear to be very informative, though.

Transparency with respect to the outcomes of education and training systems concerns comparability across individuals and education/training systems, as well as

over time. Recently, internationally comparable information about *adult* skills and competencies has been made available through the survey PIAAC. This survey will significantly contribute to making transparent the abilities of national education and training systems to respond to the ultimate requirements of generating skills and competences necessary to cope with working life and citizenship.

A vital responsibility of human resource policy is to design the systems of education such that the skills and competencies generated are in line with the qualifications demanded in the labor market. It has been shown that a basic consideration in this respect, the number of students to admit to different educational programs, lends itself to an analysis in terms of several different facets on policy transparency suggested by Geraats (2014) – political, economic, procedural, policy, and operational transparency.

Historically, it has not been common practice to relate the benefits of education and training to the corresponding costs. An important reason is that there are still obstacles to be overcome in the estimation of the positive externalities associated with human resources. However, it was noted that efforts are made to come to grips with these problems.

Several suggestions on how to increase transparency in human resource policy have been put forward. One points to the desirability of human resource policy decisions being preceded by *ex ante* benefit-cost analyses. Another suggestion calls for a strengthening of political accountability by means of intermediate follow-ups during policy implementation, combined with commitment of resources to an independent evaluation of the policy's (final) effects, made at the point when the policy is decided upon. Finally, availability of reliable information is crucial. To this end, compilation of impartial data and the build-up of infrastructures enabling judicious comparisons of education and training benefits and costs should be supported.

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