Skilling the Unskilled - A Question of Incentives

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The sudden slump in the labour market of the 1990s made it necessary for Switzerland to alter its labour market policy, which from being almost exclusively passive became an active policy. Indeed a lack of suitable qualifications can be considered as one of the main factors prolonging the unemployment of those concerned, in Switzerland. Even so, the policy of relying on massive continuous education and retraining programmes as the most efficient solution to this problem needs to be called into question. For many years a majority of those who now find themselves unemployed neglected the option of seeing to their own continuous education needs. The reasons for this inactivity at the individual level may well lie in the lack of financial incentives. This in turn is the result of a wage structure that is still very much linked to years of service, with education-related differences in wages being very slight.

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1. Introduction

The sudden slump in the labour market of the 1990s made it necessary for Switzerland to alter its labour market policy, which until that time had been almost exclusively passive. It was to become an active policy, i.e. one concentrated on the improvement of qualifications of the unemployed. In Switzerland, lack of the necessary qualifications can be considered as one of the most important factors prolonging the unemployment of those concerned (cf. e.g. Sheldon, 1997), a fact that would seem to justify additional state spending on continuous education and reskilling programmes. The first attempts at evaluation also seem to argue in favour of such measures and their effectiveness. However, it is too early to consider these first tests as in any way conclusive. Although Switzerland is tackling the problem of unemployment in a way which is more or less similar to the approach of other industrialised nations, there are certain significant differences. Thus in Switzerland the problem of lack of qualifications, or of the wrong qualifications, has less to do with any failure of the classical education system than with insufficient efforts to continuously train the working population (and failures in the migration policy up to the 90s). One possible explanation for the lack of activity in this area may well be because of inadequate financial incentives, i.e. the insignificance of private rates of return on education available to reward those who take the trouble to „go back to school“. The purpose of this article is therefore to calculate what the rates of return on education for Switzerland would be, on the assumption that a continuous education scheme is undertaken in the middle of the individual’s working life (at about the age of 40) leading to a recognised certificate, diploma or degree.

2. Structure of this paper

The following section attempts to demonstrate the limitations of a labour market policy almost exclusively concerned with retraining the unemployed when those still in employment (the potential unemployed) have little or no incentive to change their attitude towards continuous education. The theoretical model we have used to empirically calculate rates of return on education for Switzerland is outlined in section 4. In section 5 we briefly explain the database, and any assumptions that may have been made. In section 6 we present the rates of return

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2 At 77%, the proportion of young Swiss who do not undertake any kind of post-compulsory school training is, with that of Norway, the lowest of the industrialised nations (see Borkowsky, 1997). Indeed, the problem of unemployment, and even more so of long-term unemployment, is not really a young person’s problem (see Sheldon, 1997), which also suggests that the education and vocational training levels of most young Swiss correspond to the requirements of the labour market.
on education on the basis of educational choices made at the earliest possible stage. The difference in the return on education that occurs when the education is not undertaken until the age of 40 or an additional education is made at this age is given in section 7 with the help of selected simulations. In section 8, the results are evaluated in the context of economic policy decision-making options. The conclusions we have reached on the basis of the findings are also presented in this section.

3. The limitations of the active labour market policy in force today

Whereas education in Switzerland up to and including the tertiary level is for the most part state-controlled and state-financed, the opposite is true in the area of continuous education. A rare but important exception insofar as the labour market is concerned are the programmes of continuous education and retraining offered to the unemployed as part of the active labour market policy. Although in many ways perfectly suited to today's changed circumstances, this active labour market policy has nonetheless shown its limitations. For in order to benefit from such active labour market policy measures, a member of the workforce must first lose his or her job. When unemployment does strike, the authorities concerned often find themselves confronted with an impossible situation. They are confronted with the need to upgrade educational and continuous educational qualifications that have been neglected for the past 10, 20 or even more years of a worker's life - and to do so in the shortest possible time. In most cases, action at an earlier stage would have proven both more effective and more economical.

3.1 Every worker a potential unemployed?

A glance at the educational levels of today's working population (see also Wolter and Knuchel, 1997) shows another significant shortcoming of today's active labour market policy. There are still far too many workers who risk becoming unemployed and remaining so for a long time. Even if we were able to help all those currently unemployed to rejoin the labour market in a meaningful way, thanks to requalification programmes, the potential numbers of unemployed still in the pipeline would make this a task comparable to the labours of Sisyphus. If these programmes were the most effective and efficient strategies for raising the qualification level of the entire working population, one would of course find nothing to object. But there are many arguments why the "lifelong learning" type of approach put forward by the OECD is a far more promising strategy.

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1 It is precisely this reference that is found in many foreign assessments of active labour market policies, studies which often point to the so-called "replacement effect": What this means is that individuals who rejoin the labour market thanks to state-financed requalification schemes, do so at the expense of workers who are less qualified, who in turn become the charge of state-financed requalification schemes.
3.2 Market failure in the demand for education

At first, economists saw no danger of the market failure in the demand for education because they were convinced that as long as there was a clear distinction between general and company-specific continuous education, no externalities could arise that would lead to sub-optimal demand for education. Those demanding education (workers) would in this case have to bear the cost of continuous education themselves, as in any case these costs would eventually be compensated through higher wages. On the other hand, the teaching of know-how of a company specific nature would be financed by the firms, this knowledge being exclusively to their own benefit, and clearly of no value once the worker left the first firm for a second one. But since such strict separation is not possible, an increasing amount of free riding is inevitable, with a corresponding reduction in companies investments in their own employees. This is particularly true in times of increased flexibility in the labour market with greater mobility of workers between firms (see e.g. Stevens, 1996 and also Burdett and Smith, 1996).

In addition to potential corporate neglect in the area of education, there are also reasons that explain why employees themselves pay insufficient attention to the need for continuous education. Credit restrictions (see Acemoglu, 1996), particularly for poorly qualified and poorly paid workers who face correspondingly high opportunity costs, are but one factor among many. One of the major reasons indeed is the lack of financial incentives for continuous education due to inappropriate wage structures – which is the main focus of this study. The insignificance of wage differentials, not least due to the dominant role played by age and years of service (see Wolter, 1997), mean that there is too little for the individual to gain from investing in his own training and education.
4. Model for the calculation of individual rates of return on education

Calculations of rates of return on education are based on the human capital theory. According to this theory training and education of all kinds, including so-called "on-the-job" training, increase a worker's productivity, which in a competitive labor market will be reflected in higher rates of pay. This wage-earning advantage produced by education may be looked upon as the return on human capital.

Investments in education are usually assessed on the basis of cost-benefit analysis. Evaluation models explicitly based on cost-benefit analysis are also referred to in the literature as "the elaborate method" or "the full method". The core in such cases consists of so-called "age-earnings profiles" for people with different educational levels. As a rule, the age-earnings profiles are based on data from a cross section, whereby wage differences between workers of different ages are interpreted as anticipated wage developments and the area below the profile is interpreted as a life income.

4.1 The cost-benefit model vs. the Mincer method (Mincer, 1974)

There are a number of different ways in which to calculate rates of return on education. The choice of model depends mainly on the questions to which one wants the results to supply answers. Exactly how much detail is required will also depend on what questions are being asked. The range can stretch from simple wage comparisons to complex analyses that include such social considerations as "improved public health or reduced social disorder" (see OECD, 1997a, p.29). A disadvantage that all models have in common is that they take into account only advantages and disadvantages of a financial nature. This would take too restrictive a view of the subject in the specific area of education, which also has consumption effects (cf. e.g. McMahon, 1987).

The cost-benefit model used in this paper is based above all on the proposals of Psacharopoulos (1987), Wolter (1994) and Alsalam and Conley (1995). The advantage of this model is that it offers simplicity and a level of detail that depends on the available database. And it manages to accurately reflect the influence of the labor market and of the education system, as well as the other factors that come into the calculation of wages that are made possible by a given level of education. In contrast to the Mincer method, which is more suited to human capital theory type questions, the factors that have an influence on the earnings obtained, such as the formal educational attainment\(^4\), on-the-job-training and such other factors for example as genetically and socially determined ability differences\(^5\), are not considered in isolation. Educational achievement as measured by formal qualifications (diplomas) is treated as a separate distinguishing factor. The reason for this simplification is that we do not really wish to measure the influence of human capital on the earnings obtained (or on productivity).

The only question that concerns us is whether or not individuals who are distinguished by their educational attainment and gender obtain a measurable difference in wages and therefore in their return on education and if

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\(^4\) It helps when considering formal types of education to also take a differentiated view of the quality of education in schools at the same level, in countries whose school systems are of heterogeneous quality. See for example Bond, 1995 or Heckman et al., 1996

\(^5\) On the latter there is a considerable amount of new empirical literature e.g. Card (1994), Altonji and Dunn (1996), Behrman et al. (1996) and Ashenieller and Rouse (1997)
such differences would be big enough to attract people into continuous education. It is in any case also possible to justify focusing on the human capital differences attributable to formal educational qualifications in terms of the importance of diplomas as "proxies" for human capital on the labor market (see e.g. Jaeger and Page, 1996 and Van der Meer and Wielers, 1996).

In more simple terms, we might say that our model is above all distinguished by the amount of detail which it allows concerning factors that determine the calculation of wages, while the Mincer method and similar models inspired by human capital theory put much more emphasis on differentiated treatment of the input factors (human capital). It would of course be possible to combine the two approaches, given a suitably extensive database. This has not however been necessary for the purposes of our inquiry.

4.2 The model

Figure 1 shows a simple cost-benefit model for a type of education that leads to qualification level $h$. The training lasts $S_h$ years. Age $t_h$ is the point at which the individual begins professional activities in the labor market. In the educational period, there are the direct costs ($C_h$) which include all expenditures that relate to education. There are also indirect costs however to be taken into account, in the form of lost earnings. In the literature these are usually assessed as the effective earnings by persons of the same age at the educational level just below ($W_{h-1}$). The actual wage difference between persons of different qualification levels ($W_h - W_{h-1}$) is regarded as a wage advantage determined by education. Wage advantages are obtained from the beginning of professional activities ($t_h$) and last to the age of retirement ($P$).

![Figure 1: The cost-benefit model](image)


There are a number of ways in which to evaluate information about the costs and benefits from education. "Rate of return analysis" is a way of determining the rate at which discounted costs and discounted earnings cancel each other out. This so-called internal rate corresponds to the average interest on capital invested in education. If
the internal rate is higher than the rate of return of alternative investment projects, then the education may be considered as profitable.

The present value method is based on comparisons between the discounted life incomes of individuals with different levels of educational attainment. The discount rate enters the calculation as an exogenous measure of the alternative rate of return. Educational investments that increase the present value of the life income may be considered profitable. A major advantage of this method is that it allows comparison between a variety of alternative forms of education, in a way that is highly transparent. The analyses which follow make use of both of these types of calculation. The present value method takes the form of equations in this paper.

1st step: Gross life income (LL)
The expected gross life income of an individual of education level h is given by the sum of the annual wages, earned up to the time of retirement (P) (t0= age on beginning active employment after the period of compulsory schooling).

\[ LL_h(gross) = \sum_{t=t_0}^{P} (W_t) \]  

(1)

2nd step: present value of discounted gross life income
The present value of all expected wage income for a person with education level h (PV(1)_h) can be determined with the help of equation (2). The rate of interest "i" serves as an indicator for the alternative interest and is an expression of the individual’s time preference.

\[ PV(1)_h = \sum_{t=t_0}^{P} (W_t) \cdot (1+i)^{-t} \]  

(2)

A rate of interest of 5% is used for the results in section 5. All calculations have additionally been made with rates of 3% and 7% with no influence on the qualitative results. The exogenously predetermined rate represents a rate at which it would be possible to obtain refinancing, in real terms and without risk.

3rd step: Risk premium, for the risk of unemployment
The purpose of the next calculation step is to take the purely financial losses that result from unemployment into account. Since as a rule there is a higher risk of unemployment for the less qualified, the rates of return on education must also be corrected to take this factor into account. The unemployment insurance system is described with the help of the following two parameters:

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*The term life income is used to mean the total wage income minus direct educational costs, for a person's entire life*
1. Average replacement rate (RR)
2. Upper limit of insured income (W<sub>max</sub>)

In the case of unemployment during the period t the lost income is given by the following equations:

\[
V_h = W_h (1 - RR) \quad \text{if} \quad W_h \leq W_{\text{max}} \quad (3a)
\]
\[
V_h = W_h - W_{\text{max}} \cdot RR \quad \text{if} \quad W_h > W_{\text{max}} \quad (3b)
\]

The formulas for calculating the unemployment risk premium differentiate the rates of unemployment (U) according to educational level, gender and age.

\[
RP(U)_h = \sum_{t=0}^{T} (U_h \cdot V_h) \cdot (1 + i)^{-t} \quad (4)
\]
\[
PV(2)_h = PV(1)_h - RP(U)_h \quad (5)
\]

The unemployment risk premium must be deducted from the life income. This gives us the life income adjusted to take the income lost due to unemployment into account.

4<sup>th</sup> step: Taxes

Since a rational individual can be expected to take both the costs and the benefits that will influence his personal gain (private profitability of education) into consideration when making his decision on education, we must also take care to deduct the direct income tax from the gross wage earnings. The average tax rate, in per cent (τ) should take into account the progressive nature of taxation (\(\frac{\partial \tau}{\partial W} > 0\)), see also 4.5.

\[
T_h = \sum_{t=0}^{T} (W_h \cdot \tau) \cdot (1 + i)^{-t} \quad (6)
\]
\[
PV(3)_h = PV(2)_h - T_h \quad (7)
\]

5<sup>th</sup> step: Direct education costs

The discounted direct cost of education of whatever type that contributed to attainment of the qualification level h are to be subtracted from this value (9)<sup>*</sup>. By means of a variation of C<sub>h</sub> it is easy to show how the profitability of education changes, depending on the share of cost that is borne by the private individual.

<sup>*</sup>The use of square parentheses is only relevant in cases where several training courses are required to reach the educational level h.
\[ TC_a = \sum_{t=1}^{s_a} [C_a_t] \cdot (1+i)^{-t} \] (8)

\[ PV(4)_h = PV(3)_h - TC_a \cdot [-TC_{a+1}] \] (9)

6th step: Risk premium, for the risk of dropping out of school

For the purposes of this study moreover, a risk premium (\(R\(P(D)_h\)) has been included in the calculation. This is intended to provide compensation for students of all ages who drop out of school (cf. Wolter, 1994, p. 4). In contrast to the familiar methods of calculating rates of return on education, the explicit inclusion of a risk factor is fairly unusual. The reason for adopting this method here is as follows: as with any type of investment so with investment in one's own human capital, compensation should be allowed for the risk of failure, in the form of a risk premium. Such a consideration would be superfluous if the risk of dropping out of school were the same in all education decisions, and the same allowance were made for all resources similarly invested and lost. A closer look at the figures shows immediately that this is not so however (see also chapter 4). Moreover, the risk premium can also play a role in international comparisons, since dropout quotas can be very different even at the same educational level.

The method of calculating the risk premium proposed here assumes that the capital invested, in the form of direct and indirect costs, is lost when studies are interrupted\(^1\). The loss probability is estimated in terms of dropout quotas (\(DQ\)). An assumption is also made that dropping out of school occurs on average half way through the course of studies (hence the multiplication factor of 0.5). The risk premium for education \(h\) is thus given by equation (10).

\[ RP(D)_h = (DQ_h \cdot 0.5) \cdot \sum_{t=1}^{s_a-1} [W_{a,t}(1-\tau) + C_a_t] \cdot (1+i)^{-t} \] (10)

\[ PV(5)_h = PV(4)_h - RP(D)_h \cdot [-RP(D)_{a+1}] \] (11)

The present value of the life income, adjusted for risk and direct cost of education, is determined with the help of equation (11). The \(RP(D)_h\) is included in the calculation as an additional cost component. The risk premium has a similar effect as the direct costs in equation (9) but is to some extent influenced by other decisions. The risk premium, together with the direct cost, has a leverage effect in two ways, i.e. concerning both the risk of the studies being interrupted, and the cost of this eventuality. On the one hand an increase in the direct cost of education leads to an increase in the total costs over the increase of the cost of dropping out of school. And on

\(^1\) By definition dropouts thus remain at the starting educational level. In principle, all invested capital is lost when re-entering the labor market. But those re-entering will in any case earn the same as colleagues of the same age whose incomes in the meantime will have increased as a result of "on-the-job" experience. The value of interrupted studies is thus equal to that of work experience of the same duration.
the other hand the high cost of study can also lead to an increase in the risk of those studies having to be interrupted, if for example the student has to pay for the high cost of his education with the help of a part-time job, thus increasing the risk of his studies being interrupted (cf. Williams, 1997).

Education that increases the net (difference of the present value between two different levels of education) present value of the life income ($NPV > 0$) (see also equation 12) is profitable.

The difference with the rate of return analysis is to be found in equation (12); whereas in the present value method an exogenous rate is given and discounting is made in every step, with the rate of return analysis there is no discounting and the rate determined is endogenous (= internal rate). The internal rate is the interest rate that sets the net present value zero.

\[ NPV = PV(S_b) - PV(S_{-b}) \] (12)
5. Principles behind the data

5.1 Wage structure survey
The present paper makes use of the data from the Swiss wage structure survey (LSE) of 1996. This may be considered representative for all non-self-employed persons resident in Switzerland and active in the private sector or in the federal administration (incl. post office and railway staff). The survey is based on a layered, two-level random sample. The survey takes 8’200 companies and a total of 560,000 employees into account. The LSE is thus the most representative cross section of data on the wage situation in Switzerland. The LSE contains different types of information on wages. The present paper is based on standardized gross annual wages.

Differentiation into various levels of education is made on the basis of the highest educational qualification or diploma obtained. In this context, we may distinguish between a total of nine categories of education. The model takes seven of these into account:

- university (theoretical) (UNI)
- university of applied science (UAS) (Fachhochschulen)
- university entrance certificates (A-levels)
- higher vocational colleges (HVC)
- completed vocational training courses (APS), apprenticeship
- teacher training colleges (SEMI)
- compulsory schooling (CS)

The LSE data is further classified according to the following age groups: 20-29, 30-39, 40-49, 50-59. A life income profile in the form of $W_h^t \forall t \in [t_0, P]$ has been created for each type of education (b) on the basis of these classifications.

5.2 Duration of studies, age, taxes, direct costs and dropout quotas
The data on the length of the period of studies, the age of entry into the labour market, the direct costs of education and the dropout quotas are all average values, obtained from various surveys carried out by the Swiss Federal Statistical Office (BFS). The tax data has been taken from publications of the Federal Tax Administration. The simulations of section 7 are based on the same data as used for the calculation of returns on education. The only difference is that the educational starting point has been shifted to the age of 40. The assumptions made for the 40-year-olds in terms of direct education costs are based on the same cost structure as for the younger students. This assumption for the calculation of the direct costs of education for the 40-year-olds represents therefore the optimum case.

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1 For additional information of Swiss Federal Statistical Office (BFS, 1996). Non-published data from the 1996 LSE survey was used for this study.

2 Based on a standard 40-hour week and including so-called 13th month (and where necessary 14th month) payments, as well as bonus and special payments. does not include income from overtime.

3 Detailed information on the data used and the assumptions made will be found in Wolter and Weber (1998).
6. Rates of return on education in Switzerland, based on sex and type of education

In the first place it should be pointed out that that as in many other industrialised countries, clear differences are to be found in the rates of return on education between the two sexes in Switzerland. The reasons for these differences will not be further discussed in this paper. However, where necessary, the rate of return on education is reported separately in each case. The first result is shown in Table 1, being the return on education as given by the rate of return analysis, distinguishing between sexes and types of education. The rates are calculated on the basis of the marginal principle i.e. the private return on education shows in each case the return that can be obtained compared to the next rung down on the educational ladder. What becomes apparent at first glance is the fact that the return on a (theoretical oriented) university education (UNI) is clearly lower for both sexes than is the case for example with other forms of upper-secondary and tertiary level education (HVC and UAS). If we take as our yardstick the international results of the OECD (1997), which gives a return of 10% as the "threshold rate above which return on investment is viewed as potentially being worth making compared to alternative investments" (p. 35), then even though the calculations are not directly comparable, the returns obtained for all types of education are relatively low, with very few exceptions.

Table 1: Returns on education according to sex and type of education

<table>
<thead>
<tr>
<th></th>
<th>APS</th>
<th>HVC</th>
<th>UAS</th>
<th>A levels</th>
<th>UNI</th>
<th>SEMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>8.6</td>
<td>7.7</td>
<td>10.0</td>
<td>10.2</td>
<td>3.6</td>
<td>5.0</td>
</tr>
<tr>
<td>Female</td>
<td>11.7</td>
<td>7.5</td>
<td>7.8</td>
<td>9.9</td>
<td>4.5</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Our findings more or less correspond to calculations made earlier for Switzerland (see Wolter, 1994) and thus already indicate very low returns for education which has been undertaken at the earliest possible stage.

7. Rates of return on education at the age of 40

In the following calculations it is supposed that a 40-year-old employed person is able to undertake theoretical or dual training at the next level up. Thus an individual without any post-compulsory schooling would catch up with a vocational training course (APS)\(^a\), someone with vocational training would move on to a higher vocational college (HVC) or a university of applied science (UAS), and someone with a university entrance certificate (A-levels) would be able to aim at a university degree. As for the wage flow following the additional training, it has been assumed that this corresponds to the median wage of the educational attainment group concerned. This may

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\(^a\) The gender related differences in the rate of return on education are discussed in detail in an another article (see Wolter et al. 1998).

\(^b\) The active labour market policy in Switzerland for example today allows the unemployed to catch up on vocational training in certain conditions and within a given age group.
seem an optimistic assumption, but we feel it is justified on the basis of the accumulated human capital and in particular the "on-the-job-training" at the lower educational level, and the fact that the knowledge obtained by the newly trained individual will be more up-to-date than in the case of anyone who trained at an earlier point of time. The rates of return on education of these individuals will be different from those found in section 6 for a number of reasons:

1. The opportunity costs increase with age, i.e. a period of no employment will have greater weight as will the value of the risk premium linked to the opportunity costs.
2. The time in which income advantages may be obtained and thus investments allowed to depreciate will be shorter.
3. The wage difference with the training level just below is greater immediately after the training, since with increasing age the gap between the wages grows larger. This has a positive effect on the NPV of a life income - in the case of high discount rates in particular - since high income differences in the future are now not so heavily discounted.

A priori there are arguments in favour of increasing returns just as there are arguments for the opposite case. Only empirical examination can show therefore in which direction an education decision taken at a later stage will shift the rates of return on education.

Figure 1&2 show the results of our calculations. The white column shows a comparison in life income advantages (present value calculation)\(^1\) and disadvantages for a life income (age group16-65) in the case that education has been postponed to the age of 40. The column shows the difference in life income of this group (postponed) with the life income of persons that have attained the same education level at the earliest possible point in time. The black column shows the life income (dis)advantages for individuals who train at 40, compared to those who remain at the educational level immediately below. In this case we call the individuals that trained at the age of 40 „late-starters“.

As per the results in Figure 1&2, if we compare the results of the „postponed“ education with the „normal“ case we see that with regard to the life income advantages, those who postpone face a situation where investment in human capital is less advantageous in all cases. Men loose on average 6% in life income, women even 10%. This difference is mainly due to the fact that women have less access to career positions and therefore have a smaller increase in nominal salaries when improving their qualifications. These calculations are simulations, also meant to show the sensitivity of the model to changes in the parameters. The calculations are, however, not based on real observations of people having postponed their education. Examples for such studies with the necessary set of micro data can be found in Stoikov (1975) and Ziderman (1987). Nevertheless, the results of those studies and our own findings seem to coincide, insofar they find, that a postponement of training, even for a short period of time, is not paying in cost-benefit terms.

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\(^1\) A discount rate of 5% has been used. The results in relation to other discount rates between 3% and 7% are fairly solid.
While the results just described show that it always pays to undergo training as early in life as possible, this does not mean that it would not pay to catch up on training at the age of 40, relative to persons always remaining on the lower educational level. The black columns show the life income (dis)advantages for individuals who retrain at 40 ("late starters"), compared to those who remain at the educational level immediately below. We can see that for men it would still pay to make an apprenticeship or attend a higher vocational college (HVC), but the difference is quite insignificant. For women with no post-compulsory vocational training it would pay to sign up for some but every other investment at a higher level of education would mean a reduction of one's life income. The losses are highest when attending university. This is due to at least three factors. First, it is the longest educational option, with correspondingly high opportunity costs. Secondly, the risk of dropping out is also high and together with the high opportunity costs produces a high risk premium. Thirdly, it should not be forgotten that the median nominal wages of graduates in this age group ends up feeding tax progression, which amounts to a noticeable reduction in the life income that might be expected.
8. Economic policy implications and concluding remarks

In recent years a number of factors have changed the requirements for workers in our economy. New technologies make it possible to integrate new knowledge in the production process far more extensively and also far more rapidly than ever before. This brings a higher degree of flexibility that is also reflected in the demands made on workers. New and additional skills and abilities, including the ability to jettison the old skills and abilities, are a must in virtually every job today. This can immediately be seen from a glance at the current state of the labour market. Unemployment, i.e. the risk of becoming unemployed and the risk of remaining so for a long time, is just one of the negative consequences faced by individuals with poor qualifications. The vicious circle „bad qualifications – bad job“ (cf. also Snower, 1996), harms the persons concerned at a number of levels, whether private, social or economic. While most people are more or less aware of this new reality, one has only to consider the worrying situation with regard to continuous education in Switzerland today to realise that a real discrepancy exists between these labour market requirements and the individual behaviour regarding continuous education. The most striking fact about further education in this country is that in a given year not more than 40 per cent of the adult population have been enrolled in continuous education, of whatever kind. If one considers only further training in the vocational field, between 1995 and 1996, the proportion involved was just one quarter (see Wolter and Knuchel, 1997). If we consider the level of education prior to continuous education then it is easy to see that individual efforts in the direction of further training are more or less inversely proportional to the individual risk of becoming unemployed and remaining so. In this context and in the light of our results presented here, we should not attempt to automatically explain the efforts of the highly qualified members of the workforce to indulge in continuous education outside the workplace merely in terms of financial advantages. More important is their feeling that with the help of continuous education they stand a better chance of stability and security in their future career.

As soon as unemployment became a worrying problem on a large scale in Switzerland, there was an immediate demand for measures to eliminate the causes of the perceived „qualifications mismatch“. The active labour market policy that was above all designed with that in mind can never really be expected to be more than one element of such a strategy. It makes little sense to wait for unemployment to happen, before setting out to do something about it by reshaping the human capital to meet the new market requirements. In order to promote a strategy of lifelong-learning, with the help of financial incentives where necessary, there is an urgent need in Switzerland, in an environment at present characterised by virtually non-existent returns on education, to introduce appropriate corrective measures:

1. It is precisely at a relatively advanced age that the opportunity costs, i.e. the prospect of income losses, are particularly high. While in the case of relatively well paid individuals this may represent only a temporary setback for an otherwise comfortable living standard, for the poorly paid worker it generally means a financial sacrifice of prohibitive dimensions. In the case of the lowest qualified and paid categories, (partly
financial coverage by the state during the further training period would therefore be entirely justified. In this context an institutionalised ruling similar to the Danish educational leave would also make sense in Switzerland (see Wolter and Knuechel, 1997).

2. In order to provide the necessary direct incentives for continuous education, companies will have to begin to give more consideration to performance and qualifications in calculating the wage offer. The wage structures found in most companies today do not take these objectives sufficiently into account, although it is true that there is a trend towards performance-related remuneration. Current wage differentials are still too small to compensate the high total cost of investment in continuous education.

3. Finally, the state must be aware that it controls several parameters which directly influence the rate of return on education. A departure from current policy, which generally aims at reducing the price of education for young people only, needs to be given some real thought in this context. Even more significant is the influence of the tax system, which imposes the greatest progression in the middle-income bracket, i.e. in the very area where the wage differentiation should be the widest.

Politicians should be aware that economic, educational and active labour market policy measures designed to help the working population to requalify will take time to implement and will cost a great deal. Such a policy therefore requires flanking measures, which offers real and effective incentives to promote individual efforts in the area of continuous education for those now in employment. Only with such a policy can we ensure that sufficient individual and collective efforts are put into continuous education so that the entire workforce is truly adapted to the requirements of the marketplace of today, and tomorrow.

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1 The idea of paying for education in the same way as for work is an old one. For an interesting presentation see Jacques Attali (1994).
9. Bibliography


