

# **Financing, support and participation in further learning in Austria - a comparative perspective**

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## **1. Introduction**

The European Commission promotes comprehensive lifelong learning strategies as an important component of flexicurity. Besides a high quality initial education, citizens should "acquire new skills and upgrade existing skills throughout their working lives" (EC 2007,13). And enterprises should invest more in human capital and skills development of their employees. Implementing such strategies is still a challenge and much remains to be done in making lifelong learning and learner mobility a reality (EC 2008b). With regards to adult participation in lifelong learning, the commission points out 3 disadvantaged groups: older workers, low skilled persons and migrants, since there is a concentration of low skills among migrants (EC 2008a). The topic of this paper is to provide an empirical account of the state and development of further learning in Austria, as compared to the European discussion. The three aspects of financing, public support, and participation are observed and discussed on the background of the existing conceptual hegemony of the market approach. Pros and cons concerning this approach are given, based on the observations. Support mechanisms are observed, firstly based on a population survey, and secondly including a more in-depth analysis of individual support instruments (training accounts, etc.). Finally participation structures are analysed more deeply, based on a population survey, due to the effects of background variables.

## **2. Financing of further education and training in Austria**

The basic structure of financing formal and non-formal adult education and training arise from public and private sources. Public sources consist of government expenditure from the central, regional and local level and private sources are composed of expenditure of firms and individuals. The OECD proposed a cost-sharing model between the state, the enterprise sector, and the individuals, who should contribute one third each. Funds from the public employment service (AMS), a main source of adult education in Austria, cannot be easily attributed to this distribution. Either these funds are assigned to the public level or, because these funds are comprised by contributions from employees and employers to the social insurance system, to the private level.

The lion's share of total public expenditure on education and training is spent on initial formal education in pre-primary education, schools and universities. Only a mere part of 2.2% of total government expenditure was dedicated to adult education and training (table 1). These 293 million EUR comprises central, regional and local level of government expenditure on non-formal learning of adults (150 million), spending on adult education in formal initial schools such as secondary general and vocational evening schools for working people (135 million from central level government), and the basic funding of the Danube University for Continuing Education Krems (8 million from central and regional level of government). Government expenditure on non-formal adult learning has not risen significantly since 1999: in 2006, across all levels of government 150 million EUR was spent on adult learning outside the formal schooling system, as compared to 146 million EUR 7 years before (at constant prices).<sup>1</sup>

Training expenses from the public employment service are a part of the active labour market policy of the government and serves for qualifying and supporting unemployed people or labour market groups at risk. Funds have increased clearly from 520 million EUR in 1999 to 903 million EUR in 2006 (at constant prices). But the use of these funds is not solely earmarked to direct costs for adult learning. A

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<sup>1</sup> The sum of total public funds for adult education cannot be compared due to a change in the calculation of expenditure on formal schooling of adults in evening schools.

variety of programmes to make up for a better initial educational attainment (via second chance courses) for younger people are funded as well as contributions to living costs. It is not possible to correct adequately for this and to single out expenses on adults for the purpose of learning only, with the result of a significant overestimation of training funds from the public employment service. If one deduce the expenses for younger people aged between 15 in 24, which is possible since 2006, the expenditure would amount to a more realistic number of 639.5 million EUR.

According to the third cycle of the European Continuing Vocational Training Survey (CVTS), private Austrian firms with 10 employees and more spent 628 million EUR of direct costs on training courses in 2005 (at prices of 2006), which is an increase of 28% as compared to CVTS2 in 1999. Adding training investments of smaller private firms (approx. 102 million EUR) and personal absence costs of all these private firms, the enterprise sector annually spends a total of 1,283 million EUR on vocational training. It has to be mentioned, that public sector firms and also companies from some private sectors are not included in CVTS, so the figure marks the lower bound of enterprise investment in training.

The question of how much money the individuals contribute to their non-formal training activities is not yet answered. But several approximations exist and at least individual spending on vocational training courses outside the regular school or higher education system have become clearer recently. Lassnigg et al. (2008) scanned the relevant documents and analysed the available databases.

According to them, private expenditure on vocational training ranges from 200 to 240 million EUR per year (pp. 13-17). After having validated this figure by various datasets, the authors put forward their own estimation on the basis of the labour force ad hoc module 2003, which amounts to 238 million EUR. Drawing on that estimation, the authors came to the approximation, that individuals spend another 228 million EUR per year for private courses mainly relating to leisure time activities. So it can be assumed, that individuals dedicate about 466 million EUR on non-formal training.

After compiling the funds from different sources, we now look at the distribution. Considering direct costs only (not taking into account personnel absence costs of firms and opportunity costs of individuals), the major part is borne by the public employment service (38%) followed by the private sector enterprises (30%), and by the individuals (20%). Public sources from governments are the smaller part of 12% (see Figure 1, left pie). If we turn back to the cost sharing model proposed by the OECD again the question arises, where to assign the 38% from AMS/ESF funds. If we add these funds to individuals and firms in equal shares – as it corresponds to its provenance contributions from employees and employers – half of total expenditure was funded by the firms and 38% by the individuals (middle pie). On the other hand, if assigning AMS/ESF funds to the public because it is part of the governments active labour market policy, public funds would account for half of the total expenditure on adult learning, with firms accounting for 30% and individuals for 20% (right pie).

So no matter where to put AMS/ESF funds, the cost sharing proposal of one third each is not implemented in Austria by now. Either there is a strong underinvestment of public funds, or an overinvestment on the other hand. Although the amount actually contributed by the individuals is still unclear, it seems to be sure that enterprises invest significantly more than individuals. We have to keep in mind that the firms invest even more on vocational training because not all sectors are included in CVTS. And the contribution of individuals consists not only of vocational training, but also private courses mainly related to leisure activities. It is true, that individual's contribution to vocational training is rather low and that enterprises finance the major part of vocational training: From the 2003 LFS ad hoc module we know, that almost 70% of the participants reported, that they did not financially contribute to their vocational training activities in the year before the survey (Lassnigg et al. 2006, 54). This figure is also supported by the Adult education survey (AES). The decision to what extent continuing vocational training is undertaken is mainly made by the enterprises.

**Table 1: Expenditure on adult learning in Austria (million EUR at 2006 prices, GDP deflators)**

	1999	2004	2006
<b>Public expenditure on adult learning</b>			
Formal schooling of adults (upper secondary education for working persons) <sup>1</sup>	169.4	172.1	134.7 <sup>1</sup>
Non-formal learning (further education)	145.5	129.7	150.2
<i>Thereof central government expenditure</i>	57.5	51.6	55.6
<i>...regional government expenditure</i>	63.2	51.7	54.8
<i>...local government expenditure</i>	24.8	26.4	39.8
Public funding Danube University Krems		6.1	7.8
<b>Total public funds</b>	<b>314.9</b>	<b>307.8</b>	<b>292.7<sup>1</sup></b>
<i>Percentage of total public expenditure on education</i>	<i>2.6%</i>	<i>2.4%</i>	<i>2.2%<sup>1</sup></i>
<b>Public employment service (AMS; incl. ESF funds)</b>			
Training	438.8	428.0	567.0
<i>Thereof direct costs</i>	<i>n.a.</i>	<i>299.4</i>	<i>187.0</i>
<i>...funding of youth aged 15 to 24</i>	<i>n.a.</i>	<i>n.a.</i>	<i>264.5</i>
Professional mobility, additional training funds	73.0	185.5	326.5
Training leave	8.1	8.0	9.5
<b>Total AMS &amp; ESF funds</b>	<b>519.9</b>	<b>621.5</b>	<b>903.0</b>
<b>Expenditure of enterprises<sup>3</sup></b>	<b>CVTS2</b>		<b>CVTS3</b>
Direct costs of firms with 10+ employees	489.7		627.5
Approx. of direct costs of smaller firms <sup>4</sup>	79.2		101.5
Personnel absence costs (all firms)	384.8		554.3
<b>Total enterprises expenses<sup>3</sup></b>	<b>953.8</b>		<b>1283.3</b>
<b>Individual expenditure (approximation)<sup>5</sup></b>			
Financial contributions to non-formal training			466
<i>Thereof vocational training</i>			238
<i>...general education (leisure activities etc.)</i>			228
Opportunity costs (foregone earnings) <sup>6</sup>			389
<b>Total individuals expenses</b>			<b>855</b>
<b>Total expenditure public, firms and individuals</b>			
<b>Total expenditure without personnel absence costs and opportunity costs</b>			<b>2,390</b>
<b>Total expenditure incl. personnel absence costs and opportunity costs</b>			<b>3,334</b>

Compilation by the authors.

<sup>1</sup> The calculations of public expenditure for formal schooling of adults in 2006 are based on improved students' statistics. According to the method applied for 1999 and 2004, the spending would amount to 183.6 instead of 134.7 and total public expenditure to 341.6 instead of 292.7 million EUR.

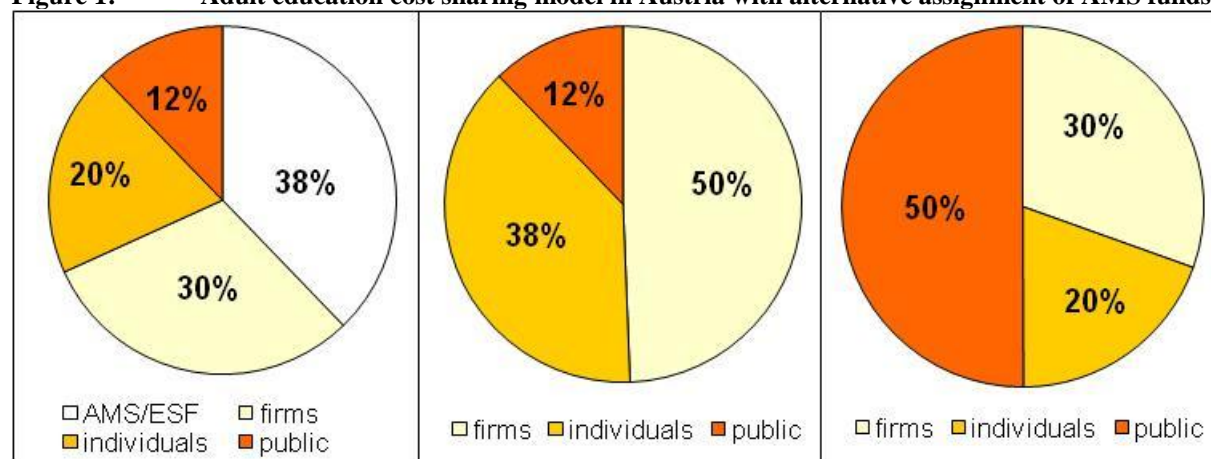
<sup>2</sup> The percentage is underestimated for 1995 due to a significant overestimation of total public expenditure for education.

<sup>3</sup> CVTS2: 1999, CVTS3: 2005; public sector, social insurance, agriculture, instruction, health care, social services, private households (OeNACE sectors A, B, L, M, N, P) not included.

<sup>4</sup> The approximation for firms with less than 10 employees according to Markowitsch & Hefler 2003, 109.

<sup>5</sup> Rough estimation based on data of the 2003 labour force ad hoc module on lifelong learning, as calculated by the authors.

<sup>6</sup> Forgone earnings for vocational training during leisure time of working people.

**Figure 1: Adult education cost sharing model in Austria with alternative assignment of AMS funds**

Source: IHS.

### 3. Support mechanisms: Austrian instruments to promote individual continuing education and training

During the last decade various instruments to promote individual continuing education and training have been developed in Austria. The entitlements to benefits are sometimes very complex in order to increase the chance for educationally disadvantaged to benefit. The instruments are presented in short:

Employees with a work history of over six months with the current employer may arrange a training leave with the employer. The leave may take from 2 to 12 months. Wages are left out during this period. But the student gains "further education benefit" (Weiterbildungsgeld) in the amount of their fictitious unemployment benefit (minimum 14.53 EUR a day) from the Public Employment Service (AMS), if he/she participates a minimum of 20 hours in CVET per week. In reaction to the economic crisis the regional governments temporarily support the direct training costs if the employer pays the rest.

Every member of the Chamber of Labour – which is mandatory for employed and unemployed people, apprentices and persons on parental leave<sup>2</sup> – may order a training voucher worth 100 EUR. In some regions special target groups (apprentices, persons on parental leave) receive an additional amount of 50 EUR. The vouchers can be used in special courses at selected training providers. Most of the Austrian regions award a grant to people who participate in CVET. They frequently call it learning account. In fact, these initiatives are not real savings accounts but grants to refund training costs. On successful completion of the course a certain percentage of the costs is refunded. The grants are partly limited to special target groups or special second-chance courses. Saving / financing by a building society is one of the most favoured forms of saving / financing housing in Austria and it is state-subsidized. Since September 2005 the building loan contract may be used for education expenses also.

There are some special grants for students of universities and universities of applied sciences (Fachhochschulen), that could be seen as support of continuing education and training, although usually it is not: This comprises the grant for former-employed students and the grant upon completion of studies.

Some trade unions provide funds for the subsidisation of education activities for their members. The conditions whether financial support is provided differ. There is usually a specific amount or a specific percentage (with a maximum set) of the course fee, which is refunded. Mostly the financial benefit is not very high at all, compared with the total amount of the course. In Austria training expenses paid by employees can be deducted from the tax base, if they are regarded as income-related expenses. There are also tax incentives for training and financial support by the AMS for employers, who train their employees. These are not instruments which can be used by individual workers, but for the sake of completeness it has to be mentioned.

The presented instruments are rather diverse, so their strengths and weaknesses may compensate. As an example: learning accounts are addressed to low-income and educationally disadvantaged groups, but persons with high income benefit disproportionately high from reduction in taxes. Most of the subsidies can only be applied for afterwards. This may be a considerable education barrier to groups with low income. The AK's training voucher is exemplary in this regard, but its account will only compensate for a small rate of training costs. The training leave was not very well accepted. The reformed training leave (e.g. increase of the benefit, reduction of the required work history) may increase the attendance, but there are no data available at the moment. The grant for former-employed students offers a high incentive to upgrade formal education, but educationally disadvantaged people will not be activated by this instrument. There are various isolated evaluations of some instruments to promote individual continuing education and training. But there is a lack of comprehensive evaluation of the actual effects and impacts on individual, microeconomic and macroeconomic level.

### 4. Participation rates: status quo and recent developments

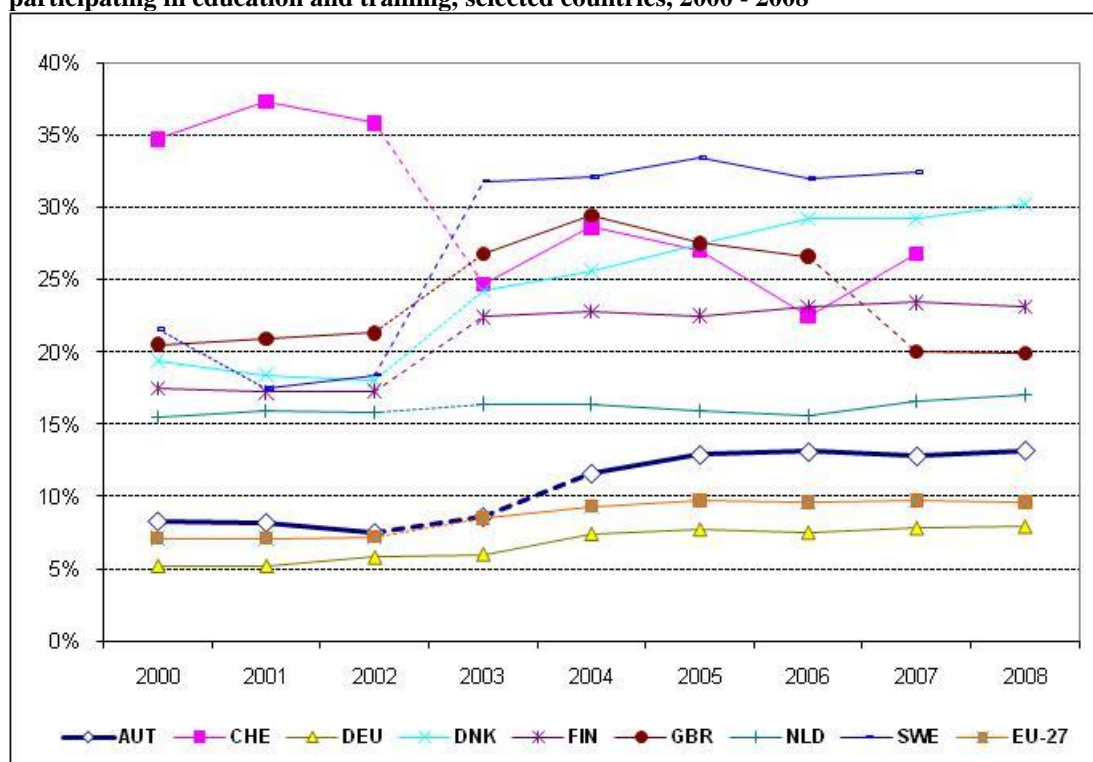
Figure 2 shows the learning activities of the adult population aged 25 to 64 years in Austria and in selected European countries. This structural indicator is related to one of five benchmarks, which have

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<sup>2</sup> Civil servants and agricultural worker are exempt from compulsory membership.

been set in education and training to stimulate progress in policy areas. By 2010, 12.5% of the adult population across member states should be engaged in any form of lifelong learning activities (formal or non-formal, vocational or private). The interpretation of the depiction suffers from several breaks in the time series in almost all selected countries. In Austria, for example, due to the implementation of harmonised concepts and definitions in the survey in 2003, the provided information lack comparability with former years. This is also true for the case of DNK, NLD, FIN, SWE, CHE and from 2004 in GBR. In Germany, personal interest courses were excluded in 2003 and 2004. In the case of Switzerland, the reference period of reported training activities changed in 2003. In Austria, the survey characteristics of the microcensus changed completely in 2004. Besides a complete redesign of the sampling-procedure and data coverage, questions and response options regarding education and training changed. All this in addition to "normal" sample variation makes it impossible to interpret yearly up- and downturns, but to look at trends over years taking into account the breaks. Before 2004, Austria was below the 10% mark, since 2005 however, the value is somewhere above the EU-Benchmark of 12.5%. Before and after the time series break, the graph shows a rather constant trend. So we cannot assume that there was an increase in LLL-participation in Austria since 2000. Apart from some erratic movements, we also see a rather constant developing of participation in almost all other selected countries. Moreover, the participation rate across the EU stagnates below 10% for the EU-27, and also the EU-15 countries which do only little better (provisional value for 2008 is 11.0%), will in all likelihood fail to reach the policy goal set. The static trend in lifelong learning participation is accompanied by a persistent gender imbalance.

**Figure 2: Structural indicator lifelong learning: Percentage of the adult population aged 25 to 64 participating in education and training, selected countries, 2000 - 2008**



Source: Eurostat (labour force survey).

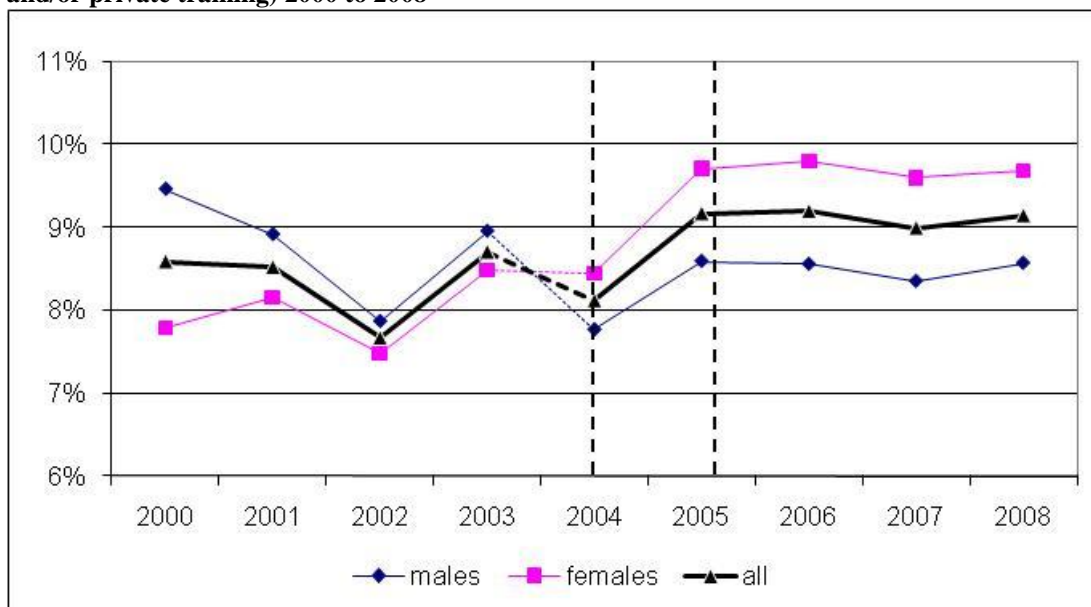
2000-2005: reference quarter in spring; 2006-2008: annual averages of quarterly data.

Dashed line: break in time series, estimated values for Sweden since 2005.

If we look at the participation of the Austrian adult population aged 15+ only at non-formal learning (vocational and/or general), we assume, that most of the variation between 2002 and 2005 is attributable to data-problems and survey changes. But for recent years, it seems that we have reached a stable survey instrument. And there is no evidence for an increasing LLL-participation. There is a constant gender gap observable: from 2005 on, the participation rate of females is significantly higher than of males. The higher female participation in non-formal training results only from private courses, because the female population aged 15 and above participates less in vocational than man.

And this latter finding is solely attributable to the actual employment status. For if we limit our analysis to the active labour force aged between 25 and 64, no gender gap occurs regarding participation rates in vocational training. Consequently, females aged 25 to 64 years who are active in the labour market are much more engaged in private training as compared to males of the same age and labour market status (actually females participation rates are more than twice as high than males).

**Figure 3: Non-formal learning participation rates of Austrian population aged 15+ (vocational and/or private training) 2000 to 2008**



Source: Statistics Austria, microcensus; 2000-2003: 1.Quartal; 2004-2007: yearly average.

Dotted lines: breaks in time series (2003-2004: redesign of microcensus, 2004-2005 adaptations after redesign).

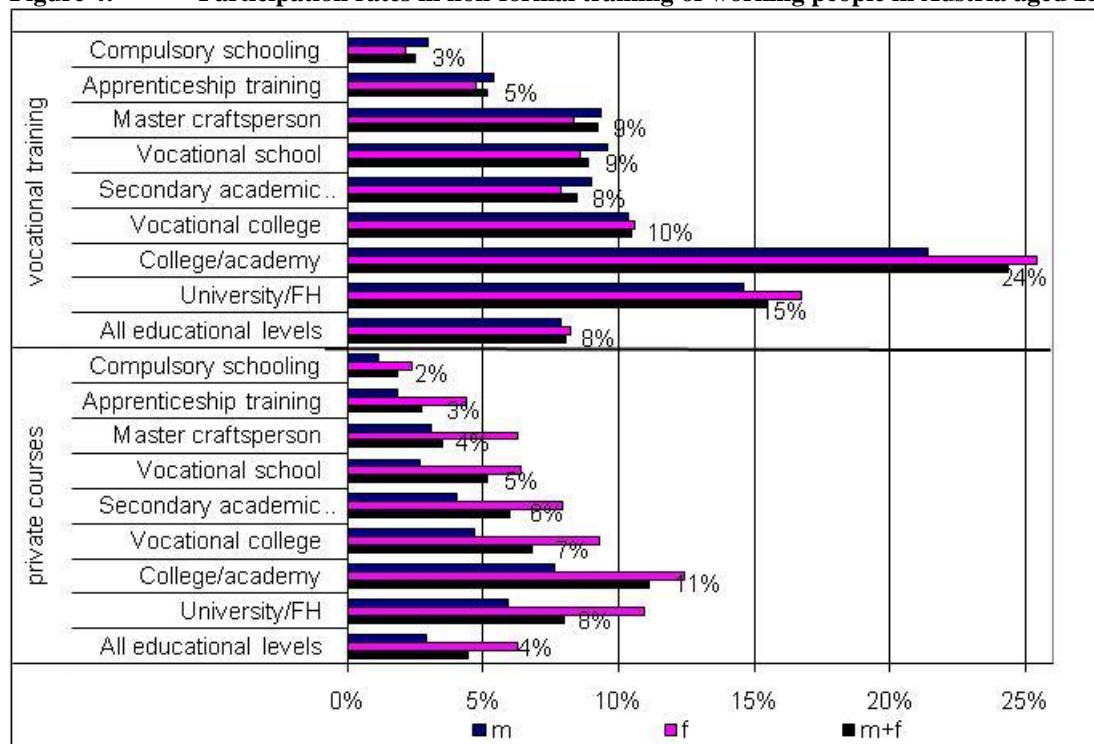
Because of the validity problems, we focus on cross-sectional data of recent LFS cycles for the next analytical steps. To have a better basis for disaggregated in-depth analysis, we pooled all 12 quarters of the Austrian microcensus 2005 to 2007. The educational status attained at formal schooling can be considered as one of the best predictor for LLL activity, since it is highly associated with participation in further learning processes. This is especially true for vocational training activities. According to the labour force survey, 5% of the Austrian population aged 15 and above participated in at least one vocational training course 4 weeks before the survey. Persons who acquainted no formal education beyond compulsory schooling show a much lower participation rate of 2%, whereas at least 4% of the persons who hold an apprenticeship training certificate participated. All other educational groups are clearly above the population average, the participation rates of persons holding university degrees or College/academy certificates are largely beyond 10%. One interesting result is, that the higher the educational attainment, the higher the participation of women, as compared to men. With regards to private further learning courses (mainly related to leisure time activities), there is also a clear hierarchy of educational attainment levels, but the differences are not so pronounced compared to vocational courses. Instead, the gender differences are much higher: except the category of compulsory schooling, females show significantly higher participation rates.

If we limit the analysis to working people aged between 25 and 64 years, the hierarchy between educational attainment levels is rather the same, but as expected, participation in vocational training courses is higher: overall, 8% said they have participated within 4 weeks (Figure 4). And lower educational attainment levels (compulsory schooling, apprenticeship training) fall even more behind. On the other side, there is almost no difference in participation in private courses between working people and the whole adult population.

Comparing the results the regular LFS with the 2003 ad hoc module lifelong learning, which surveyed training activities within a period of 12 month, the regular LFS seems to capture about one third of the total annual vocational training activities of the whole adult population and of working people as well. With regards to private courses, again a gender gap exists. The 4 weeks period captures about one third of males' annual participation and one fourth of their annual training hours, whereas it captures

more than half of females' annual participation but only one fifth of their yearly training hours. Different patterns of participation emerge: while males attend shorter but more time-consuming courses, females are rather engaged in longer course with a lower level of weekly or monthly hours.

**Figure 4: Participation rates in non-formal training of working people in Austria aged 25 to 64**



Source: Statistics Austria, LFS, pooled sample of 12 microcensus quarters 2005-07.

We see, that formal educational attainment is associated with participation in vocational training and private courses as well. Another predictor is the occupational status which is also positively related with non-formal learning, especially with participation in vocational training. To see what effect one single predictor has on training incidence while controlling for other important predictors and background variables, we tested fitted logistic models to explain participation in vocational training separately for males and females (for estimates see Table 2 and Table 3 in the Annex). The models control for educational attainment, field of educational attainment, occupational status, age, educational status, migration background and region. The model-estimates confirm that the higher the educational level attained as well as the higher the occupational status, the higher the probability to participate in vocational training, all other things being equal.

Table 3 shows the estimates of additional predictors regarding employment and firm characteristics. This model was applied to working people only and contains all the predictors of the model presented in Table 2. Firm size is positively related with training incidence. Time spent with the same firm seems to be negatively related with training, especially for females. Based on a qualitative assessment of the job-worker qualification and education matching (see Lassnigg et al. 2008), the relationship between match, mismatch and training probabilities was analysed. Underqualified persons – persons whose formal educational attainment level is below the typical requirement of their job – show a higher probability to train as compared to adequately qualified persons. Consequently, overqualified persons are less likely to participate in vocational training. This result is in line with the basic assumption, that underqualified people have to acquire the competencies required by their jobs through other ways. And it seems, that people actually compensate a lack of formal education via vocational training to some extent (p.45). Interestingly, the positive relationship between formal education and further training still dominates: underqualified people do show on average a higher probability to train than people of the same level of educational attainment in less demanding jobs. But they have a lower probability to train as compared to people with a higher educational attainment level occupied in the same jobs.

## 5. Returns to training

Steiner et al. (2007) have analysed individual returns to various forms of further learning based on the LFS ad hoc module 2003 using an adjusted wage function according to Mincer (1974). Persons who have participated in at least one vocational training course during 12 months before the survey, show on average 6% (males) and 8% (females) higher wages than persons with the same formal educational attainment level and the same amount of vocational experience but who did not participate in vocational training in the same period. This return seems considerable high as compared to the rate of return to a year of formal schooling, which is associated with a wage gain of about 7%. Because according to the ad hoc module 2003, a vocational course lasts on average for only 72 hours in Austria (Lassnigg et al. 2006, 28). A causal interpretation for the observed positive correlation between vocational training and wages is not possible, because persons who participate in training differ significantly from persons who do not, not only with regards to formal education and experience. Most of these differences (individual characteristics like ability, motivation, and ambition) cannot be controlled for adequately, since the datasets provides no information about that. The selection bias is often tackled by fixed-effects estimations correcting for time-invariant individual characteristics, given that panel data are available. In applying fixed-effects models on ECHP-data, two comparative studies have found no significant wage effects of vocational training in Austria (OECD 2004, Bassanini et al. 2005).<sup>3</sup> But fixed-effects estimates are also hard to interpret in a causal way and the coefficients seem to be underestimated, at least for the case of Austria. Among other reasons, this is for example due to an overcorrection of the individual fixed effects, different slopes of individual wage profiles, too short time series and too small sample sizes as well as panel mortality.

There is not only a lack of evidence concerning the wage effects of vocational training, also little is known about non-monetary outcomes of adult skill development in Austria. The LFS ad hoc module 2003 reflects the subjective impressions of effects perceived by the respondents. Most frequently individuals reported, that training has been contributing to an improvement of their occupational situation, sometimes in combination with a contribution to employment security. Another 20% of vocational trainees perceived no or little effects of the training measure. A mobility effect, i.e. helping people to find a new job was reported by a minority of 3%. The coverage of training effects is not very specific and therefore lacking explanatory power, for what reason the results are hard to interpret.

Böheim und Schneeweis (2007) have studied the correspondence between training activities of firms in the production and service sector in Austria and their productivity, based on a connection between two CVTS cycles (1999 and 2005) and data on the performance of firms (Leistungs- und Strukturhebungsdaten, LSE). The authors found a strong correlation between training incidence and productivity: Firms who invest twice as much in their employees' skills development have on average a 4% higher productivity rate than comparable firms. Moreover the results show, that firms with a higher level of training expenditure also pay higher wages, as compared to firms with a lower level of training investment. Due to effects of unobserved selectivity, which influences the firms decision to train as well as its productivity, a causal interpretation of the observed relationship between training and productivity is not possible, also due to the problem of simultaneity. Thus the authors limited their sample to firms that participated in both CVTS cycles and estimated panel models using fixed effects. Because then the sample size was too small, the estimated elasticities are not statistically significant. The longitudinal analysis also suggest that a higher training incidence is associated with a higher productivity.

## 6. Discussion

Our empirical findings have shown, that public expenditure on non-formal adult training have not risen significantly since 1999. This is also true for total public expenditure on education in Austria and

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<sup>3</sup> If applying OLS-models the Mincerian type to the ECHP-data, Bassanini et al. (2005) found even higher rates of return like Steiner et al. (2007), amounting up to 10%.



in the EU. On contrary, expenditure from enterprises and funds from the public employment service (AMS including ESF funds) increased considerably. As stated before, it is not clear if AMS-ESF funds should be regarded as public or private sources: on the one hand they are distributed by law by a public agency but on the other hand these funds stem from unemployment insurance contributions of employers and employees. Because of that, government cannot dispose of these funds since they can only be applied to measures in favour of the two labour market parties. This question reveals an underlying structural problem of financing adult education in Austria, especially with regards to disadvantaged groups who are not enjoying the benefits of the unemployment insurance system. For only persons entitled for unemployment compensation are eligible to most of the AMS-ESF funds, more than two thirds of total expenditure on adult education (AMS/ESF funds and expenses of enterprises) are solely dedicated to the active labour force. Younger people, migrants and workers who did not contribute to the unemployment insurance (e.g. marginal employed persons) do not benefit. Adult education is therefore largely determined by employment and the social insurance system.

To answer the question of under- or overinvestment in training and whose expenditure should be increased, it is also necessary to clarify the returns to training and how they are distributed among the parties, not only in monetary terms. A causal answer to this question does not exist for the time being, but it is most likely that a relationship between training and productivity, as well as between training and wages exists in Austria too. The OECD has collected evidence, that training influences individual labour market performance positively. The organisation pointed out, that training plays an important role in enhancing employment security of older and low skilled workers (OECD 2004, 207). In the actual setting, public expenditure in Austria should focus on promoting learning of disadvantaged persons who have no access to the major part of available funds. Older and low skilled workers not only have low rates of training participation but also very low employment rates: only 37% of the Austrian population aged between 55 and 64 years are active.<sup>4</sup> Older and low skilled workers are at risk, because firms tend to invest in high skilled (younger) workers who promise the highest returns. To help increase participation of older and low skilled people in the labour market, as well as their probability of being employed, public funding should emphasise on adequate programs for this target groups in cooperation with enterprises and intermediate bodies. For making lifelong learning a reality, public promotion of adult education has to compensate for market-mechanisms that discriminate certain people. It seems that this could be accomplished more efficient by making spending independent from the origin of funds.

Of course, the best way to increase adult learning participation is to raise initial education attainment through the formal system beforehand. But in the meantime it is necessary to think about more effective, efficient and equitable training measures. Therefore we need to know much more about various aspects of adult learning outcomes to inform the discussion of training motivation and barriers of different actors and groups, and the determinants and expectations in the firm and individual decision for or against training.

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<sup>4</sup> By law, women reach the retirement age at 60, men at 65.

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## ANNEX

**Table 2: Factors explaining participation in non-formal vocational training of Austrian population, 15 years and older, 2005-07**

	Males		Females	
	<i>Exp(B)</i> <i>odds ratio</i>	<i>Sig.</i>	<i>Exp(B)</i> <i>odds ratio</i>	<i>Sig.</i>
<b>Educational attainment</b>				
<i>Compulsory schooling</i>	(Ref.)		(Ref.)	
Apprenticeship training	1.176	***	1.425	***
Vocational school	1.591	***	1.765	***
Master craftsperson	1.785	***	2.257	***
Secondary academic school	1.509	***	1.850	***
Vocational college	1.578	***	2.203	***
College, Academy	2.268	***	3.761	***
University, Fachhochschule	2.007	***	2.905	***
<b>Field of education</b>				
<i>General programmes</i>	(Ref.)		(Ref.)	
Education	1.994	***	1.751	***
Humanities and arts	.873	***	1.015	
Social sciences, economics, law	1.068	**	1.123	***
Business and administration	1.191	***	.955	
Science, Mathematics and Computing	.880	***	.987	
Engineering and engineering trades	.996		1.124	**
Manufacturing and processing	.683	***	.683	***
Architecture and building	.704	***	.981	
Agriculture	.946	*	.875	***
Health and welfare	2.004	***	1.626	***
Personal services	.810	***	.888	***
Transport, security services, environm. prot.	1.523	***	1.291	***
unknown	1.994	***	1.751	***
<b>Occupational status</b>				
<i>Unskilled worker</i>	(Ref.)		(Ref.)	
Skilled manuals	1.881	***	2.276	***
Skilled non manuals	2.608	***	2.802	***
Intermediate and professionals	3.068	***	3.317	***
Out of labour force / unemployed	1.168	***	1.187	***
<b>Age group</b>				
<i>15-24</i>	(Ref.)		(Ref.)	
25-34	.923	***	.713	***
35-44	.777	***	.764	***
45-54	.679	***	.693	***
55-64	.334	***	.212	***
65 and above	.035	***	.011	***
<b>Currently in formal education</b>				
<i>No</i>	(Ref.)		(Ref.)	
yes	.604	***	.672	***
<b>Migrant background</b>				
<i>yes</i>	(Ref.)		(Ref.)	
no	1.544	***	1.253	***
<b>Federal State</b>				
<i>Vienna</i>	(Ref.)		(Ref.)	
Burgenland	1.074	***	.904	***
Lower Austria	1.105	***	.975	***
Carinthia	.990		1.025	**
Styria	1.024	***	.941	***
Upper Austria	1.205	***	1.061	***
Salzburg	1.007		.966	***
Tyrol	1.097	***	.948	***
Vorarlberg	1.196	***	1.086	***
Sample size pooled (n)	239,920		261,322	
Pseudo R <sup>2</sup> (Nagelkerke)	13%		19%	

Source: Statistics Austria, pooled sample of 12 microcensus quarters 2005-07, estimation: IHS.

\*\*\*/\*\*/\* statistically significant at the 99%/95%/90%-CI.

**Table 3: Factors explaining participation in non-formal vocational training, Austrian working people aged 25-64, 2005-07 (only estimates of firm related variables are displayed)**

	Males		Females	
	<i>Exp(B)</i> <i>odds ratio</i>	<i>Sig.</i>	<i>Exp(B)</i> <i>odds ratio</i>	<i>Sig.</i>
Full time	1.012		1.095	***
<b>Number of employees</b>				
<i>Up to 10</i>	(Ref)		(Ref)	
More than 10	1.387	***	1.218	***
unidentified	1.320	***	1.234	***
<b>Work contract</b>				
<i>permanent</i>	(Ref)		(Ref)	
Limited up to 1 year	0.896	***	0.854	***
Limited up to 3 years	1.149	***	1.245	***
Limited but more than 3 years	1.015		0.905	***
unknown	1.216	***	1.244	***
<b>Time in the firm</b>				
<i>Up to 1 year</i>	(Ref)		(Ref)	
up to 3 years	0.966	***	0.890	***
up to 6 years	0.896	***	0.847	***
more than 6 years	0.947	***	0.751	***
<b>Education adequate occupation</b>				
<i>Adequately occupied</i>	(Ref)		(Ref)	
underqualified	1.399	***	1.523	***
overqualified	0.714	***	0.666	***
Not assigned	0.843	***	0.774	***
Sample size pooled (n)	131,770		111,381	
Pseudo R <sup>2</sup> (Nagelkerke)	9%		13%	

The model controls for educational attainment, field of education, occupational status, age, education status, region  
Source: Statistics Austria, pooled sample of 12 microcensus quarters 2005-07, estimation: IHS.

\*\*\*/\*\*/\* statistically significant at the 99%/95%/90%-CI.