FINANCING VOCATIONAL EDUCATION AND TRAINING IN THE EU NEW MEMBER STATES AND CANDIDATE COUNTRIES

RECENT TRENDS AND CHALLENGES

etf
SHARING EXPERTISE IN TRAINING

THE EUROPEAN TRAINING FOUNDATION (ETF) IS THE EUROPEAN UNION'S CENTRE OF EXPERTISE SUPPORTING VOCATIONAL EDUCATION AND TRAINING REFORM IN THIRD COUNTRIES IN THE CONTEXT OF THE EU EXTERNAL RELATIONS PROGRAMMES

HOW TO CONTACT US

Further information on our activities, calls for tender and job opportunities can be found on our web site: www.etf.eu.int

For any additional information please contact:

External Communication Unit
European Training Foundation
Villa Gualino
Viale Settimio Severo 65
I – 10133 Torino
T +39 011 630 2222
F +39 011 630 2200
E info@etf.eu.int

FINANCING VOCATIONAL EDUCATION AND TRAINING IN THE EU NEW MEMBER STATES AND CANDIDATE COUNTRIES

RECENT TRENDS AND CHALLENGES

Prepared by Jean-Raymond Masson

European Training Foundation, June 2005

Europe Direct is a service to help you find answers to your questions about the European Union

Freephone number (*):

00 800 6 7 8 9 10 11

(*) Certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (http://europa.eu.int).

Cataloguing data can be found at the end of this publication.

Luxembourg: Office for Official Publications of the European Communities, 2006

ISBN 92-9157-455-4

© European Communities, 2006
Reproduction is authorised provided the source is acknowledged.

Printed in Italy

PRINTED ON WHITE CHLORINE-FREE PAPER

CONTENTS

1. INTRODUCTION **5**

2. EXECUTIVE SUMMARY **7**

2.1 Priorities in public expenditure on education 7

2.2 Resources for vocational and technical education 8

2.3 Resources for adult learning and labour market training 10

2.4 Main conclusions 10

3. INVESTMENT IN EDUCATION: GENERAL SITUATION AND TRENDS **13**

3.1 Current situation 13

3.2 Trends in public expenditure on education since 1995 in the EU new Member States and candidate countries 14

3.3 The case of tertiary education 15

3.4 Consequences of funding priorities for efficiency and equity 18

3.5 Impact of investment in education 21

3.6 New trends, objectives and targets 22

3.7 Structural and pre-accession funds 24

4. INITIAL VOCATIONAL EDUCATION AND TRAINING **27**

4.1 Overview 27

4.2 Legal and policy frameworks for VET funding, and funding allocation 29

4.3 Resources for initial VET 32

4.4 Other measures aimed at better efficiency in funding 37

4.5 Specific measures aimed at promoting equity in funding 38

4.6 Use of resources 39

5. ADULT LEARNING **43**

5.1 Overview 43

5.2 Adult education 44

5.3 In-service training 45

5.4 Labour market training 47

5.5 Other incentives and measures aimed at increasing efficiency 48

6. CONCLUSIONS **51**

6.1 The Maastricht Communiqué as a framework 51

6.2 The need for improvement, particularly in the candidate countries 51

6.3 Questions about priorities 53

6.4 The need for policies aimed at more and better targeted funding for VET 54

6.5 The need to implement the Copenhagen–Maastricht process 54

ANNEXES **57**

Annex 1: Importance of education as part of all public expenditure 58

Annex 2: Preparation for the European Social Fund in Lithuania 58

Annex 3: Preparation for the European Social Fund in Estonia 59

Annex 4: Preparation for the European Social Fund in Slovakia 60

Annex 5: Balance between public and private VET schools 61

Annex 6: Apprenticeship 61

Annex 7: Approaches to funding allocation 62

Annex 8: Funding for VET students 64

Annex 9: Tax deduction systems 65

Annex 10: National training funds 65

Annex 11: Other resources 66

Annex 12: Impact of investment in education 67

ACRONYMS **69**

REFERENCES **71**

1. INTRODUCTION

1

The main purpose of this document is to give a synthesis of the national reports on the financing of vocational education and training (VET) prepared by the National Observatories for the European Training Foundation (ETF) in 2002/03. These reports were done in seven of the EU new Member States (NMS) – Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia and Cyprus – and in the four candidate countries (CC), Bulgaria, Romania, Turkey and Croatia.

In order to provide a more comprehensive and up-to-date overview, and in the light of the Maastricht Communiqué [27], which insists on the need to invest in VET, particularly with the aim of 'focusing on the image and attractiveness of the vocational route, in order to increase participation in VET', it was decided to enrich the analysis with more recent work and the results of studies on investment in education and training and their impact on the systems.

Accordingly, this document makes use of the most recent data and indicators produced by Eurostat and the OECD on education and training. It also takes into account the Maastricht Study [25], the Cedefop synthesis of the Maastricht Study [5], the candidate countries' contributions to the Maastricht Study [18][19][20], the results of the work done by the Working Group set up by the European Commission, 'Making the best use of resources' [9][10] as part of the Education and Training 2010 work programme, and the third follow-up report (2005) of the Framework of Actions for the Lifelong Development of Competencies and Qualifications set up by the EU social partners [23].

It makes substantial reference to the European Commission's 2003 progress report on lifelong learning [11] and to studies published by the ETF, in particular the monographs completed in 2002 on then acceding and candidate countries, as well as the report *Thirteen years of cooperation*

and reforms in vocational education and training in the acceding and candidate countries (the ETF 13 Years Report) and its addendum [16][17][22]. Thus, it aims to contribute to the follow-up of the Maastricht Conference of 15 December 2004 and the implementation of the Maastricht Communiqué particularly in the candidate countries, as well as to the process of dissemination of the main results and lessons of the Copenhagen–Maastricht process in the Western Balkans.

Since information on Croatia comes only from the national report [24], with very few quantitative indicators, less reference is made to Croatia in this document than to other countries. When speaking about the candidate countries, the analysis refers essentially to Bulgaria, Romania and Turkey.

After the executive summary (section 2), the section 3 of the document provides an overview of investment in education and training in the countries concerned and analyses the priorities and trends so far. Subsequent sections focus on the initial vocational education and training systems (section 4) and the adult learning systems (section 5), by describing the situation, identifying the most recent trends and national initiatives in funding, and highlighting the main issues and challenges. Finally (section 6), the paper seeks to draw conclusions and analyses how the Copenhagen–Maastricht process and messages can help to address issues and challenges.

2. EXECUTIVE SUMMARY

2

2.1 PRIORITIES IN PUBLIC EXPENDITURE ON EDUCATION

On average, public expenditure on education in the ten new Member States is at the same level as in the EU old Member States (EU-15), but there is a wide variation between countries, ranging from 4% of GDP in Slovakia to 6.3% in Cyprus in 2001. On the other hand, the candidate countries spend substantially less on education than the Member States.

Since 1995, public expenditure on education has decreased slightly in Estonia and in the Czech Republic and markedly in Latvia and Slovakia, whereas it has increased slightly in Hungary and substantially in Poland, Cyprus, Lithuania and Turkey and has been fairly stable in Romania and Bulgaria.

In this context, increased funding went to tertiary education in accordance with the high priority it received from governments and individuals since the beginning of the transition in almost all countries, whereas secondary education received lower investment than in the EU-15, though candidate countries were nevertheless extending the duration of compulsory education[1]. As analysed in ETF reports [16][17], this trend in favour of tertiary education was encouraged by governments, by the substantial support given by the EU in particular through the Tempus programme, and also by the high unemployment rate of school leavers after secondary education.

[1] In Turkey compulsory education was increased from five to eight years in 1997 with the intention of reaching 12 years in 2004; in Romania the duration was increased from eight to ten years in 2003; and in Bulgaria compulsory primary and secondary education were extended from 11 to 12 years in 2000.

This funding priority in favour of tertiary education can be analysed both in global terms (global funding for tertiary education in comparison with global funding for primary or secondary education) and in individual terms (funding per student by education level in comparison with EU or OECD averages).

According to EU and OECD indicators, the expenditure per pupil in relation to GDP per capita in 2000 was on average similar in the EU and the NMS for the primary (including lower secondary) and tertiary levels, but markedly lower for the upper secondary level. The indicators on expenditure per student include public and private expenditure and hence give an indication of global priorities, including the priorities of both governments and individuals. As a consequence, by 2001 participation in tertiary education among the 20–29 age group in the acceding and candidate countries had reached a similar level on average as that in the EU-15 (25.5% versus 26%) and was around 30% in Poland, Estonia, Latvia and Slovenia [15].

These different priorities have already produced different achievements. Interesting indicators are: the participation in tertiary education; the contribution tertiary education is making to the EU benchmark on enrolment in mathematics, science and technology (MST); the rate of early school drop-out; the participation of adults in lifelong learning; the changes in performance in qualitative assessment in general education; and the increase in teachers' salaries.

More has been achieved in countries where in-depth reforms have been accompanied by the provision of substantial public resources by governments, expressing in concrete terms the level of priority given to the different components of the education system.

At present, governments continue to prioritise the development of tertiary education. They are also preparing global strategies for lifelong learning, including increasing teachers' salaries and promoting better efficiency in funding. They are making use of the structural funds and the pre-accession funds. The most ambitious plans for the use of the European Social Fund (ESF) are in Slovenia and Hungary, where they will consolidate achievements already made through national resources, and in Slovakia, where they could compensate for the limited public funding given by the government to education.

Therefore, we can wonder whether this high funding priority for tertiary education should not be now combined with a similarly high funding priority for vocational education and training (VET). Indeed, the following points should be considered.

(1) Substantial efforts have already been made by both governments and individuals to increase participation in tertiary education, and much has been achieved in many countries where participation already exceeds the EU average even if the gap in enrolment in mathematics, science and technology is still high.
(2) Most of these countries are still a long way from the 'technological frontier' and therefore should put greater effort into medium-level qualifications.
(3) It is obviously easier to attract private funds to tertiary education, since motivation to attain this level is very strong in large segments of the population.
(4) Vocational education and training systems suffer from the length and complexity of reform processes and the lack of adequate resources, although they are on the frontline of the preparation of adequate medium-level qualifications for the knowledge-based economy.

An important question, therefore, is how fully both the economic efficiency and the equity aspects of the current prioritisation of tertiary education have been considered.

2.2 RESOURCES FOR VOCATIONAL AND TECHNICAL EDUCATION

Since the beginning of the transition, vocational and technical education has undergone big changes in a context of low

priority and low public and private funding. None of the NMS and CC is anywhere near the EU benchmark of 1.5–2% of GDP proposed by Cedefop.

At secondary level, vocational education is becoming more and more technical and pre-vocational, preparing students for further studies after graduation, and less and less vocational, preparing them for entering the labour market after graduation. Thus, preparation for qualifications is moving increasingly from secondary to postsecondary or tertiary education. Overall, vocational and technical streams still make a substantial contribution to upper secondary education but, in contrast to the EU-15, participation in vocational streams is decreasing in all NMS and CC except Romania and represents on average 25% of students, although employment forecasts for 2010 suggest that just under 40% of the net additional jobs would require upper secondary level education. This shift is strongly influenced by the very high unemployment rates of school leavers with medium qualifications, the long and difficult process of adapting qualifications and curricula to the needs of the labour market, and the low attractiveness of the vocational routes in general.

We lack proper information on the situation of vocational and technical programmes in postsecondary and applied tertiary education, since most countries consider these components as part of tertiary education and issues related to them were therefore covered by neither the national reports nor the Maastricht studies. Given the high priority this level receives in most countries, we may assume that postsecondary and tertiary vocational education will develop under better conditions. But this needs further in-depth investigation.

The process of VET funding is moving towards new approaches aimed at greater efficiency. The introduction of per capita funding, the decentralisation to local or regional authorities, and a greater autonomy for schools are the main trends at work in vocational education.

However, the national reports suggest that per capita funding standards given to vocational programmes are often low in comparison to other programmes, although the needs are obviously higher, taking into account the costs of technical equipment for school workshops.

Also, decentralisation is often a way for governments to hand responsibility to regional and local institutions without giving them adequate funding. Thus, although several initiatives have been taken to increase resources for vocational education and improve efficiency in funding, there is evidence that vocational education at secondary level suffers from a lack of resources and parents are often obliged to contribute to the costs.

There is little evidence that measures have been taken to promote equity and to counteract the risks of disparities in quality and performance coming from increased competition between schools in the decentralisation context. Such disparities are very marked in the NMS and CC, more so than in the old EU-15, as it has been noted in previous ETF reports and in the European Commission's reports on cohesion.

Furthermore, the lack of public funding is not compensated by increases in funding from enterprises. In most of the countries, businesses do not invest much in education. Apprenticeship is very underdeveloped in comparison to the situation in the EU-15 and is even decreasing, as students prefer studying in a school-based system in the hope of entering tertiary education. More generally, the cooperation between businesses and schools is limited and, as a result, students' practical training suffers from poor-quality school workshops with obsolete technical equipment.

However, recent increases in public funding for education have been used to raise teachers' salaries and develop teacher training, and it can be assumed that vocational education is benefiting from this.

2.3 RESOURCES FOR ADULT LEARNING AND LABOUR MARKET TRAINING

The situation is even more difficult in the field of adult learning, mainly because of a lack of interest from businesses (particularly because there is a large workforce available, which can substitute for workers in need of training), and limited public resources for labour market training. However, a high individual motivation is still widespread throughout the population and compensates to some extent for the low investment made by the state and the private sector.

The situation is very diverse among the countries, with particularly large differences between Slovenia and Cyprus, on the one hand, where high levels of public funding are combined with substantial private sector investments supported by several state initiatives and relevant incentives, and Romania and Turkey, on the other, where the main resources for adult learning are devoted to labour market training but remain far from meeting the needs. Here also we see a strong correlation between investment in adult learning and participation in lifelong learning as measured by Eurostat.

In general, governments are aware of the need to develop initiatives aimed at increasing investment by companies and individuals in education and training. Numerous initiatives are described in the national reports. Since formal education systems are still predominant in education and training, many initiatives come from the ministries of education and are developed through appropriate legislation. Most frequently they take the form of specific national state-funded programmes aimed at specific target groups, but there are also tax exemption systems for companies and individuals, and the development of training funds based upon compulsory contributions by businesses on the payroll.

The social dialogue being weak and employers poorly motivated in most countries, the social partners are less actively engaged. However, collective agreements involving training in companies or at sector level play an increasing role in some countries [23].

It is clear that the preparation and implementation of national lifelong learning strategies will require more attention and resources from governments and other stakeholders in adult learning. As argued in the 2003 progress report on lifelong learning [11], this process will require a much stronger partnership approach between all stakeholders, but also new funding policies at national level aimed at promoting more public and private funding, redirecting funding to the priority sectors (for instance from adult education to labour market learning), supporting the involvement and contributions of social partners through adequate financial and nonfinancial incentives, and favouring public/private cofunding.

2.4 MAIN CONCLUSIONS

Overall, it appears that the performance of the VET systems, as measured particularly in terms of the attractiveness of VET routes, is still low in the NMS and even more problematic in the CC, with a serious gap between the former and the latter. This is due to the size, complexity and duration of the reforms to be made, but also to a lack of investment and particularly financial investment by governments, as well as by businesses and individuals. Priority has been given – and is still given – to general and tertiary education. As it is functioning now, this trend could be seen as prejudicial to economic efficiency and also to social cohesion and equity.

Numerous initiatives are developing in most countries, with a view to increasing resources for VET and complementing ongoing systemic reforms. However, most of them are too recent for any impact analysis to be possible, and conclusions on their implementation are therefore still rather general. Lifelong learning strategies are in preparation, sometimes with specific objectives assigned to VET. The EU structural funds and pre-accession funds are also being used to address some major deficiencies of the systems.

In that context, there is a need to consider seriously the orientations given in the Joint Interim Report [12] and to take on board the messages and priorities of the Maastricht Communiqué. A more active contribution to the open method of coordination on VET in Europe initiated in Copenhagen is needed. It implies drawing up comprehensive lifelong learning strategies, clearly identifying the contribution of VET, implementing systemic reforms and allocating adequate resources to them. This would then improve the VET systems and would make a concrete contribution to the Lisbon strategy. The Western Balkan countries could also benefit from the lessons drawn from the NMS and the CC and from the dissemination of the Copenhagen messages when continuing to reform their VET systems.

3. INVESTMENT IN EDUCATION: GENERAL SITUATION AND TRENDS

3

3.1 CURRENT SITUATION

Investment in education is very variable among the new Member States and also, though to a lesser extent, among the candidate countries. According to the most recent Eurostat statistics, public investment in education in 2002 was on average at the same level in the EU-15 and in the ten NMS, and markedly lower in the four CC. Among the NMS, the situation varied a lot, with seven countries (Cyprus, Slovenia, Lithuania, Latvia, Estonia, Poland and Hungary) having around 5.5% of GDP or above devoted to education and the other countries (Slovakia, Czech Republic and Malta) around 4.5%. Among the CC, only Croatia reached more than 4% of GDP, while in the other countries the figure was about 3.5%.

As regards private funding, 'expenditure on education in 2000 exceeded the European Union level only in Cyprus and Latvia. In the other countries, measured as a percentage of GDP, the figures vary from 0.15% in Slovakia to 0.59% in Hungary' ([17] section 4.1). Recent data from Eurostat also give figures for 2001 (table 2) and show some stability at a modest level. Nevertheless, expenditure in Malta and Bulgaria in 2001 was higher than the EU average, while Cyprus showed a substantial drop. Since private funding refers to expenditure funded by private sources, i.e. households and other private

Table 1: Public expenditure on education as a percentage of GDP

	EU	NMS	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TK	HR
2000	5.0	5.0	5.6	4.0	5.6	4.5	5.4	5.7	4.6	5.0	4.2		4.4	2.9	3.5	
2001	5.1	5.1	6.3	4.2	5.5	5.2	5.7	5.9	4.5	5.6	4.0	6.1	3.5	3.3	3.7	4.5*
2002	5.2	5.2	6.8	4.4	5.7	5.5	5.8	5.9	4.5	5.6	4.4	6.0	3.6	3.5	3.6	4.3

*Source: Eurostat NewCronos, 17.5.2005 — * ETF sources*

Table 2: Private expenditure on education as a percentage of GDP

	EU	CY	CZ	HU	LV	MT	SK	RO	BG	TK
2000	0.6	1.8	0.4	0.6	0.8	0.5	0.2	0.3		0.1
2001	0.6	1.3	0.4	0.6	0.7	0.9	0.1	0.2	0.9	0.1

Source: Eurostat (cited in [14])

entities, it would be interesting to identify patterns according to countries showing the relative importance of these two sources. However, the relevant data on the NMS and the CC are scarce and OECD data provide no evidence of major discrepancies between them and the EU-15.

The national reports confirm the low involvement of enterprises in financing education. As we will see below when analysing the scant development of apprenticeship schemes and the difficulties experienced by VET schools in cooperating with businesses on work-based learning and practical internships, there is evidence that private funding for education is still underdeveloped and is particularly low in secondary education, with the exception of Cyprus and Latvia.

The case of Hungary is interesting, since private funding for education there is below the EU average although the Vocational Training Fund, financed by a 1.5% levy on the payroll, aims to finance both adult education and initial vocational education. As reported below (section 4.3.2), funding from households can be quite substantial in some countries, but it covers two different situations. In countries such as Turkey or Bulgaria, household funds aim to compensate for the lack of public financing even for compulsory education, but the situation is different for tertiary education in most countries, where individuals and families invest substantially and hence do contribute to the development of a large sector of private training providers.

3.2 TRENDS IN PUBLIC EXPENDITURE ON EDUCATION SINCE 1995 IN THE EU NEW MEMBER STATES AND CANDIDATE COUNTRIES

Trends between 1995 and 2002 are given in table 3. On average, investment in education was stable and evolved in a homogeneous pattern in the EU-15 and the NMS. However, among the latter, the figures show a limited decrease overall in Estonia and the Czech Republic and a more substantial decrease in Latvia and Slovakia, in contrast to a moderate increase in Hungary and Poland and a more marked increase in Cyprus and Lithuania during this period. Among the CC, public expenditure remained low in Romania and Bulgaria and increased substantially in Turkey, but was still below 4% of GDP in 2002.

These trends should be viewed in relation to the demographic changes affecting the countries, which have also been diverse. According to the Maastricht Study, the Czech Republic was the NMS with the highest decline in the 0–19 age group between 1985 and 2003 (-8% versus -6% in Poland and -4% in Latvia). The ETF 13 Years Report made similar observations, identifying the Czech Republic and Hungary as the countries most affected by a decrease in the 15–24 age group between 1997 and 2000, while Slovenia, Estonia, Lithuania, Bulgaria and Romania

Table 3: Public expenditure on education as a percentage of GDP in 1995–2002

	EU-15	NMS	CZ	CY	EE	LV	LT	HU	MT	PL	SK	BG	RO	TK	HR
2002	5.2	5.2	4.4	6.8	5.7	5.8	5.9	5.5	4.5	5.6	4.4	3.6	3.5	3.6	4.3
2001	5.1	5.1	4.2	6.3	5.5	5.7	5.9	5.2	4.5	5.6	4.0	3.5	3.3	3.7	
1999	5.0		4.1	5.7	6.1	5.8	6.1	4.7	4.4	4.9	4.4	3.7	3.4	3.1	
1997	5.1		4.4	5.7	5.9	5.2	5.4	4.6		4.8	4.8	2.6		2.9	
1995	5.2	5.2	4.6	4.8	5.8	6.3	5.1	5.4		5.1	5.0	3.4		2.4	

Source: Eurostat NewCronos, 17.5.2005

exhibited a shallower decline and Latvia, Poland, Malta, Cyprus and Turkey showed a net increase in this age group.

However, the figures do not give any evidence of correlation between demography and public funding in the countries concerned, since Lithuania and Estonia, with comparable negative demographic trends, show opposite trends in funding, while Latvia and Poland also show opposite trends in funding together with comparable positive demographic trends. Clearly, other factors were more important, first among them the policy priorities given to education in general and to its different components in particular.

There are no comparable figures for private funding in 1995 and 2001 in any of the countries. However, OECD statistics show a decrease in the Czech Republic from 0.7 to 0.4% of GDP, whereas the levels remained stable in Hungary at 0.6% and in Slovakia at 0.1% [38].

The most recent figures confirm these trends and show some changes. Table 1 above showed a marked increase from 2000 to 2002 in public expenditure on education in Cyprus, Hungary, Poland and Romania, a smaller increase in the Czech Republic, Latvia and Slovakia, and a considerable drop in Bulgaria[2], while other countries showed moderate increases or stability.

These findings are confirmed by the national reports and by recent national statistics regarding central government expenditure on education and training ([9] and annex 1). These statistics show a recent increase since 2000 in public spending for education by central governments in Cyprus, Hungary and Romania, but a certain decrease in Bulgaria and stability in Latvia, Lithuania, Poland and Slovenia. As we will see below, these increases can be explained by recent substantial rises in teachers' salaries and a higher priority for tertiary education as well as by extending the duration of compulsory education in a number of countries, and demographic factors in addition in Turkey.

3.3 THE CASE OF TERTIARY EDUCATION

As the ETF reports have indicated, priority in education funding went to general and higher education in the context of the reforms in education and training carried out since the beginning of the transition. This prioritisation was the result of governments' choices, supported by EU technical assistance. It was based upon consideration of the countries' lower educational attainments at higher qualification levels than in the EU, and also upon the intense interest in education and training triggered by the collapse of the former system.

Thus, the new social demand for education has been directed towards general education and in particular higher education ([16] sections 2.3 and 7.2). As a consequence, participation in tertiary education rose rapidly: between 1995 and 1999 Poland and Hungary had the highest percentage increase in enrolments in tertiary education – more than 80% – of all OECD countries. Other sources indicate that trends were similar in the Baltic States, Romania and Slovenia. This trend continued and in 2001, the share of 20–29 year-olds in tertiary education in the acceding and candidate countries reached on average a level similar to that in the EU-15 (25.5% versus 26%). The figure was even higher than 30% in Latvia, Estonia, Poland and Slovenia, but still markedly lower than the EU-15 average, at about 15%, in the Czech Republic, Slovakia and Romania.

More recent data confirm and reinforce this message [14]. Looking at progress against the EU benchmark on the percentage of the population aged 20–24 who have completed at least upper secondary education, the 2005 report shows particularly high completion rates in the NMS. While the average rate in the EU has

[2] However, recent information from national sources gathered as part of the preparation of the Maastricht Study indicates a partial recovery in 2002 (3.8%) over 2001 (3.6%).

Table 4: Percentage of 20–29 age group in tertiary education in 2001

EU-15	NMS & CC	BG	CZ	EE	CY	LV	LT	HU	PL	RO	SI	SK
26.0	25.5	22.7	15.5	30.3	14.4	31.7	25.5	20.6	30.6	15.9	30.5	16.1

Source: Eurostat, Statistics in focus, Science and Technology, Theme 9, 9/2003

Table 5: Unemployment rate by educational attainment for 15–39 year-olds in 2002 and ratio between the rates for upper secondary and tertiary education levels

	CY	CZ	EE*	HU	LV	LT	PL	SK	SL	BG	RO	EU-15
Upper secondary education	3.4	8.0	15.3	6.3	14.1	14.3	26.0	21.4	6.6	20.0	11.6	8.4
Tertiary education	3.2	2.3	8.6	2.5		8.4	9.4	5.2	3.9	10.3	5.3	5.9
U/sec: tertiary ratio	1.1	3.5	1.8	2.5		1.7	2.8	4.1	1.7	1.9	2.2	1.4

*Source: Labour Force Survey, Eurostat, 2003 — * 2001 data*

been stable since 2002 (76.6% in 2002 versus 76.4% in 2004), it has kept rising markedly in Latvia from 73% to 77%, in Lithuania from 79% to 86% and in Malta from 39% to 48%[3].

This increased participation in tertiary education was, and still is, strongly impelled by the high unemployment rate among school leavers after secondary education, and particularly by the substantial gap between this rate (at ISCED 3–4 qualification level) and that of graduates from tertiary education (at ISCED 5–6 level), which was much larger than the corresponding gap in the EU-15 ([16] section 4.2.6; [17] section 3.7). The chance of finding a job was considerably increased for people attaining a high qualification level, particularly in the Czech Republic, Hungary, Poland and Romania.

This trend was supported by public and private investments. If we look again at the trends from 1995 to 2001, the OECD figures show an increase in public expenditure on tertiary education in Hungary, Poland, Slovakia and Turkey, but not in the Czech Republic, whereas public spending on non-tertiary education decreased in Slovakia and Hungary. This trend, combining increasing funding for tertiary education with decreasing funding for non-tertiary education, is rarer in the European OECD countries, occurring only in Spain and Ireland. Conversely, a majority of European OECD countries showed roughly parallel trends in which funding for

Table 6: Expenditure on educational institutions as a percentage of GDP by level of education in 1995 and 2001

	Primary, secondary and post-secondary non-tertiary education				Tertiary education			
	2001			1995	2001			1995
	public	private	total	total	public	private	total	total
Czech Rep.	2.8	0.2	3.1	3.7	0.8	0.1	0.9	1.0
Hungary	2.8	0.2	3.1	3.6	0.9	0.3	1.2	1.0
Poland	4.0			3.9	1.1			0.9
Slovakia	2.6		2.7	3.1	0.8	0.1	0.9	0.8
Turkey	2.5			1.7	1.0		1.1	0.7

Source: OECD, Education at a glance, 2004

[3] On the other hand, the rate has decreased in Cyprus from 85% to 80%, in Hungary from 86% to 83% and in Slovakia from 94% to 91%. It was fairly stable in Bulgaria at 76% and in Romania at 75%. Croatia's rate of 91% was already higher than the EU benchmark of 85%.

Table 7: Total expenditure on education by student by education level in GDP per capita (PPS euros[4])

	EU-25	CY	CZ	HU*	LT	LV	MT	PL*	SL	SK	BG	RO*
ISCED 1	20	23	12	17		23	18	21		12	16	10
ISCED 2–4	27	37	22	19	20	26	25	18	28	17	19	16
ISCED 5–6	39	52	39	44	38	39	40	31	57	49	55	30

*Source: Eurostat, 2001 — * 2000 data*

Table 8: Allocation of the education budget in Lithuania (percentage)

	Vocational schools	Colleges	Universities
1995	7.3	4.4	13.0
1996	7.3	4.7	13.4
1997	7.4	4.7	14.6
1998	6.4	4.3	14.0
1999	6.4	4.4	12.6
2000	6.4	4.5	11.9
2001	5.9	4.1	15.0
2002	5.6	4.3	16.5
2003	5.3	4.3	17.2

Source: Lithuanian Centre for Vocational Education

both tertiary and non-tertiary education rose or fell together.

A more significant trend is revealed by observing expenditure by education level and per student [13][14]. It is important here to note that these figures concern both public and private expenditure, including individuals' contributions to education. We have already noticed that private investments in tertiary education are substantial.

Measured in relation to GDP per inhabitant, these expenditures per student indicate a bias in the acceding and candidate countries toward primary and especially tertiary education at the expense of secondary education. The 2001 data confirm the analysis made by the ETF [17]: eight countries (Cyprus, Malta, Hungary, Latvia, Slovakia, Slovenia, Bulgaria and the Czech Republic[5]) are equal to or above the EU average in terms of expenditure per student in tertiary education, whereas only Cyprus and Slovenia are above the EU average in expenditure per student in secondary education, and three countries (Latvia, Poland and Cyprus) exceed the EU average in their expenditure on primary education.

Indeed, if we consider the ratio between the expenditure on tertiary education and that on secondary education, the former is higher by 44% in the EU-25, but this ratio is equal to or higher than the average in all acceding and candidate countries – 41% in Cyprus, 50% in Latvia, 60% in Malta, 72% in Poland, 77% in the Czech Republic, 88% in Romania, 90% in Lithuania, 104% in Slovenia, climbing as high as 132% in Hungary, 188% in Slovakia and 189% in Bulgaria. Considering that technical and vocational education students make up a significant proportion, if not a majority, of those in secondary education, these observations are an indicator of the lower investment accorded to technical and vocational education in comparison to tertiary education in the NMS and CC. Table 8 shows the situation in Lithuania [34], where the share of the educational budget for vocational schools fell by 27%, while that for universities rose by 32%.

[4] PPS stands for 'purchasing power standard'. The use of PPS euros equalises the purchasing power of the different currencies.

[5] The low figure for Poland must be seen in the context of a high increase in the number of students during the period.

Table 9: Annual expenditure per student as a percentage of GDP per capita

	Primary	Lower secondary	Upper secondary	All secondary	Post-secondary non-tertiary	All tertiary	Tertiary type B	Tertiary type A	All tertiary excluding R&D
Czech Rep.	13	22	25	23	11	37	19	40	
Hungary*	20	18	23	20	32	55	23	56	45
Poland*	22		25		21	35	32	35	28
Slovakia	11	13	22	17		47		47	42
Turkey									65
OECD country mean	20	23	28	26	16	42	28	43	34

*Source: OECD, Education at a glance, 2004 — * Public expenditure only*

OECD data confirm these results. From the data in table 9, we can argue that: investment per student on primary education is close to the OECD average in Poland and Hungary, but markedly lower in the Czech Republic and Slovakia; secondary education suffers from underinvestment compared to the OECD average in the four OECD NMS, particularly at lower secondary level and in Slovakia; and investment in tertiary education is greater than the OECD average in Slovakia, Hungary and especially Turkey[6], in contrast to the Czech Republic and Poland, which invest less. Another notable feature is Hungary's (and to a lesser degree Poland's) high investment in postsecondary non-tertiary education.

Differences can be seen between the trends of global expenditure on tertiary education already established and the more qualitative aspects of spending per student. Poland and Lithuania, for example, which showed some of the highest levels of expenditure on tertiary education, exhibit rather low levels of expenditure per student. On the contrary Slovakia, with a relatively low level of global expenditure on tertiary education, exhibits a high level of expenditure per student at this level.

Thus, these measures demonstrate the growing importance of tertiary education in the total expenditure on education in almost all countries concerned, combined with a higher ratio than the EU average between the levels of spending by student in tertiary education and the levels of spending in secondary education. All this is evidence of a higher priority given to tertiary than to secondary education in all the countries considered, with the possible exception of the Czech Republic.

3.4 CONSEQUENCES OF FUNDING PRIORITIES FOR EFFICIENCY AND EQUITY

Since it has considerable consequences for the financing of VET, at least as far as public resources are concerned, this high priority given to tertiary education and the results already achieved in terms of participation rates have now to be analysed in more detail.

First it could be assumed that they are in line with the Lisbon objectives and the need to develop further research and development. 'Higher education is situated at the crossroads of education, research and innovation [14]. The full spectrum of scientific disciplines, from the "hard" to the "soft", including the economic and social sciences and humanities, are implicated in the success of the knowledge economy, and the issue of increasing recruitment to these studies, but particularly to technological fields, has been emphasised on numerous occasions.' They seem also to be in line with the employment forecasts

[6] In Turkey tertiary education is under the responsibility of the Council for Higher Education, distinct from the Ministry of Education and responding directly to the prime minister [20].

given by Cedefop [4][5], which state that 'by 2010, almost half of the net additional jobs will require people with tertiary level qualifications'.

However, the analysis of the share of mathematics, science and technology in the overall participation reveals a less promising picture [14]. As regards the ratio of students enrolled in mathematics, science and technology in 2002 to all students in tertiary education, only the Czech Republic, Turkey, Slovakia and Bulgaria were above the EU average, while Romania and Lithuania were close to it and the countries which had demonstrated a very high increase in participation in tertiary education (Estonia, Poland, Hungary, Slovenia, Latvia, Malta and Cyprus) were markedly below it.

As regards the ratio of graduates in mathematics, science and technology to all graduates in 2001, the same countries were above the EU average but the proportion had been decreasing since 2000 except in Bulgaria, the Czech Republic and Slovakia, and the number of tertiary graduates in mathematics, science and technology per thousand inhabitants aged 20–29 in 2002 was markedly below the EU average except in Lithuania.

Similar conclusions come from the statistics on graduates at ISCED level 6 (PhD), which showed in 2001 a share of 32% of graduates in science in the EU-15 compared to 19.5% in the NMS and CC [15]. These results are also consistent with the low performance in research and development, as demonstrated in the most recent Joint Interim Report [12][13], showing that public investment in research and development was particularly low – and private investment even lower – in the NMS and the CC, with a significant gap between these countries and the EU-15.

A rapid increase in the numbers of graduates in the NMS, a higher rate than in the EU-15, is noticeable. In 2001, there were on average 40 new graduates per thousand 20–29 year-olds in the EU-15 and 55 in then acceding countries[7] [15]. Bearing in mind the similar level of participation in tertiary education reached in 2001 between the EU-15 and the acceding countries, the difference can be explained by a rapid development of courses of shorter duration in tertiary education in the acceding countries.

This should be seen as a measure of the mushrooming of short courses in management, commerce, accounting, communication, informatics, foreign languages, and the like, which were most often introduced in private institutes and financed through household resources[8] [16][11], and – to a lesser extent – the first initiatives in developing higher vocational courses, inspired by the Bologna process, on the model of the *Fachhochschulen* in Germany, the polytechnics in the United Kingdom, or the *Instituts universitaires de technologie* and the *Sections de techniciens supérieurs* in France.

At this point, it is important to recall the labour market information given above on the rates of unemployment by educational attainment and the considerable gap between the rates measured for secondary and tertiary education. It can be assumed that the quick development of short courses in business management, informatics and foreign languages responded to the development needs of new businesses in the services sector, which grew spectacularly from the beginning of the transition [16][17], while industrial restructuring took much longer, made numerous workers redundant, and took a long time to indicate clear requirements in terms of qualifications and skills to the VET systems.

In that context, it can be said that VET systems experienced a kind of vicious circle. The short-term needs of the labour market, the individuals' requirements and the priorities set up by governments

[7] The highest numbers were in Poland (74), Latvia (63) and Lithuania (52).

[8] 'Some countries refer to a significant funding of training courses by individuals (in Latvia 25% of fees in adult education are paid by participants, and this ratio has increased in the last two years, in a context where participation in adult education has increased sharply from 100,000 in 1996 to 210,000 in 2002).'

channelled a substantial part of public and private resources towards tertiary education to the detriment of secondary education and particularly vocational education, while the systemic transformation of vocational pathways also required strong political commitment and adequate resources.

Thus, curriculum reform was usually not accompanied by sufficient resources, particularly in terms of new technical equipment for practical learning. Without this necessary support, VET reforms were too slow and participation in vocational pathways decreased substantially (see section 4). Hence, vocational school leavers were not well prepared and most of them registered at labour offices, underlining the need and reinforcing the argument for students to remain longer in education whenever possible and consequently for additional public and private resources to be channelled towards tertiary education.

Bearing in mind the 2010 employment forecasts [4][5] this vicious circle must be broken. Indeed, consideration has to be given to the 50% of net additional jobs requiring tertiary-level qualifications, but also to the 'just under 40% which will require upper secondary level, given that only 15% of jobs will be for those with basic schooling'. This means that vocational education still has a considerable role to play at secondary level, by contributing to school attractiveness as underlined by the Maastricht Study, by preparing large numbers of students with adequate qualifications for successful entry into the labour market after graduation, and also by preparing some of them for further studies at tertiary level, particularly in two to three years of vocational or technical higher education. Such a role calls for governments to reinforce the priority they give to vocational education, in order to counteract the vicious circle which still affects it.

Additional issues arise from the level of technological development in the NMS and CC. Interesting indicators for this are expenditure on research and development, and productivity indicators, which are proposed as structural indicators for monitoring progress towards the Lisbon objectives. In 2002 the productivity per worker in the NMS and CC was markedly below the EU average in all acceding and candidate countries[9], all this leaving the NMS and even more the CC much further than the EU-15 from the 'technological frontier' introduced in the endogenous growth theory to measure gaps in productivity and technological development with the more advanced countries in the world [1][2]. According to this theory,

> there is a threshold of development below which stimulation of the growth needs to invest in secondary education, and above which it would be better to invest in tertiary education; econometric data from OECD estimate this threshold at 24% below the frontier, which is approximately the level where France is nowadays.

The theory insists on the key role of secondary education in copying and disseminating technologies and enabling less advanced countries to catch up with more advanced ones, – as Japan did after the second world war, or as China is doing now even more intensively, – and also on the key role of higher education in developing new technologies and competing with the leading countries in the world, a role now assigned to EU countries in general in the framework of the Lisbon objectives.

According to this reasoning, the authors say, France should invest much more in tertiary education. Similarly, the progress report of the European Commission Working Group on 'Making the best use of resources' [9] argues that:

> the necessary level and type of investment and their consequent impact on efficiency depend on the development level of the country as defined by its proximity to the technology frontier (i.e. relatively to the technologically most advanced countries). Countries far from the frontier should focus on primary and secondary education

[9] Productivity index per worker was 28 in Romania, 30 in Bulgaria, 35 in Latvia and Turkey, 40 in Lithuania and Estonia, 50 in Poland, 55 in the Czech Republic and Slovakia, 64 in Hungary, 71 in Slovenia and 74 in Cyprus, compared to 100 for the EU average. See [16] section 4.2.

(imitation process) whereas countries close to the frontier should invest primarily in higher education (innovation process).

Overall, it can now be assumed that public policies in funding education and training could improve in terms of efficiency and equity. Better efficiency is necessary because the priority accorded to tertiary education until now has not left adequate resources for vocational education at secondary level, where numerous qualifications would develop in the context of economic developments, and has not sufficiently prioritised mathematics, science and technology studies at tertiary level, resulting in a serious gap in terms of productivity and innovation with the rest of the EU.

Better equity is required because public funding until now has continued to support the tertiary level, draining the bulk of resources from households, while private funding for secondary education is scarce. Following these views, it would be advisable for the NMS and CC to consider finding a better balance in funding between VET and tertiary education, as well as between mathematics, science and technology and other fields at tertiary level.

These lessons are even more crucial for the CC than for the NMS, since they have implemented or planned substantial increases in the duration of compulsory education (section 2.1 and footnote 2). Such increases would need substantial additional public resources for secondary education. Without such resources, there is a risk that quality may deteriorate and equity and preparation for further studies may be compromised.

3.5 IMPACT OF INVESTMENT IN EDUCATION

It is clear from the previous sections of this paper that investment in education has been variable among countries and education levels, and at different times. At the same time, in-depth reforms were undertaken concerning different levels and components of education and training systems, but at varying paces and intensities [16][17]. In this section, we would like to underline some results and raise some issues concerning the role played by public expenditure in the achievements so far, as an integrated part of the global reforms.

This paper has already discussed the participation in tertiary education (section 2.3) and has drawn the correlation between these achievements and the levels of public investment in tertiary education. It has also made clear the recent and substantial increase of teachers' salaries in some countries and the role of public funding in this endeavour.

Similar conclusions were drawn in ETF reports [16][17] when analysing the results of the TIMSS study [28] and the progress made between 1995 and 1999 in the countries studied (annex 12). The best progress in this respect was achieved in Lithuania, Latvia, Hungary and Cyprus, for the most part countries with a level of public expenditure on education higher than the EU average[10], and the least progress in the Czech Republic and Bulgaria, where public expenditure on education was below the EU average.

The recent results of PISA 2003 [39] should also be taken into consideration. Unfortunately, they deal with only four NMS (Czech Republic, Hungary, Latvia and Poland), but at a first glance, the results are less convincing. However, the best progress is seen in Latvia, while good progress is noted in the Czech Republic and Poland. In Hungary, there are no statistically significant differences between 2003 and 2000.

The latest results from TIMSS [28] are more interesting since they involve eight NMS and CC (Hungary, Slovakia, Latvia, Lithuania, Slovenia, Bulgaria, Romania and Cyprus) and give additional measures taken in 2003.

[10] Hungary is an exception, as it reached 5% of GDP for education only after 2000.

Some NMS continue to produce very good results. Estonia ranks third in mathematics among the 14 European countries studied in the survey, Hungary fourth, Latvia fifth and Slovakia sixth, while Bulgaria, Romania and Cyprus are at the bottom. In science, Hungary ranks first, Slovenia fourth, Lithuania fifth and Slovakia sixth; again, Bulgaria, Romania and Cyprus are at the bottom. The highest progress between 1999 and 2003 is registered by Lithuania in mathematics and by Lithuania and Latvia in science; these are countries where public expenditure on education has been among the highest since 1995.

During the same period, performance was deteriorating sharply in Slovakia, Bulgaria and Cyprus both in mathematics and science, very much in line with the decrease in public expenditure on education in Slovakia since 1995 and its persistent low level in Bulgaria. On the other hand, the worsening performance of Cyprus in a context of increased public funding for education seems to contradict this trend, since the funding increase started in 1997 and was reinforced in 2001, and affected all education levels (see annex 12).

However, it is clear that using the percentage of GDP represented by the public expenditure on education is a very rough measure of the investment in education. As we have noted above, demographic considerations need to be taken into serious consideration, as well as the investment per student and by level of education. We should also take into account the absolute figures given by surveys, not only the differences between the results of different surveys. Finally, increases in public expenditure on education should not be analysed in isolation from the qualitative reforms undertaken by education systems.

As previous ETF reports [16][17] have demonstrated, both aspects had to go together, since ambitious systemic reforms need resources and additional resources provided without substantial reform would be wasted. Hence, a multivariate approach would be necessary, and there are important subjects for further research. Nevertheless, we think that there is some convergent statistical evidence in the NMS of the positive impact of increased public expenditure on the performance of their education systems.

However, it should be underlined at this stage that the indicators provided above concern general education, mainly at lower secondary level, and higher education, not vocational education. Participation in vocational routes and the global performance of systems did not benefit from the high level of funding for education in countries where this existed or from recent increases in funding in other countries. Participation in vocational pathways is declining because of many factors, including the lack of attractiveness of such routes and the poor qualification of vocational education graduates at secondary level. Participation in adult learning is also insufficient in most countries, mainly because of the lack of both public and private funding.

3.6 NEW TRENDS, OBJECTIVES AND TARGETS

Investment in education and training is now high on policy agendas in all the countries. This has been stimulated by the Lisbon agenda, which expresses the EU aim to become the most dynamic knowledge-based economy in the world by 2010, specifically through the Lifelong Learning, Bologna, Copenhagen and Education and Training 2010 processes and more recently in the context of the Maastricht conference and Communiqué. According to the Joint Interim Report [12],

> there is an urgent need to invest more, and more efficiently, in human resources. This involves a higher level of public sector investment in key areas for the knowledge society and, where appropriate, a higher level of private investment, particularly in higher education, adult education and continuing vocational training.

The Maastricht Study similarly emphasises:

> increased levels of expenditure will be required for VET if it is to play its part in achieving the Lisbon goal. This has implications for governments and the public sector, work organisations and the social partners and for individuals.

Nowadays, all countries are preparing lifelong learning strategies with a view to reaching the targets and addressing the challenges identified in the Joint Interim Report. Unfortunately, these strategies have not been published yet. However, it is possible to underline some trends emerging from previous policy documents.

For instance, the Millennium plan in Slovakia has set an objective of 5% of GDP for public education for 2004, to increase to 6% by 2010. Recent amendments to the education law in Romania envisage an increase in the education budget to 6% of GDP by 2007. In Turkey, the 16th National Education Council decided in 1999 that the portion allocated to education from public resources should be at least 10% of GNP and 25% of the consolidated budget in the period 2000–10 and that the share of VET should be increased. In the Czech Republic, there is still a debate among ministries on setting an objective of 6% of GDP for public expenditure on education. In Lithuania, however, a 2002 law has abolished the objective of 6.5% of GDP for public expenditure on education.

Objectives and targets are thus tending to become more precise and focused. Beyond the general objective of implementing lifelong learning, they most often involve increasing teachers' salaries[11], developing tertiary education and increasing efficiency in funding. Turkey still has the objective of increasing the duration of compulsory education from 8 to 12 years. Lithuania is going to allocate more funds to quality in education. Poland is upgrading teachers' remuneration and career development. Slovakia intends to facilitate integration in basic and secondary education for socially disadvantaged pupils, predominantly Roma.

Other objectives are based on outputs, as reported in the 2003 progress report on Lifelong Learning.

> However, some countries have also set up quantitative targets, but without reference to the EU benchmarks or to 2010: Lithuania, for example, has set targets for 2012 stipulating that at least 95% of schoolchildren should acquire basic education, that the share of early school leavers/drop-outs does not exceed 9%, that more than 80% of 25–29 year-olds gain at least secondary education, and that at least 85% of the working age population have real access to information and communication technologies (ICT) and ICT skills. Poland's targets arise from the JAP process, although they were not mentioned in the report12. Among the CC, Turkey's schooling targets as part of its eighth Five-Year Development Plan ending in 2005 are 25% in pre-school education, 100% in primary education, 75% in secondary education and 37.3% in higher education. Cyprus has also set the goal of becoming a regional reference point for lifelong learning by investing at all levels and by giving particular support to the establishment of two new public universities.

More recent information suggests an increased use of the EU benchmarks and indicators. For example, Romania made frequent reference to them in drafting its 2004–06 National Development Plan and is continuing to use them in preparing the plan for 2007–13.

Furthermore, specific objectives are now set up for VET in some countries. Most often, these concern the development of postsecondary or higher vocational education, reduction in the number of drop-outs and early school leavers, increasing the student–teacher ratio (in Estonia from 12.7:1 to 16:1, and also in Slovakia), developing further decentralisation, and giving greater autonomy to schools, particularly in the management of their own resources (Slovenia and Lithuania).

In addition, targets are expressed on the importance of vocational and technical streams as part of secondary education: in Turkey, the objective was to increase this indicator from about 35% in 2002 to 65% by 2005 and in Cyprus the targeted rise was from 12% to 20%. Slovenia intends to increase the participation of adults in formal education, particularly with the support of a tax incentive for individuals. Estonia intends to increase the allocation for the basic student cost in VET by 50% by 2007.

---

[11] In Latvia, the aim is to give at least twice the level of the minimum wage for the lowest level of teacher salary.

[12] The target for 25–64 year-olds participating in education and training is a rise from 3.8% in 2002 to 18–20% in 2006; for 25–30 year-olds with university education, a rise from 16% in 2002 to 18–23% in 2006.

Estonia National Report: Development plan for VET

In 2004, a new development plan for VET funding in 2005–08 was prepared, which was to alter the factors used in calculating the budgets of VET institutions. From 2005, the numbers of students rather than the costs of premises are the most important factors in setting budgets. The main priority will be a substantial increase (50% by 2007) in the allocation for the basic student cost in VET. At the same time, funds will be allocated to those VET institutions not yet in receipt of investments by the European Regional Development Fund (ERDF).

Cyprus is redirecting funds towards learning in SMEs. In Hungary the greater part of the Development and Training Fund is now allocated to employees' training.

Most often, these policies make use of the structural funds and/or pre-accession funds under cofinancing mechanisms involving public resources. In so doing, they are increasingly based on closer coordination between different administrative layers and closer partnerships between the main ministries and the social partners.

3.7 STRUCTURAL AND PRE-ACCESSION FUNDS

In the NMS, important resources for education and training can come from the EU structural funds. It is interesting to examine how far the development of human resources has been considered among the priorities relevant for the structural funds for the period 2004–06. As shown in table 10, Slovakia, Hungary and particularly Slovenia gave a strong priority to human resources development, allocating more than a quarter of their total structural funds to it, whereas Estonia, Latvia and the Czech Republic devoted 20–25% of the total to human resources and Malta, Poland and Lithuania less than 20%.

It is notable that the highest priority to ESF is given in Slovenia and Hungary, where substantial national priority has been given to education – which will help consolidate reforms – but also in Slovakia, where education received a lower priority and ESF will help to compensate for the lack of priority in recent years. The challenge will be to use structural funds (ESF and ERDF) as much as possible to realise national policy goals and reforms, in line with the European Employment Strategy.

Annexes 2, 3 and 4 give examples of the ways education and training priorities have been approached in the ESF preparatory documents in Lithuania, Estonia and Slovakia. Particularly interesting is the Estonian case, where funds will be allocated for the implementation of lifelong learning strategies, as well as for the modernisation of VET and tertiary education infrastructure, through the

Table 10: National commitments for the use of structural funds during 2004–06

	CY	CZ	EE	HU	LV	LT	MT	PL	SI	SK
Total (million euros)	**101**	**2,328**	**618**	**2,847**	**1,036**	**1,366**	**79**	**11,369**	**405**	**1,560**
Infrastructure		16.9	37.2	16.4	32.6	39.4		14.1		40.5
Enterprises		17.9	19.7	21.5	25.0	25.3	60	15.2	57.5	14.5
Human resources (ESF)		21.9	20.5	28.2	21.2	18.3	17	17.8	31.9	27.2
Agriculture	67.5	12.0	18.7	15.9	18.5	15.3	11	16.7	9.9	17.7
Regional dev.		31.2		18.0			10	35.9		
Towns	30.0									
Other	2.5		3.9		2.7	1.7		0.3	0.8	

Source: European Commission, 2004

combined use of ESF and ERDF instruments.

In parallel, the CC have been using Phare, MEDA or CARDS assistance for human resources development in the context of programmes devoted to economic and/or social development and/or cohesion.

In the country strategy paper for Croatia, €18 million of the CARDS allocation for 2002–04, about 10% of the total, is allocated to social cohesion, this amount being devoted to: (1) implementing the curriculum and teacher training reform in VET; (2) achieving a greater match between labour market needs and supply; and (3) promoting the reform of higher education in line with practices in EU Member States.

In Romania, the Phare allocation for 2004–06 is considering human resources development issues through four main objectives: (1) tackling structural unemployment; (2) improving long-term labour market adaptability; (3) actively combating social exclusion; and (4) improving access to education and region-specific technical and vocational education and training. In total, around €60 million each year would be devoted to these objectives through Phare, in addition to €12 million from the national budget.

In Turkey, the EC-MEDA assistance given during 1996–99 to education and training amounted to €165 million; the implementation of this started in 2002. In addition, the 2002 pre-accession assistance is providing support for the implementation of active employment measures, and the 2003 support to economic and social cohesion includes the promotion of local training initiatives.

4. INITIAL VOCATIONAL EDUCATION AND TRAINING

4

4.1 OVERVIEW

Before analysing financing issues, it is important to clarify what is covered by the term 'initial vocational education and training' (IVET) in the NMS and CC. According to the national reports, the situation is diverse and heterogeneous among the countries. The IVET system is school-based. Apprenticeship or dual systems exist in some countries, but they represent a small part of the system and are declining (see below and annex 6).

At secondary level, most countries have three educational streams related to VET:

(1) the basic vocational stream for students in lower secondary education, with a duration of two years and leading to an ISCED 2 qualification; in some countries, such as Romania, it is integrated in continuity within the second stream;
(2) the vocational or secondary vocational stream for students in upper secondary education, with a duration of three to four years and leading to ISCED 3C qualifications, with little or no possibility of progressing to tertiary education; in some countries this stream includes apprenticeship or 'dual' streams;
(3) the secondary technical or secondary specialised stream for students in upper secondary education, with a duration of four to six years and leading to an ISCED 3A qualification and to tertiary education, from which most graduates now continue postsecondary education or applied (or vocational) higher education in colleges or universities.

In addition, some countries are considering:

(4) a postsecondary stream, organised in colleges (Lithuania), high technical institutes (Cyprus) or postsecondary schools (Romania, Bulgaria, Turkey), usually with a duration of two to three years in continuity with secondary vocational education but also open to general education graduates, leading to ISCED 3A, ISCED 4 and sometimes

> ISCED 5B qualification and to further education in universities.

Overall, contrary to the trend in the old Member States, participation in technical or vocational streams is declining to the benefit of general education streams: for example, from 76% of total enrolment in 1995 to 63% in 2002 in Slovenia; from 77% in 1990 to 62% in 2000 in Poland; from 86% in 1989 to 82% in 2001 in Slovakia[13]. Participation in 2000 was around 40% of total enrolment in Latvia, Lithuania and Turkey, around 30% in Estonia and less than 20% in Cyprus and Malta[14]. Romania is an exception, with vocational and technical streams representing more than 80% of participation in all high schools, and participation now growing[15]. This shift towards general education streams would be even larger if some countries had not put a brake on it by introducing entry examinations or by keeping a limited number of classes in secondary general education. This trend is important, as it takes the opposite direction to that observed in the EU-15: as the Maastricht Study notes,

> While in the EU-15, participation is rising between 1999 and 2002, the NMS are faced with a setback. Ten out of the EU-15 have an increase in the share of students enrolled in vocational programmes, while only one country (Germany) is faced with a decrease. Among the NMS, there is only one country that is not faced with a decrease in enrolment (Latvia), whereas seven out of the NMS have a decreasing share of vocational programmes.

At least equally important, however, are the changes between the different vocational and technical streams. Here we see a considerable shift from the basic vocational and the secondary vocational streams to the secondary technical and postsecondary streams. The first stream now plays a very limited role: still representing about 15% of all VET students in Lithuania, it accounts for less than 1% in Bulgaria and seems negligible in most countries. The share of vocational streams in the total dropped from 64% in 1998 to 48% in 2002 in Lithuania; from 42% in 1995 to 38% in 2002 in Slovenia; and from 68% in 1989 to 56% in 2001 in Slovakia. In Romania, the vocational streams lost 45% of their students between 1990 and 2000 while participation in postsecondary schools was tripled; however, the situation has now stabilised at about 37% and participation in vocational streams is now growing. In Bulgaria 75% of the VET students are now in vocational high schools leading in five to six years to postsecondary or tertiary education[16].

Apprenticeship or dual systems represent a very limited part of vocational streams (see annex 6). Even though many VET schools are still called 'apprenticeship' schools, in reality most of them do not have close relationships with enterprises. True apprenticeship, in which the main responsibility for training is given to employers, the costs are paid by them, and training time is shared between a school and the enterprise, exists mainly for craft workers in Turkey, Cyprus or in Poland, although it was recently reintroduced, learning from the German dual model, in Slovenia, Hungary and Croatia. In 2001,

---

[13] The 2002 Social Monitor report [41] also reported considerable drops in participation in vocational/technical streams since 1990 in Romania, Latvia and Lithuania (see [16], section 7.2.5). According to Eurostat NewCronos, using 2000 figures, VET streams represented 80% of the total participation in the Czech Republic, 78% in Slovakia, 70% in Slovenia, 64% in Poland, 44% in Latvia, 43% in Lithuania, 36% in Slovenia, 17% in Malta and 14% in Cyprus (the 11% figure given to Hungary is highly doubtful as it certainly includes only 'vocational' streams, and not 'technical' streams as in all other countries). Using the national reports, we can also evaluate the rates of 56% in Bulgaria, 71% in Croatia and 32% in Turkey.

[14] The Maastricht Study [25] gives slightly different figures owing to some slight differences in the ways vocational routes and dates are taken into account, but the results are fully consistent with data from the national reports: according to the Qualifications and Curriculum Authority, the decrease between 1999 and 2002 was from 56% to 55% of total participation in Bulgaria, from 34% to 32% in Estonia, from 66% to 50% in Hungary, from 33% to 29% in Lithuania, from 47% to 35% in Malta, from 69% to 61% in Poland, from 69% to 64% in Romania, from 75% to 70% in Slovenia, from 80% to 76% in Slovakia, and from 49% to 39% in Turkey. The participation rate was stable in the Czech Republic at 80% and increased in Latvia from 37% to 39%.

[15] From 79.5% in 2001 to 82.4% in 2004, representing an additional 72,000 students to the 565,000 counted in 2002.

[16] 75% in 2003 against 67% in 1999.

apprenticeship accounted for about 12% of all VET students in Poland and in Turkey, little more than 5% in Croatia, around 1% in Cyprus and Slovenia, and even less in Slovakia and Lithuania. There are plans to introduce apprenticeship in Romania and Bulgaria. However, the general trend is declining in all countries, even in Slovenia (after an increase up to 2000) and Croatia. There are two main reasons: students prefer school-based pathways because they provide better opportunities for continuing studies, and businesses are still reluctant to support such training, even when they receive some state support.

Thus, even though statistics still show impressive participation in vocational programmes – such as over 60% in Poland and Slovenia and over 70% in Croatia, the Czech Republic and Slovakia – in reality, most of these students are now in technical streams and do not enter the labour market after graduation, preferring to continue in postsecondary or vocational higher education. It can be estimated that vocational education pathways represent between 10% and 40% of the upper secondary streams in the range of countries considered. This change from vocational to technical education is of course encouraged by the very difficult access to employment available to school leavers with a medium (or ISCED 3) qualification ([16] section 4.2.6). Recent studies use the term 'pre-vocational' to specify these technical streams leading to 'real' vocational courses. However, this creates another difficulty, for it becomes difficult to draw a clear distinction between general and pre-vocational streams.

As a result, a thorough investigation of vocational education systems should now focus also on what happens at postsecondary level and in particular in the new vocational higher education streams, which are organised as two- or three-year courses in colleges, rarely VET schools and more often universities. In Lithuania, Romania, Bulgaria and Turkey, the development of postsecondary education is now seen as a priority, in line with the assessment, made by the Maastricht Study, that 'a measure targeted at young people is to make higher education more accessible for students on VET programmes, together with the creation of occupationally oriented programmes at higher education level' [25]. Taking into account the global statistics given in section 3 of this paper, we can assume that these streams receive more public funds than the secondary vocational programmes and also probably more private resources. However, as these components are considered part of tertiary education and are managed by specific structures, they are not covered even partially by existing reports on VET, which is still largely considered part of secondary education. Accordingly, information is scarce and in-depth investigation is still to be carried out.

The IVET system is also mainly organised through public schools. Private schools account for 5% or less of IVET in Turkey, Bulgaria and Latvia, rising to about 25% in Estonia or in Poland. Also, their share is higher among postsecondary schools than among secondary schools (see annex 5). In most countries, private schools have to be licensed or accredited by the Ministry of Education and then may receive funds in the same way as public schools, but only for teachers salaries and study costs (e.g. in Estonia, Latvia, and Turkey).

4.2 LEGAL AND POLICY FRAMEWORKS FOR VET FUNDING, AND FUNDING ALLOCATION

Public funding for VET in 2002 was still strongly centralised in most countries, even in countries where the education system was already widely decentralised, such as the Baltic States. However, deconcentration

[17] In this paragraph, we make a clear distinction between three processes: deconcentration, decentralisation and school autonomy. Under deconcentration, power remains with the state but is exercised by its local and/or regional representatives; under decentralisation, power has been devolved to local and/or regional elected authorities; under school autonomy, (some) responsibilities have been delegated to schoolteachers, monitored by school councils. Of course, these processes can be combined since they can involve different kinds of responsibility. Some responsibilities (e.g. innovation funds), can remain at state level, whereas others are decentralised (e.g. infrastructure financing), and others given to schools (e.g. appointment of teachers and payment of their salaries).

Table 11: Coefficients by study field in vocational schools[18] in Estonia

Broad study discipline group	Study field	Programme	Coefficient
Education			1.4
Humanities and art			2.6
	Arts	Music and performing arts	3.6
Social sciences, business and law			1.0
Natural and exact sciences			1.0
Technology, production and building			1.0
	Technical fields	Mechanics and metalwork	1.0
		Electrotechnics and energetics	1.1
		Electronics and automation	1.1
		Chemistry and process technology	1.3
	Production and processing	Textiles, garment and footwear manufacturing, leather processing	1.1
	Architecture and building	Architecture and town planning	1.3
Agriculture			1.5
Health and welfare			1.4
Service			1.0
	Transport		1.1
	Environmental protection		1.4

Source: Estonian National Report

mechanisms are at work in many countries and are developing in others[17]. Needs expressed by schools are channelled through local or regional authorities, but decisions are taken at the national level, directly by the Ministry of Education or by other ministries where relevant and implemented by the ministries concerned (e.g. in Cyprus) via dedicated national institutions (e.g. the School Network Administration Office in Estonia) and/or through district and/or municipal authorities. In general, funding is broken down according to different categories of expenditure but with diverse groupings according to the country (salaries, social insurance, scholarships, examinations, catering, utilities, equipment and infrastructure). In Turkey, for instance, there are three different mechanisms under the Ministry of Education, covering salaries and other running costs, heavy equipment (with procurement managed by the Department of Educational Tools and Equipment), and construction (where decisions are made by the Department for Investment).

However, funding systems are evolving quickly and three different trends in funding are developing.

The first trend is the introduction of lump-sum funding per student as per capita funding schemes, based upon standard costs, differentiated by study field and by type of participation (e.g. full-time student, evening student, distance education student, student with special needs). This approach applies in particular to Estonia, Slovakia (since 2001) and Lithuania and seems to be under development in Poland, Latvia (see annex 7) and Slovenia. The table 11 gives examples of coefficients used in Estonia.

It can be seen from this table that the coefficient is the highest for studies in

[18] The coefficients for the fields of study and forms of study and the coefficients for the provision of instruction for students with special needs shall be established by the Government of the Republic (Regulation No 30 of the Government of the Republic, 28 January 2003). The regulation is established on the basis of subsection 33(5) of the Vocational Education Institutions Act.

humanities and art and the lowest for technology, production and building. We would have expected an opposite hierarchy, taking into account the heavy costs of technical equipment for practical training in a school-based system. A similar situation occurs in Latvia, where the highest expenditure per trainee is in dentistry, followed by art, music and choreography, the expenditure amounting to three times the expenditure per student in VET schools from the Ministry of Education. Bulgaria, moving in the same direction, is now setting up different standards for student allowances in relation to the study fields. Romania is now about to implement funding by normative expenditure per capita, using differentiated coefficients according to study fields and levels, as well as distinctions based on school location (rural or urban).

The second trend is decentralisation of public funding to local or regional authorities. Poland already has a highly decentralised funding system in which 93% of basic and secondary VET schools and 35% of postsecondary VET schools are managed by self-government at *powiat* or district level, with a very small role played by municipalities (*gminas*), which manage 3% of public funding, and regions (voivodships), which manage 1.5%. Romania offers a mixed decentralised and deconcentrated system, where local authorities are responsible (on the basis of local taxes) for equipment and capital investments, the Ministry of Public Finances is responsible through the local councils for salaries and scholarships (but without any flexibility at local council level), and the Ministry of Education, Research and Youth is responsible for textbooks, examinations and teacher training through the County School Inspectorates[19].

In the Czech Republic, regional budgets have been separated from the national budget since 2001 and further transfer is under consideration. In addition, according to the Maastricht Study [25], 'direct links have been established between social partners and educational institutes in regions, so as to create a demand–supply relation between regional social partners and VET institutes in regions'. Slovakia has decentralised the funding system, but fiscal decentralisation will be fully introduced in 2005. Furthermore, the state retained the power to disapprove changes in the school network proposed by regions.

Other countries have more centralised schemes, with some decentralised approaches in some fields: in Bulgaria 12 VET schools out of 500 are managed by local authorities, which have been able to introduce VET classes in a further 80 schools; in Croatia self-governing bodies are responsible for equipment, maintenance, construction and transport; and in Estonia municipalities approve the number of students. Almost all countries are now reflecting on or planning further decentralisation (e.g. Slovakia, Slovenia, Estonia, Poland and Lithuania).

The third trend, which is less developed, is about giving more autonomy to schools. Important measures were already taken in the first years of the transition, when head teachers were given large responsibilities to appoint teachers and draft substantial parts of the curriculum. But governments seem often reluctant to go further when the management of resources is at stake (see section 4.3.3 below). Some projects are noteworthy, nevertheless, for example in Cyprus, in Lithuania with the change of status of vocational schools into 'self-governing institutions' to provide better possibilities of cooperating with industry, social partners and other public institutions, and in Estonia, where there is an initiative to create a development fund of 10% of total study costs for development activities, to be decided and organised at school level.

All these changes in funding mechanisms express some hesitation on the way to reforming vocational education and improving its performance. Decentralisation and increased school autonomy have positive effects since they allow for the development of partnerships between

[19] National funding makes up about 80% of the total, local funding amounts to 16% and schools' own resources represent less than 3%. The system is being restructured, and in the school year 2004/05 a new distribution of roles and financial management mechanisms and instruments is being piloted in eight counties.

Estonia National Report: Development costs

In order to modernise the learning environment in vocational schools, improve the professional qualification of teachers and develop programmes, funds have been allocated for development activities. In 2002, the amount allocated to development activities was 41,989,000 kroons, approximately 10% of study costs. Funds for school development are distributed according to the following criteria: projects must be related to the development of vocational schools, the cofinancing of regional vocational education centres participating in projects Phare 2001 and Phare 2002, and support to the merger of vocational schools.

schools and local communities, particularly businesses and employment services, and contribute to better involvement of social partners and other stakeholders in the management and development of vocational education in the context of local and regional economic and social development strategies. However, the development of lump-sum approaches may generate rigidities and counteract the positive effects of decentralisation and increased autonomy.

In some EU countries where further decentralisation is ongoing, lump-sum approaches are now being replaced by global endowments provided by the state to decentralised bodies, giving them full responsibility for implementing vocational education strategies and using resources in accordance with those strategies. Furthermore, according to recent research [43], decentralisation and school autonomy can have good or bad effects on school performance depending on the situation. Increased autonomy may raise the variability of outcomes, because it reinforces the competitive pressure between schools and can lead to unacceptable disparities in quality [7]. Therefore, it is crucial for governments to monitor school performance strictly, and researchers suggest implementing national certification systems and/or setting up quality assurance systems (see section 4.4 below).

4.3 RESOURCES FOR INITIAL VET

4.3.1 PUBLIC FUNDING

There are few comparable figures on the expenditure on vocational education. Such statistics are not recorded by Eurostat. Only the OECD gives figures covering public and private expenditure on upper and postsecondary education and training. The problem lies in the difficulty of identifying clearly the borders of VET subsystems among secondary, postsecondary and tertiary education systems (see section 4.1). Nevertheless, some proxy figures come from the national reports. Unfortunately, they are unable to distinguish between vocational and technical streams. They are given in table 12, in comparison with total public expenditure on education and public expenditure on tertiary education.

Overall, table 12 demonstrates the weakness of the resources allocated to vocational education in most countries. Looking at the level of resources per student, several clusters can be identified:

(1) Cyprus and Malta, where participation in vocational programmes is the smallest and public expenditure per student in vocational programmes is the highest among all countries, with an index above 20;
(2) Estonia, Poland and Latvia, where the index is between 15 and 19;
(3) Lithuania, Hungary, Slovakia, the Czech Republic and Slovenia, where, with the exception of Lithuania, participation in vocational programmes is the highest and the index is between 10 and 14;
(4) Turkey, Romania and Bulgaria, where the index is below 10, although participation in vocational programmes is high in Bulgaria and Romania.

Comparisons between public expenditure on vocational and tertiary education, as well as indications coming from the national

Table 12: OECD data on total public and private expenditure on upper secondary and postsecondary education (1); and ETF estimates on: (2) public spending for vocational education as a percentage of GDP in 2000; (3) public expenditure on tertiary education, for comparison; (4) share of secondary students in vocational and technical programmes; and (5) index on public spending per student in vocational programmes calculated on the basis of public expenditure on VET divided by the number of students in VET

	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	CR	RO	TK	OECD mean
Public exp. on education	5.6	4.0	5.6	4.5	5.4	5.7	4.6	5.0	4.2	5.6	4.4	4.5	2.9	3.5	
(1) Total exp. on upper and postsec. VET		1.2		1.2				1.2	1.1					0.7	1.3
(2) Public exp. on VET*	0.3	0.9	0.7	0.9	0.7	0.6	0.4	1.0	0.9	0.7	0.4		0.4	0.3	
(3) Public exp. on tertiary education	1.0		1.1		1.0	0.9		1.2	1.0				0.8	1.0	
(4) Share of students in VET**	14	80	36	72	44	43	17	64	78	70	56	71	69	32	
(5) = (2)/(4)	21	11	19	13	16	14	24	16	12	10	7		6	9	

*Sources: [5][38][16] — * National reports on VET financing and ETF estimates — ** Eurostat NewCronos and ETF estimates*

reports, provide strong evidence that vocational programmes do not receive sufficient public funding in most countries. According to Cedefop estimates ([5] and a presentation by M. Tessaring to the Maastricht conference of 14 December 2004), vocational education should receive 1.5–2% of GDP in the interests of preparing for the knowledge-based economy. In 2001 Poland, the Czech Republic and Hungary reached 1.2% of GDP, Slovakia reached 1.1% and Turkey 0.7% for public and private expenditure on upper and postsecondary education and training, including vocational education.

There is in general little space for teacher salary increases or investment in technical equipment. Furthermore, funding has often been decentralised in order to compensate for the lack of national resources for vocational education. But local or regional authorities do not have the available resources to compensate at the level of the needs expressed in the budgets prepared by schools. The national reports from Estonia and Lithuania confirm a decrease in VET financing in favour of tertiary education. In Latvia, one of the priorities is to ensure that state-defined minimum expenses per student are met and to start the transition towards meeting optimum expenses.

Costs per student differ among the study fields or ministries involved, usually to the detriment of schools under the Ministry of Education, that is, the majority of traditional VET schools (Latvia, Turkey). In Turkey, the costs per student in vocational high

Turkey National Report: Expenditure per student

In Turkey, it is noteworthy that, statistically, general expenditure per student in many departments of VET schools is lower than those in general high schools. However, students of vocational education should ideally be receiving skills training and thus using more electricity or similar power resources and materials for their practical training. This in turn should result in a higher expenditure on secondary vocational education. However, the figures indicate just the opposite. This is a cause for serious concern about the quality of skills training given in vocational high schools, especially in branches where there is high demand.

schools in the field of electronics are lower than the costs per student in general secondary school (see annex 8).

The situation is similar in Slovakia, where the costs per student in vocational schools were about half those in grammar schools devoted to sports or in secondary schools devoted to horticulture, and only a third of the costs per student in schools of applied arts (annex 8).

4.3.2 SPECIFIC MEASURES AIMED AT PROVIDING MORE RESOURCES FOR VOCATIONAL EDUCATION

As we have already seen, private resources for education are limited and their trend is stagnant in most countries. Cyprus, where private financing is at the highest level in the EU, is an exception, and Bulgaria, Malta and Latvia show higher private funding for education than the EU average. However, private funding is playing a substantial role in tertiary education, where expenses paid by individuals contribute to the development of an important private sector of training providers, as well as in secondary education, where household budgets are mobilised to compensate for the inadequacy of state funding in some countries, while the involvement of companies seems rather limited.

Section 4.1 gave an overview of apprenticeship, where it was clear that businesses are still reluctant to consider investing in training for young people, even when they receive some incentives from the state. In general, precise information on private expenditure on vocational education is lacking. Some countries have started to investigate the issue: Turkey planned to set up a database to collect VET spending by companies while, at the same time, a law was passed making it obligatory for businesses to devote US$250 per student in apprenticeship to practical training.

Training funds have been set up with compulsory business contributions obtained through levies on the payroll, and some of them are active in the field of initial vocational education. This is the case with Hungary's Training and Development Fund ([16] section 6.3.1 and annex 10), which can also serve the training needs of employees, and in Cyprus, whose Human Resources Development Authority (HRDA) aims chiefly to promote adult education but is also contributing to the apprenticeship system. The funds of the HRDA are drawn from a 0.5% levy on the payroll of private and state-related business organisations.

Cyprus National Report: The Human Resources Development Authority

In Cyprus, the Human Resource Development Law of 1999, which replaced the Law of 1974 for the former Industrial Training Authority, regulates the operation of the HRDA, which is a very influential institution, with financial resources drawn from the levy scheme (0.5% on the payrolls of private and parastatal organisations). The HRDA assesses, among other things, the short- and medium-term personnel needs of the country, develops appropriate training policies and sets priorities, plans the relevant VET schemes and approaches, and supports them through a grant system. The HRDA's mission encompasses both the promotion and the funding of training for new entrants into the labour market and attends to their lifelong training and retraining needs as long as they are associated with a contributing employer. This limitation is the result of the fact that the finances of the HRDA are entirely dependent on the levy. The HRDA is an independently managed institution under the general supervision of the Ministry of Labour and Social Insurance.

Other countries preferred to set up tax exemption systems for companies and/or individuals. This is the case in Romania, which offers a VAT exemption for VET providers; in Lithuania, where the aim is to increase private household investment in education by making it possible to allocate 2% of residents' income tax to education institutions; and in Turkey, where legal

arrangements are being put in place to enhance the participation of private institutions in education and training.

Turkey National Report: Involving private organisations

In Turkey, legal arrangements have been made in recent years to encourage the participation and contribution of private organisations as regards education and training. In accordance with an arrangement made in 1999, private organisations may make donations to public training institutions and foundations that have been defined by the Council of Ministers as providing services for the benefit of the public. A proportion not exceeding 5% of a company's profit for the year (10% in Priority Development Regions[20]) was exempted from corporation tax. By an amendment made to the Corporation Tax Law in 2003, the limit of 5% was lifted and the following will be deducted as expenditure from the revenues when determining an organisation's profit:

- expenditure incurred due to the donation of a school to public administrations or institutions or due to the construction of student dormitories with capacity for at least 100 beds (50 beds in Priority Development Regions);
- all types of donation and help provided for the construction of these establishments by the public administrations or institutions;
- all cash or in-kind donations provided to enable these establishments to continue their services.

Another option is the creation of national foundations for education capable of attracting both public and private funding, including contributions from students' parents. This is the case in Turkey, where parents are contributing substantially and in particular through a compulsory 'contribution to education share' calculated at the regional level. More generally, in most countries parents play a considerable role: in Poland, the annual expenses of the students' parents are evaluated in the national report as a considerable part of the public cost per student[21]; in Slovakia, parents' expenses are estimated at 0.6% of the total education budget; and in Cyprus, parents' associations can pay for additional staff. However, it was not clear in the national reports which components of education systems were covered by these initiatives.

Turkey National Report: Emergency Action Plan

In Turkey, the measures to be taken to provide additional resources for education have been laid down in the government's 2003 Emergency Action Plan. These measures consist in transferring tools, office equipment and machinery not needed by other public institutions to educational institutions, and transferring half-finished buildings to these institutions after making the necessary modifications to their character.

Another effort to create additional resources is the use of income generated from the sales of some of the real estate allocated to the ministry to construct, renovate and refurbish schools. For example, school buildings and land not being used for a school that could be sold for high prices because of their location in the middle of a business centre could be sold if approved by the ministry and the income generated used for the purposes mentioned above. The draft law to amend the National Education Basic Law, which is necessary to put this policy to implementation has been submitted to the parliament by the Council of Ministers.

[20] All provinces in Turkey were classified into different groups according to their level of development by the state planning organisation.

[21] This may be related to the high percentage of private schools in postsecondary education (64%).

Table 13: Basic financial management data for selected Slovakian secondary vocational school (case study) in 1996–2000 ('000 SKK)

	1996	1997	1998	1999	2000	Index 2000/1996
Total expenditure	11,069	16,307	17,154	18,469	19,743	178.4
State subsidy	6,262	8,275	9,388	9,391	7,299	116.6
To be earned from own activities	4,807	8,032	7,766	9,078	12,444	258.9
Wages, including levies	4,001	5,422	5,410	6,364	6,716	167.9

Source: Vantuch, J., Modernisation of vocational education and training in Slovakia, Bratislava, 2001, p. 59

Very specific measures are also taken in case of urgency as shown in Turkey, which developed an Emergency Action Plan involving a significant transfer of resources to the education sector (not only VET) as follows.

Public–private partnerships are also developing in some countries, mainly in order to introduce ICT in schools (Czech Republic, Slovakia[22], Lithuania and Slovenia) or to develop practical training for students (Turkey).

Finally, EU and other international programmes play a considerable role in resource provision, mainly through pre-accession Phare or CARDS grants and World Bank loans in the CC and structural funds support in the NMS.

4.3.3 VET SCHOOLS' OWN RESOURCES

VET schools raise their own resources by selling products from their workshops, services, training activities for adults, or renting premises. These resources represent roughly 10% of the total funds available for schools and amount, for instance, to 15% in Latvia, 8.5% in Lithuania[23] and 7% in Romania.

In some countries, these funds have to be included in the national budget before redistribution and use by schools (Estonia, Latvia). In Slovakia also, the government regards these funds as a way to compensate for the limitations of national budgets and makes a distinction between 'budgetary schools', which must give their incomes back to the Ministry of Education, and 'contributory schools', which may keep them but then receive less state funding. In Bulgaria, school managements may not freely administer either their subsidies or their incomes. According to the VET law, school incomes may not diminish state budget allocations. In reality, the amount in question is returned to schools and the state subsidy is reduced accordingly. The table 13 gives an example of such transfers from state to own resources.

These funds are regulated and must be used for educational purposes (Lithuania, Bulgaria and Croatia). In general, they are used for running costs and also for boosting teachers' salaries, but only after approval by the Ministry of Education (Slovenia). In Romania, they are used mainly for salary increases and the procurement of raw materials for school-based practical training, in order to compensate for the particularly low allocation from the local public budget. In Turkey, services and products are sold through a revolving fund (see annex 11).

Some countries report that it is difficult for VET schools to undertake such activities and, in particular in Bulgaria, to engage in continuing vocational training (CVT) courses, since this should be done on the basis of financing requirements of a highly centralised management that obliges schools to return the earnings to the national budget. Thus ([16] section 6.2.7),

> Except in very few countries, CVT activities are not penetrating very deeply, as schools are not yet skilled enough to deal with adults and the specific pedagogies and content that it implies, and also because they are sometimes obliged to return back the income to the state.

[22] Thanks to the involvement of Slovak Telecom, which is equipping and wiring all schools for internet access, and of automotive industry representatives, which are cofinancing the reform of secondary vocational schools.

[23] Some 5% for VET schools and 16% for colleges; increasing from 5% in 1999 to 8.5% in 2002.

4.4 OTHER MEASURES AIMED AT BETTER EFFICIENCY[24] IN FUNDING

In addition to lump-sum approaches, increased school autonomy and decentralisation when associated to national certification and quality assurance systems, public–private partnerships and tax policies, there are other measures aimed at increasing efficiency in funding. This section will concentrate on those measures that directly affect funding issues. Of course, other nonfinancial measures could be listed, as their implementation is a source of better efficiency for the whole system and contribute indirectly to better efficiency in funding. Such measures would include the development of modern counselling and guidance systems, the organisation of more flexible and permeable pathways, or the introduction of policies aimed at promoting transparency and quality assurance. However, covering these issues would go beyond the remit of this paper and they are already well covered by the Maastricht Study.

Below are some measures that directly affect funding questions.

Restructuring the regional map of schools and training centres by grouping schools

In general, this goes alongside decentralisation of funding, since the involvement of regional stakeholders can contribute to a better vision of the needs in light of the regional development strategies. According to the ETF 13 Years Report, the average enrolment at VET schools was between 200 and 300 students in many countries; but restructuring and grouping of schools is now ongoing, for instance (in Slovakia) as a consequence of the activities of regional rationalisation commissions [42d] and the introduction of per capita funding, by creating associated schools grouping vocational and technical schools [42b]; by creating (in Estonia, Latvia and Lithuania) VET centres aimed at providing initial and continuing vocational training; or by closing schools (in Bulgaria, from 553 in 1998 to 496 in 2003).

Optimisation of classroom capacity is mentioned in the Latvian report. Networking is another option, involving the sharing between VET schools of a limited number of practical training centres (Slovakia, Poland) or inter-company training centres (Slovenia). In Romania, according to the 2004 modifications of the Education Law, the minimum number of students at a school is 200. Since 2003 a multilevel planning instrument has been introduced, based on early skills identification schemes at regional, county and community levels, so as to inform VET supply planning better. Subsequently, the regional map of qualifications provided by schools takes labour market needs into consideration and enables the restructuring of the schools network. In Estonia, the 2005–08 Development Plan for the VET schools network envisages a further reduction of state-owned schools by at least 45%.

Increasing class sizes and the student–teacher ratio

In the mid 1990s, the student–teacher ratio was often rather low in the NMS and CC, lower than in the EU-15 [16]. However, more recent statistics report that the ratios are now higher than in the EU-15 in most countries ([17] section 4.3), which suggests a move towards a more efficient management of resources. Estonia, for example, has implemented a change in the student–teacher ratio from 13:1 to 16:1 in the framework of the 2001–04 VET system action plan. Another issue is the still high percentage of non-teaching staff among all staff in countries such as Hungary and Slovakia [16].

Introducing an allocation system to schools based upon a performance-based financing scheme

This is being done in Estonia. The effectiveness of this approach will be

[24] We refer here to the definition given by E. A. Hanushek in *Economics of Education* (2001, cited in [10]): 'Efficiency involves the relationship between inputs and outputs in a production process. The underlying notion is that production is efficient if given inputs produce the maximum impact'.

Estonia National Report: Allocating student places

In Estonia, since 2000 the number of students to be financed is calculated as follows:

Number of students continuing studies (to the extent of the number of student places approved by a directive of the minister in previous years) + 2/3 of the number of graduates + 1/3 of the number of new enrolled students.

The head of the ministry in which administration a school is located approves the student places at the public school that are financed by the state, after having considered the opinion of the corresponding vocational council.

assessed through a quality assurance mechanism being developed at the Ministry of Education.

Other measures to promote quality assurance through a variety of mechanisms and institutions such as accreditation agencies are being developed in the Czech Republic, Latvia, Slovenia and Turkey. In the school year 2004/05 Romania is piloting a self-assessment guide for VET providers based on the European Framework for Quality Assurance in VET. Recent legislation on quality in education and training, under public debate, is taking advantage of progress in the field of quality assurance in VET.

4.5 SPECIFIC MEASURES AIMED AT PROMOTING EQUITY[25] IN FUNDING

Few such measures are mentioned in the national reports. The Equalisation Fund set up in Croatia should be considered as promoting equity since it aims at compensating for differences in funding by region in the decentralised part of total public funding. However, the minimum standards used as references are very low and do not allow for real compensation. As a result, equalisation fails to address the issue and the infrastructure and equipment of VET schools are still of poor quality in most cases.

Croatia National Report: Equalisation Fund

In Croatia, funds from the allocated income tax share (2%) constitute the main source of finance for the decentralisation functions to meet public needs in secondary education, as well as for VET, for 32 cities and 20 counties. If a local or regional self-government unit cannot entirely meet the obligatory minimum standard prescribed for meeting public needs in secondary education, equalisation subsidy funds for decentralised functions are available within the transitional period. Subsidy funds or the so-called equalisation fund (which are actually state budget funds) may be requested by local and regional self-government units for equalisation up to the prescribed minimum standard. The Croatian Ministry of Finance, in cooperation with the Ministry of Education and Sport, defines the method of calculation of equalisation subsidies.

Compensatory funds are also managed by the National Education Foundation in Turkey. They are funded by the contribution to education paid by parents, which is collected at district level and redistributed according to the priorities of the district.

Study loans have been introduced in secondary and postsecondary vocational

[25] We refer here to the following definition: 'The idea of equity is that all students should have an equal chance to succeed, with actual observed success dependent on certain personal characteristics such as motivation, desire, effort, and to some extent ability. In negative terms, the idea of equal opportunity is that success should not depend on circumstances outside the control of the child, such as the financial position of the family, geographic location, ethnic or racial identity, gender and disability' (C. Hoxby, 'All school finance equalizations are not created equal', *Quarterly Journal of Economics* 10, 2001).

Turkey National Report: National Education Foundation

In Turkey, it is accepted that the appropriations allocated to schools in order to cover current expenses, excluding personnel expenses, are insufficient. In order to meet the needs, an additional financial structure is established under the coordination of the National Education Foundation. In this context, the sole responsibility of the governorships is to determine the amount to be collected under the name of 'contribution to education share'. To do this, the governorship takes into account the current situation of the province and the needs of the schools. For example, in Ankara, for the 2002/03 academic year, this amount was determined as TRL 4 million.

The money collected from the parents of each student as contribution to education share for an eight-month education period in a year is TRL 24 million (about €14.50) and the payment is compulsory. In general, 75% of the amount collected from the parents as contribution to education share is used by the school management to meet the current needs. Some 10% of the remainder is transferred to the representative of the National Education Foundation at provincial level. The provincial foundation uses this amount to alleviate the income imbalance between schools in general in that province. The remaining 15% is transferred to the National Education Foundation in Ankara.

There are also associations established and run by parents, which aim to provide support to poor students and meet the needs of schools. The associations play an important role in meeting the current expenses of schools. However, no reliable data have been collated on the contribution of these associations to education.

education in Estonia. They are also under development in Hungary, but mostly for tertiary education. Latvia has been successful in creating a subsidised work experience scheme for unemployed youth with insufficient work experience .The programme involves compensation to both the unemployed and their mentors [26].

4.6 USE OF RESOURCES

Staff salaries

It is clear from the national reports that staff salaries, including social costs, make up the major part of VET expenditure. Together with scholarships and public utilities, they represent 96% of the total in Latvia, 95% in Lithuania, 94% in Slovakia, but only 85% in Turkey, where new infrastructure is still needed to absorb the rapid increase in the population at school and the extension of the compulsory schooling period. Therefore, the proportion of expenditure on VET devoted to innovation in learning, the renovation of infrastructure and the upgrading of technical equipment for practical training is extremely limited.

Lack of funding for technical equipment for practical training

All national reports complain of the lack of funding for technical equipment. In Estonia, 'the amount planned for investment doesn't cover essential investments'; in Lithuania, schools are unable to invest in their development and spending on construction, renovation and acquisition of basic means is extremely limited; in Slovakia, equipment is assessed as obsolete, as well as in Romania and in Turkey where the revolving fund whose aim was to upgrade equipment is instead used for increasing teachers' salaries. All these observations confirmed statements made in the ETF 13 Years Report in 2003 ([16] section 6.2.6).

Of course, the countries make use of EU structural funds and pre-accession funds as well as World Bank loans in order to compensate for the national scarcity of resources. In the case of Romania, Phare

Table 14: Scholarships and loans by level of education – financial aid to students as a percentage of total expenditure on education

	Scholarships or other grants to households	Student loans	Scholarships or other grants to households	Student loans
	All levels except tertiary education		Tertiary education	
Czech Republic	5.9		7.9	
Hungary	10.1		16.4	3.1
Poland	0.5		0.4	
Slovakia	2.0		9.3	1.1
Turkey	0.9		6.2	7.8
OECD country mean	3.0	0.4	9.7	7.8

Source: OECD

Lithuania National Report: Balance of VET schools expenditure

In Lithuania, according to data from the Education Economy Division of the Ministry of Education and Science, in 2002 the bulk of resources allocated for vocational schools was spent on staff salaries (49.6%) and social security contributions (15.4%). Scholarships for students formed 17.8% and spending on public utilities 10% of expenses. Institutions are unable to invest in their development: spending on construction or renovation and on the acquisition of basic means accounts for 0.08% and 3.5% of expenses respectively. There are no possibilities for renovation of training materials – printing, books and manuals account for only 0,17% of expenditure.

funds allow an allocation of about €300,000 per school for equipment and €150,000 for infrastructure rehabilitation for 250 schools. As a possible remedial solution, regional centres for practical training are being developed in Poland and Slovenia, but the experience is too recent to be analysed and assessed yet.

The situation as regards the deployment of ICT in schools is also very diverse. As quoted by Tom Leney [26], in the NMS one group of countries (e.g. Poland and Slovakia) lags behind the EU average as regards existing ICT facilities and computer/vocational classroom ratios, and another group (e.g. Estonia and Slovenia) is pushing ahead fast. As explained in a recent publication by Eurydice [44], there is progress in all countries[26], often because of ambitious plans set up by governments (Tiger Leap in Estonia, Infovek and a project putting brand new computers in schools in Slovakia, the Szeceny Plan in Hungary, etc.) and dedicated ministries or agencies set up at the level of the prime minister's office.

ICT is now being introduced in all education systems, most often as a support for teaching in other fields, and also sometimes as a specific field of study. Hungary was at the top in this respect with 12 pupils per computer, at the EU average level, while the ratio was about 20 in the Czech Republic, 28 in Poland, 32 in Latvia and about 50 in Romania and Bulgaria. Nonetheless, contrary to EU-15 countries, strong disparities remained between public and private schools, the latter being much better equipped than the former.

Scholarships and loans

The latest OECD *Education at a glance* (2004) provides relevant information on

[26] Unfortunately, however, the Eurydice report does not specifically analyse VET schools compared to other schools.

[27] In Lithuania 65% of students in VET schools (55% in colleges) have grants at 80% of the minimum wage and 20% have social grants.

scholarships and loans provided to students by level of education. The national reports provide additional information.

Again, the situation is diverse among the countries studied. Scholarships cover a large majority of VET students in Cyprus and Lithuania[27] and account for a substantial part of total expenditure in Hungary and the Czech Republic, whereas they cover 17% of students in vocational schools, 12% in lyceums, 3% in post-lyceum in Poland and even less in Bulgaria and in Turkey (7%). A specific measure aimed at scholarships for students from socially disadvantaged families prepared within ESF support is in the pipeline in Slovakia.

Estonia National Report: Study loans

In Estonia, in addition to a scholarship, a secondary-level student studying full time or in a day form of study at a public or municipal vocational school or at a private vocational school which is operating on the basis of the Private Schools Act, has the right to receive a study loan[28]. To receive a loan, a student must be an Estonian citizen or have a permanent residence permit, and the nominal duration of studies must be nine months or more. A study loan may be received throughout the nominal duration of studies according to the programme of a relevant field of study.

The state guarantees a study loan to the extent of the maximum amount established by the Government of the Republic plus the interest to be paid on the amount of the study loan to a credit institution by the recipient of the loan (state guarantee). Since 1999, the maximum amount of a study loan guaranteed by the state has been 15,000 kroons per year per applicant. Study loans are granted by credit institutions selected on the basis of public competitions. Lenders grant the loans out of their credit resources.

In Estonia, scholarships are complemented by study loans for students in secondary education, the loans being guaranteed by the state (see box). Student loans seem also to play a substantial role in Turkey.

National reports also mention other supports to students, such as free medical and psychological care, out-of-school activities, transport and access to cultural institutions and facilities (Romania) and public transport to schools (Lithuania).

Teachers' salaries

According to the Cedefop synthesis of the Maastricht Study [5],

> Ensuring high quality and appropriately skilled VET practitioners is seen as one of the five main priorities for VET: VET teachers and trainers are pivotal in promoting the Lisbon and Copenhagen goals. The quality of VET depends primarily on the quality of its teachers and trainers […] As a matter of urgency countries need to improve the status and attractiveness of the VET profession. The right balance needs to be found between further professionalisation of VET teachers/trainers and more flexibility in policies for their recruitment. Special attention should be given to their continuing training, including in how to exploit the learning and innovation potential of ICTs as well as content specific training.

However, as previous studies have pointed out, teachers' salaries are low, on average lower than national average wages. This is the case in Latvia and in Bulgaria even after a large increase in 2001[29]; in Lithuania the ratio is about €280 versus €310 for state sector employees. They are also still below average in Slovakia, even after a significant increase in 2002.

The situation seems to have improved in Estonia, where teachers' wages were close to the average in 2001 and benefited from an 11% increase in 2002, and in Hungary. In Turkey, a teacher's net monthly salary starts at €405, rising to €500 at the end of the career, and complements are possible

[28] Estonian Education Act.

[29] At the same time, however, all salaries increased at a slightly lower rate, but not enough to improve the situation substantially.

Table 15: Real wages in the Slovak national economy and in the education sector, various years compared to 1989

Index	1989	1990	1991	1992	1998	1999	2000	2001	2002
Real net wage in the national economy	100	94.0	68.4	73.3	92.0	87. 9	89.6	89.5	94.9
Real net wage in the education sector	100	93.9	70.8	78.6	84.0	77.8	78.0	75.7	85.5

Source: Vantuch, J., Financing of vocational education and training in the Slovak Republic, Bratislava, 2004

through extra courses and the revolving fund. In Romania, the entry-level wage is about €98, rising to €165 for the highest degree and after a 40-year career (minimum wage about €75, average gross salary about €210).

In general, resources for staff training remain limited, as exemplified in the Lithuanian national report.

5. ADULT LEARNING

5

5.1 OVERVIEW

The EU indicator on the participation of adults in education and training indicates that only Slovenia scores above the EU-15 average (and also above the EU benchmark for 2010, 12.5%). Cyprus, Latvia, Estonia, Lithuania and Poland have exhibited considerable increases since 2002, but are still markedly below the benchmark, confirming that adult learning is the weakest link in the lifelong learning chain in most of the NMS. This is even more critical in the CC.

These data must be viewed with caution, however, since Eurostat indicates that some figures are not comparable between different years, because of a break in series. This is mentioned for Cyprus, Hungary, Slovenia and Slovakia in 2003 and for Lithuania in 2002. Furthermore, some reports indicate different trends from those provided by Eurostat. According to these reports the participation of adults in education and training is increasing in Latvia whereas it is now declining in Lithuania (by 60% compared to the peak in 1998).

Adult education and training covers several different components: adult education, in which ministries of education as well as dedicated associations or foundations and

Table 16: Participation in education and training by the adult population aged 25–64

	EU-15	EU-25	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	CR	TK
2000	8.5		3.1		6.0	3.1		2.8						0.9		
2001	8.4	7.9	3.4		5.2	3.0		3.6		4.8		7.6	1.4	1.1		
2002	8.5	8.0	3.7	5.9	5.2	3.2	8.2	3.3	4.4	4.3	9.0	9.1	1.3	1.1		
2003	10.0	9.3	7.9	5.4	6.2	6.0	8.1	4.5	4.2	5.0	4.8	15.1	1.4	1.3	1.6	1.2
2004	10.1	9.4	9.3	6.3	6.7	4.6	9.1	6.5	5.0	5.5	4.6	17.9	1.3	1.6		

Source: Eurostat, Structural indicators, 23.5.2005 update

private institutions are active; in-service training, in which it is useful to distinguish training carried out for state and public institutions employees and training initiated by businesses; and labour market training. But the distinction between components may be blurred and the national reports provide a different grouping which makes a sound analysis more difficult. Also, no distinction may be made between the different payers – state, businesses or individuals.

These components have different functioning and funding ways and there are no global statistics covering them all in an homogeneous way. Therefore, the statistics provided in the national reports give only a partial overview of the situation. In Slovakia, for instance, the 1997 figures, based on a sample of 372 training institutions, give a breakdown of adult learning expenditure by source: 23% from the state, 14% from employers, 38% from the trainees and 8% from the labour offices, as shown in table 17. The table also shows an increasing contribution from the state and a decreasing contribution from employers.

Although the national reports do not contain information on adult learning activities organised at the regional and local levels, it is clear that the state takes a predominant role in organising and financing adult learning activities in the NMS and the CC. However, the reports on progress in lifelong learning made by the countries in 2003 gave evidence of many initiatives organised by municipalities and/or schools or other training centres [11].

5.2 ADULT EDUCATION

Adult education is an important component of adult learning activities ([16] section 7.3.7). It receives significant support from ministries of education, which usually offer it free of charge. In Estonia adult education costs the education ministry about 8% of the amount spent on initial vocational education and represents about 12% of enterprises' expenditure on their employees' training. Participation is stable in Estonia and in Latvia it is increasing despite declining public funding for adult education and the development of study loans. This participation is growing in tertiary education institutions. In Poland, the participation of public schools amounts to 68% of total adult education, which gives an indication of the strong state investment. In Lithuania, the formal education system accounts for one-third of the total. In Slovenia, public spending on adult education amounts to 0.1% of GDP, and legislation in 2002 planned additional funds for adult education for the period 2003–08.

Since governments were encouraged to take steps to develop activities related to lifelong learning, the ministries of education took the lead and launched several initiatives aimed at different groups, particularly in the fields of ICT literacy, access to basic skills, or specific training for disadvantaged groups. This was mainly done through education ministry budgets, but with a decrease at national level and a rise in provision from local budgets, for instance in Latvia, where the breakdown is 45% from the national budget, 4% from local governments, 25% from individuals

Table 17: Distribution of sources of CVT financing in Slovakia in 1997–2003

Type of source	1997	1998	1999	2000	2001	2002	2003	
	%						%	'000 SKK
State budget subsidies	17	18	19	22	21	24	23	297,528.80
Extrabudgetary sources	2	6	4	4	4	-	-	-
Employers	30	21	16	16	18	13	14	177,598.54
Trainees	25	36	37	35	36	43	38	481,561.25
Labour offices	9	6	1	3	6	10	8	97,009.15
Donations from natural and legal persons	1	1	0	0	2	2	2	18,951.22
Other activities of educational institutions	7	8	8	4	4	-	-	-
Others	9	4	15	16	9	8	15	189,524.34
Total	100	100	100	100	100	100	100	964,644.50

Source: Vantuch, J., Recent development in education, training and employment policy in Slovakia, Bratislava, 2003

Table 18: Enterprises' expenditure on CVT as a percentage of total labour costs

EU-25	CZ	EE	LV	LT	HU	PL	SL	BG	RO
2.3	1.9	1.8	1.1	0.8	1.2	0.8	1.3	1.0	0.5

Source: Eurostat, 1999

and 25% from companies. In Estonia funds are directly allocated by the ministry to local governments. In Hungary, since the Adult Training Law entered into force in 2001, financial support has been made available for adult training from the state budget, through a normative financial contribution to nationally-recognised adult training courses taking place at adult training institutions, registered in the National Qualification Register, and providing language or professional qualification to adults and disabled people [23].

Another indication is given by analysing the breakdown of training providers of adult education in Slovenia: 34% of providers are private companies, 16% are secondary schools, 14% are folk high schools, and 6% are adult education units set up in schools.

5.3 IN-SERVICE TRAINING

In almost all countries in-service training is developing in the public sector according to different obligations undertaken by the state for its employees. In Estonia, 3% of teachers' wages and 2–4% of those of public servants are devoted to training, depending on their institution. In Lithuania, 1–5% of the wages are used for this purpose.

There is no systematic information on the training activities initiated by companies more recent than the Eurostat survey CVTS 2, conducted in 1999 ([16] sections 6.3.1 and 7.3.6)[30].

That survey made it clear that, with the exception of the Czech Republic and to a lesser extent Estonia, the involvement of businesses in training for their employees was at a low level in the countries. According to the national reports, companies in Slovenia are beginning to be more active, but in other countries they are still considered to be passive towards employee training (e.g. in Slovakia, Bulgaria, Lithuania, where only 26% of companies have a training plan, and Croatia, where only 15% carry out training). For this reason many countries are developing initiatives and approaches in order to promote human resources development in companies.

The most frequent approaches are:

- **tax exemption systems** concerning employees who can deduct study costs from their personal income (Bulgaria, Estonia, Cyprus, Hungary, Malta, Poland, Czech Republic) and/or employers, through different modalities (Estonia, Lithuania, Romania, Bulgaria, Czech Republic, Bulgaria, Cyprus, Hungary, Malta), (see annex 9);
- the use of **training leave for employees** (Poland, Lithuania, Romania, Estonia and Slovenia);
- the creation of **training funds**, financed by compulsory contributions calculated on the payroll. The ETF monographs prepared between 2000 and 2002 reported training funds only in Hungary, with the Development and Training Fund (see annex 10), and Cyprus, with the Human Resources Development Authority (see section 4.3.2). From the national reports we must now add other countries to the list. Slovenia has created a training fund in the craft sector through a contribution of 1% on the payroll. In Poland, a training fund was created in 2004 after an agreement between the state and the social partners according to which the training fund would be financed by employers' voluntary contributions of at least 0.25% of the payroll in 2004, increasing to 1% and becoming compulsory in 2008. In addition, state support would be made available in the first years through reimbursement of 50% of the training

[30] The results of the CVTS 3 from 2003/04 will be available later in 2005.

activities. In the Czech Republic an educational fund has been initiated in the government's Council of Economic and Social Agreement (CESA), with contributions based upon a percentage of the wages. Special taxation on businesses is also under consideration in Latvia.

Study loans are used extensively in Latvia and increased from 2,600 in 1997 to 30,000 in 2001. This could be one of the main reasons for the recent growth in participation in lifelong learning as measured by the Eurostat indicator. A learning voucher approach is being tried in Slovakia but at a level of only €1.5 per month and for activities of interest only to children and youth.

Collective agreements between employers and trade unions play a considerable role in these initiatives at sector or company level. This is the case in Poland, where NSZZ Solidarnosc and the Confederation of Polish Employers (KPP) contribute substantially to the conclusion of collective agreements involving professional education and competences; in Lithuania, at the initiative of the Lithuanian Trade Union Confederation and the Lithuanian Confederation of Industrialists; and in Slovenia, whose initiative in the craft sector [23] and national collective agreement concerning study leave (including exam leave) were mentioned above.

Associations of employers and/or trade unions are also active in this field, by means of direct initiatives or partnerships with the government. In Poland the Association of Craftmanship cooperates with the Ministry of Education, NSZZ Solidarnosc participates in EQUAL[31] initiatives, the Confederation of Polish Employers organises seminars on professional training in the regions and has created a department responsible for developing training projects [23]. In some countries employers also have a mandatory responsibility to facilitate the acquisition of a qualification by unskilled employees (e.g. Czech Republic) or ensure employees' access to training programmes based on training plans agreed with trade unions (e.g. Romania) [5].

Support to companies undertaking training is also provided in Estonia by annual awards for the best human resources projects at company level [23], in Poland through an 'Investors in Human Resources' programme aimed at publicising the

Romania National Report: Helping employers to fund training

In Romania, one of the most recent initiatives is Law 107/2004 amending Law 76/2002 on unemployment compensation and stimulation of the labour force. With regard to employers who provide CVT for their employees through accredited programmes delivered by authorised service providers, the law stipulates that up to 50% of the employer's costs for one training programme annually can be covered by the Unemployment Fund, provided that at least 20% of personnel participate in such training.

Bulgaria National Report: Financial incentives for employers

In Bulgaria, the Employment Promotion Act provides for a financial incentive scheme for employers to maintain or enhance the vocational qualifications of their employees. The amount of funding is determined on an annual basis by the National Employment Action Plan. Employers who receive state funds for training are obliged to retain the trained employees for at least six months after the training is finished. In 2003 the number of employed persons who participated in state-funded training was 16,064, compared to 554 in the previous year. This scheme has not yet been fully exploited because of its relatively recent introduction and the fact that employers' awareness of this opportunity is still low.

[31] Community initiative financing projects in partnership related to employment policies, managed by DG Employment.

Lithuania National Report: Training in the SME sector

In Lithuania, funding for training projects for entrepreneurs in the SME sector comes from the state budget. As already mentioned, the state supports projects involving training, qualification upgrading and requalification of SME owners and employees. The state provides subsidised training services through the Lithuanian Development Agency for Small and Medium-Sized Enterprises (LDASME). In 2001, financial support from the national budget provided for training was 250,000 litai (about €72,500)[32]. In 2002, three counselling and training projects were implemented, covering business development (with 145 participating enterprises), start-up support for entrepreneurs (843 participants), and the promotion of electronic business (29 participating enterprises). General funding for the projects was 599,000 litai (about €173,700). The project beneficiaries were reimbursed for 70–80% of their training costs.

achievements of training companies, in Romania by the Public Employment Service and in Bulgaria through the Employment Promotion Act.

Governments also provide specific support to SMEs through special programmes (Romania, Turkey, Malta) or the creation of special institutions to promote training in SMEs. Examples of the latter are the Polish Agency of Entrepreneurship Development, which in particular supports entrepreneurs who apply for funding from the structural funds [23], the Lithuanian Development Agency, financed by the state, the Cyprus Productivity Centre, or the Enterprise Estonia initiative. Such initiatives, however, often concentrate on training business people and managers rather than other employees.

Cyprus National Report: Cyprus Productivity Centre

The Cyprus Productivity Centre provides courses to upgrade training for both managerial and supervisory personnel and skilled and semi-skilled workers. There are also special programmes for unemployed or employable persons through accelerated training.

5.4 LABOUR MARKET TRAINING

Resources for labour market training in the NMS and CC have been assessed in previous ETF reports as dramatically insufficient in all countries, with the exception of Hungary and Slovenia, where resources were nevertheless markedly below the EU average ([16] section 6.3.3). Some progress was registered in Hungary and Slovakia ([17] section 4.4), whereas, on the contrary, the situation was deteriorating in the Czech Republic. Use of the ESF in the NMS is now developing according to plans, and in the CC, CARDS and Phare are also contributing to labour market policies and preparing for future use of the ESF. The table 19 gives an overview of the situation in 2001 among nine NMS, two CC and other EU-15 countries.

The national reports confirm that the situation is still difficult in almost all countries. Latvia and Slovenia report drops in both funding and participation in labour market training lately, although in Lithuania decreasing funds[33] are accompanied by increasing participation, probably as a result of the development of cofinancing mechanisms. The situation seems particularly critical in Turkey, where the employment organisation ISKUR receives very limited funds from unemployment insurance, although it does benefit from projects financed by international donors, the World Bank in particular. Here, participation in nationally funded programmes is extremely low, with fewer

[32] Calculated on pegged rate of 1 litas = €0.29.

[33] Labour market training accounted for less than 40% of all active labour market measures in 2002, as compared with 52% in 1999.

Table 19: Unemployment rate and active labour market (LM) expenditure in some EU-15 countries and new Member States in 2001

	ES	PT	PL	SK	LT	LV	EE	MT	CZ	HU	SI	RO*	BG
Unemployment rate	11	4	18.4	19.7	16.1	12.8	13	5.3	8.0	5.7	6.0	8	19.6
Public expenditure on LM measures as % of GDP	2.06	1.52	1.19	0.92	0.35	0.50	0.24	0.64	0.46	0.85	1.08	1.0	1.01
Active LM measures	0.64	0.50	0.14	0.23	0.12		0.08	0.05	0.13	0.36	0.36	0.14	0.14

*Source: Masson, J-R., ETF, Thirteen years of cooperation and reforms in vocational education and training in the acceding and candidate countries, ETF, 2003 — * 2002 data*

than 4,000 trainees each year (2000–03) participating in fewer than 200 programmes. In Romania, only 2.6% of active labour market measures are devoted to training.

Conversely, Croatia reports that active labour market measures accounted for 0.27% of GDP in 2000 and are still growing; among these, the share of training, although it is the lowest priority, has been growing since 2002. This increase results from new initiatives launched by the government aiming to deliver new programmes based on on-the-job training, such as From Classroom to Workshop and Through Education to Jobs for All. In Bulgaria, substantial programmes were set up in 2003 with the aim of promoting employment through important vocational training components, bringing the resources for labour market training up to 1% of GDP.

Specific programmes aimed at target groups are developing through state/private sector cofunding mechanisms such as 'work funds', sometimes including contributions from individuals. These mechanisms are gaining importance in Slovenia, in particular in relation to enterprise restructuring.

5.5 OTHER INCENTIVES AND MEASURES AIMED AT INCREASING EFFICIENCY

Financial and nonfinancial incentives

As we have remarked above concerning initial VET (section 4.4), incentives can be financial or nonfinancial. Among the latter are the development of counselling and guidance policies, the establishment of validation and recognition of nonformal and informal learning approaches and, more generally, a series of policies presented in the Maastricht Communiqué and aimed at increasing the attractiveness and flexibility of VET routes and provision. As all these policies are well covered by the Maastricht Study, we will concentrate in the following paragraphs on the financial incentives, which have developed rather quickly in recent years, but sometimes on a small scale and with an impact which has still to be assessed.

Other measures

These include:

- the organisation of public tendering for delivery of state-funded adult education and labour market training (Slovenia and Lithuania);
- the development of cofinancing mechanisms: in Slovenia these are for the retraining of redundant workers or other workers threatened by industrial restructuring, usually through collective agreements involving the state, businesses and individuals; in Cyprus different schemes are active between the state (sometimes through the Cyprus Productivity Centre), companies, the HRDA and individuals, depending on the nature of the programmes; and in Estonia employees contribute to in-service training.

In Slovenia, the ministries of education and labour, in cooperation with social partners, have undertaken an interesting cofinancing initiative entitled Programme 5000 (see box). According to local sources however, the results have not yet been convincing.

Slovenia National Report: Programme 5000

In Slovenia, the Ministry of Labour, Family and Social Affairs and the Ministry of Education, Science and Sports, in cooperation with social partners and other stakeholders, make proposals to the government every year on the types and numbers of training places, the enrolment conditions and the mode of financing training. The types and numbers of training places are based on the annual blueprints of regional demands for vocational and professional qualifications prepared by the regional employment offices in cooperation with the social partners.

In its first few years, Programme 5000 targeted long-term unemployed young adults aged up to 26 years who had not completed initial vocational or technical education or who had formal qualifications not in demand in the labour market. In the last few years, the programme has been extended to other target groups (e.g. the long-term unemployed older than 40 years).

In the first year (1998/99), the programme was limited to secondary education; in later years tertiary education was also included. The government's ambition is to increase the yearly enrolment of new participants from 5,000 unemployed at the outset to as many as 8,000 unemployed in the 2003/04 school year[34].

Programme 5000 is under the competence of the Ministry of Labour, Family and Social Affairs and the Ministry of Education, Science and Sports; operationally and administratively it is implemented by the Employment Service of Slovenia (ESS). However, all the main stakeholders (Ministry for Finance, Ministry for the Economy, Chamber of Commerce and Industry, Craft Chamber, Centre for Vocational Training of the Republic of Slovenia, and Slovenian Institute for Adult Education) also participate. The government has appointed a special project group composed of the main stakeholders, which takes care of the organisation, monitoring and external control of the programme's implementation.

[34] In the 2003/04 school year the name of the programme was changed to 'Programme 5000+'.

6. CONCLUSIONS

6

6.1 THE MAASTRICHT COMMUNIQUÉ AS A FRAMEWORK

As the Maastricht Communiqué recognises, the Copenhagen process has succeeded in raising the visibility and profile of VET at the European level and in the Lisbon strategy. The Maastricht conference emphasised the key role played by VET systems in developing and implementing lifelong learning strategies. However, the Joint Interim Report [12] has identified a number of levers and priorities for reform in key areas.

These include the need to mobilise the necessary investments effectively and to focus particularly

- on the image and attractiveness of the vocational route, in order to increase participation in VET,
- on linking VET with the labour market requirements of the knowledge economy for a highly skilled workforce,
- on the needs of low-skilled and disadvantaged groups for the purpose of achieving social cohesion and increasing labour market participation.

Therefore, it is important to assess how far the necessary investments have been mobilised effectively and what lessons could be drawn up not only for the CC but also for the Western Balkan countries, which are now considered pre-accession countries.

6.2 THE NEED FOR IMPROVEMENT, PARTICULARLY IN THE CANDIDATE COUNTRIES

Although the countries studied are involved in all EU education and training processes and some of them are setting up ambitious targets for VET, the results are in fact disappointing with regard to the Copenhagen–Maastricht objectives. The image and attractiveness of vocational routes are poor, little progress has been made in the links between VET systems and the needs of the labour market, and the contribution of VET systems to social cohesion and greater labour market

participation is still limited. Overall, the investment in VET has been limited and insufficiently focused.

Most indicators exhibit decreasing trends in participation in VET in secondary schools [5][25], with the exception of Romania. Technical and vocational pathways still represent a substantial share (around 40–60%) of upper secondary education in most of the countries, but this is decreasing steadily, while vocational routes including apprenticeship account for 10–40% and this rate is also decreasing, except in Romania. The situation is different at postsecondary level and in tertiary education, where new kinds of vocational pathway are developing quickly (though still to a limited extent), thanks to the transformation of secondary technical pathways in preparation for further studies. Overall, this situation is closer to that in some of the EU-15, where vocational pathways become attractive only in the context of tertiary education. However, there are still major gaps, since vocational routes in secondary education are still enrolling growing numbers in most of the 'old' Member States and vocational pathways in tertiary education have been implemented there for two or three decades and are still developing.

As regards the participation of adults in lifelong learning, the situation is still difficult but improving. A number of countries, including Slovenia, Cyprus, Latvia, Estonia, Lithuania and Poland, have made substantial progress recently. However, with the exception of Slovenia, Cyprus and Latvia, all the countries are markedly below the EU benchmark of 12.5%, and the gap is particularly high in the CC, where the indicators show very slow progress.

Thus the general situation could in fact be seen as critical: the necessary increase in productivity could be compromised, according to the 2010 employment forecasts, which predict that just a little less than 40% of the additional jobs envisaged will require education to upper secondary level and 15% to lower secondary level, while almost half will require tertiary level.

In fact, we can assume that only the vocational routes are fully dedicated to providing the medium-level qualifications particularly needed by the manufacturing industry, while the technical routes are mainly devoted to preparing for further education at the tertiary level, even if they often lead to a professional certificate in addition to the *maturita*.

Experience in the EU suggests that the initial double vocation of technical routes was not sustainable. The balance between providing qualifications for the labour market and allowing for continuing study at tertiary level shifted rapidly in favour of tertiary education. The huge gap between the unemployment rates at these two levels in the NMS and CC will also accelerate this move.

In view of the qualification needs for the knowledge-based economy, the increasing participation of students in tertiary education certainly must be backed and consolidated, but must also be redirected towards mathematics, science and technology where progress is too slow. Priority has also to go to postsecondary and higher vocational education. However, vocational secondary education also has a key role to play in meeting and anticipating labour market needs by providing medium-level qualifications, and should not be neglected. This message is confirmed by the theory of endogenous growth, which suggests that countries distant from the technological frontier should give priority to medium-level qualifications.

The situation is also prejudicial to the objectives of achieving social cohesion and increasing labour market participation. Big challenges for vocational education are the high rate of early school leavers in Latvia, Malta, Bulgaria, Romania and Turkey[35], the number of drop-outs from vocational pathways in most countries and the integration of disadvantaged and ethnic minorities, particularly the Roma. Other challenges for the VET systems are the strong disparities between regions, economic sectors, companies, social and age groups, with large categories excluded

[35] These are, however, lower than the EU benchmark in Slovenia, Slovakia, the Czech Republic, Poland and Croatia.

from lifelong learning and from the labour market, or at risk of exclusion because of accelerating changes in the economy, the continuation of industrial and agricultural restructuring processes, and the rise of poverty. Comprehensive lifelong learning strategies, including a significant role for VET, are needed.

6.3 QUESTIONS ABOUT PRIORITIES

Several reasons can be adduced for the low attractiveness of VET routes in general and the weak development of continuing VET. Systemic VET reforms have been undertaken only recently in most countries and it will take a long time for the necessary changes to be fully implemented [16]. They have focused first on technical pathways in the school system. Many narrow, rigid curricula will doubtless continue to be taught in vocational education until the new architecture of broad, competence-based new curricula, imparted by well-trained teachers and underpinned by the adequate provision of equipment for practical training, will apply across the board. It is also difficult to identify the right qualifications required to meet the needs of economies that are changing rapidly and comprehensively, from which adequate curricula might be drawn up. In that context, newly developing businesses, particularly in the field of services, are often inclined to favour graduates with soft skills. Meanwhile, the existing curricula provided by secondary vocational routes fail to meet labour market needs and students prefer to engage in tertiary education, where they favour short courses in management, accounting, communication or foreign languages. In the field of adult training, governments have prioritised the need to counteract unemployment, and the drastic changes in the economy have not allowed for rapid, full consideration of continuing training needs by the market.

Inadequate funding policies, including the lack of funding from public and private sources and the inefficient allocation of funding, are also contributing factors to the low attractiveness of VET. The analysis has shown that priority has been – and still is – given to tertiary education, to the detriment of secondary education and particularly vocational secondary education, even in countries which still underinvest in education, and particularly in the CC, which all invest markedly less than the EU average of 5.1% of GDP in education. Moreover, this investment in tertiary education does not respond adequately to the requirements of the knowledge-based economy since enrolment in mathematics, science and technology and the development of higher vocational education are still limited.

In addition, the allocation of funding to secondary education has not prioritised vocational education and has long been too rigid. In many countries, allocations per student based on national standards are lowest in vocational fields. At the same time, businesses are still reluctant to invest effectively in human resources and VET, so apprenticeship is very underdeveloped and cooperation with schools is poor. Households often invest in learning on an individual basis or through dedicated mechanisms such as foundations. Their investment serves mainly to compensate for the lack of public resources, but also reflects the widespread need for investment in learning and explains the mushrooming of private training centres providing soft skills through short courses at postsecondary or tertiary level.

Overall, vocational schools suffer from a serious lack of resources particularly in terms of infrastructure and technical equipment, although ESF in the NMS and pre-accession funds in the CC are now widely used in that context. The situation may be better at tertiary level owing to the high priority given by all countries to that level, but there is a lack of adequate information on the situation of vocational tertiary education. Furthermore, labour market measures focused on addressing unemployment, social exclusion and the need to ‘reskill’ large categories of the workforce, are still extremely deficient. In total, one can say that policy for funding education and training still suffers from a lack of efficiency and equity in most countries.

6.4 THE NEED FOR POLICIES AIMED AT MORE AND BETTER TARGETED FUNDING FOR VET

Many countries are now considering the need to address the issue and to give increased priority to VET by introducing or developing new financing schemes including incentives aimed at businesses and individuals. Such policies are developing in most countries, particularly in the case of adult training, but also with the objective of involving parents and/or private enterprises in the financing of education, sometimes with a view to compensating for the low level of public expenditure. Hence, a panoply of measures is now available, including tax exemptions, training funds, study loans, individual learning accounts, public/private partnerships and other measures.

Unfortunately, it is not possible to assess these initiatives yet, for they are too recent. However, the national reports suggest that greater impact and significant advantages will result from better-targeted measures with clear objectives and from their integration into comprehensive national strategies for lifelong learning. Substantial involvement of social partners in the design and implementation of measures, particularly through collective agreements at company or sector level, seems to be a significant success factor. Measures need also to be widely disseminated in the country and awareness raised, which does not seem to happen systematically.

Although some measures promote decentralisation and greater autonomy for VET schools and other training centres, public funding for vocational education is still often overregulated, with low quality standards and rigid administrative rules which hamper the development of VET schools in close contact with local stakeholders and the labour market. Decentralisation to local and regional authorities and the autonomy of schools should be strengthened and become effective in most countries so as to increase accountability.

This would help the actors to work in partnership and to set up more relevant strategies aimed at responding to local and regional development needs. It would also allow for better involvement of all the relevant actors in economic and social development, and it would help to promote social partnership and social dialogue as key components of the modernisation of VET systems. However, decentralisation should not be seen as a panacea that can compensate for all national weaknesses. It has to be additional to institutional reforms and ambitious national policies, with national and regional or local actors working together towards economic and social development.

The development of incentives and the decentralisation should also go hand in hand with approaches aiming at transparency, quality, social cohesion and equity. As various experts suggest, school autonomy could have negative effects if not accompanied by nationally centralised examinations and/or by quality assurance approaches. More generally, full implementation of the Copenhagen priorities on transparency, quality assurance, lifelong guidance and validation of nonformal or informal learning is needed in addition to substantial public investment and the development of incentives and decentralised mechanisms.

6.5 THE NEED TO IMPLEMENT THE COPENHAGEN–MAASTRICHT PROCESS

Several analyses of education and training systems in the NMS and the CC are already available. Key challenges have been identified and key questions are on the table and are being discussed by key stakeholders. Ambitious policies have been, or are to be, drawn up to address these challenges.

The full implementation of the Copenhagen–Maastricht process should now help to give VET systems their rightful place in future developments. Developments at national level will be important, since they will address key priorities such as greater and more effective investment in VET in the context of systemic reforms. In this context, use will

be made of instruments, principles and reference tools already developed, particularly as regards quality assurance, transparency, validation and recognition of nonformal and informal learning, counselling and guidance, but also key competences, making the best use of resources and developing ICT in education and training.

Developments at EU level will also help by developing further approaches concerning a European Qualification Framework, a credit transfer system for VET, and education and training for teachers and trainers. Finally, cooperation between countries – sharing common challenges, setting up common goals, discussing common policy issues, exchanging good practice, using common indicators and benchmarks – will also be crucial.

The Western Balkan countries can benefit from these developments, including coordination and mutual learning approaches, since analyses of their VET systems reveal the same kind of issues as those identified in other European transition countries, although on a different scale and in every case with specific aspects and particularities related to their historical, cultural and economic situation. Many Western Balkan countries are already keen to embark on the Bologna process. The voluntary cooperation on VET with the EU and the CC in the context of the Copenhagen–Maastricht process can play a major role in the near future in the reform of their VET systems.

Particularly relevant for these countries would be:

(1) the need to develop a clear human resources development strategy in the context of lifelong learning, in which the role of VET and its different components would be clearly identified, with specific objectives. Such a strategy should strike a good balance between initial and continuing training and learning, between short-, medium- and long-term objectives, between vocational, general and tertiary education, between efficiency and equity approaches, and between competitiveness and social cohesion;
(2) the need to involve social partners systematically in elaborating such strategies and to set up a good coordination at both national and regional levels, involving all stakeholders and the different administrative layers and self-governing bodies;
(3) the need to combine adequate funding of VET system components with in-depth and systemic reforms that make the best use of the principles, references and instruments emerging from the Copenhagen–Maastricht processes, in particular concerning quality assurance, transparency, lifelong guidance and identification, and recognition of nonformal or informal learning. Particularly important will be the need to combine financial and nonfinancial incentives.

ANNEXES

ANNEX 1: IMPORTANCE OF EDUCATION AS PART OF ALL PUBLIC EXPENDITURE

ANNEX 2: PREPARATION FOR THE EUROPEAN SOCIAL FUND IN LITHUANIA

ANNEX 3: PREPARATION FOR THE EUROPEAN SOCIAL FUND IN ESTONIA

ANNEX 4: PREPARATION FOR THE EUROPEAN SOCIAL FUND IN SLOVAKIA

ANNEX 5: BALANCE BETWEEN PUBLIC AND PRIVATE VET SCHOOLS

ANNEX 6: APPRENTICESHIP

ANNEX 7: APPROACHES TO FUNDING ALLOCATION

ANNEX 8: FUNDING FOR VET STUDENTS

ANNEX 9: TAX DEDUCTION SYSTEMS

ANNEX 10: NATIONAL TRAINING FUNDS

ANNEX 11: OTHER RESOURCES

ANNEX 12: IMPACT OF INVESTMENT IN EDUCATION

ANNEX 1: IMPORTANCE OF EDUCATION AS PART OF ALL PUBLIC EXPENDITURE

The following table is derived mainly from the report prepared for the European Commission Working Group on 'Making the best use of resources', using national sources. Data for Bulgaria have been added using the Bulgaria country report for the Maastricht Study. Data for Turkey come from the national report on Turkey.

Table I: Public expenditure on education at central level as a percentage of GDP in 2000–03

	CY	HU	LV	LT	PL[36]	SI	RO	BG	TK
2000	5.6	5.1	6.8	5.9	4.0	5.3	2.4	4.4	
2001	6.3	5.2	6.8	6.1	3.8	5.5	2.7	3.6	3.3
2002	6.4	5.6	7.1	6.1	4.0	5.3	3.1	3.8	4.0
2003	6.2		6.9	5.9		5.5	3.2		4.0

National sources

The working group's report [9] also highlights the importance of education as part of all public expenditure and shows the growing share of education in government expenditure in Latvia, Lithuania and Romania since 2000.

Table II: Public expenditure on education as a percentage of all public expenditure in 2000–03

	CY	HU	LV	LT	RO
2000	14.5		16.7	15.5	
2001	15.6	10.6	17.5	17.4	7.0
2002	15.2	10.6	18.3	17.7	8.0
2003	13.3		18.0	17.2	

National sources

ANNEX 2: PREPARATION FOR THE EUROPEAN SOCIAL FUND IN LITHUANIA

The Single Programming Document (SPD) for 2004–06, prepared jointly by the Lithuanian ministries, state institutions, regional and local authorities and social partners, contains information about where and how Lithuania will invest the structural support received after EU accession. The SPD sets out human resources development as the strategic priority for reaching the main goal – the development of a knowledge economy. The strategy specifies that in the implementation of the human resources priority investments will be made towards meeting the following objectives:

- reduction of unemployment and its more efficient prevention;
- development of adaptability to change;
- targeted promotion of social integration;
- promotion of lifelong learning;
- ensuring sufficient numbers of highly qualified specialists.

[36] Funding for education in Poland has been decentralised since 2000. This explains the substantial difference between central government funding in table above and public funding measured by Eurostat in table 1 (p. 13). According to the Polish National Observatory study, the local government spending amounts to around 40% of the central government spending in education. Following these figures, the total public funding for education in Poland could be estimated at around 5.6% of GDP in 2002.

ANNEX 3: PREPARATION FOR THE EUROPEAN SOCIAL FUND IN ESTONIA

A prerequisite for receiving aid from the ESF is the National Development Plan – Single Programming Document, which defines the fields of development that are of high priority and will guide Estonia in the future. The measures outlined in the programme are the means for implementing the priorities during the period of the programme. During the first period, 2004–06, the Ministry of Education and Research is responsible for the planning, implementation and supervision of two measures: measure 1 concerning the development of human resources and measure 28 concerning infrastructure and regional development.

The Development Plan for the VET Institutions Network in 2005–08 will reduce the number of VET institutions, the merger of which should create possibilities for pooling available resources. At present the €45 million budget for VET institutions is divided between 49 institutions, while in the future the number of state-financed VET institutions will be between 25 and 29.

In the period 2004–06, ten VET institutions will receive funds from the European Regional Development Fund totalling €19.3 million. For 2007–08, this amount will be approximately €10.9 million. These sums will be used for capital investment to renovate and upgrade buildings and to improve the training and living conditions of students.

In future years, additional resources from the ESF could be used to develop national priorities. The total amount for the first programme period (2004–06) for measure 1.1 of the Estonian National Development Plan amounts to €53,588,477 (25% of which should come from the state budget and 75% from the ESF). In the longer term, it is important to recognise that the system cannot be built and remain operational with foreign aid alone, and that a much higher contribution of resources from the state is needed.

Priority 1: Human resources development

- Measure 1: Education system supporting the flexibility and employability of the labour force and providing opportunities of lifelong learning for all (cofinanced from ESF)

Priority 4: Infrastructure and regional development

- Measure 28: Modernisation of infrastructure for vocational and higher education (cofinanced from ERDF)

The Foundation for Vocational Education and Training Reform in Estonia (FVETRE), as the implementing agency for the two measures under the Ministry of Education and Research, prepared the implementation of the measures in 2003, and starting from 2004 is implementing the measures or administrating them at the level of projects. The task of both FVETRE and the ministry is to provide information to partners and beneficiaries in order to use the opportunities offered by the funds as effectively as possible.

As of 12 February 2003, the volumes of measure 1 were as follows:

EU cofinancing (2004):	EEK 504.67 million (75%)
Estonian cofinancing:	EEK 168.23 million (25%)
Total:	EEK 672.90 million

ANNEX 4: PREPARATION FOR THE EUROPEAN SOCIAL FUND IN SLOVAKIA

In 2004, the new National Employment Action Plan is expected to define more clearly the role of actors outside the Ministry of Labour, Social Affairs and the Family and the new employment service offices, and also to strengthen the links between measures, funding and impact in order to achieve a closer interconnection with the National Development Plan and maximum preparedness for drawing funds from the ESF. The Sectoral Operational Programme (SOP) Human Resources Supplement and SPD NUTS II Bratislava Objective 3 Supplement – already drafted – are expected to be finalised in summer 2004. In 2004–06, the expected funding within the respective relevant measures is as follows.

Sectoral Operational Programme: Human Resources (valid for the whole of Slovakia except the Bratislava region)

Priority 1: Development of active labour market policy

- Measure 1.3: Development of training and retraining of job seekers in order to improve their prospects on the labour market
  Total public financing 2004–06: €56,293,085 (ESF 80%, state budget 20%)

Priority 3: Improved qualifications and adaptability of people in employment and of those entering the labour market

- Measure 3.1: Adaptation of vocational training and education to the needs of the knowledge-based society
  Total public expenditure 2004–06: €28,994,250 (ESF 75.38%, state budget 24.62%)

- Measure 3.2: Development, improvement and more extensive provision of further education with the aim of improving the qualification and adaptability of people in employment
  Total public expenditure 2004–06: €42,495,760 (ESF 77.92%, state budget 22.08%)

- Measure 3.3: Development of career guidance and of systems for anticipating changes of qualification needs on the labour market

  - Sub-measure 3.3 A: Development of career guidance
    Total public expenditure 2004–06: €4,925,645 (ESF 80%, state budget 20%)

  - Sub-measure 3.3 B: Systems for interconnection of vocational education and training to the labour market
    Total public expenditure 2004–06: €9,147,626 (ESF 80%, state budget 20%)

Single Programming Document NUTS II – Bratislava Objective 3

Priority 2: The development of lifelong learning and support for research and development in the context of human resources quality improvement

- Measure 2.1: Stimulating and improving the provision of education relevant to employers and businesses
  Total public expenditure 2004–06: €31,183,888 (ESF 52.2%, state budget 47.8%)

- Measure 2.2: Improving the quality of employment and competitiveness of the Bratislava region by human resource development in the area of research and development
  Total public expenditure 2004–06: €10,326,870 (ESF 52.5%, state budget 47.5%)

It is estimated that the most important VET relevant priority, the SOP Human Resources Priority 3, will take up 24% of the total amount of funds allocated for the SOP Human Resources (measure 3.1: 7.9%; measure 3.2: 12.0%; and measure 3.3: 4.1%). With regard to SPD NUTS II – Bratislava Objective 3 it is estimated that Priority 2 will take up 46.2% of the total funds allocated (measure 2.1: 34.1%; and measure 2.2: 12.1%).

ANNEX 5: BALANCE BETWEEN PUBLIC AND PRIVATE VET SCHOOLS

- Latvia: 120 VET schools, of which five are private and five are owned by local government
- Poland: 8,600 VET schools, of which 95% are public and 93% under self-government; 2,900 postsecondary schools or lyceums, of which 36% public (35% self government) and 64% private
- Slovakia: 893 VET schools, of which 758 are self-governed, 73 private and 62 connected to churches
- Slovenia: all secondary VET schools state-owned; 19 private postsecondary schools
- Cyprus: important private sector at college level; VET is 12% of total secondary
- Turkey: very small private sector; 11 private schools with 936 students (about 1/1,000 of total student enrolment)
- Romania: private sector is important in developing high schools
- Bulgaria: 24 private schools out of 500 (others are state or municipal)

ANNEX 6: APPRENTICESHIP

- Lithuania: two schools with a dual system, but financed by the state on the same basis as VET schools
- Bulgaria: in preparation by the Chamber of Crafts
- Poland: 150,000 students in apprenticeship (one part funded by districts for basic VET and a second part sent by employers and financed by labour offices or Labour Fund)
- Slovakia: dual system for craftspeople rather marginal, about 3,000 students out of 800,000
- Slovenia: dual system, but participation increasing until 2000/01 and decreasing since then: 854 students enrolled in 2001 against 1,075 in 2000/01 and 700 in 1997/98 (around 1% of all students in secondary education). Costs met by employers with state support for social insurance (first year: 100%; second and third years: 50%).

Discussions ongoing with employers as they would like to receive more support from the state

- Croatia: dual system, but only 8,000 students out of 140,000 and declining (10,500 in 2000; 8,100 in 2003)
- Cyprus: apprenticeship system, with about 700 students in 1999 (620 in 2000, declining steadily), therefore less than 1% of students in secondary education (64,000 of whom 7,500 in VET); costs shared by employers (33%), Ministry of Education and Culture (47%), HRDA (14%) and students (6%)
- Romania: no system yet, but regulations taken in 2003 foresee on-the-job apprenticeship as VET for employees, not for youth at present
- Turkey: apprenticeship exists but is declining: from 180,000 in 1997 to 120,000 in 2001

ANNEX 7: APPROACHES TO FUNDING ALLOCATION

In **Lithuania**, in the planning of allocations for individual institutions, resources for salaries, scholarships, catering (in vocational schools only) and ordinary and extraordinary expenses, depending upon the number of students and the cost of training programmes, are considered. This share is accounted according to a concrete coefficient of programme cost. The coefficient is calculated on the basis of premises area, equipment and its maintainance, training materials, and the energy required for a specific programme. The coefficient of cost may vary from 1.00 (the least expensive programme) to 1.15 (the most expensive, special programme). In vocational schools 0.1 points could be added to the coefficient in case of stage III training programmes and for rehabilitation institutions, and 0.01–0.05 in case of newly introduced programmes. In professional colleges 0.02 points may be added to the coefficient in case of a newly introduced programme.

In **Latvia**, during the planning of the annual budget, each ministry projects the average number of students attending the vocational education establishments under its authority, as well as the number of training places in each profile. The plan is further based on the minimum expenditure per trainee determined by the Cabinet of Ministers (CM). The CM (Regulation No 303 of the year 2000) has determined that the lowest expenditure per trainee is LVL 540 per year. This level of expenditure applies to communication sciences, library and information sciences, business, public and institutional management, legal sciences, printing, and naval shipping services training programmes. The highest expenditure per trainee applies to in the training programmes in dentistry (LVL 1,522 per year) and art, music and choreography (LVL 1,409 per year). The varying level of expenditure on different training programmes influences the average expenditure per trainee at the vocational education establishments under the authority of the different ministries: expenditure per student in 2001 for the Ministry of Culture, LVL 1,324; for the Ministry of Education and Science, LVL 568; for the Ministry of Agriculture, LVL 781; and for the Ministry of Welfare, LVL 862.

In **Estonia**, the funding of initial vocational education is regulated mainly by the Vocational Educational Institutions Act, which provides that VET institutions are financed from the state, municipality or city budgets, fee-charging services related to the main activities of VET institutions provided for in their statutes, revenue from foundations, and other funds. Student costs for a public VET institution are covered by the state budget from relevant ministry funds on the basis of student cost and the number of financed students at the institution. VET institutions have their own budgets. The student costs of public and municipal VET institutions are covered from the state budget funds within the limits of the number of student places financed by the state during the standard period of study

determined in the curriculum on the basis of student cost, factors for the curricula and forms of study. In Estonia, the principles of funding municipal and public VET institutions are the same.

The allocation for each student place for each budgetary year is established by the government. Similarly, the government determines the factors attributed to the study fields (specialities, different curriculum groups) and study forms (daytime study, evening courses, apprenticeship) as well as the factors for the provision of instruction for students with special needs.

In 2004, the student cost in VET institutions was €869, of which teacher salaries and social taxation amounted to €520 and study materials to €61. To calculate study costs, the student costs are multiplied by the factor given to a field of study, form of study and, if necessary, with the factor for the provision of instruction for students with special needs. In addition to the above costs, the student cost includes management costs as well as wages and social tax costs of nonpedagogical staff amounting to €288.

The Ministry of Education and Research covers the study costs of VET institutions proceeding from the number of student places during the standard time of study. The budget is developed in accordance with the following formula:

annual number of state-commissioned student places **x** student cost **x** factor of field of study **x** factor of form of study

Financing at the local level in **Romania** is as follows: Ministry of Public Finances to local councils for teachers' salaries and scholarships (60%); Ministry of Education, Research and Youth for text books, examinations, teacher training (21%); local councils for material expenses and capital investment (12%); own income for the rest (deconcentration of teachers' salaries and scholarships through local councils, decentralisation for materials and capital, centralisation for textbooks and distribution through school inspectorate).

Types of expenditure	Sources of funding	Responsibilities
Salaries	State budget – value added tax (VAT)	The Ministry of Public Finances distributes salary funds to local councils. They in turn distribute funds to local authorities, based on the number and teaching degrees of the teachers in the respective area.
Materials	Local budget – local charges and taxes	Local authorities are responsible for ensuring the amounts intended for expenditure on materials required by schools. The budget for this expenditure is set locally, based on the requests of school/budgetary centres.
Capital investments	Local budget – local charges and taxes	Local authorities are responsible for ensuring the amounts intended for expenditure on capital investments required by schools. The budget for this expenditure is set locally, based on the requests of school/budgetary centres.
Textbooks	State budget through the Ministry of Education, Research and Youth	The Ministry of Education, Research and Youth provides and manages funds for compulsory education textbooks. Each local authority informs the ministry of the required number of textbooks through the County School Inspectorates (CSI), which receive the textbooks and distribute them locally to the respective schools.
Scholarships	State budget – value added tax (VAT)	The Ministry of Public Finances allocates scholarship funds to county councils. They in turn distribute the funds to local authorities, based on the number of pupils in the area. The funds are allocated as maintenance grants to pupils in financial difficulties (approximately 1%). The criteria for obtaining maintenance grants are established at national level. County School Inspectorates may add several criteria, depending on local socioeconomic conditions.

ANNEX 8: FUNDING FOR VET STUDENTS

Student unit cost according to branch or field, Turkey (USD)

Branch or field	Per student				Total cost per branch or field
	Teacher cost	Building cost	Equipment cost	General expenses cost	
Handicrafts	882.48	58.86	32.24	48.94	1,022.52
Clothing	571.96	55.16	20.37	45.19	692.68
Engineering	250.04	69.61	232.36	31.30	583.31
Electrics	212.06	56.52	38.74	36.69	344.01
Electronics	179.60	51.19	50.66	33.50	314.95
Accounting	267.80	34.68	19.48	2.51	324.47
General upper secondary	228.80	39.55	2.17	48.28	318.80

Source: CORD, ARGON ve H.Ü. Found. Eng. Fac., Feasibility study in secondary vocational education, Evaluation of unit costs and capacity, Ankara, 1997

Labour costs and operational costs per full-time student in public schools, Slovakia, 2002 ('000 SKK)

School by type	Labour costs (wages incl. levies) per student		Operational costs per student		Number of schools
	Mean	Std. dev.	Mean	Std. dev.	
Grammar school	17.812	3.2	3.147523	1.688638	125
Grammar school for sports	30.965	10.5	6.439984	1.911253	6
Secondary specialised schools (mixed programmes)	9.542	3.1	1.401553	1.100292	2
Secondary technical schools (SSS)	23.233	5.0	5.219404	2.441573	65
Business academy	18.714	3.1	3.003698	1.600354	58
Hotel academy	18.777	3.3	3.918824	3.011127	8
Social and legal academy	23.667	NA	4.037037	NA	1
Secondary school of agriculture (SSS)	28.719	4.4	7.949150	7.194780	19
Secondary vocational school of forestry (SSS)	25.551	1.4	5.050418	0.869864	2
Secondary school of horticulture	29.922	0.5	8.694301	3.300587	2
Conservatory (mixed programmes)	72.095	11.2	10.688600	3.303280	5
Conservatory (dancing)	74.487	NA	12.071430	NA	1
School of applied arts	43.714	4.4	13.148570	4.121914	4
School of librarianship and information studies	18.869	NA	4.233990	NA	1
Secondary pedagogical school	22.716	2.4	3.268324	0.616815	5
Secondary specialised schools for girls	23.617	11.9	11.510090	21.934220	26
Secondary vocational schools	29.990	16.2	3.935756	7.097329	130
Practical training centres	10.049	13.8	-	-	16
Associated secondary schools	15.125	12.1	2.679440	2.390281	23
Total	23.728	9.5	4.499983	5.248513	483

Source: Kubanova, M., SGI

ANNEX 9: TAX DEDUCTION SYSTEMS

In **Estonia**, individuals or their employers pay for work-related training and informal education. The state is supporting people's participation in training through an effective tax system. Pursuant to the Income Tax Act people have a right to be exempted from income tax to the extent of the sum spent on training. Training financed by employers is not considered a fringe benefit; however, the financing of an employee's formal education and informal education by the employer is considered a fringe benefit. Pursuant to the Value Added Tax Act, value added tax shall not be imposed on preschool education, lower secondary education, upper secondary education, higher education, private tuition related to general education, or other training, except for training provided by a company or sole proprietor.

ANNEX 10: NATIONAL TRAINING FUNDS

In **Hungary** enterprises make a contribution to the funding of initial VET in the school system and the provision of CVT for employees through a tax of 1.5% of wage costs [16]. The tax levied on enterprises finances the Development and Training subfund of the Labour Market Fund. The tax is referred to as the 'vocational training contribution'. Up to one-third of the tax (0.2% until 1999, 0.5% now) can be spent by companies on CVT for their own employees, but only on training programmes included in the National Vocational Qualification Register. This condition is fulfilled through prior agreement given by the County Training Committee. Up to 75% of the tax can be contributed directly to vocational schools, for the organisation of practical training for students, or to cover the costs of training in money or in kind, or by providing direct financing.

Since 2001, direct support can also be given to higher education institutions. The remainder is paid into the Vocational Training Fund, which has a decentralised and a centralised component. The decentralised component is devolved to the level of municipalities on a student per capita basis and may be used at the discretion of the municipalities within a framework of eligible measures drawn up by the Minister of Education on the advice of the National Vocational and Training Council (NVTC). The centralised component is used on the authority of the Minister of Education following advice from the NVTC:

- to pay for practical training places offered to initial VET students by enterprises and to support the Chamber of Commerce in its overview of the training. Funds are distributed on the basis of applications by enterprises providing practical training for VET school students, verified by a direct contract with a vocational school or mediated through the Chamber of Commerce;
- for the procurement of expensive equipment requested by a vocational or secondary vocational school;
- to contribute to the Leonardo da Vinci programme and other national and international VET programmes. Funding is allocated to such programmes during the relevant programming cycle;
- to support the work of the National Institute for Vocational Education (NIVE).

The vocational training contribution has increased considerably since the beginning of the 1990s, growing from HUF 9.4 billion in 1991 to 15 billion in 1995, 30.6 billion in 1998, 36 billion in 1999, 43.3 billion in 2000 and 47.6 billion in 2001. As part of this, the Vocational Training Fund increased from a share of about 20% up to 1996 to about 30% from 1997, while direct subsidies to schools increased most strongly from about 25% in 1991 to 40% in 1997 and more than 50% since 1998. The contribution to 'corporate training' decreased drastically and regularly from more than 50% in 1991 to 39.3% in 1995,

29% in 1997, 18.6% in 1998, 16.1% in 1999 and 13.6% in 2000, while the threshold for this contribution to CVT increased from 0.2% to 0.5% in 1999.

In 2000 the vocational training contribution amounted to an estimated HUF 43.3 billion (€173 million). The contribution from the Development and Training Fund to initial VET was estimated to be approximately €150 million or 0.3% of GDP, i.e. nearly one-third of the total estimated expenditure on initial VET. Therefore, only €23 million were available for CVT for their employees, 13.6% compared to a theoretical one-third.

One reason for this could be the recent introduction of the reference to the National Vocational Qualification Register as a condition for accepting the funding of training courses. Another explanation is probably that Hungarian companies are traditionally involved in initial education and training (it should be noticed that when the Vocational Training Fund was introduced before 1990, its purpose was to support schools, not CVT). Finally, we must acknowledge that the vast majority of Hungarian companies are small or very small (only 2% of them employ more than 300 people) and therefore they do not use this facility, as the money available could not cover their real training needs (see Sum, I. and Tóth, A., *Financing vocational training outside the school*, Hungarian Ministry of Education, 1999).

ANNEX 11: OTHER RESOURCES

In **Cyprus**, these are financed directly by the government to schools; but parents' associations are able to pay for additional staff as well as school committees. Parents associations' and school committees also receive state grants and can raise additional funds.

In **Turkey**, the revolving fund is important in that it provides extra financing for education. The vocational and technical schools are connected to the Department of Operations of the Ministry of National Education with respect to the revolving fund. Schools may procure machinery and equipment with the income generated from the revolving fund after getting approval from this department. The products made using the students' contribution are sold through the revolving fund and the production fee related to each job is given to the students and teachers who made the product. Thus, through the revolving fund:

- the students are provided with the opportunity to receive skills training on different jobs by using a variety of materials of different quality, as well as the opportunity to earn some money;
- the requirements that arise during skills training (maintenance and repair of machines, procurement of required supplies, etc.) are quickly met;
- the teachers have the opportunity to earn additional income;
- the adaptation to new technologies is made easy through the procurement of new machinery and equipment from the income generated.

If the revolving fund is used correctly it can play an important role in attaining the goals of vocational and technical education. However, it has been observed that the revolving fund has become the end rather than the means in some schools where, for example, all the work under the revolving fund may be done by teachers and workers. In such circumstances the main goal of providing students with more practical training is replaced by the goal of providing teachers with extra earnings and profit for the school.

The revolving fund activities are organised according to the provisions of a law enacted in 1938, which takes production of goods as a basis. A new draft law has been prepared in order to adapt the regulation to the present conditions; however, it has not been passed through the parliament yet.

ANNEX 12: IMPACT OF INVESTMENT IN EDUCATION

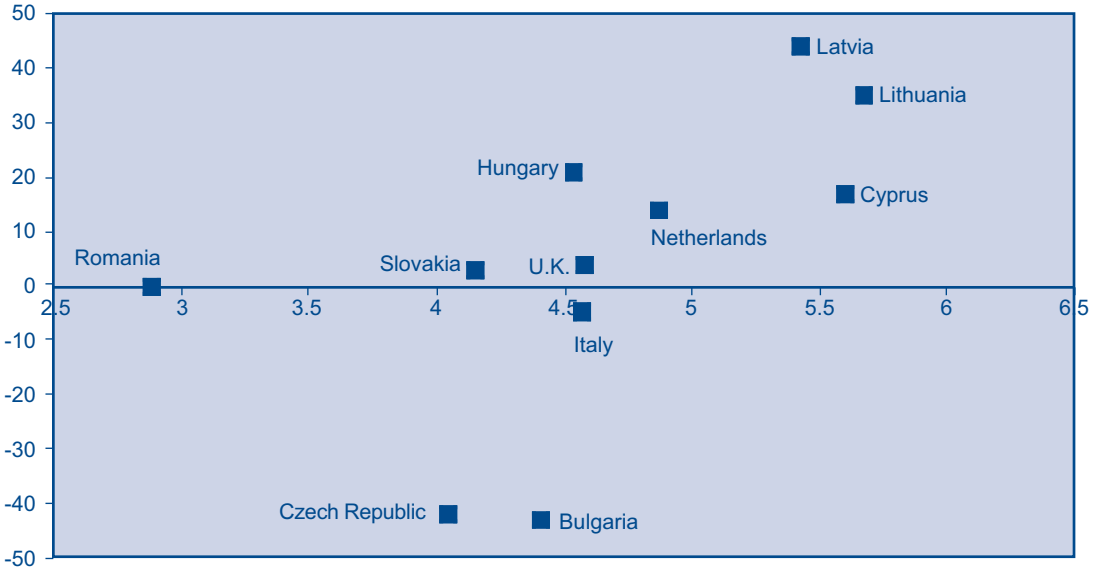
Differences in average mathematics and science scales scores of eighth-grade students by country in 1995, 1999 and 2003

	Mathematics				Science			
	1995	1999	2003	2003 -1999	1995	1999	2003	2003 - 1999
Belgium (Flanders)	550	558	537	-21	533	535	516	-19
Netherlands	529	540	536	-4	541	545	536	-9
Hungary	527	532	529	-2	537	552	543	-10
Russian Federation	524	526	508	-18	523	529	514	-16
Slovakia	534	534	508	-26	532	535	517	-18
Latvia	488	505	505		476	503	513	+11
Lithuania	472	482	502	+20	464	488	519	+31
Sweden	540		499		553		524	
Scotland	493		498		501		512	
Israel		466	496	+29		468	488	+20
Slovenia	494		493		514		520	
Italy		479	484	+4		493	491	-2
Bulgaria	527	511	476	-34	545	518	479	-39
Romania	474	472	475	+3	471	472	470	-2
Norway	498		461		512		494	
Moldova		469	460	-9		459	472	+13
Cyprus	468	476	459	-17	452	460	441	-19
FYROM		447	435	-12		458	449	-9
Jordan		428	424	-3		450	475	
Tunisia		448	410	-38		430	404	-26

Source: National Center for Education Statistics, Highlights from the Trends in International Mathematics and Science Study (TIMSS) 2003, 2004

The graph below gives the differences in average achievement between 1995 and 1999 in relation to the average public expenditure on education during these four years as a percentage of GDP for a number of countries, nine of which are former or current candidate countries. The graph shows a strong correlation between the two factors. Improved results in the survey seem closely correlated with the level of investment ([16] section 7.1.4).

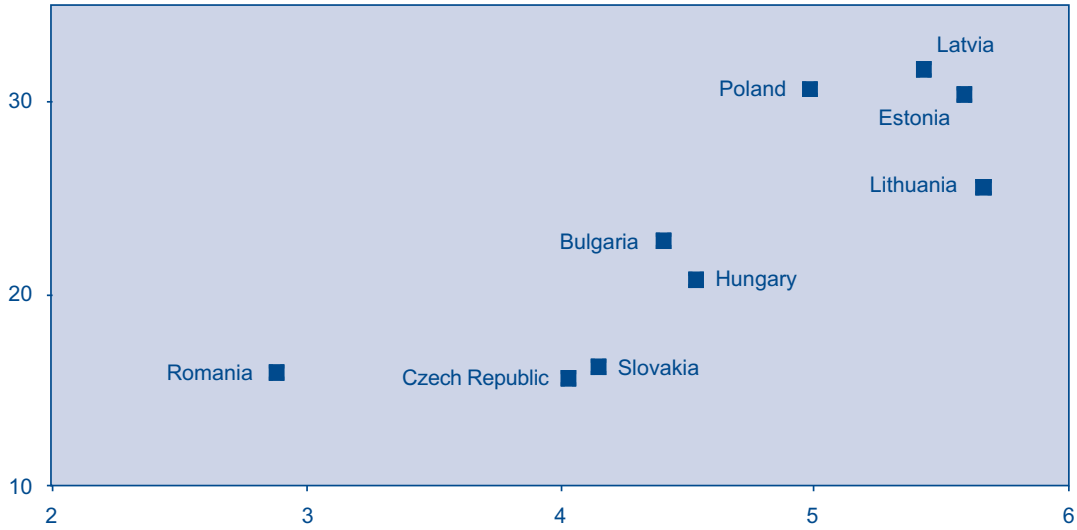
Progress in TIMSS by public funding for education between 1995 and 1999 (% of GDP)



Pb exp in education (% of GDP)

The graph below analyses the level of participation in higher education in 2001 as measured by the EU indicator produced in 2004 [13] in relation to public expenditure on education as a percentage GDP. Here too, the correlation seems significant.

Participation in higher education by public funding for education in 2001 (% of GDP)



ACRONYMS

CARDS	Community Assistance for Reconstruction, Development and Stabilisation
CC	candidate countries
Cedefop	Centre européen pour le développement de la formation professionnelle (European Centre for the Development of Vocational Training)
CVT	continuing vocational training
CVTS	Continuing Vocational Training Survey
ERDF	European Regional Development Fund
ESF	European Social Fund
ETF	European Training Foundation
EU	European Union
GDP	gross domestic product
HRDA	Human Resources Development Authority
ICT	information and communication technology
ISCED	International Standard Classification of Education
IVET	initial vocational education and training
JAP	Joint Assessment Paper
LM	labour market
NMS	new Member States
OECD	Organisation for Economic Cooperation and Development
PISA	Programme for International Student Assessment
PPS	purchasing power standard
R&D	research and development
SKK	Slovak koruna
SME	small and medium-sized enterprise
SOP	Sectoral Operational Programme
SPD	Single Programming Document
SSS	secondary specialised schools
TIMSS	Trends in International Mathematics and Science Study
VET	vocational education and training

REFERENCES

[1] Acemoglu, Daron, Philippe Aghion and Fabrizio Zilibotti. 2002. *Distance to frontier, selection and economic growth*. NBER Working Paper 9066

[2] Aghion, Philippe and Élie Cohen. 2004. *Rapport du Conseil d'analyse économique. Education et croissance.* La documentation française

[3] Akpinar, Aise. 2003. *Financing of vocational and technical education in Turkey*. Ankara

[4] Cedefop. 2003. Steve Bainbridge, Julie Murray, Tim Harrison and Terry Ward. *Learning for employment. Second report on vocational education and training policy in Europe*

[5] Cedefop. 2004. Manfred Tessaring and Jennifer Wannan, *Vocational education and training – key to the future. Lisbon–Copenhagen–Maastricht: Mobilising for 2010*. Cedefop (synthesis of the Maastricht Study)

[6] Cedefop. 2001. Tommi Pukkinen, Clemens Romijn and Sarah Elson-Rogers. *Funding continuing training in small and medium-sized enterprises. Discussion and case studies from across the EU*. Cedefop Panorama series 17. Luxembourg

[7] Checchi, Daniele. 2005. 'Making the best use of resources' peer learning cluster. *Notes on grouping countries*. Working paper

[8] Christodoulides, G. 2003. *Financing: Investment in human resource. An ETF sponsored report for Cyprus*. The Consultancy Unit, Intercollege in Cyprus. Nicosia

[9] European Commission, DG Education and Culture, Implementation of 'Education & training 2010' work programme. Working group E 'Making the best use of resources'. 2004. *Progress report*

[10] European Commission, DG Education and Culture, Implementation of 'Education & training 2010' work programme. Working group E 'Making the best use of resources'. 2004. *A European toolbox of policy measures*

[11] European Commission. 2003. *Implementing lifelong learning strategies in Europe: Progress report on the follow-up to the 2002 Council resolution on lifelong learning in the acceding and candidate countries*. See http://www.europa.eu.int/comm/education/policies/2010/et_2010_en.html

[12] European Commission. 2004. *Joint Interim Report of the Council and the Commission on the implementation of the detailed work programme on the follow-up of the objectives of education and training systems in Europe*

[13] European Commission. 2004. *Commission staff working paper. Progress towards the Lisbon objectives in education and training. Indicators and benchmarks. 2004 Report*

[14] European Commission. 2005. *Commission staff working paper. Progress towards the Lisbon objectives in education and training, 2005 Report*

[15] Eurostat. 2003. *Statistics in focus. Science and Technology*. Theme 9, 9/2003

[16] ETF. 2003. *Thirteen years of cooperation and reforms in vocational education and training in the acceding and candidate countries* [the ETF 13 Years Report]

[17] ETF. 2004. *Thirteen years of cooperation and reforms in vocational education and training in the acceding and candidate countries. Addendum*

[18] ETF. 2004. *Achieving the Lisbon goals: The contribution of VET in Bulgaria*

[19] ETF. 2004. *Achieving the Lisbon goals: The contribution of VET in Romania*

[20] ETF. 2004. *Achieving the Lisbon goals: The contribution of VET in Turkey*

[21] ETF. 2002. *ETF synthesis report: Cross-country summary of needs in the fields of employment and human resource development.* ETF report for DG Employment

[22] ETF web site http://www.etf.eu.int/. Pages on publications, new Member States and enlargement

[23] ETUC, UNICE/UEAPME, ECEPP. 2005. *Framework of actions for the lifelong development of competencies and qualifications. Third follow-up report*

[24] Institute of Economics, Zagreb, and National Observatory. 2004. Zdenko Babic, *Draft Study into the effectiveness and efficiency of funding secondary education in Croatia, with particular reference to vocational education and training*. Zagreb

[25] Leney, T. 2004. *Achieving the Lisbon goals: the contribution of VET* [the Maastricht Study]. Qualifications and Curriculum Authority. London

[26] Leney, T. 2004. *Achieving the Lisbon goals: The contribution of VET. Executive summary.* Qualifications and Curriculum Authority. London

[27] *Maastricht Communiqué on the future priorities of enhanced European cooperation in vocational education and training (VET)*, *Review of the Copenhagen Declaration of 30 November 2002*. 14 December 2004

[28] National Center for Education Statistics. 2004. *Highlights from the Trends in International Mathematics and Science Study (TIMSS) 2003*. Canada

[29] National Observatory in Bulgaria. 2003. *Report on financing: Investment in human resources*. Sofia

[30] National Observatory in Estonia. 2003. Marju Sepp, Pille Tarto and Katrin Jogi. *Financing: Investment in human resources.* Tallinn

[31] National Observatory in Estonia. 2005. *Additional comments and information*. Tallinn

[32] National Observatory in Latvia. 2003. *Financing of VET in Latvia. Draft report*. Riga

[33] National Observatory in Lithuania. 2003. *Financing: Investment in human resources*. Vilnius

[34] National Observatory in Lithuania. 2005. Dienys Valdas, *Additional comments and information on the 2003 report*. Vilnius

[35] National Observatory in Poland. 2003. Elzbieta Drogosz-Zablocka and Rafal Piwowarski, *Report on financing of vocational education and training in Poland: Investment in human resources.* Warsaw

[36] National Observatory in Romania. 2003. Mihaela Jigau. *Financing of vocational education and training – Romanian report*. Bucharest

[37] National Observatory in Slovenia. 2003. *Financing of vocational education and training.* Ljubljiana

[38] OECD. 2004. Education at a glance

[39] OECD. 2004. *Learning for tomorrow's world – first results from PISA 2003*

[40] OECD. 2003. *Beyond rhetoric: Adult learning policies and practices*

[41] Unicef. 2002. *Social Monitor 2002: The MONEE project CEE/CIS/Baltics*. Florence

[42a] Vantuch, Juraj. 2004. *Financing of vocational education and training in the Slovak Republic*. Bratislava

[42b] Vantuch, Juraj. 2003. *Recent development in education, training and employment policy in Slovakia*. Bratislava

[42c] Vantuch, Juraj. 2002. *Current status of vocational education and training in Slovakia*. Bratislava

[42d] Vantuch, Juraj. 2001. *Modernisation of vocational education and training in Slovakia.* Bratislava

[42e] Vantuch, Juraj, et al. 2004. *Recent development in education, training and employment policy in Slovakia* (2003 Short Country Report), Bratislava

[43] Wössman, Ludger. 2004. *Decentralisation works if combined with external examination*. Presentation to the first European Symposium on Economics of Education. Brussels, 16–17 November

[44] Eurydice. 2004. *Key data on information and communication technology in schools in Europe*

European Training Foundation

Financing vocational education and training in the EU New Member States and Candidate Countries — Recent trends and challenges

Luxembourg: Office for Official Publications of the European Communities

2006 — 73 pp. — 21 x 29.7 cm

ISBN 92-9157-455-4

SALES AND SUBSCRIPTIONS

Publications for sale produced by the Office for Official Publications of the European Communities are available from our sales agents throughout the world.

You can find the list of sales agents on the Publications Office website (http://publications.eu.int) or you can apply for it by fax (352) 29 29-42758.

Contact the sales agent of your choice and place your order.

TA-69-05-771-EN-C

Publications Office
Publications.eu.int

ISBN 92-9157-455-4
9 789291 574551