

Bulgaria – Education and Skills for the Knowledge Economy

A Policy Note

Executive summary

Why Education Reforms now?

Underpinned by the availability of a well-educated workforce, Bulgaria's economic performance has been impressive in recent years. Yet, as it prepares to accede to the European Union, its education system faces a number of challenges. Many of these are similar to those faced in EU countries as they strive collectively to achieve the strategic Lisbon goal "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs."

The magnitude of the challenge, however, is larger in Bulgaria for at least three reasons. First Bulgaria's working age population is shrinking much more rapidly than in many countries in the EU, placing even greater demands on higher labor productivity – and thus the ready availability of a skilled labor force – as a key determinant of economic growth. Second, despite its high levels of educational attainment and tremendous progress in recent decades, there are still gaps with EU countries. At the same time, some recent trends – on quality and participation – raise concerns. Third, inequalities in access to good quality education are still high. Low income groups, rural residents and ethnic minorities are at risk of economic and social exclusion in the future. This in turn will imply higher fiscal costs to address their probable unemployment and poverty, and lower growth. Since the production of a workforce with the appropriate skills cannot take place overnight, Bulgaria needs to take significant strides urgently to reform its education system to prepare its future labor force to meet the demands of an increasingly competitive economic environment.

Accession and integration into the EU provide the imperative for reform, but also bring significant amounts of external funds that could be used to propel the reform process, and to support needed investments¹. But to access and effectively utilize these funds, significant planning is needed immediately. This note focuses on three challenges – increasing quality and relevance of skills, increasing participation in upper secondary and higher education, and doing these with cost effective utilization of resources – integral to achieving the Lisbon goals. What is needed now is action to seize this historic opportunity and to move forward with the unfinished reform agenda. This will require political commitment to reform and a clear strategy for consensus building and implementation. This note seeks to contribute to the in-country debate by suggesting a road map to accelerate the pace of reforms over the next three to four years.

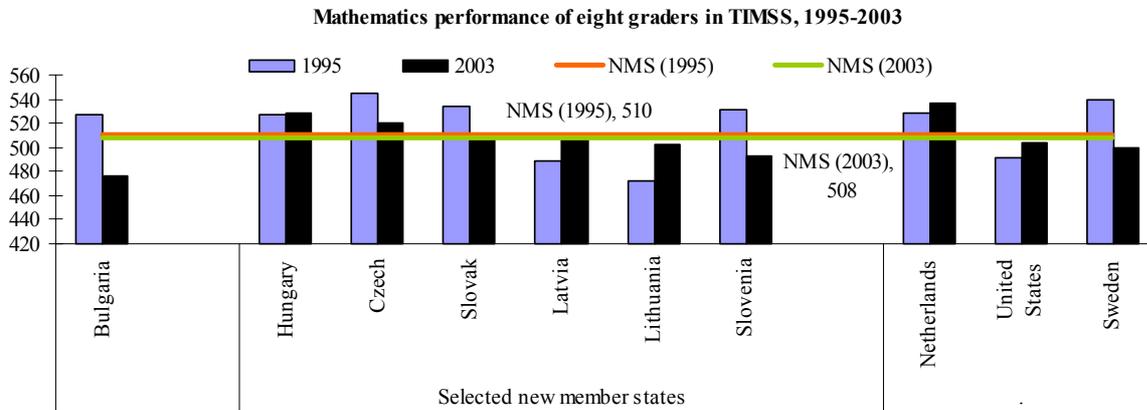
At the core of the recommended options is the vision in Bulgarian strategic documents – reiterated in the policy statements of the new government – to "change the educational model from resource oriented towards results oriented; binding the expenditure level with the quality of the educational product; decentralization and autonomy of schools; optimization of the school network...²." To this end, the note emphasizes the establishment of targets at the national level in the context of the Medium Term Fiscal Framework, and linking financing progressively with the achievement of agreed targets. For school education, a key recommendation is that Bulgaria's existing model of autonomy – pioneered in its "delegated budgets" – is further strengthened. In particular, performance contracts between the government and municipalities should be signed. Contracts between the MES and universities could link finances to agreed changes needed to improve quality and cost effectiveness.

¹ An accompanying Public Finance Policy Review provides suggestions for specific project proposals for EU funding.

² *Political Priorities of the Government*, August 2005, p.6.

Challenge I: Increasing the quality and relevance of skills

Figure 1: Mathematics performance of Bulgarian eighth graders fell from above to below the NMS average



Bulgarian secondary school students are not adequately equipped with the competencies and skills for the knowledge society

In the OECD PISA (Program of International Student Assessment) 2000 survey which assesses proficiency in foundation skills for the knowledge society (reading, mathematics and scientific literacy), 40% of Bulgarian 15-year olds perform at or below the lowest level of proficiency in reading literacy. This is twice the EU average and 2.6 times the Lisbon benchmark. The PISA survey also found significant inequality in the quality of education accessed by different socioeconomic groups, linked to a large extent to the selection of children into different quality of schools for upper secondary. There is worrying evidence of decline in the acquisition of key skills over time. In the TIMSS (Trends in International Mathematics and Sciences Study) Bulgarian eighth grade students faced the steepest declines in mathematics and science achievement between 1995 and 2003 (Figure 1). Interestingly, while Bulgarian 15-year olds are falling behind, Bulgarian fourth grade students fare well in international tests of reading literacy.

The delays in adopting and implementing an objective external quality assessment system have limited the ability of policy makers to set national targets. Policy makers, education managers and teachers are also unable to obtain feedback on the performance of the system, schools and individual students and to use this to identify and introduce needed changes. International experience suggests that the quality of teachers is a key determinant of student achievement but this issue is only now beginning to receive attention in Bulgaria.

Decentralization with appropriate accountability systems and teacher quality are essential elements of any strategy to improve quality of school education

To improve quality, the government should set targets at national and local levels, elaborate a clear decentralization strategy and an overall framework for accountability. Such a strategy can build on the existing models of financial autonomy to schools in municipalities with “delegated budgets”. The note proposes that autonomy is extended while placing an explicit focus on incentives and accountability for improving quality. Support systems should be strengthened to enable schools to improve. In the medium term, these pilots should be expanded based on systematic evaluations of their impact on quality.

To strengthen the accountability framework, there is an urgent need to move ahead

with the introduction of a national external assessment system. Modernization calls for the establishment of a strong monitoring and assessment system in line with best EU practices and recommendations. Given the sensitivity, pilot testing and strong communications will be key to launching implementation.

A comprehensive strategy to enhance teacher quality will need to be defined in collaboration with all key stakeholders. It should address *inter alia* the rewards system to enable performance-based remuneration and innovative pedagogy, active recruitment and retention of good teachers, and the in-service needs of teachers and school staff as a team in support of classroom and curricular needs. As a start, various teacher incentive schemes could be piloted and evaluated.

The quality and relevance of skills provided in higher education institutions does not meet labor market needs

One indicator of a mismatch of skills provided in higher education with the needs of the economy is the striking differences in the balance of subjects with the EU. For example, the share of students in social sciences, business and law is 41% compared to 34% in the EU. In mathematics, sciences and computing the share is 5% compared to 11% in the EU and 15-17% in UK and Ireland. Courses and curricula are also often not in tune with industry and employment needs.

In Bulgaria, there is limited information on future employment and earnings prospects to inform course offerings and student demand. In the absence of this, the government controls student numbers by subjects in each institution. Funding mechanisms still provide limited incentives to universities to be attractive to students, and are not yet used to support public policy objectives. Although industry can play an important role in ensuring that universities produce graduates that are more valuable to the economy, in Bulgaria (as in many countries) it has been difficult to establish needed linkages. Finally, the ultimate authority of the university is a body that is comprised largely of the staff of the university. This governance structure does not serve the broader public interest and is not conducive to innovation and change. Although universities have a lot of autonomy, they are not adequately accountable for quality.

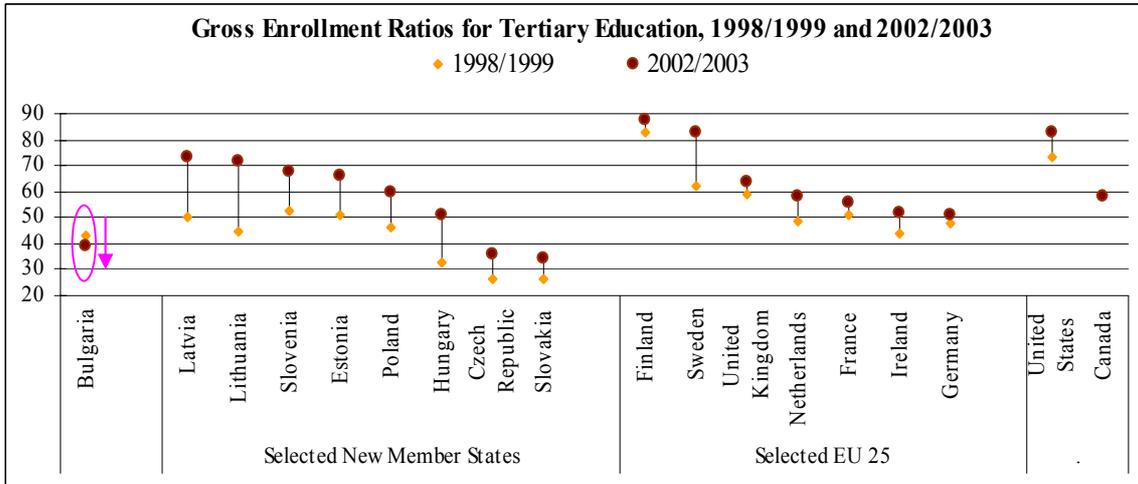
Improved information (including labor market information) and quality assurance in higher education, stronger linkages with industry, and accountability systems to deliver results will be key

A progressive policy framework for quality assurance by the National Evaluation and Accreditation Agency (NEAA) is in place. What is needed now is implementation to ensure the credibility, rigor and independence of the evaluation, and the collection, publication and dissemination of comparative information on the quality of outputs and outcomes. This will replace control with regulation, enable competition, enhance transparency and accountability, and improve educational experiences and outcomes.

With good market information funding can be made more competitive. Funding mechanisms could also play a greater role in enhancing quality and relevance and rewarding public policy objectives such as the study of priority subjects, or employability. To increase the relevance of courses and curricula, the government should require reviews of courses and curricula with local industry. Contracts with universities could link additional funding to the introduction of changes. Contracts with universities could also tie future funding to the adoption of acceptable governance arrangements. What is needed is a governing council with a majority of external stakeholders and a competitive selection of university leaders.

Challenge II: Raising participation in upper secondary and tertiary.

Figure 2: Bulgaria is unique in its decline in higher education participation



Source: UNESCO Institute for Statistics

Completion of upper secondary is below New Member States and Lisbon targets. Children from low income families, rural areas, and disadvantaged populations have unacceptably low participation rates

Completing upper secondary is a pre-requisite for a dynamic and competitive European economy. It is the minimum needed to improve individuals’ prospects into the labor market, enable continuation to further education and training, and prepare individuals for lifelong learning. Bulgaria has made impressive progress in increasing participation especially in upper secondary but participation among 16-18 year olds is still lower than EU-15 and the NMS. Completion of basic education and progression to upper secondary is lower than desired, reflecting to a large extent drop-out among low income, rural and ethnic minority children. A large share of Roma, in particular, drop out after only a few years of school. These groups – the rural, poor and ethnic minorities – also represent the majority of the un-enrolled in upper secondary. Despite recent progress in this area, inequities in access by income group are much higher in Bulgaria compared to Hungary, Poland and even Romania.

High direct and opportunity costs together with low perceived benefits constrain demand by these groups. Above and beyond their poverty status, children from ethnic minorities are additionally constrained by language and cultural constraints, while Roma face added issues of discrimination and segregation.

Targeted interventions to include hard-to-reach groups will have tremendous payoffs for increasing completion in upper secondary.

As with quality, the government should set participation targets at the national and local levels, including targets for transition from basic to secondary. A particular focus should be on including disadvantaged groups – who are a small share of the population but a large share of un-enrolled. It could sign performance contracts with municipalities with “delegated budgets” with an explicit focus on incentives to increase the same targets.

In addition, demand-side cash transfer programs to encourage participation and completion among low-income children have had tremendous success worldwide and in Bulgaria. In 2002/03, to provide incentives to low-income children to attend school, the monthly child benefit program was made conditional on attendance in school. Partly as a result of this, attendance rates of children in the lowest income quintile increased by 20% between 2001 and 2003. Bulgaria could build on this experience to

encourage completion of secondary school. While a strategy and national fund to reduce segregation and increase participation among ethnic minorities is in place, there is need for implementation and attention to results.

Participation in higher education has stagnated and is now on the low end compared to EU-15 and NMS

Tertiary education is critical to the higher skills needs of a knowledge-based economy and is particularly important in the context of higher labor productivity requirements of the future workforce. Today, the share of 30-34 year old Bulgarians with tertiary qualifications compares favorably to EU countries. However, the flow of graduates from the tertiary system has stagnated in recent years. Bulgaria's recent falls in tertiary participation rates in the context of spectacular increases in the NMS and continued gradual increases in EU-15 (Figure 2) poses concerns for competitiveness.

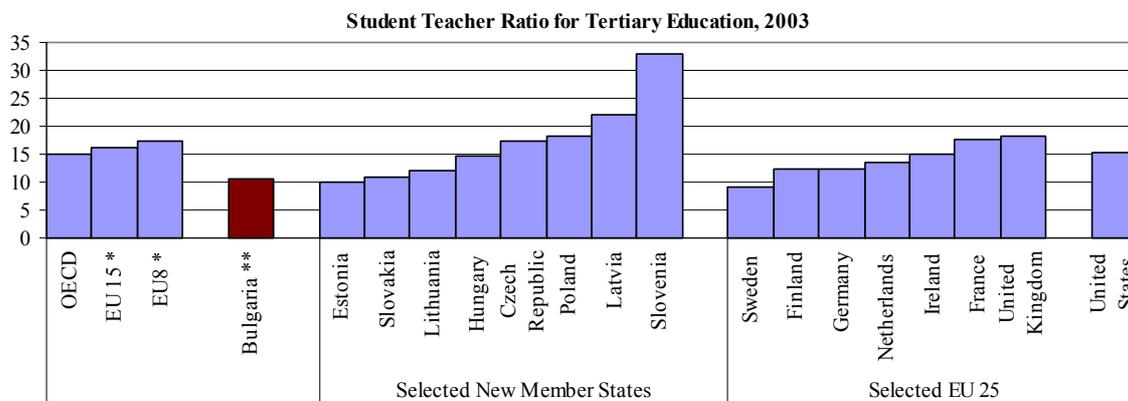
A strategy to increase participation in higher education would include clear policy goals and plans to further leverage private provision and finance

In contrast to public universities, private universities have experienced a sharp increase in enrollments (by nearly 50% between 1997/98 and 2004/05) and in 2004/05. In fact, by 2004/05 only Poland and Latvia among the NMS had a larger private higher educational sector. This suggests unmet demand, but also a greater role for private provision and finance.

To move forward, Bulgaria should set ambitious goals and review the role of the private sector in its strategy to expand participation with quality. A review of the role of student contributions together with strengthening of mechanisms to include qualified students from all backgrounds is recommended.

Challenge III: Optimizing resource use.

Figure 3: Student-teacher ratios in tertiary are low



Source: Data for Estonia, Latvia, Lithuania and Slovenia from UNESCO Institute for Statistics (2002-2003). All others from OECD Education at a glance 2005.

Note: * Unweighted Averages, ** National Institute of Statistics

The need to optimize the use of resources is particularly strong in the face of the dramatic projected falls in school age

There are visible signs of overcapacity in Bulgaria's education system – both of staffing and facilities – which consume resources that could be devoted to quality improvements. While current student teacher ratios are “only” 10% lower than OECD averages, Bulgaria faces among the largest declines in school age population compared to EU countries. Between 2000 and 2010, the 5-9 year old population will fall by 26%, the 10-14 year old by 39% and 15-19 year old population by 27%. This will pose a significant challenge to adjust physical infrastructure and human resources. It also provides an opportunity to reallocate resources to improve quality.

population

Current financing mechanisms provide limited incentives to optimize resources, while continued central control limits cost-effective delivery at the local level..

Optimizing school infrastructure and staffing will require political will, a carefully formulated and communicated strategy, and incentives

Judging by international evidence, there is typically considerable local opposition to school closures and significant staff redundancies. Therefore, addressing the overcapacity in the system will require strong political will and national leadership. As a start, the government should formulate a strategy in close cooperation with regional and municipal governments and communities. This will need to be based on detailed regional demographic projections. Particular attention will need to be paid to issues such as transportation of students and the provision of a safety net for teachers. The gains of the reforms will need to be carefully communicated to stakeholders. In addition, financial incentives will need to be an important part of the package and will need to be tied to the achievement of targets. The government could begin implementation in pilot regions. With careful planning, European Regional Development funds could play a potentially critical role in reconstructing and equipping consolidated schools in rural areas and overcrowded schools in urban areas.

Low student teacher ratios and the large number of small institutions pose similar challenges in higher education

There is a considerable degree of overstaffing in tertiary education (Figure 3). University managers have the levers needed to take decisions to reduce overstaffing but have not done so. The incentives in the governance arrangements are part of the problem, while there are limited financial incentives to address the overstaffing.

Bulgaria also has a strikingly large number of tertiary education institutions relative to its size. In 2003/04, 17 of the 51 higher education institutions had fewer than 1000 students and 32 had fewer than 5000; only 7 of the 51 had more than 10,000 students. While small size by itself is not problematic, Bulgaria is unusual in the high proportion of very small institutions. These are particularly cost ineffective both because of their relatively high overhead costs but also because they are able to offer limited academic coverage. The problem has long been accepted in Bulgaria but action has not been forthcoming. Reasons include vested interests and political difficulty of forcing closure or amalgamation of unwilling institutions.

A combination of national level planning and incentives to higher education institutions will need to be part of the solution

Targets should be established and finances linked to achievement of desired student teacher ratios. Similarly funding mechanisms could play a significant role in providing incentives for collaboration, merger or federation. In addition, there will be need for national strategic leadership. ERDF funds could support improvements in University infrastructure and facilities.

Bulgaria – Education and Skills for the Knowledge Economy

A Policy Note

I. Introduction

Bulgaria's economic performance has been impressive in recent years and Bulgaria has benefited from the availability of a well educated workforce. Traditionally high levels of educational achievement, high value accorded to education by parents and the general public, and strong motivation of students have served Bulgarian education well. Yet, as it prepares to accede to the European Union, Bulgaria's education system faces a number of challenges. Many of these are similar to those faced in other countries of the Union as they strive collectively to achieve the strategic Lisbon goal "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs."

The magnitude of the challenge, however, is larger in Bulgaria for at least three reasons. First Bulgaria's working age population is shrinking – much more rapidly than in many countries in the EU. The shrinking size of the work force places even greater demands on higher labor productivity as a key determinant of economic growth. Bulgaria needs the ready availability of a work force that has the skills and ability to respond to the needs of a rapidly changing – and increasingly sophisticated – global labor market, and that can facilitate innovation and the absorption of new technologies by firms. Second, despite its high levels of educational attainment and tremendous progress in recent decades, there are still gaps with EU countries. At the same time, some recent trends raise concerns – for example there is evidence that quality is declining and the accumulation of higher level skills is slowing down. Third, although Bulgaria has made important recent progress in reducing inequalities in opportunities to education, inequalities in access to good quality education are still high. Low income groups, rural residents and ethnic minorities are at risk of economic and social exclusion in the future. The lower economic opportunities faced by these groups will also mean higher fiscal costs to address their probable unemployment and poverty – and lower growth.

Since the production of a workforce with the appropriate skills cannot take place overnight, Bulgaria needs to take significant strides urgently. Many important and ambitious reforms are presently under discussion in Bulgaria and action has also been taken on a number of fronts. These include developments on the standards and quality of vocational education, curricular reform initiatives, quality assurance in higher education, strategies and programs to target disadvantaged groups and reduce drop out, the introduction of ICTs in schools, and plans for lifelong learning and continuing vocational education. New agencies have been set up in recent years and could contribute to the reform agenda ahead.

This note focuses then on the unfinished agenda. It integrates and complements existing work already undertaken by the Ministries of Education and Finance, Bulgarian research agencies, the World Bank, and other international agencies. It highlights three key challenges – increasing quality and relevance of skills, increasing participation especially in secondary and higher education, and doing these with cost effective utilization of resources. These challenges are integral to achieving the Lisbon goals – of improving quality and effectiveness of, facilitating equal access to, and opening up of, education and training systems. It identifies the constraints to meeting these challenges and suggests policy options for the medium term. The hope is that these will contribute to the debate already on-going in Bulgaria to accelerate the pace of education reform. In terms of scope, this note focuses primarily on the role of school education (including compulsory vocational

education) and higher education in preparing the *future labor force* with the competencies and skills for lifelong learning and the needs of the knowledge economy.

II. The challenge of increasing the quality and relevance of skills.

II. A. School Education

Issue 1: There are serious concerns on the acquisition of cognitive skills in secondary education. Higher cognitive achievement is critical to increasing individual earnings, productivity, and economic growth and for continuation in education. Bulgaria has participated in three recent international studies that provide a comparative perspective on the skills acquired by Bulgarian school children. Bulgarian fourth graders performed well, ranking 4th among 35 countries in PIRLS 2001 (a study of reading literacy achievement in 25 countries). At higher levels of the system, however, Bulgaria does not do well. In the 2000 Program for International Student Assessment (PISA), Bulgarian 15 year olds ranked in the 33rd position among 41 participating countries on reading literacy – behind all EU countries. The mean score of Bulgarian students was 430, below the average for the EU (491) and OECD countries (500). More worrying than the relative ranking, however, is the finding that 40% of Bulgarian 15 year olds – twice the EU average and 2.6 times the 2010 Lisbon benchmark – performed at or below the lowest level of proficiency needed to be equipped with the knowledge and skills in adult life. Equally worrying are the results from the Trends in International Mathematics and Sciences Study (TIMSS) study which show that between 1995 and 2003, Bulgaria faced the steepest declines in the performance of its students in mathematics and sciences (Figure 1). Another concern is the functionality of Bulgarian students in modern foreign languages and ICT, despite impressive recent progress in exposing students to modern foreign languages.

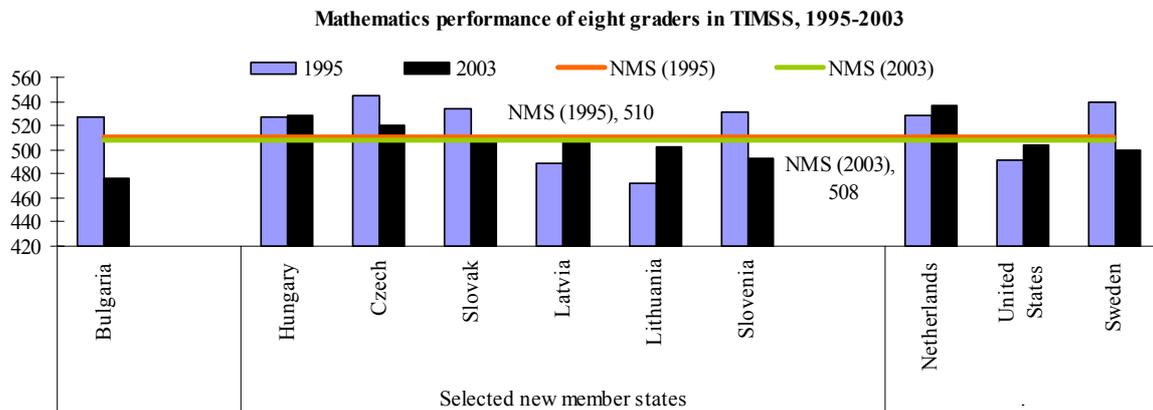
Issue 2: Inequality in educational opportunities and outcomes is high. The variation in student performance *between schools* is particularly pronounced in Bulgaria. In the PISA 2000, this variation was almost twice as large as the average level in the OECD. Socioeconomic segregation resulting from major differences in schools' socioeconomic intake was among the highest in Bulgaria. Canada, Finland, Ireland, Iceland, Sweden have half or less of OECD level of variation between schools and are among top performing countries, demonstrating that seeking similar student performance among schools is a policy goal important in itself but also compatible with high overall performance standards.

Key Constraints:

➤ No system for monitoring the quality or evaluating performance at various levels. All well performing school systems place considerable importance on monitoring and evaluating the quality of the school system as part of the strategy to secure strong performance. In contrast to most modern education systems Bulgaria does not yet have an objective and transparent framework to monitor standards against national and international benchmarks. Results from international comparative studies have not been used for system monitoring or improvement, while commitment to further participation – for example in PISA – is unclear. Bulgaria also lacks a national testing and evaluation system to measure quality at various levels of the system, and the planned external assessment at the ends of grades 4, 7/8 and 12/13 (*matura*) have yet to be implemented nationwide. There is no system of external evaluation of individual students or of schools based on outcomes. The absence of a reliable system of external evaluation of schools contributes to the inability to objectively understand the causes of differences in performance between schools and to target

assistance to underperforming schools. A Center for Control and Quality Assessment has recently been established in 2005 which could play an important role moving forward but the challenge – as in the past – will be to establish the needed expertise and to overcome tradition, old practices and public/social opposition which have proved formidable in the past.

Figure 1: Mathematics performance of Bulgarian eighth graders fell from above to below the NMS average



Source: TIMSS. NMS average is computed only for countries who participated in both years.

- No focus on accountability for quality. In part a result of the lags in developing an external assessment system, there are no agreed targets at the national or local levels for teaching and learning outcomes, and no mechanisms to hold the MES, municipalities or schools accountable for improving outcomes.
- Insufficient competition among schools. There are no incentives or mechanisms to encourage and enable poorly performing schools to improve or to learn from other schools. Funding mechanisms do not yet link to quality or equity objectives. Information on school outcomes and good practices is lacking. Even in the 10% of municipalities (approximately 660 general secondary schools) with “delegated budgets” to schools – where some competition is in place, mechanisms to improve quality and equity have still to be developed.
- Inadequate attention to the quality of teachers. Teacher quality is a key determinant of educational outcomes. The move towards modern, student-centered curricula imparting basic skills requires a shift in the paradigm of a teacher – from the traditional role of imparting of subject matter to one of adaptability and innovation regarding curricula and pedagogy. It poses new challenges and expectations for teachers to work together and to be more open to productive relationships with parents and the local communities. Yet, teacher quality has been a relatively neglected issue in Bulgaria and a host of circumstances affecting their status and conditions of work are unsatisfactory. First the still highly centralized reward system limits the ability to reward performance at the local level where innovative practices can be better identified. Second, despite overstaffing at the aggregate level, there is a shortage of teachers with skills in specific areas – such as foreign languages. Third, pre-service and in-service training structures have not yet begun to adequately address the practical needs of teachers and school staff on the ground. Important recent developments on this front, however include the recent adoption of a law to reform initial teacher education, due for implementation in 2006 and the establishment National Pedagogic Center which is to have a major role in in-career development.

➤ Slow progress in modernizing curricula and content. The process of curriculum reform is proceeding slowly and curriculum reform continues to be a major policy concern. Progress has been made and reforms are in place up to 4th school year, but there is need to speed up the reform and sequence the vocational elements better with general education. There is still a high degree of fragmentation in the upper secondary curriculum between vocational and academic paths and limited mobility between programs and from the compulsory vocational system to higher education. Moreover, the narrow and outdated specializations still offered in many vocational schools are particular constraints for quality and relevance.

➤ Structural features of the school system reinforce inequalities in achievement according to socioeconomic background. Selection within the public school system takes place at about age 14 as students select into vocational or general streams in upper secondary. An additional competitive selection takes place a year earlier into selective (even elitist) education in the profile oriented schools. While tracking or streaming of students has been used in many countries to deal with diverse student bodies, there is accumulating international evidence that early tracking into educational streams increases inequality in educational outcomes without necessarily contributing to higher overall performance³. In Bulgaria, this relatively early institutional fragmentation reinforces the ability of students from better off households – who perform better on tests, have more information, as well as more resources for private tutoring – to be admitted into good schools. Many countries have begun to address the issue of early reinforcement of socioeconomic differences in the school system by delaying institutional differentiation. Poland provides the most recent example – it dramatically reduced differences in performance between schools between 2000 and 2003 – the mean performance of Polish 15 year olds increased substantially as a result of the improved performance among the lowest performing students. This success is attributed to the reforms since 1999 to delay institutional differentiation until after age 16⁴.

➤ Segregation among ethnic minorities. Children from ethnic minorities – and especially the Roma – are overrepresented in lower quality schools due to geographic separation or discrimination.

Policy Options for Consideration:

At the heart of the vision in Bulgarian strategic documents, and indeed in this note, is the move towards a more decentralized system with greater autonomy at local and school levels. A common principle of reform strategies in many OECD countries is decentralization – in terms of a downward shift in decision making – within an overall framework of defining roles and responsibilities, strengthening capacities appropriately, and assigning accountability for outcomes. This principle is central to the policy options recommended to meet all three challenges laid out in this note.

A core pillar of the recommendations in this note is the establishment of targets for desired outcomes and outputs at the national level – for example setting realistic targets at the national level in the context of the Medium Term Fiscal Framework (MTFF), setting the appropriate baselines for outcomes and budgets, and then linking financing progressively with the realization of these targets. The parallel at lower levels of educational management is the establishment of similar targets and baselines at the local level through performance contracts or agreements between MES and

³ Hanushek and Wössmann (2005), Does Educational Tracking affect performance and inequality? Differences in differences evidence across countries, NBER working paper 11124, February 2005; OECD, 2003, *Literacy Skills for the world of Tomorrow*, pp. 220

⁴ OECD (2003) *Literacy Skills for the World of Tomorrow*.

municipalities – for example starting with those already implementing school autonomy pilots (the “delegated budgets” scheme.).

To improve quality and relevance in school education, the following steps are recommended for consideration.

➤ Setting targets, linking budgets to results and expanding existing model of school autonomy

- a. Establish realistic targets in MTRF for quality improvements, starting with indicators which are already available (e.g. drop-out rates, and PISA scores), including also a focus on improving outcomes among disadvantaged groups. Specify baseline and tie future budget agreements to realization of goals.
- b. Sign performance contracts with municipalities implementing delegated budgets (school autonomy) scheme with agreements on targets for quality improvements and budgets. Performance contracts with municipalities should clarify responsibilities that will be devolved. It should also specify the role of local stakeholders in school decision making to increase accountability of school management. Gradually increase the number of municipalities on delegated budgets scheme and the number of performance contracts with municipalities. Provide training to school directors and management drawing also on EU structural funds.

➤ Monitoring and evaluation. Formulate and implement a strategy for monitoring and evaluating outcomes in school education. Disseminate the strategy widely. The strategy should include:

- (i) Time-bound plans for introduction of external examinations at the end of the primary, basic and upper secondary cycles, beginning with pilot tests⁵; plans for participation in international comparative studies;
- (ii) Plans to strengthen external evaluation of schools and to introduce internal self-evaluation in line with EU practices and recommendations.
- (iii) Plans to use the results on evaluation of schools to improve school quality, and disseminate best practices.

The recently established National Assessment Center could play a key role in the implementation of the strategy. With a strong policy on assessment reform, the agency could benefit from EU support. Similarly inspectors could be re-trained (with EU structural funds) to play a more developmental role in improving school quality.

➤ Addressing teacher quality. Develop and implement – in close collaboration with all key stakeholders – a comprehensive strategy for improving teacher quality. The strategy:

- (i) Allows decentralized remuneration and rewards based on performance. Its implementation begins with the piloting of different incentive schemes. Also, it should allow differentiated rewards to facilitate recruitment of teachers in areas of skills shortages, rural areas, and schools with challenging student body. A good place to start is in municipalities with delegated budgets.
- (ii) Addresses in-service needs of teachers and school staff as a team focusing on new curricular areas, and in support of new pedagogic practices, drawing on EU structural funds.

➤ Curriculum, content and structure

⁵ The National Institute of Education is also drawing up a methodology to assess pupil attainment in Bulgarian Literature and Language and Mathematics in years 1,2,5 and 9.

- a. Set targets for and speed up curricular reform especially better sequencing of vocational and general elements.
- b. Design changes to the structure of the school system in close collaboration with stakeholders. Consider reforms to delay tracking into streams until compulsory age and/or the introduction of standardized tests or other mechanisms to facilitate mobility. The Polish reform may serve as an example.

II. B. Higher Education

Issue: There are valid concerns about quality and relevance of higher education. One indicator is the balance of subjects studied in Bulgarian universities which reveals striking differences with the EU: for example with a significantly higher share of students in social sciences, business and law in Bulgaria (41% in 2003 compared to EU average of 34%) and significantly lower share in mathematics, sciences and computing (5% in Bulgaria compared to 11% in the EU and 15-17% in UK and Ireland). Another concern relates to the adequacy and quality of research conducted in universities and thus their limited contribution to innovation and productivity – indicators are the comparatively low proportion of young people with doctoral degrees in science and engineering majors, and the much lower proportion of scientific publications per million population (only Lithuania, Latvia and Malta are lower).⁶ In part this is a result of the separation of teaching and research and still significant concentration of limited research funds in the Bulgarian Academy of Sciences.

Key constraints:

- Insufficient information and limited linkages with industry. There is limited available information on future employment and earnings prospects of various higher education programs to inform demand, limited involvement of industry in the identification of courses and curricula and pedagogic practices of high value. There are also limited mechanisms to incorporate work experience into academic courses.
- Unfinished agenda in quality assurance arrangements. As a signatory to the Bologna process, Bulgaria has made important recent progress in quality assurance and accreditation in recent years. The legal and institutional framework for evaluation of quality outcomes as opposed to compliance with state requirements is in place, internal quality assurance mechanisms are in place in the majority of universities, and the quality of these will explicitly be linked to institutional accreditation. The key challenge, however, will be in implementation and in particular ensuring independence of external evaluations, the development of performance indicators that measure the quality of outputs and outcomes, the systematic use of student feedback in quality assurance, and the publication and dissemination of information – including comparative information.
- Insufficient competition and greater role for performance based funding. The lack of market information – on costs, quality, and employment prospects – limits effective competition amongst universities to offer high quality to students. A second issue is the lack of a competitive element to the funding. Bulgaria made progress in moving from a historic input based funding system and money is now allocated to universities as block grants depending on the number of students recruited by the university, with more expensive subjects funded at higher rates than cheaper

⁶ GOB National Strategy for Scientific Research for the period 2005-2013.

subjects. This is a step towards performance based funding. However, universities still have too few incentives to be attractive to students. In particular, with the government still dividing the number of student places by subjects between universities, even institutions of poor quality or which have not modified their curricula to be more relevant could be confident of receiving funding⁷. Once good market information is available, funding could be made more competitive and a portion of funds could follow students. Funding mechanisms could also play a greater role in enhancing quality and relevance, for example by linking to public policy objectives – such as the study of priority subjects or greater employability, etc.

➤ Lack of accountability and outdated governance structures. Bulgarian higher education institutions enjoy a high degree of autonomy and compare fairly well in this respect with the New Member States and many EU countries⁸. However, Bulgarian universities lack the framework to exercise the autonomy that they have. Increased autonomy has not been accompanied by mechanisms for ensuring governance that is likely to be good for the university in the long run and for society as a whole. In particular, the ultimate authority of the university is a body that is comprised largely of the staff of the university. This suggests that universities would be run largely for the benefit of existing staff, and is also a recipe for inertia and conservatism. In addition, the appointment of the Rector by the academic electorate means that the leader owes his or her loyalty entirely to the academic electorate, and his or her selection is not sufficiently based on management and leadership skills. While this governance structure is similar to many of the New Member States, the trend in the EU-15 is clearly towards a redefinition of functions and composition of university Boards or Councils, with a greater management responsibility role for a mix of academic and outside stakeholders, and competitive appointment of university leaders (Table 1).

⁷ Bekhradnia (2004), Higher Education in Bulgaria: a Review for the Ministry of Education and Science.

⁸ Ibid.

Table 1: The trend in the EU is towards external representation in governing boards of universities

Appointment of leaders of universities, selected EU15 countries

	Process for election or appointment	Government has to approve?	Typically appointed for how many years?	Renewable position?
	<i>Countries where leaders are usually APPOINTED by:</i>			
Ireland	Governing Body (approximately 50% external)	No	10	No
Netherlands	Supervisory Board: 5 external members appointed by Minister	No	4	Yes
Sweden	Government, on recommendation of mainly external Governing Board, which first consults students & employers	Yes	6	Yes, for 2 periods of 3 years
UK	Governing Body, of which majority are external members	No	7	Yes
	<i>Countries where reforms have been implemented in 2003:</i>			
Austria	Formerly elected by University Assembly (75% staff, 25% students) From 2003 appointed by University Council, made up of external members, from a shortlist of 3 candidates nominated by Senate.	No	4	Yes
Denmark	Formerly elected by academic staff (50%), other staff (25%) & students (25%) From July 2003, appointed by Board with majority of external members	No	4	Yes

Source: Extracted from World Bank (2005) forthcoming; EU-8 Finance Reform Cross-Country Study; "Financing Higher Education".

Policy Options for Consideration:

As in the case of school education, a core pillar of the recommendations in this note is the establishment of targets for desired outcomes and outputs at the national level – for example setting realistic targets in the context of the MTFF, setting the appropriate baselines for outcomes and budgets, and then linking any incremental financing progressively with the realization of these targets. In contrast with school education, Bulgarian universities have a considerable degree of autonomy. The focus here is therefore to a greater extent on incentive and accountability mechanisms to achieve desired results.

To improve quality and relevance in higher education, the following steps are recommended for consideration.

➤ Setting targets, linking budgets to results

- a. Establish realistic targets in MTEF for quality improvements starting with available indicators, including baseline and future budget agreements tied to realization of goals
- b. Sign performance contracts with higher education institutions. These could include similar agreements on targets for quality improvements and budgets. To introduce performance based funding, MES should identify the public policy objectives it wishes to reward – e.g. employability, study of priority subjects. Funding agreements could also be made conditional on agreed changes in governance structures, and gradual implementation of proposals to revise curriculum and courses in collaboration with industry (see below). The agreements could specify additional responsibilities that will be devolved (e.g. detailed allocation of student places by subjects).

➤ Information and Quality Assurance

- a. Ensure independence of the external evaluation process, preferably by involving foreign or external experts in the evaluation. Most EU-15 countries (with very few exceptions) as well as NMS (except Poland, Hungary) draw on foreign evaluators. About a third of Bologna Declaration signatory countries (including Croatia, Estonia, France, Germany, Ireland, Latvia, Netherlands and Sweden among others) call on national and foreign experts, students and professionals. EU funds could be drawn upon to support these and other efforts of the National Agency for Accreditation and Evaluation (NEAA).
- b. Identify performance indicators and develop mechanisms for collecting and evaluating these, drawing on internal quality assurance systems being developed and including student feedback. Good market information would cover matters such as employment prospects of different subjects in different universities, costs of study, quality of universities and courses, etc. Publish and disseminate the information in a systematic way. This may be done by the NEAA or otherwise through public-private partnerships.

➤ University governance. Publish acceptable governance arrangements with external stakeholders forming a majority on governing councils, and invite proposals from universities to propose new governance structures and to professionalize the position of the rector to make him/her independent of the governing body. Performance contracts should include changes in governance agreements within a reasonable time frame.

➤ Increasing the relevance of courses and curricula. To address the mismatch of the courses and curriculum offered by universities with the skills needs of industry:

- a. Carry out course-by-course reviews of content, skills and knowledge provided in universities (by university staff and representatives of local industry); and
- b. Review and monitor progress by universities in implementing changes (by a Steering group at the National Level including Ministry of Education, Economy, Finance, Labor, representatives from industry and members of the Rectors' conference). Funding could gradually be made conditional on progress by universities in this area.

III. The challenge of raising participation

III. A. School Education

Issue 1: Participation and completion rates at upper secondary are low compared to the New Member States. Completing upper secondary education is a pre-requisite for a dynamic and competitive European economy: it is the minimum needed to improve individuals' prospects on entry into the labor market, to enable their continuation to further education and training, and to prepare them for lifelong learning. Bulgaria's share of young population completing upper secondary school – although comparable to EU-25 average – is substantially below the Lisbon target of 85% in 2010. Importantly it is below that in most of the NMS as well as EU-15 countries such as Sweden, Ireland and France. In part this reflects the still substantial discontinuation after basic education: over a fifth of young Bulgarians 18-24 years of age have only lower secondary education and are not participating in further education and training. This is high compared to a Lisbon target of no more than 10% by 2010, an average for the EU countries of 15.9%, and particularly the average of 7.5% in the New Member States. It is of particular concern for social cohesion and integration into the work force.

Table 2: Trends in Net Enrollment Rates in School Education

	1994/95	2000/01	2001/02	2002/03	2003/04	2004/05
Pre-primary (ICSED-0)	59.7	66.8	73.6	74.2	74.6	73.6
Primary (grades 1-4, ICSED-1)	92.8	96.3	98.5	99.8	100.3	99.7
Lower Secondary (grades 5-8, ICSED-2A)	79.0	82.4	83.1	84.0	84.2	84.2
Upper Secondary (grades 9-12, ICSED 3A,3C)	61.4	64.7	68.3	74.9	77.1	77.3

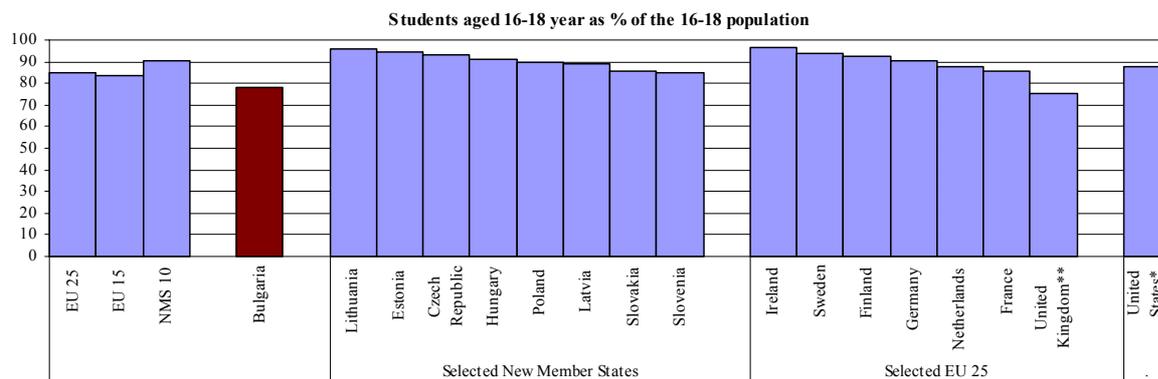
Source: National Statistics Institute.

Bulgaria has made tremendous progress over the past decade in increasing participation rates among the school age population (Table 2). Net enrollment ratios at pre-primary, basic and upper secondary levels are all higher today than they were 10 years ago. Nevertheless a key challenge is the still lower than desired net enrollment ratio in lower secondary education – at 84% – and the relatively small gains in the net enrollment rate at this level.⁹ The sharp fall in net enrollment rates between primary and lower secondary, still a part of compulsory education, is of concern. Upper secondary shows impressive increases, although to some extent this reflects the recent increase in the duration of some programs¹⁰. Despite this progress, Figure 2 shows that participation among students of upper secondary age is still lower than the average for the EU 25 and the NMS.

⁹ Age enrollments, defined as participation of the relevant age group independently of the educational level are higher, however and close to universal, suggesting that a significant fraction of the lower secondary age group may still be in primary education, while others may have progressed to upper secondary.

¹⁰ The duration of several (but not all) upper secondary programs was increased by one year to 5 years in 2002/03, while the denominator refers to a four year age cohort. Nevertheless, absolute enrollments also increased by about 14% between 2000/01 and 2003/04, despite the fall in the population age cohort.

Figure 2: Participation of upper secondary age students is lower than EU-15 and NMS



Source: Eurostat

Note: * U.S. Census Bureau, Current Population Survey, October 2004

** Data from Department for Education and Skills, UK¹¹

Issue 2: Inequity in participation in upper secondary is high. Household data provide insights, into gaps in participation rates between different sections of the population. Participation rates in basic education are 11 percentage points lower for children from the poorest quintile of the population compared to the wealthiest, and 17 percentage points lower for children from Roma households compared to Bulgarians. The gaps widen at upper secondary, where differences between urban and rural participation also become more prominent. At this level, differences by ethnicity are over 50 percentage points, and by location and poverty status the gap is nearly 40 percentage points. Recent trends have been encouraging as increases in coverage in basic and secondary education have been accompanied by a reduction in enrollment gaps between income groups. According to a recent study¹², Bulgaria saw among the largest reductions in enrolment gaps between rich and poor between 1999 and 2003. But inequities in access by income groups are much higher today in Bulgaria compared to Hungary, Poland, and even Romania. Unless addressed, this will translate into higher inequality in economic opportunities and greater social exclusion in the future.¹³

¹¹ Table 1: Participation of 16 to 18 year olds in education and training, England, 2003 and 2004

<http://www.dfes.gov.uk/rsgateway/DB/SFR/s000587/tab001.shtml>

¹² World Bank, Growth, Poverty and Inequality in Eastern Europe and Former Soviet Union, 2005.

¹³ Tesliuc (2004), Social Protection and Poverty Reduction in Bulgaria – an Update, unpublished paper, ECSHD, World Bank.

Table 3: Inequities in access are higher at upper secondary and tertiary age
Participation rates by level of schooling, gender, location and poverty status

	Basic	Secondary	Tertiary
Total Population	95.5	78.8	29.8
Males	94.1	81.6	27.1
Females	96.8	76.4	32.4
Rural	96.5	49.5	6.3
Urban	93.2	87.5	39.1
Poor	89.9	50.0	6.2
Non-Poor	97.9	88.7	38.1
Bulgarians	97.6	89.7	37.5
Roma	81.0	37.0	2.1
Turks	94.1	39.5	1.6

Source: Staff calculations from the Multi-Topic Household Survey (NSI 2003)

Note: these are age enrollments, that is the share of the relevant age group that participates at any level of education.

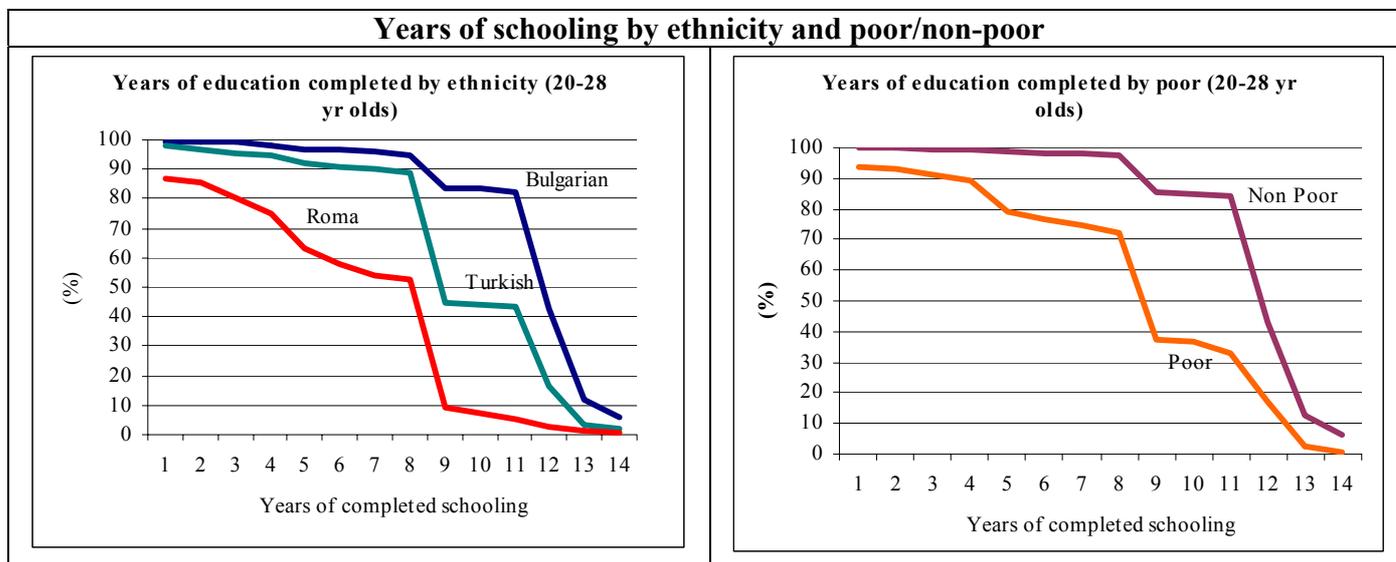
Key constraints:

- Non-enrollment among hard to reach groups and early drop out of children from ethnic minorities. The majority of the un-enrolled in secondary education are from low income and disadvantaged households. Costs faced by households – for meals, various types of fees, textbooks and transportation – together with opportunity costs are major deterrents for poor households¹⁴. But because the poor account for only 20% of the population but nearly 60% of the un-enrolled, concerted efforts targeted to the poor will have tremendous payoff. Two thirds of the un-enrolled are from ethnic minorities – Turkish and Roma children. Drop out from the school system starts early for these groups and as early as primary school for the Roma (Figure 3). Only 52% of Roma children complete all eight years of basic education and only 9% complete the ninth year of school. Above and beyond economic constraints associated with their poverty status, children from ethnic minorities are additionally constrained by low language proficiency, geographic isolation, and cultural traditions affecting girls. Roma face added issues of discrimination and are more likely to end up in segregated schools or special schools for the mentally and physically disabled which limit future labor market prospects
- A transition problem between basic and upper secondary education appears to affect a broader section of the population. Completion and participation rates drop sharply between basic (grade 8) and upper secondary (grades 9-12) (Figure 3 and Table 3), possibly due to additional reasons such as availability of schools, quality and relevance of courses offered. The institutional fragmentation referred to above is another factor. As such this drop in completion rates reflect the lack of a consistent strategy to ensure transition between schools.
- Insufficient focus and accountability for enrollment and completion. There are no agreed targets at the national or local levels to increase completion or enrollment rates, or to reach and integrate hard to reach groups – and thus no accountability for achieving these targets. As mentioned earlier, funding mechanisms to schools do not yet provide adequate incentives to increase participation or enroll the disadvantaged or minorities. But a powerful instrument that has success is the conditionality introduced to the family benefits program in 2001, which contributed to the

¹⁴ World Bank, 2002, Bulgaria Poverty Assessment.

observed 20% reduction in non-enrollment among low income 7-18 year olds between 2001 and 2003.

Figure 3: Drop out during compulsory education is particularly striking among ethnic minorities



Source: Staff calculations from Multi-Topic Household Survey (NSI, 2003)

Policy Options for Consideration:

Improvements in quality (section IIA) will increase incentives to participate and continue in school. In addition, the following options are offered for consideration to increase participation and access.

➤ Setting targets, linking budgets to results and expanding existing model of school autonomy (as in section IIA)

- a. Establish realistic targets in MTFB for enrollment, completion and transition between basic and secondary education, including a focus on improving outcomes among disadvantaged groups. MTFB specifies baseline and future budget agreements tied to realization of goals.
- b. Sign performance contracts with 10% of municipalities implementing delegated budgets (school autonomy) scheme with similar agreements on targets for participation, completion and transition.

➤ Targeted interventions to include hard to reach groups.

- a. Strengthen cash transfer programs. Cash transfer programs that provide funds directly to students (“demand side” programs) to encourage school attendance have proved to be successful in many countries in improving participation and completion rates among hard to reach groups. Perhaps the best known example is Mexico’s *Progressa* program – a model which has now been adopted in a number of other countries in Latin America. Bulgaria already has a conditional cash transfer program with similar elements. This is the family benefits program, which as mentioned above appears to have demonstrated significant results in a short period of time. Based on international experience, the following design features could enhance the effectiveness

of the program: increasing the benefit levels at higher grades (to cover the higher direct and opportunity costs), and introducing minimum attendance and academic record requirements. Community based promotion, systematic impact evaluation and wide dissemination of results are also essential elements. Alternatively, a separate scholarship program could be targeted to low income students in upper secondary.

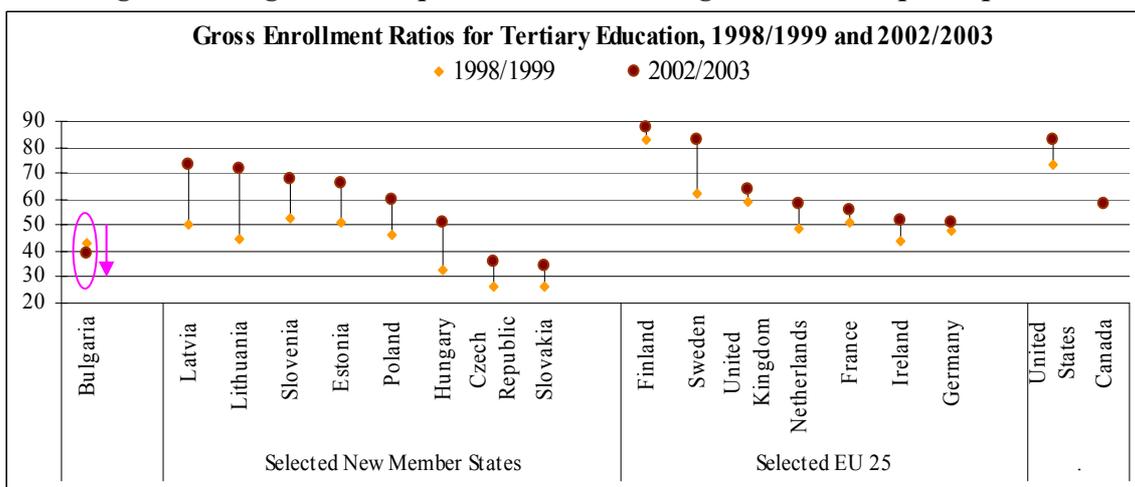
- b. Include ethnic minorities. A National Strategy and action plan for the integration of children from ethnic minority households is now in place and a fund has been adopted to support school desegregation and increased participation of ethnic minority households. What is needed now is implementation and attention to results. Particular attention paid to the support of mother tongue teaching and interventions at the pre-school level to help smooth the transition and break the relationship between ethnic and socioeconomic status and future success in school.

III. B. Higher Education

Issue: Participation rates in higher education have stagnated and are now among the lowest in the EU. Tertiary education is critical to the higher and more diverse skills needs of a knowledge based economy and for increased competitiveness. Maintaining and increasing economic growth with a shrinking labor force will increasingly be dependent on productivity growth from a more skilled labor force. Bulgaria has a respectable share of tertiary graduates in the labor force today. For example, in part as a result of the rapid expansion tertiary enrollment in the 1990's, the share of young Bulgarians (24% of 30-34 years old) with tertiary qualifications was comparable to the EU 25 (24.3%). However, the flow of graduates into the tertiary system has stagnated in recent years. After increasing for several years, student numbers began to decline in 1998/99. The decline in student numbers has been larger than the demographic decline of the relevant age cohort, resulting in a fall in the participation rate. The recent declines in tertiary enrollment rates is in stark contrast to the spectacular rises in most NMS (especially Hungary and the Baltic states) and the continued gradual growth in the EU-15 (Figure 4)¹⁵. In 2002/03 the gross enrollment rate in tertiary education in Bulgaria was higher only than the Czech Republic and Slovakia among the NMS. As in other countries, tertiary education still caters primarily to the better off (Table 3). Virtually no poor, rural or ethnic minority students participate in tertiary.

¹⁵ Many of the NMS – including Hungary and the Baltic states – faced similar or larger demographic declines in the tertiary age cohort, yet increased student numbers spectacularly. Bekhradnia (2004) Higher Education in Bulgaria: a Review for the Ministry of Education and Sciences.

Figure 4: Bulgaria is unique in its decline in higher education participation



Source: UNESCO Institute for Statistics

Key constraints:

➤ Uncertain policy on goals for increasing university graduates. Bulgaria lacks ambitious targets to prepare for a skilled labor force. The policy goals in this area are at best ambiguous – the 1999 MES “Strategy for the Development of Higher Education in Bulgaria” explicitly envisages a reduction in transition rates from upper secondary to higher education while the 2004 National program for the Modernization of Education does not establish specific goals. The concern – as in other countries – is to expand higher education without compromising quality and relevance in the face of limited public resources.

➤ Potentially more room to leverage private resources to support student expansion. Countries in Europe and across the world are recognizing the need to diversify their sources of finance to support higher education expansion with quality, particularly in the face of other fiscal imperatives. Student contributions are a key source, as graduates themselves benefit the most from higher education. The most recent example of actual reform is in Britain in 2004. Tuition fees are well accepted in Bulgaria: the law allows students to pay up to 30% of the cost of tuition. The available data suggest that students in some disciplines (e.g. in education, economics, management, etc.) pay close to this share, but those in other fields (e.g. medicine, physical sciences) pay considerably less. The fees are established on an annual basis by the council of ministers – in 2004 they ranged from 100 to 150 euro for a Bachelors course. There are at least two reasons to believe that student contributions could play a greater role in Bulgaria. First, private universities which charge higher fees have continued to expand their student numbers while numbers in public universities have fallen – an indication of unmet demand and a willingness to pay for higher education, and possibly better quality. Second, most of the New Member States have managed large increases in enrollments despite allowing universities to charge fees in some form¹⁶. For example, in Hungary, students who pay tuition fees pay between 250 and 2600 euro per semester. In Lithuania these charges are between 300 to 2000 euro a year. Both Lithuania and Hungary have managed to increase participation rates dramatically (Figure 4). The key challenge for Bulgaria will be to determine a

¹⁶ Although there is no universal tuition fee for full-time undergraduates in any of the NMS at present – and indeed in this regard Bulgaria is more advanced – student and parent financing does in fact play a significant role in these countries. Most charge tuition fees for all full-time undergraduate students over a given quota of government subsidized places, as was the case in Bulgaria until 1999.

level – higher than the present one – and to accompany it with measures to ensure that it does not deter participation especially among low and middle income groups

➤ A potentially greater role for private universities. In 2004/05 there were 9 private universities and 7 private colleges in Bulgaria: accounting for 30% of the total number of higher education institutions and over 16% of total enrollments. Enrollments in private universities have increased by nearly 50% between 1997/98 and 2004/05. Among the NMS, only Poland (just under 30%) and Latvia (just over 20%) have a higher share of their higher education enrollments in the private sector, and among OECD/EU-15 countries. The private higher education sector has served as a conduit for increasing enrollments and meeting some of the demand that could not be accommodated in the public universities. And private universities typically have more flexible management and staffing arrangements and are able to be much more flexible than public universities to respond to market and student demand. While there are some concerns on quality for some of the universities (for example stemming out of the similarly large number of small institutions, or their more liberal intake policies), these are issues that can be addressed through an adequate and robust quality assurance framework. The private sector is a potential strength in Bulgaria which could be tapped to support further expansion. One issue that would need to be addressed in doing so is the concern that they compete with public universities on unfair grounds, for example by drawing on the staff of these universities without contributing to overhead costs.

➤ The pool of entrants into university is constrained. First, inadequate preparation of many graduates of secondary schools (especially vocational who constitute about 56% of the graduates, but also from the general education system) constrains the pool of secondary entrants below levels implied by secondary completion. Second, the complicated system of entrance examinations and the absence of a standardized examination (e.g. the *matura*) at the end of school education increases the cost of entry for many individuals because of the high costs associated with private lessons to improve the chances of entry¹⁷. Third, tuition and living expenses – together with opportunity costs and high perceived risks in the labor market – may constrain a number of qualified students from low and middle income backgrounds. Students from lower socioeconomic backgrounds, whose parents did not themselves attend university may need additional information on the value of higher education as well as targeted financial support.

Policy Options for Consideration:

Economic growth and integration into the EU will likely increase the demand for highly skilled labor. Actions to increase quality, participation and completion in secondary education will increase the pool of entrants into university. In addition, the following options are offered for consideration to increase participation and access in higher education:

- Setting targets, linking budgets to results (as in Section IIB).
- a. Establish targets in MTFE for increasing participation in tertiary including baseline and future budget agreements tied to realization of goals
 - b. MES signs performance contracts which include targets for student numbers. Recruitment of qualified low income graduates of secondary could be considered for inclusion in funding mechanism.

¹⁷ Ministry of Finance (2004), Public Expenditure Review, p. 48.

- Targeted scholarships, information and guidance. Review and strengthen existing scholarship programs to target qualified low income students and to encourage transition to public *or* private tertiary institutions. Combine this with information and guidance on the benefits of higher education.
- Leveraging additional private resources. Review the role of student contributions to leverage additional resources to support student expansion. Conduct a feasibility study on a potentially higher role of student contributions with accompanying well designed loan scheme in which repayments by graduates are made contingent on future income. Elements of such a scheme exist in UK¹⁸.
- Private universities. Review the role of private universities in expanding access with quality. Follow up with agreed actions, including leveling of the playing field by requiring private universities to contribute to the overhead costs of the public universities whose staff they use, encouraging participation in the new accreditation procedures, and dissemination of comparative information on quality.

IV. The challenge of optimizing resource use

IV A. School Education

Issue: The need to optimize the use of existing resources in school education is particularly strong in the face of the dramatic projected falls in school age population. There are visible signs of overcapacity in Bulgaria's education system – both of staffing and facilities – which consume resources that could be devoted to quality improvements. Per pupil allocation in secondary education is 1.15 times that in primary, compared to a ratio of 1.27 in EU countries, an indication of a potentially greater need for resources in secondary. Some room for efficiencies is implied by student teacher ratios at secondary – which are about 10% lower than the OECD average (12.6 and 11.9 in lower and upper secondary in Bulgaria respectively compared to 14.3 and 13 in the OECD). Aggregates conceal considerable differences however: while remote rural areas have particularly low student teacher ratios and underutilized facilities, staff and facilities are overextended in urban areas¹⁹. Importantly, Bulgaria will face among the largest declines in school age population (Figure 5), which will be different across geographical regions. This will pose a significant challenge to adjust physical infrastructure and human resources without affecting access and quality. At the same time it provides an opportunity to reallocate resources to improve outcomes.

¹⁸ See Barr 2005, Financing Higher Education, *Finance and Development*, for a recent discussion of these issue and country examples.

¹⁹ According to a recent MOF report, in 2003 many MES managed vocational schools had fewer than 8 pupils per teacher compared to an average of 10.5. In the case of municipal schools, 29 out of 263 municipalities with population of fewer than 30,000 people had pupil teacher ratios lower than 8 (compared to an average of 10.86).

a surprise to anyone and a carefully designed and well communicated reform strategy could go a long way in reducing the reported uncertainty and insecurity felt by the teaching profession²².

Policy Options for Consideration:

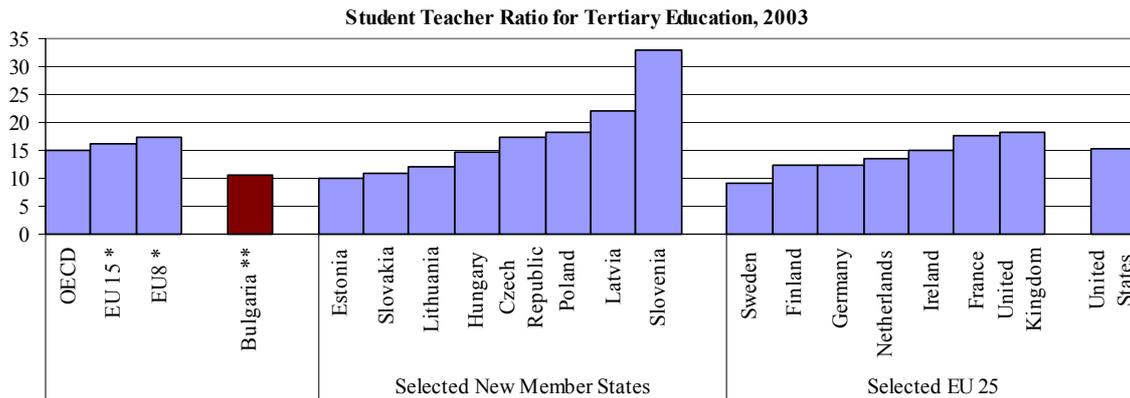
- Rationalization of staff and infrastructure. Formulate a strategy to address the needed rationalization of the school system in view of substantial demographic changes. Political will is key. Communicate the potential benefits from released resources for improving quality. The strategy will need to be formulated in close cooperation with regional governments, municipalities, and communities and will need to be based on detailed geographical school maps and demographic projections. School rationalization proposals could be supported by the European Regional Development Fund (ERDF). The human resources strategy (section IIA) should explicitly address staffing changes. A safety net for teachers – for example to facilitate re-training and other employment or compensation for redundancy – will be a critical element.
- Setting targets, linking budgets to results and expanding existing model of school autonomy (as in Section IIA).
 - a. Establish targets for consolidation of infrastructure and adjusting staff in MTFF. Allocate funding to reward meeting these targets.
 - b. Sign performance contracts with 10% of municipalities implementing delegated budgets (school autonomy) scheme with agreements to reward consolidation and staff adjustments.

IV B. Higher Education

Issue: Existing resources could be utilized more effectively. As with school education, there is evidence that existing resources could be used more effectively. Two sources of inefficiency are the overstaffing and the high proportion of very small universities. First, student –teacher ratios in tertiary education are low compared to most NMS and EU countries (Figure 6). Once again, this conceals considerable variation across programs (e.g. lower in subjects like physical sciences which have experienced a sharp decline but over 40:1 in those like economics and law). Second, Bulgaria has a strikingly large number of tertiary education institutions relative to its size, and many of these are very small. In 2003/04, 17 of the 51 higher education institutions had fewer than 1000 students and 32 had fewer than 5000; only 7 of the 51 higher schools had more than 10,000 students. Small size by itself is not always problematic and indeed many countries have small specialist or even non-specialist institutions. Bulgaria is unusual, however, in the high proportion of very small universities. These tend to be particularly cost ineffective both because of their relatively high overhead cost but because they are only able to offer limited curricular options. As with school education, reallocation of resources could release funds for the seriously under-resourced learning support systems and libraries for example.

²² Ministry of Finance (2004), Public Expenditure Review: Education – condition, problems and opportunities.

Figure 6: Student-teacher ratios in tertiary are low



Source: Data for Estonia, Latvia, Lithuania and Slovenia from UNESCO Institute for Statistics (2002-2003). All others from OECD Education at a glance 2005.

Note: * Unweighted Averages, ** National Institute of Statistics

Key constraints:

- Insufficient focus on costs. As with school education, there is insufficient focus on total costs of delivering higher education programs of good quality.
- Insufficient incentives and lack of a strategy among stakeholders to address overstaffing and underutilized facilities. As in the case of quality, the existing guarantees in the funding mechanisms limit competition to use resources more effectively. One option that has been under discussion in Bulgaria is the greater use of funding mechanisms to provide incentives. For example, funding mechanisms could be used to provide incentives to universities for collaboration, federation or merger to address the issue of the large number of small sized institutions. They could also be used to provide incentives for more effective utilization of staff. Success in this area would also require political leadership, a clear strategy, a communications campaign and university governance structures accountable for delivering results.

Policy Options for Consideration:

As in the case of school education, the need for rationalizing the large number of institutions is well understood. Yet the political difficulty of these reforms has meant that there has been limited progress. The following options are offered for consideration:

- Strategy and communication. Formulate a strategy, commission strategic reviews, communicate the benefits of consolidation, and provide guidance to universities. With serious planning on university rationalization ERDF funds could be sought to encourage consolidation. ERDF support could also be solicited for infrastructure improvements, library facilities, science laboratories, etc.
- Setting targets, linking budgets to results (as in Section IIB)
 - a. Establish targets for consolidation of infrastructure and adjusting staff in MTEF. Allocate funding to reward meeting these targets.
 - b. Sign performance contracts with universities and use funding mechanisms to provide incentives for collaboration, federation or merger and to increase student staff ratio.

V. Conclusion

As Bulgaria prepares to accede to the EU, it needs to modernize its education system to produce graduates that can respond to the increasingly complex needs of a global labor market. The magnitude of the challenge is greater in Bulgaria which has lower attainment rates and higher inequalities than EU countries and the NMS. In addition, the shrinking size of its work force place even greater demands on higher labor productivity – and thus higher skills – as a key determinant of growth.

Since the creation of a workforce with the appropriate skills cannot take place overnight, this note has argued that Bulgaria needs to take significant strides urgently. The note seeks to contribute to the in-country debate by identifying the key challenges facing Bulgaria and suggesting a road map to accelerate the pace of the needed reforms. EU accession provides both the imperative for change, but also significant amounts of funds that could support implementation of reforms. What is needed now is political commitment and a clear strategy for consensus building and implementation.