

Looking for Skills in the former Yugoslav Republic Macedonia

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Abbreviations

ALMPs	Active Labor Market Programs
CVET	Continuing Vocational Education and Training
ECA	Europe and Central Asia
ECD	Early Childhood Development
ISCO	International Standard Classification of Occupations
ICT	Information and Communications Technology
IVET	Initial Education and Training
OECD	Organisation for Economic Cooperation and Development
PIAAC	Programme for the International Assessment of Adult Competencies
PISA	Programme for the International Student Assessment
SABER	Systems Approach for Better Education Results
STEP	Skills towards Employment and Productivity
TVET	Technical and Vocational Training
WfD	Workforce Development

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Looking for Skills in the former Yugoslav Republic of Macedonia – an overview

Skills gaps affect jobs and productivity, workers and firms

Could more and better skills help improve labor market outcomes in the former Yugoslav Republic of Macedonia? Jobs challenges are significant: only two out of five adults are in employment, many of them in informal and precarious work. Paradoxically, high unemployment co-exists with an unmet need for skilled workers in the private sector. To address the problem, a better understanding of the characteristics and causes of these skills gaps are needed. This report presents new insights on the availability and demand for skills, drawing on two innovative surveys: a household level survey to measure the supply of skills in the adult population, and an employer survey to measure demand for skills. The key message coming from these two surveys is that there is indeed a significant skills gap in the former Yugoslav Republic of Macedonia, and that closing this gap would be beneficial to workers, firms, and the economy.

Lack of the right skills is limiting job creation, firm expansion, and firm productivity. There is persuasive evidence, from both the household and employer surveys, that lack of skills is an obstacle in the labor market. Firms in former Yugoslav Republic of Macedonia that do wish to expand but face difficulties in doing so, cite skills as the main problem – they cannot hire because they cannot find workers with the right experience for the job. There are also problems among the current employees: a majority of firms state that their work force lacks the skills to do their jobs effectively. Hence, lack of skills is holding back both labor demand and productivity growth. Whereas the business environment in the former Yugoslav Republic of Macedonia is marred by many problems beyond skills, employers are very concerned about the low quality of training provided through the technical and vocational education system.

The skills gap is related to a range of job-specific technical skills as well as generic skills. Job-specific technical skills are important for employers everywhere, and the kind of occupations in demand differs depending on sectors (for example plant and machine operators in the case of automotive industries, versus technicians, professionals, in the case of information and communications technology, ICT). However, there are also generic competencies lacking across different industries. Jobs and occupations that employers emphasize as suffering from skills gaps, generally require a range of higher-order cognitive and socio-emotional skills including communication skills and people skills (for managerial and professionals) and basic cognitive, time management and people skills. This suggests that the skills problem is not primarily due to students making poor choices about what vocation/occupation to choose, but of the quality of skills imparted through the education and training systems.

Low skills, or the wrong skills, is an obstacle to workers' jobs and earnings prospects. Many of those who have invested in training, in particular technical and vocational training (TVET), find themselves mismatched – over educated – compared to the requirements of their jobs, and also consider their education of little use to their daily work. Meanwhile, although unemployment rates for those who have completed higher levels of education are lower than the average, they still hover around 20 percent. This poor pay-off to educational investments, both public and private, is also evidence of distortions in the skills development systems. Vocational training at tertiary level appears to have especially poor pay-offs, manifested in a high share of workers considering themselves over-educated, and a significant difference in the intensity in use of skills on the job, compared to those with general tertiary education.

Skills development systems in the former Yugoslav Republic of Macedonia are not equitable, and especially those of non-Macedonian ethnicity lack access to skills development and higher skilled jobs. Access to education still differs significantly across ethnic groups, and the gap does not appear to fall over time. Some more vulnerable groups in the former Yugoslav Republic of Macedonia consequently accumulate fewer skills - even elementary skills such as basic literacy - and have less access to skilled jobs.

Why is there a skills gap?

Neither education and training systems nor employers are engaging in closing the skills gap. In employers' views, both educational and TVET systems fail to provide quality skills. A majority of those workers identified as having major skills gaps in their work place, had either tertiary levels of education, or secondary or tertiary vocational education, which emphasizes that it is not only the level, but also the quality of education, that is an issue. These branches of the education system lack the flexibility to respond to the needs of employers and students. An overly centralized system with an emphasis on public provision of skill, is partly to blame.

Firms do not train their workers to compensate for the skills gap. Only one quarter of firms provide some training to their workers. There are some exceptions: firms with some exposure to international markets (partly foreign owned, and/or involved in international trade), especially in the automotive industry, and firms with high intensity of modern skills (ICT), do train their workers, both on the job, and off-site. Yet, for other firms, this is not the case. There are potential reasons for this, including that firms do not realize the benefits of training, workers are not at the level where on-the-job training is sufficient to compensate for poor education quality, or firms find it too costly to invest in training, because of high staff turn-over or high costs of training.

Labor markets are not sending the right signals for investing in education. In the former Yugoslav Republic of Macedonia, unlike in more advanced OECD countries, diplomas matter more than skills for labor income. In estimates of returns to different job and workers' characteristics, including both education and measures of skills, actual measured competencies should matter more than diplomas, since education should be a means to an end (developing skills) and not an end in itself. This is not the case in the former Yugoslav Republic of Macedonia, however, where education measures are stronger determinants for earnings than skills content of the job. At the same time, the share of tertiary educated in the public sector is higher than in the private sector, and has been increasing. Developing labor market relevant skills is not a priority for students, if it is more important to ensure a diploma from an institution that ensures a wide network or that guarantees a job in the public sector with good salary and benefit levels and relatively secure employment.

What can be done?

Successful skills development systems address skilling and reskilling from birth, through adolescence and during adult working life, involving employers, education providers, actual and potential students as well as workers. The provision, quality and allocation of skills is given by how these stakeholders make choices regarding careers, educational institutions and jobs (students/workers), hiring (employers) and training (employers, educational providers).

Education reforms need to address both remaining quality problems and inequity in access. Skills formation starts early in life, and education is "path-dependent" in that poor performance early in life excludes many future options. Hence, ensuring higher quality in education right from the start and more equitable access is necessary to foster inclusive job creation. The former Yugoslav Republic of Macedonia has undertaken important and successful reforms in the education sector, including on fostering teacher training, student testing, decentralization of responsibilities to a local level, and an established monitoring and evaluation system. Nonetheless, more targeted efforts, looking at constraints from both the demand and supply side, may be needed to access disadvantaged groups.

The skills development system of the former Yugoslav Republic of Macedonia would be strengthened by stronger coordination and collaboration between these different actors. Tax exemptions and other forms of financial incentives could be used to encourage firms to train their work force. However, policy could also focus on connecting employers and educational institutions better, by establishing coordination mechanisms and supporting industrial associations. As part of this agenda, it would be useful to explore ways of introducing apprentice- and internships systems, that expose students with the world of work and increases the practical content of training, while lowering the cost to firms. Efforts to establish labor market information systems in the former Yugoslav Republic of Macedonia, that could help students, workers, employers and educational systems exchange relevant and timely information, are ongoing. A more comprehensive system for monitoring and evaluation would help policy makers identify bottlenecks and quality problems.

1. Why skills matter for the former Yugoslav Republic of Macedonia

1.1 Skills are central to the jobs agenda

There is dire need for better job opportunities in the former Yugoslav Republic of Macedonia. Only two in five adults are employed in the former Yugoslav Republic of Macedonia, and the remainder are either inactive or unemployed. Out of those that are employed, a majority is working in sectors with relatively low productivity, including agriculture and small scale trade. The formal private sector is small and fragmented, and one in three workers is employed in micro-firms with less than 10 employees. With one in five Macedonians living in poverty, getting more people into more productive employment is central to the economic and social challenges facing the former Yugoslav Republic of Macedonia.

Developing a skilled work force is part of the core challenges. Job creation is held back by many different business constraints, including political uncertainty, lack of a leveled playing field, a comparatively shallow financial system, and lack of adequate skills in the population. Skills are integral to the job creation challenge, for several reasons. For advanced economies, analyses of labor market outcomes suggest that skills are an important determinant of earnings, and that levels of education become less significant when skills are taken into account – skills, not diplomas, matter. The skills that are needed in a modern economy are also changing rapidly. Evidence from the former Yugoslav Republic of Macedonia and other countries in central and eastern Europe suggest that the intensity of certain skills is increasing rapidly as jobs that are associated with repetitive, manual skills are giving way to jobs that are more intensive in higher order analytical and organizational skills, or “new economy skills”.

Skills are becoming a bottleneck. There is evidence that job market relevant skills are becoming an important bottleneck to private sector growth in some Europe and Central Asian (ECA) countries, more particularly those that have advanced further towards building a functioning market-based economic system. This suggests that while skills may not be the key binding constraint in countries where financial and legal systems are underdeveloped and governance is poor, skills become a significant constraint once these key pieces are in place. In the former Yugoslav Republic of Macedonia there are nonetheless indications that firms experience skills gaps. In fact, skills emerge as a major issue in a 2010 survey of labor demand in the country (World Bank, 2010). In the Global Competitiveness Report, the former Yugoslav Republic of Macedonia ranks well on labor market flexibility (33 out of 140) but very poorly on the use of talent (111), including the reliance on professional management, and the capacity to attract and/or retain talent.

1.2 Information is needed about skills in the former Yugoslav Republic of Macedonia, both from the supply and demand side

Skills development systems are complex, involving students and workers, employers, educational institutions, and government bodies that regulate education and labor market policy. Understanding the level of skills available and the needs, constraints and incentives of different stakeholders is central to help fostering that provides relevant skills that in turn pay off with more job creation and higher productivity. With the exception of the labor demand survey undertaken in 2010, there have been no prior attempts to measure demand and supply of skills in the former Yugoslav Republic of Macedonia.

The STEP Household and Employer Surveys is a significant step towards filling knowledge gaps around the supply and demand for skills. The STEP¹ Skills Measurement Program, launched in October 2010 by the World Bank, is a systematic attempt to fill knowledge gaps related to skills that enhance productivity and earnings in developing countries. The program is designed to provide policy relevant information on skills, much beyond basic information on education levels and literacy, from both the supply and demand side. Household level surveys focus on measuring skills and the use of skills in the population in a comprehensive way, including analytical (cognitive) skills, and socio-emotional traits that affect work place readiness and effectiveness. Firm level (employer) surveys focus on understanding the skills that employers look for, skills that are difficult to find, and different means to address the skills gap. In the former Yugoslav Republic of Macedonia, a household level survey was undertaken in 2013, while a firm survey was undertaken in 2015 (Box 1 and 2). The rich information available in the two surveys permits an in-depth analysis of whether there is a skills gap in the former Yugoslav Republic of Macedonia, whether such a skills gap affects labor demand and productivity, and prevents people from accessing good jobs, and whether investments in skills pay off.

The analysis presented in the remainder of the report strongly supports the notion of a skills gap in the former Yugoslav Republic of Macedonia, with negative consequences for jobs and productivity. Hiring firms have difficulties in identifying qualified candidates and in general, many firms also have a work force without the skills set necessary to do their jobs efficiently and effectively. The skills in demand are first and foremost technical, relating to the specific jobs, but workers are also expected to have many transversal skills: team work capacity, communication skills, time management skills, independence, ambition, and so on – and there are important skills gaps relating to these aptitudes. The weaknesses reflect difficulties in the skills development system, in particular, the lack of interface between different stakeholders and the poor integration of the demand side (the private sector) in the planning and execution of skills training.

The report is organized as follows. The next section provides an analytical framework that highlights the pillars, links, constraints and incentives that make up a skills development system. The third section focuses on identifying whether there is a skills gap (based on employers' and workers' views) while the fourth section lays out in more detail what such a skills gap looks like in the former Yugoslav Republic of Macedonia. The fifth section brings in the relationship between firms, workers, and education systems. The sixth section concludes.

Box 1: The STEP household survey

The former Yugoslav Republic of Macedonia Household Survey (focusing on individuals and the supply of skills) was undertaken in 2013, focused on urban population aged 15-64, with a sample size of 4009. The STEP sample is biased to female older population, and to more educated people; as a result, key labor market indicators calculated on the basis of STEP household surveys differ from those based on the standard LFS data. The survey is representative at urban national level.

The survey measures:

- (i) Cognitive skills, that is, analytical, logical, intuitive and creative thinking and problem solving skills are assessed directly, through a reading literacy assessment, and indirectly, through self-reported information of use of skills in daily life and work.
- (ii) Socio-emotional skills and personality traits (behavioral skills soft skills, life skills, personality traits), include behavioral aspects, including openness to new experiences, conscientiousness, extraversion, agreeableness, hostile bias (the tendency to interpret others' behaviors as hostile), perseverance and focus on long term goals (grit), and attitudes and preferences with respect to decision making, time and risk.

¹ Skills Towards Employment and Productivity

(iii) Job-relevant skills are task related and include technical skills directly related to the specific occupation (like, for example, accounting for an accountant) and computer use, repair/maintenance of machinery, operation of machinery, but also soft skills like client contact, problem solving, learning, supervision, and so on.

Box 2: The STEP Employer survey

The former Yugoslav Republic of Macedonia Employer Survey (focusing on firms) provides information on the demand from skills as expressed by potential employers. It includes questions about the skills in use by the current work force, how skills are valued when hiring new workers, and existing constraints in terms of skills. The survey mirrors the household survey in its focus on a broad set of skills, including both cognitive, socio-emotional, and job relevant technical skills. The survey is based on an interview with firm representatives (HR managers or firm owners, depending on the size of the firm). A total of 1027 firms were included in the survey. Some key descriptive statistics are available in Annex 1.

Many questions separate out **two groups of occupations**, which we refer to as “**New Economy Skills Occupations**” and “**Traditional Skills Occupations**”. The New Economy Skills Occupations refer to the first three occupational categories according to the International Standard Classification of Occupations (ISCO), i.e. management, professional, and technical occupations, that tend to be more intense in skills needed for modern economies. The Traditional Skills Occupations refer to clerical support, sales and service workers, skilled agricultural workers, crafts and trades workers, plants and machine operators and assemblers, and elementary occupations. Although the tasks related to these occupations have been increasing in skills intensity over time as well, they tend to be more routine than those of the NES category, and in some cases involve manual work.

The survey for the former Yugoslav Republic of Macedonia was undertaken in early 2015, in urban areas and is representative at a national level for a few targeted sectors that have been identified as holding a growth potential for the former Yugoslav Republic of Macedonia: Food and textiles, automotive components, other manufacturing sectors, ICT, and logistics sectors. In most cases, disaggregated analysis focus on the economic sectors. These differ in characteristics, however. Among other things, data show that the ICT sector stands out in terms of its high share of young firms, almost all innovative (having introduced a new product or service in the past 3 years), a comparatively high share of foreign ownership in some form, and the degree of international contacts. The automotive industry also has a higher share of foreign ownership, but tend to be larger firms than others. These characteristics matter. For example, exposure to international competition or influences (e.g. through ownership or through international trade) is likely to influence company productivity and skills needs.

2. What makes a successful skills development system?

“Skills” - the ability to perform a task well, owing to a combination of knowledge, practice, and aptitude, including technical skills as well as softer skills like the ability to collaborate with other people or communicate messages well - are applied in the labor market and begin to form in early childhood and are honed throughout childhood and adult life (Table 1). Policy to reinforce skills development therefore spans across a wide system incorporating early childhood interventions through to university education and different training and re-training programs.

Table 1: Skills towards Employment and Productivity: the five STEPs.

STEPS	Preschool age	School age	Youth	Working age
5. Facilitating labor mobility and job matching			Apprenticeships, skills certification, counselling	Intermediation services, labor regulation, social security portability
4. Encouraging entrepreneurship and innovation		Fostering inquiry	Universities, innovation-clusters, basic entrepreneurship training, risk management systems	
3. Building job-relevant skills		Basic vocational training, behavioral skills	Vocational training, higher education, apprenticeships, targeted programs	Firm-provided training, recertification, reskilling
2. Ensuring that all students learn		Cognitive skills, socialization, behavioral skills	Second chance education, behavioral skills	
1. Getting children off to the right start	Nutrition, psychological and cognitive stimulation, basic cognitive and social skills	School health and remedial education		

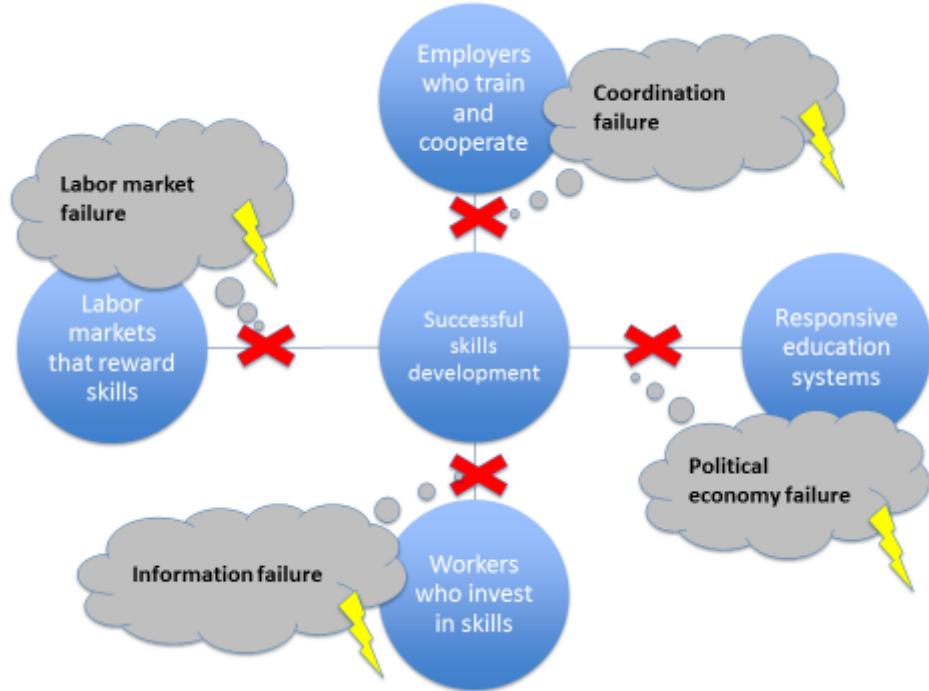
Source: World Bank, 2010.

The skills development system hinges on strong coordination and collaboration between its key stakeholders: Firms, workers, students (and their parents), and educational providers (Figure 1). The system is more efficient if: firms train their workers and are able to articulate to the education system which skills they need; workers, in particular youth and their parents, who choose vocations and education paths that are rewarded in the labor market; an education system that listens to employers and students and provides education and training that is relevant to both; and a labor market that rewards skills, that allows employers to find and hire the best talent, try them out, reward those who do well but also fire those who do not well.

Each of these players faces incentives and constraints that shape their choices and hence overall skills outcomes in the economy. Employers make decisions on investing in training of workers and organizing themselves with other employers (to provide training, to lobby for changes in the education system, etc.). These investments depend on the risk of investing in training for workers only to lose them to other firms (“poaching”), and the cost of organizing themselves with other firms. If employers cannot achieve this high level of cooperation, we speak of coordination failure. Future and present workers make choices on how and what career path to follow and what training to undertake, based on aptitude, the information available on labor markets about job and earnings prospects and training quality, and the cost of training. If information is lacking, or if labor market success is not depending

on skills (but on connections, networks, corruption, diplomas), their investments in skills may not be optimal for society. Accordingly, we speak of information failure if students and workers do not have adequate access to what skills are rewarded in the labor market; and of a labor market failure if skills are in fact not rewarded as they should. *Education systems* should be flexible to respond to the needs of the employers and students, which requires that they have incentives to be responsive. A chief obstacle to responsive education systems is often the political economy of adjusting teaching staff to changing demands, which we call a political economy failure.

Figure 1: A framework for successful skills development (and the dark clouds preventing success)



Source: World Bank, 2015

Measured against this framework, the skills development system in the former Yugoslav Republic of Macedonia is characterized by some weaknesses, especially on the integration of employers. An analysis of work force skills development systems in the country (with a focus on Technical and Vocational Training) suggest that there is a lack of coordination along several dimensions: within the public sector, within the private sector, and between the private sector and the public sector (World Bank, 2014). The education and training sector remains disconnected from the private sector (employers) and while the private sector itself is poorly organized and often unable to articulate skills needs to the public sector. There are no collaborative mechanisms for forecasting labor market needs, and data collection and information systems remain underdeveloped. More generally, the system appears centralized and “top-down”, rendering it more rigid and less attuned to the actual needs in the private sector.

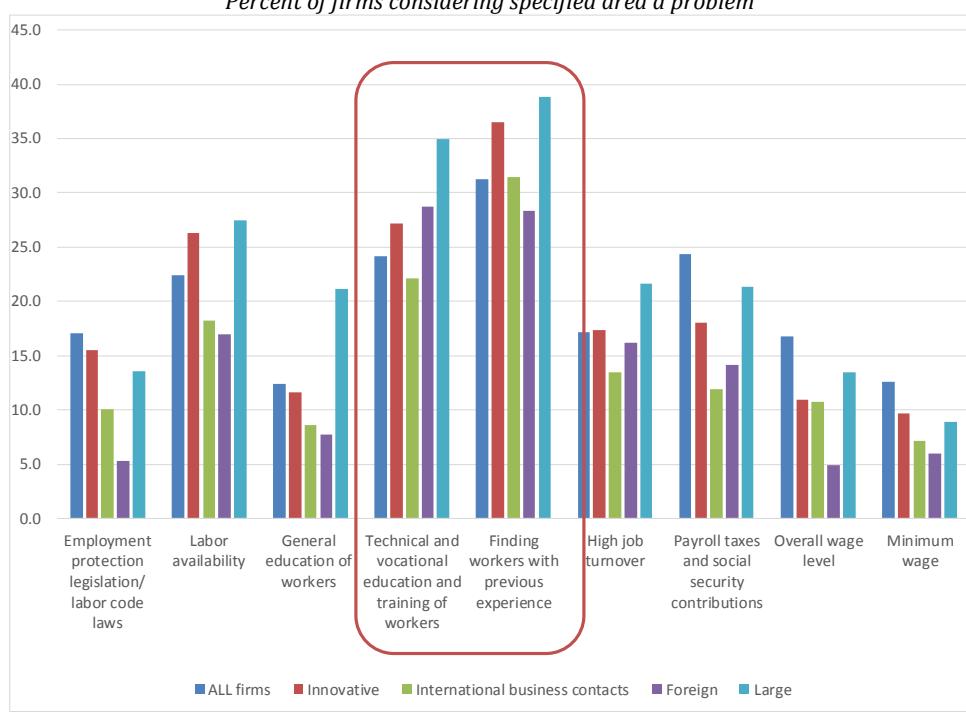
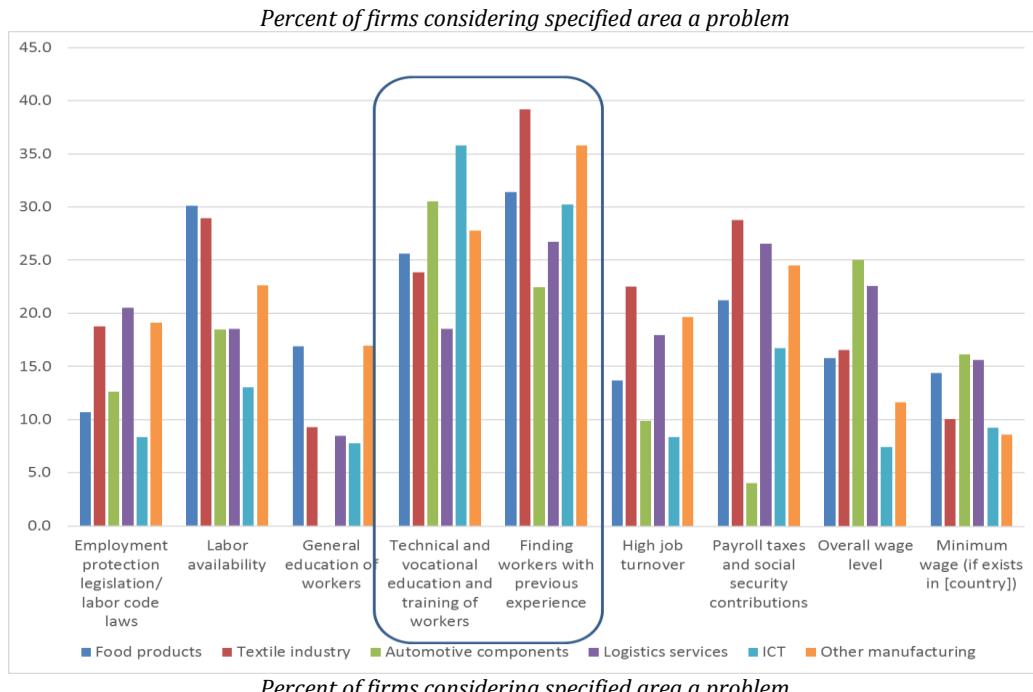
3. Is there a skills gap in the former Yugoslav Republic of Macedonia?

Insufficient and inadequate skills in the workforce hold back demand for labor, firm expansion, and firm productivity. Based on evidence from the STEP surveys, skills gaps are, in fact, a significant problem in the former Yugoslav Republic of Macedonia. Inadequate skills among applicants is the main problem for firms that have difficulties in hiring workers. A majority of firms also have a work force that is lacking the necessary skills to do their jobs efficiently and effectively. There are certainly many problems holding back business expansion in Macedonia, but when asked to rank labor related constraints to doing business, employers' most significant concern is the inadequate technical and vocational training of workers. Many workers also find themselves mismatched, with education levels that exceed what is required for the job, suggesting that important public and private educational investments are not put to productive use.

3.1 Skills gaps are holding back job creation and productivity growth in firms

Skills-related constraints are considered the most important labor related problems in the former Yugoslav Republic of Macedonia – more important than wage levels or strict labor regulation. The former Yugoslav Republic of Macedonia faces many different issues related to the conditions for business creation and expansion (World Bank, 2016), including labor issues. When asked to rank different constraints, approximately one third of firms in the Employer Survey consider lack of fair competition as well as difficult access to finance, more pressing problems than labor related issues. However, among labor constraints (linked to the availability, cost and quality of labor), skills – summarized in the training workers have received and the experience they have accumulated at work - are in fact singled out as the most significant obstacle. Inadequate training, and lack of workers with adequate experience, is a more important problem than average wages, the cost of social security, and labor regulations. Nonetheless the skills needs differ across sectors depending on whether the industry as such is skills intensive or not. The ICT sector – a modern services sector – is particularly vulnerable to skills deficiencies (Figure 2, a). For traditional manufacturing sectors like food and textiles, skills are a problem, but unlike in more skills intensive sectors, overall labor availability and the cost of labor also rank as problems. The importance of skills relative to cost and availability of labor is also higher for large firms, for innovative firms, and for firms with some foreign ownership (in the case of education and training of workers).

Figure 2: Skills and training are the most significant labor related obstacles to doing businesses

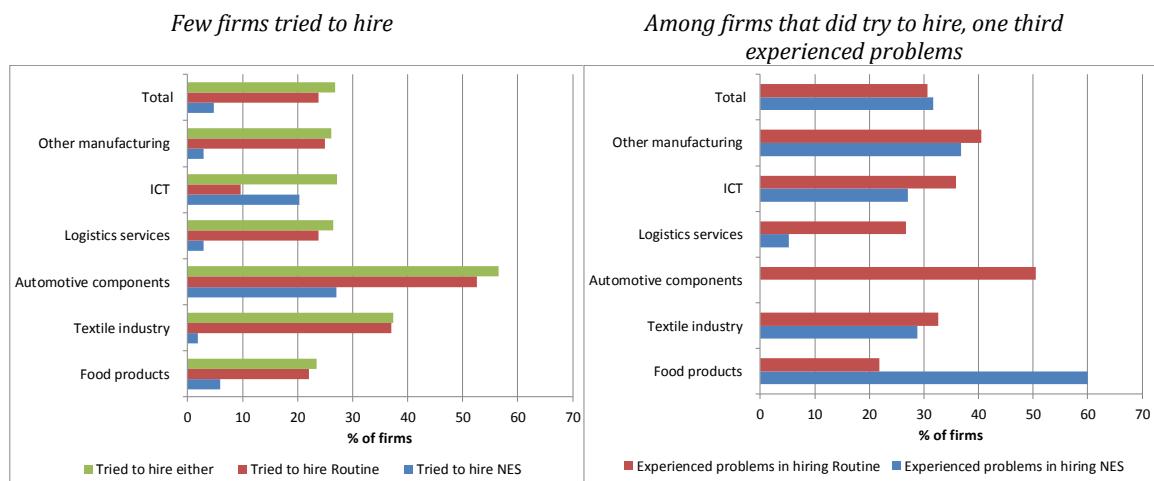


Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Expanding firms have problems finding workers with the right skills. Labor demand is relatively subdued in the former Yugoslav Republic of Macedonia – only one in four firms tried to actually hire workers, whether New Economy Skills (NES) jobs or Traditional Skills jobs. The automotive industry is an exception where a majority of firms were hiring, especially Traditional Skills workers. Among those firms who did try to hire, only one third actually experienced problems in finding the right workers (Figure 3, a and b). The situation differs between sectors, however, with more than half of hiring firms in the automotive and the food products manufacturing sector in fact experiencing problems. When hiring problems do arise, they are skills related. The key reason for not finding workers to fill a specific position was that there were no applicants with the requisite skills (Figure 4). Skills issues are generic:

skills are a bottleneck across all occupations except crafts and trades workers, and clerical support, for whom high reservation wages was the main issue.

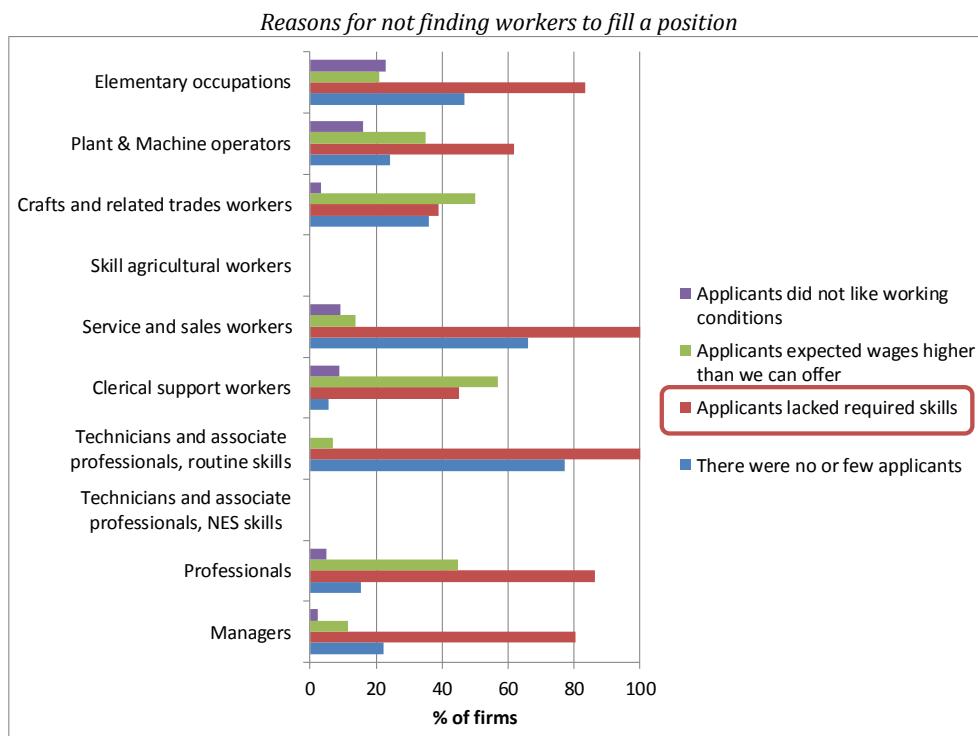
Figure 3: Labor demand is relatively low



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Note: TS stands for Traditional Skills Occupations, NES for New Economy Skills Occupations

Figure 4: But skills are the key problem for firms that have difficulties in finding workers

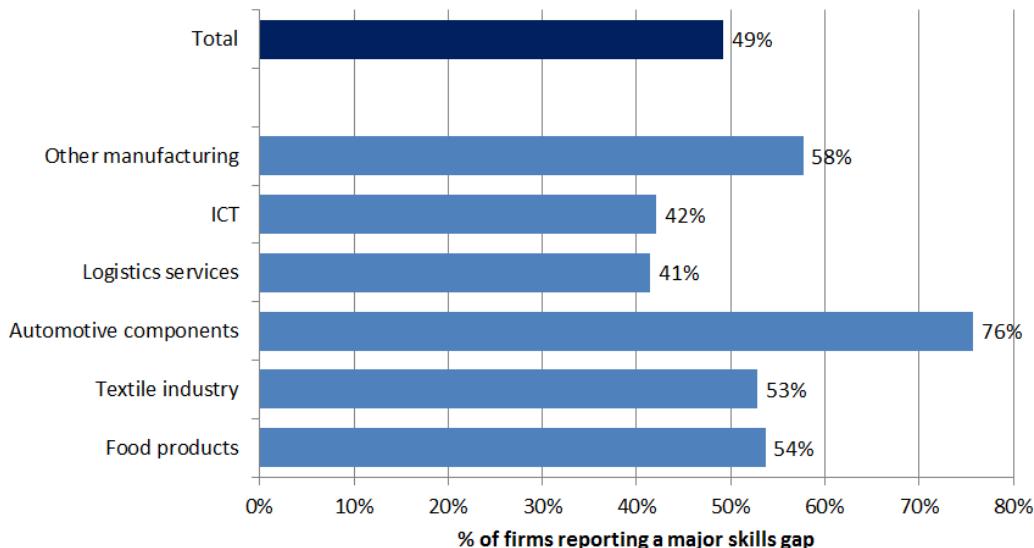


Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Skills also appear to be holding back firm productivity growth, with negative repercussions for competitiveness, profitability and – in the long run – the opportunities for expansion and wage growth. In fact, half of firms on the Employer Survey experience a skills gap among their current employees. They consider that there is a significant skills gap between what their employees know and what they would need to do their job well (Figure 5). These gaps are most serious for the

automotive industry – in an industry where a significant share of firms had been attempting to hire workers but failed due to skills gaps, three out of four firms consider their work force not entirely up to the task.

Figure 5: Many firms consider that their employees do not have the right skills for the job¹

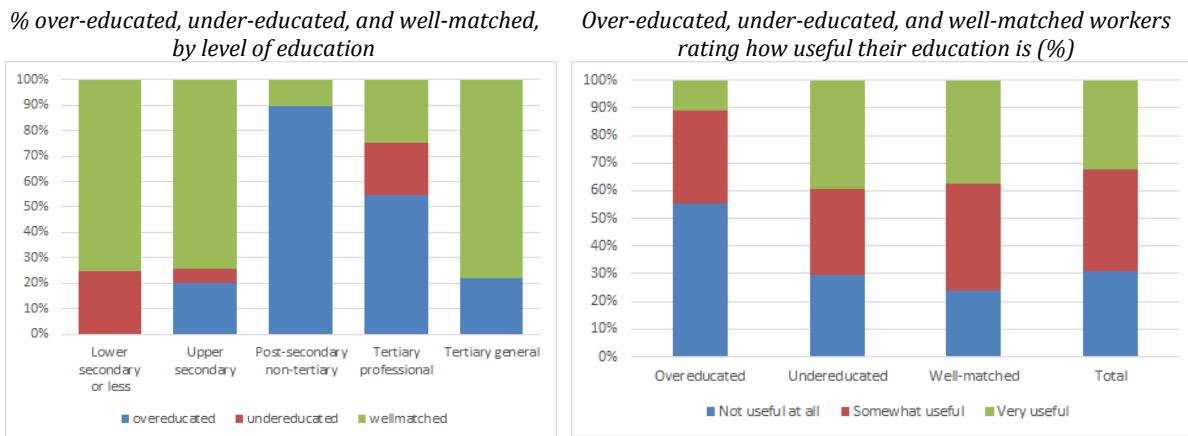


Q: "Would you say there is a significant gap between the type of skills that your employees have now, and those they need to achieve your current business objectives?" Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

3.2 Many workers consider their education levels mismatched with their jobs

Workers also bear witness to discrepancies between education and occupations. The impression of important skills gaps from the employers' side reappears on the workers' side. A significant share of individuals across different levels of education consider themselves mismatched to their jobs from the perspective of the education levels they have achieved (Figure 6, a). In particular, a majority of those with higher levels of vocational and technical training feel over-educated relative to the requirements of their jobs. The impression of over-education is high among workers in more precarious forms of jobs (self-employment, informal work) and among more elementary occupations. Unsurprisingly, a majority of the over-educated workers consider their education of no use whatsoever to their jobs (Figure 6, b). The high levels of perceived mismatch among workers who have spent more than twelve years investing in education – in particular vocational and technical education with a supposed labor market relevance - is disconcerting. Conversely, one quarter of low educated workers – those who have finished lower secondary education at the most – are, according to their own assessments, under-educated relative to the requirements of the job.

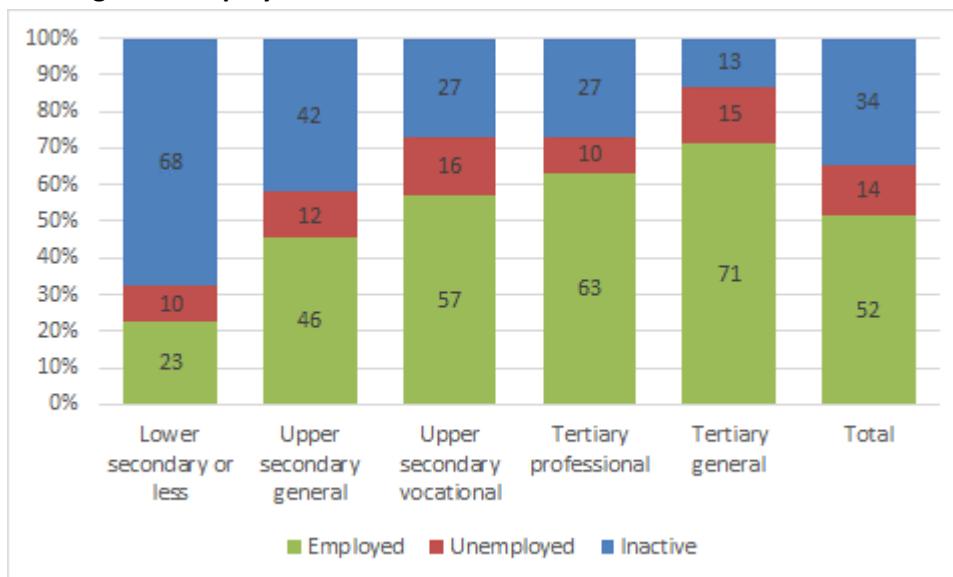
Figure 6: Many workers consider their jobs and education levels to be mismatched



Source: Former Yugoslav Republic of Macedonia STEP Household Survey

There are several potential reasons behind these mismatches, including lack of demand for certain vocational paths (which students nonetheless choose to enter) and low quality of education, making it difficult to find a job that is relevant to studies. This kind of mismatch in terms of contents of education is also witnessed in the fact that higher education is not a guarantee for a job. Certainly, employment rates are much higher for those with higher levels of education – but more than one third of those with vocational training, at secondary or tertiary level, are not in a job (Figure 7). Data from the LFS suggest that unemployment rates for those with tertiary education increased between 2007 and 2011.

Figure 7: Employment outcomes are related to education levels



Source: Former Yugoslav Republic of Macedonia STEP Household Survey

The conclusions are that both firms and workers appear to consider that there is a skills gap. Labor relevant skills are not equal to years of school, which measures quantity, and not content, vocation or quality of education. A look into the skills gap in the former Yugoslav Republic of Macedonia suggests that the skills gap in the former Yugoslav Republic of Macedonia does not seem to be related to under-education, but to lack of relevance of existing training. This can be due to the fact that students make the “wrong” choices in terms of vocations – suggesting that signals and incentives systems are not working well in terms of what jobs are in demand – and/or due to low quality of education. The next

section looks more in details at the nature of the skills gap – the skills employers are looking for, and the skills that they find.

4. Understanding the skills gap

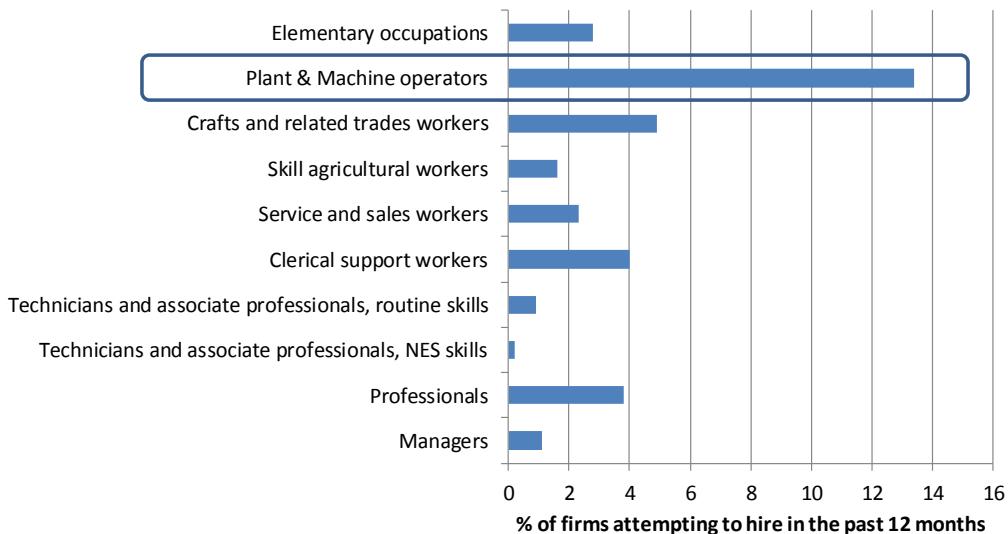
The surveys suggest that firms in the former Yugoslav Republic of Macedonia look for a range of occupations at different skills levels although the type of occupation in demand differs depending on the hiring sectors. Beyond job technical skills, however, firms are quite similar in their expectations: workers are expected to be able to solve problems, work in teams, work independently and manage their time well, and be ambitious, and there are skills gaps in these areas.

4.1 Employers look for a range of occupations and skills

Firms in the former Yugoslav Republic of Macedonia are looking for people across a range of occupations, both those intense in New Economy Skills and occupations with Traditional Skills. The occupational category with highest demand – by far – was for plant and machine operators, while demand for technicians was very low (Figure 8).

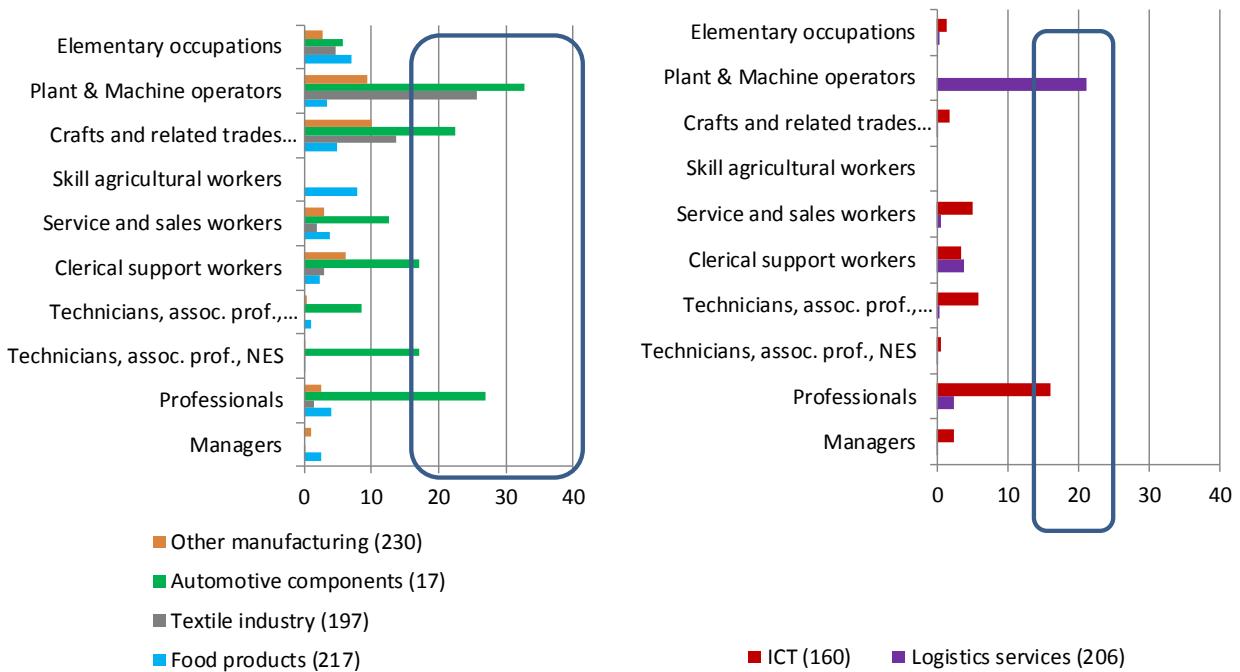
Nonetheless, firms differ significantly in their hiring needs, depending on the sector where they operate. The automotive industry is looking for workers across virtually all occupational categories, including professionals with New Economy Skills. Manufacturing sectors other than automotive, textiles and food industries are looking mostly for Traditional Skills occupations, especially plant and machine operators. The contrasts in the two services sectors are even more significant: the ICT sector is predominantly looking for professionals, technicians and sales workers; the more traditional logistics services sector is essentially looking for drivers (Figure 9). These numbers reflect hiring in one year only. Nonetheless, the wide variation of demand across occupations suggests that it is not primarily the occupational structure that is a problem (e.g., not enough available drivers or machine operators). Indeed, the demand for different occupations can change from year to year, and appropriate information systems are needed to inform workers, students and policy makers of potential demand.

Figure 8: Mostly routine, not new economy skills are in demand (% of firms trying to hire)



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Figure 9: Firms in industry and services that tried to hire different occupations

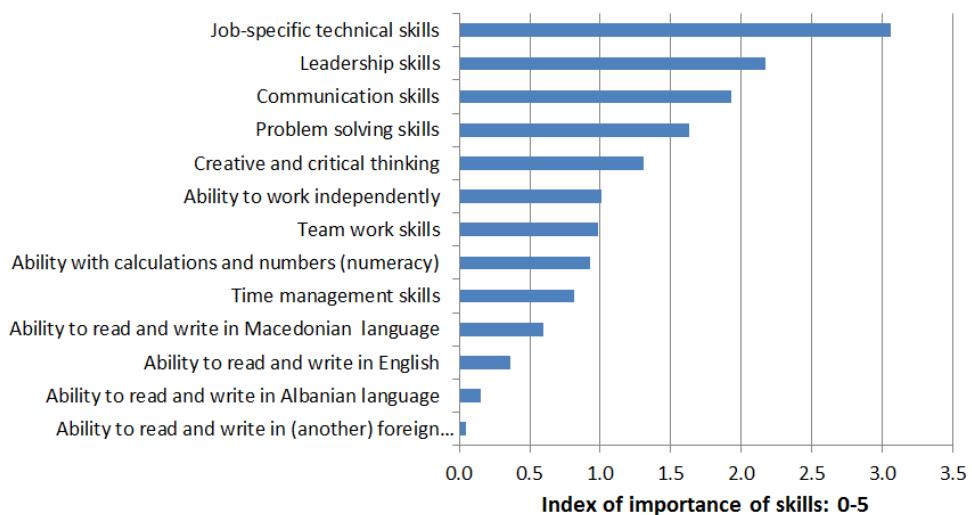


Source: Former Yugoslav Republic of Macedonia STEP Employer Survey. Numbers in parenthesis refers to total number of firms.

At a more disaggregated level, many skills needs cut across sector specific occupational needs. Irrespective of sector, when asked to rank different types of skills, both technical, general cognitive, and socio-emotional skills, firms concur in their appreciation and ranking of skills. Job technical skills, and the ability to stay on task and want to see it well done, matters significantly (a result which is consistent with the results from other ECA countries, see World Bank 2015).

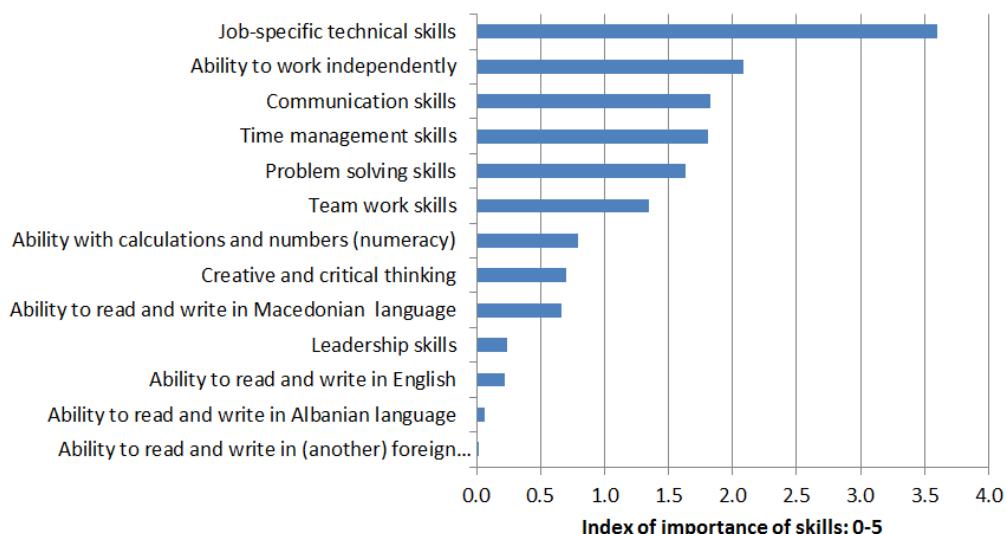
As expected, demand for skills in New Economy Skills occupations does indeed focus on “new economy skills”: aside from job technical skills, skills such as leadership, communication, and problem solving skills are highly rated. For Traditional Skills occupations, conversely, it makes sense that time management, the ability to work without supervision, and team work, include the most important skills. Across occupations, conscientiousness – the ability to stay on task and do it well – is most highly rated among the personal characteristics (Figure 10 and Figure 11). But it is also interesting to note what skills are not in demand. Compared to other skills, English and other foreign languages hold limited value for Macedonian employers. This may speak of limited size and international integration of many Macedonian firms.

Figure 10: New Economy Skills (NES) Occupations: Most emphasis on job-specific skills, but also NES skills like leadership, communication, and problem solving.



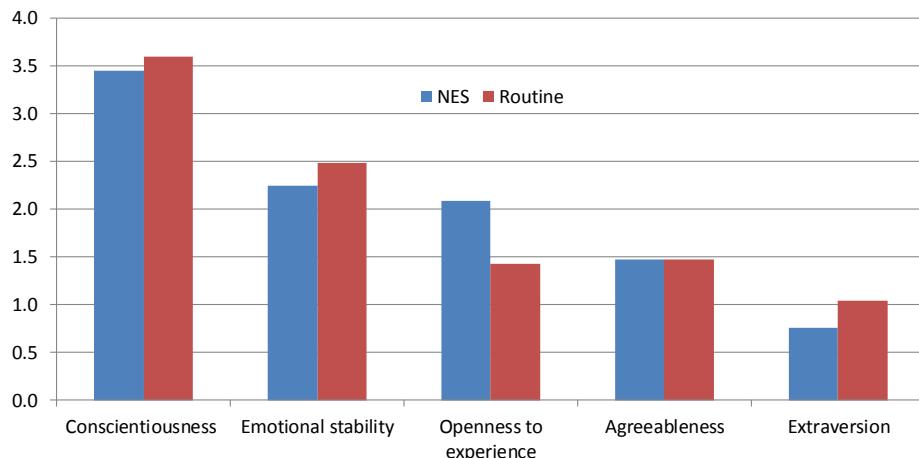
Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Figure 11: Traditional Skills occupations: Most emphasis on job-specific skills, but also skills re routine skills.



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Figure 12: Personality traits – staying on task and doing it well matters most.

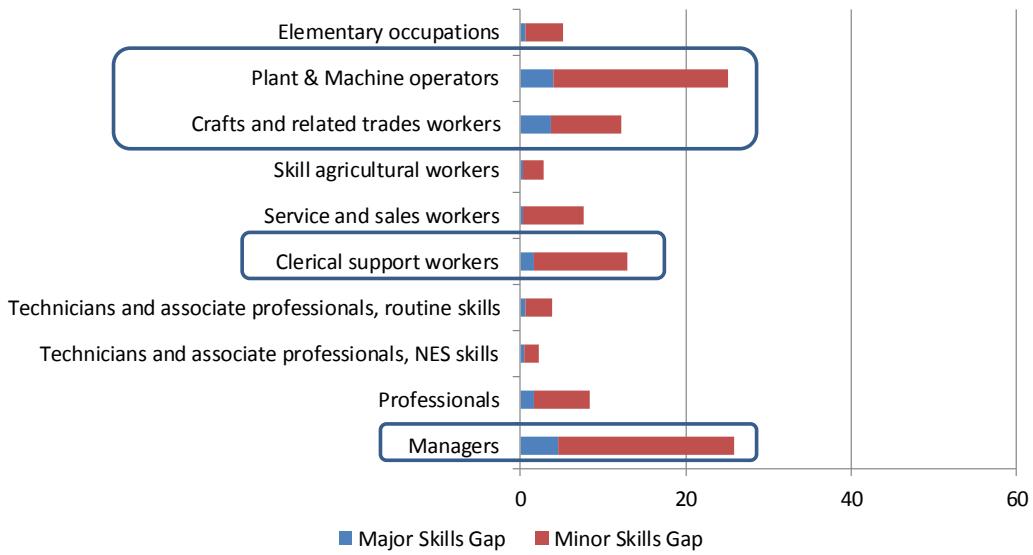


Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

4.2 Managerial and routine manual skills are missing among workers

Skills gaps among current employees are most serious for hard-to-hire occupations. Skills gaps are not defined by what kind of skills are in demand – skills gaps arise when certain skills are in demand *and* not sufficiently available for hire. Hence, the employer survey also asked firms about what occupations and skills display the most important *skills gaps* in the current work force, in the sense of workers not having the skills needed to meet the firms' objectives. The reported skills gap among existing employees coincide with those occupations for which it was difficult to hire because of skills deficiencies: managers, and some Traditional Skills occupations in high demand (Figure 13).

Figure 13: Skills gaps among employees



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Managerial capacity and sales personnel are lacking in all sectors. Again, when looking at occupations, sectors matter for the occupations for which skills gaps are most significant (Table 2). There are skills gaps for the technical routine tasks typically required in each sector – agriculture and food processing workers for the food products sector, textile machine operators for textiles,

assemblers for automotive components, drivers for logistics, and wood workers, electronics workers, and so on for other manufacturing sectors. For the ICT sector, there are no such significant gaps for Traditional Skills occupations. Instead, a host of New Economy Skills Occupations are missing. But across sectors, there is clearly an important skills gap for managers, and for sales personnel.²

Table 2: Top five occupations with major skills gaps for both New Economy Skills (red) Occupations and Traditional Skills (blue) Occupations.

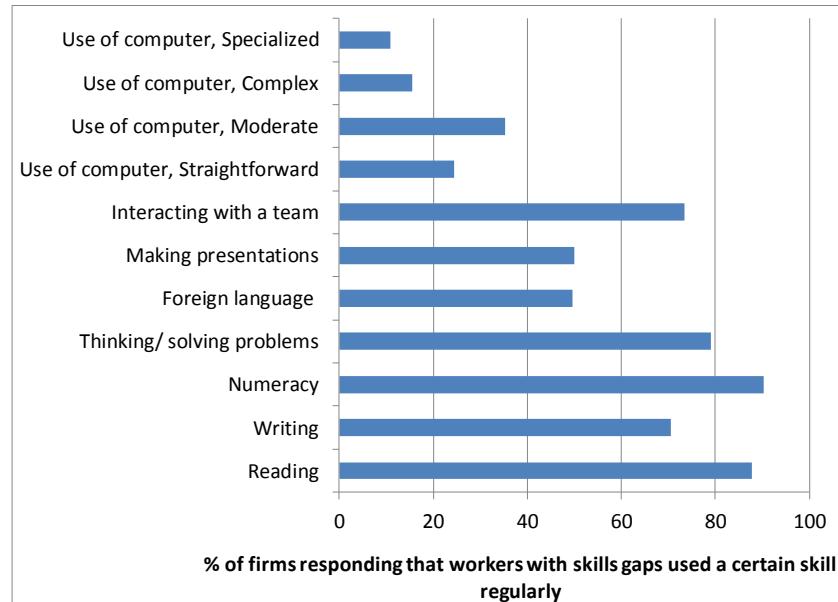
	Food products	Textile industry	Automotive components	Logistics services	ICT	Other manufacturing
First	Production and operations department managers 14	Textile-, fur- and leather-products machine operators 35	General managers 21	Motor-vehicle drivers 53	Computing professionals 31	Wood treaters, cabinet-makers and related trades workers 14
Second	Subsistence agricultural and fishery workers 14	General managers 15	Assemblers 20	Directors and chief executives 10	Production and operations department managers 11	Other department managers 11
Third	Shop salespersons and demonstrators 12	Shop salespersons and demonstrators 13	Directors and chief executives 19	General managers 8	Other department managers 10	Electrical and electronic equipment mechanics and fitters 9
Fourth	Food processing and related trades workers 11	Pelt, leather and shoemaking trades workers 9	Machinery mechanics and fitters 13	Material-recording and transport clerks 7	General managers 10	Wood-processing- and papermaking-plant operators 8
Fifth	Food and related products machine operators 10	Directors and chief executives 8	Garbage collectors and related labourers 6	Other department managers 6	Directors and chief executives 8	Directors and chief executives 8

Source: Former Yugoslav Republic of Macedonia STEP Employer Survey. Number in each cell refers to number of firms mentioning each occupation.

The kind of occupations that employers say are fraught with skills gaps, are also skills intensive, but there are clear differences depending on the kind of tasks involved in the job. More particularly, for New Economy Skills occupations, they concern an array of cognitive and socio-emotional skills (communication and people skills). For Traditional Skills jobs, the skills intensity is high in basic cognitive (reading, numeracy) and people skills. Overall, a range of skills are needed and lacking, much beyond specific technical skills.

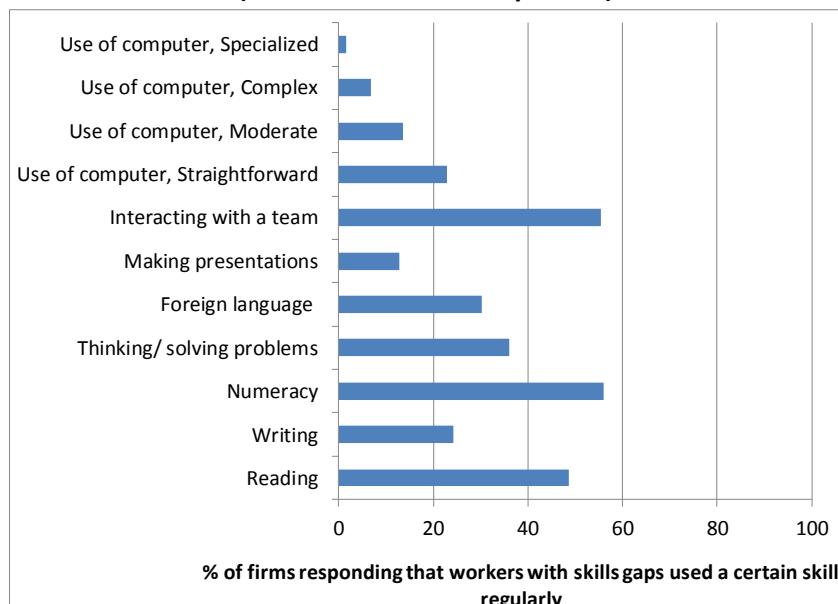
² The STEP surveys are not the only source of information pointing to a concern for managerial capacity. In the Executive Opinion Survey in the World Economic Forum's Global Competitiveness Report, FYR Macedonia ranks number 102 among 140 countries in terms of reliance on professional management (World Economic Forum, 2016).

Figure 14: Skills intensity is high among jobs with skills gaps (New Economy Skills Occupations)



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Figure 15: Cognitive and interactive skills intensity is less high among jobs with skills gaps (Traditional Skills Occupations)



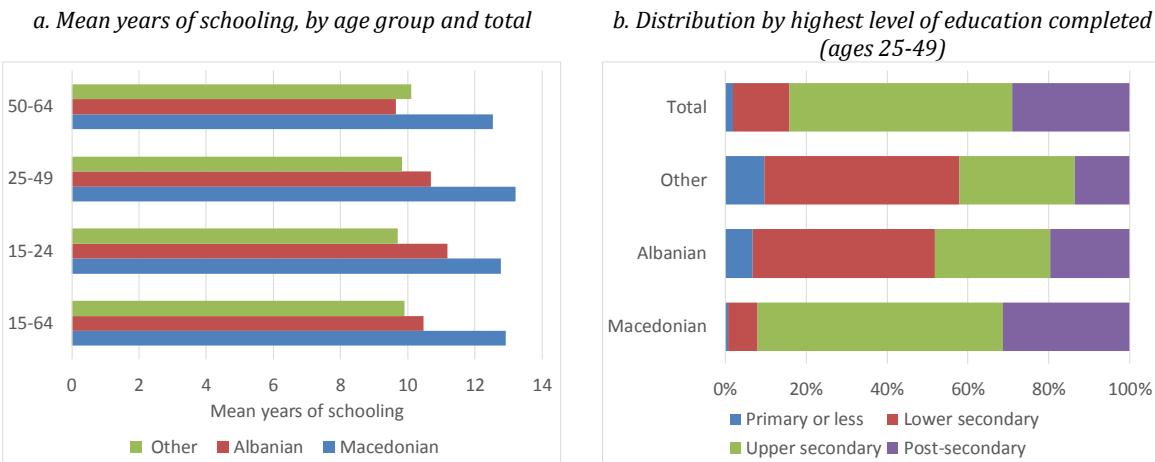
Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

4.3 The distribution and use of skills is uneven in the population

Although skills gaps are a generic feature in the former Yugoslav Republic of Macedonia, some are significantly more disadvantaged than others. The most notable differences regard ethnic groups. First, access to education differs significantly. Adults with Macedonian ethnicity have more than two years of schooling on average than other ethnic groups living in the country. Moreover, the education gaps are not falling over time: they are as high for those aged between 25 and 49, as for those above age 50. These gaps translate into low participation of non-Macedonian ethnicities in post-secondary education – only 20 percent of those in the Albanian ethnic group, and fewer of the “other” group, have completed some form of post-secondary education. More than half of those with non-

Macedonian ethnicity have at most completed lower secondary education. These differences in education and training as well as in labor market outcomes are likely related to several interrelated constraints on the demand and supply side of education, including aspirational and information gaps as well as social norms that limit demand for training for some groups.

Figure 16: Access to education differs across ethnicity



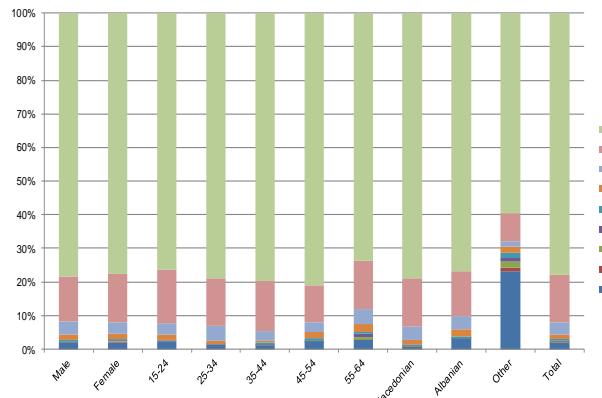
Source: Former Yugoslav Republic of Macedonia STEP Household Survey. Refers to adult population not in education or training at the time of the survey.

These differences spill over into skills gaps. In general, women and men, the young as well as the old, are literate, judging from a basic literacy test administered in the STEP household survey (Figure 17 a).³ However, even basic literacy is completely lacking for certain ethnicities (which possibly includes Roma, although we cannot ascertain this). Although Macedonian adults do better than others, there is also a significant difference between Albanian and the “other” group, among whom more than twenty percent are, in fact illiterate, even in this very basic sense. Moreover, the intensity of skills use is also considerably higher for workers with Macedonian ethnicity compared to Albanian or other ethnic groups. The differences are particularly significant for the “other group” with respect to skills used on the job. Illiteracy not only affects employment opportunities but is an effective barrier to further skills development.

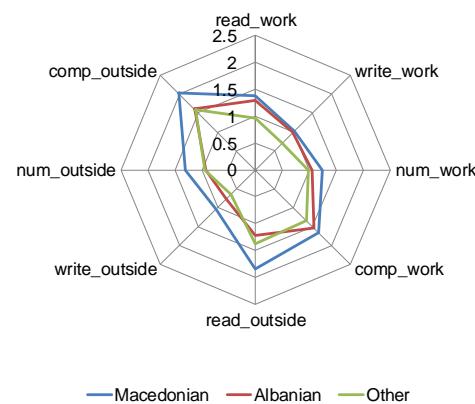
³ Macedonia conducted only the “partial literacy assessment,” in which only the General Booklet (Reading Components and Core Literacy) was administered.

Figure 17: Non-Macedonian ethnic groups are at a disadvantage in terms of skills.

a. Basic literacy test score



b. Use of skills by ethnicity

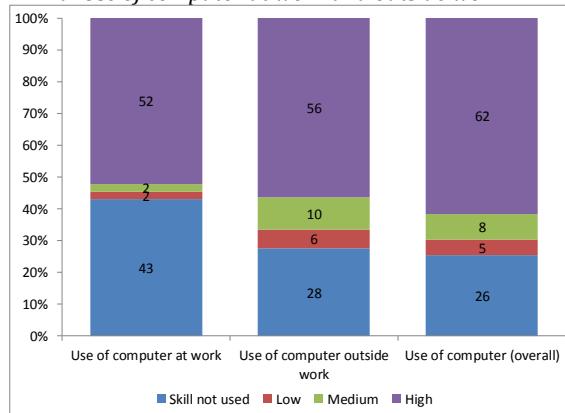


Source: Former Yugoslav Republic of Macedonia STEP Household Survey. Read= reading, write=writing, num=numeracy, comp= computer, _work=used at work, _outside=used outside work.

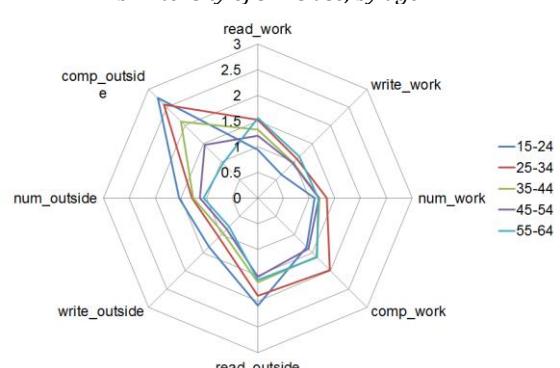
There is also some evidence of a digital divide in the former Yugoslav Republic of Macedonia. Computer skills are particularly interesting, because as economies develop and the technology content of production and consumption patterns increases, the importance of computer technologies and the ability to understand them become a necessary skill. In more advanced economies, computers are used not only by professionals and managers, but by health care workers at all levels, sales personnel, and car mechanics. In the former Yugoslav Republic of Macedonia, first, computers tend to be used intensively, or not at all, on or off the job – much like in the case of literacy above, people are either proficient (presumably, from working intensively with computers), or have no access to computer technology. Second, the intensity of computer use is closely linked to age. In particular workers aged 45 and above – born and largely educated prior to the transition into market economy began – are not equipped with computer skills.

Figure 18: Computer use differs significantly across jobs and ages

a. Use of computer at work and outside work



b. Intensity of skills use, by age.



Source: Former Yugoslav Republic of Macedonia STEP Household Survey. Read= reading, write=writing, num=numeracy, comp= computer, _work=used at work, _outside=used outside work.

The conclusion is that close-up, the skills gaps are significant in the former Yugoslav Republic of Macedonia, and affects some adults more than others. There are skills gaps across a range of generic skills, both cognitive and socio-emotional, that prevent firms from operating more effectively and that holds back productivity and earnings opportunities for individual workers. Hence, skills gaps are not only due to students choosing vocations that are not in demand, but to the fact that they do not learn

enough relevant skills on their training. The next section sheds light on the causes behind the skills gaps in the former Yugoslav Republic of Macedonia.

5. Why is there a skills gap in the former Yugoslav Republic of Macedonia?

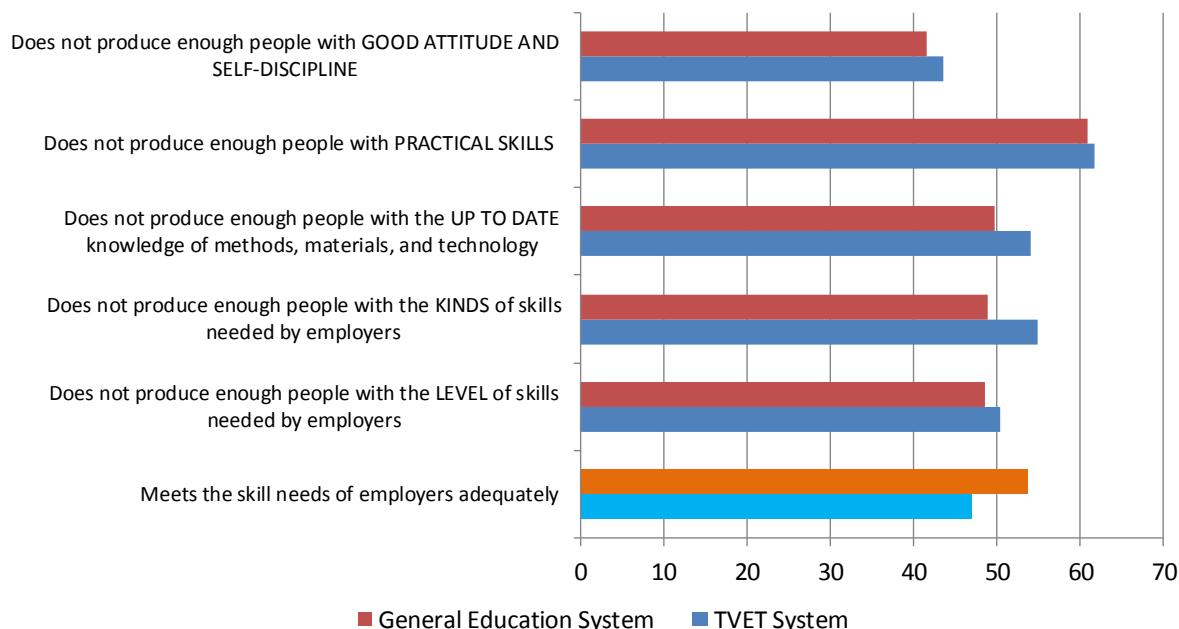
What are the underlying causes of the skills gaps in the former Yugoslav Republic of Macedonia?

The framework in the beginning of the report outlined key obstacles to an efficient skills development system, focused on the actions and interactions between the key stakeholders: an education system that is not responsive to labor market needs, employers that do neither train their workers nor coordinate with peers to train jointly or reach out to the education system, and students that lack information or incentives to choose vocations that increase chances of employment and ensure that they develop important skills during their time in school and during training. The STEP surveys show evidence of these kind of weaknesses. Quality, not level of schooling seems to be the major problem, but firms do not compensate for this by training their workers or collaborating with the education system.

5.1 Quality problems in the education system

Skills needs are not met through education systems. As seen, education levels are relatively high in the former Yugoslav Republic of Macedonia -a majority of adults have, after all, completed at least upper secondary education, and many have a vocational background. Yet, from the perspective of employers, there are significant problems related to the quality of education that workers have received. Only half of the firms consider that the skills needs of employers are adequately met; this goes for the TVET system as well as for the general education system. Lack of practical skills is a problem, but it is not the only one: good attitude and self-discipline, and relevant up-to date skills are lacking.

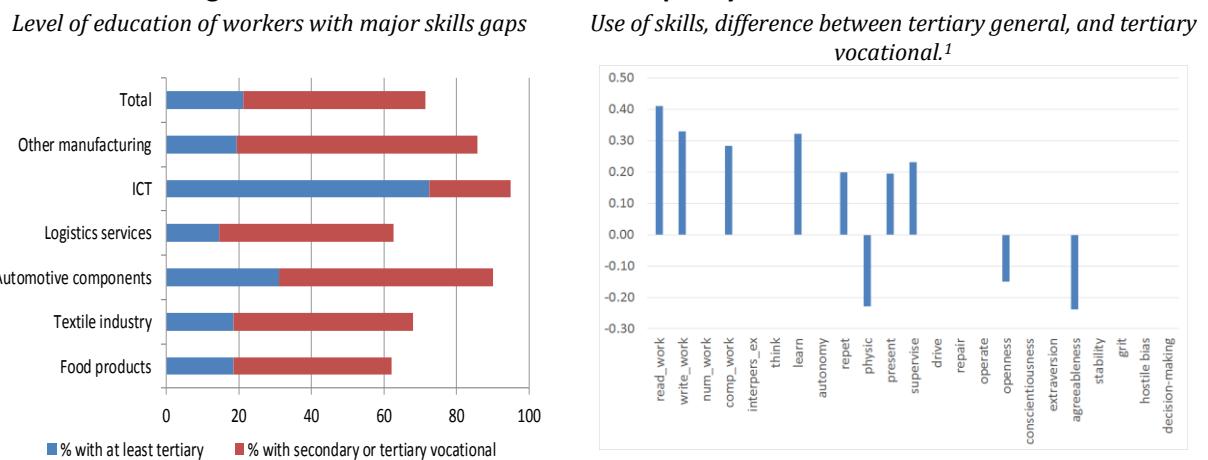
Figure 19: Education systems are not delivering enough skills



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Vocational training does not develop skills. Education pays off in terms of continued skills use, and skills development on the jobs – those with higher levels of education unsurprisingly use more cognitive and other skills on the job. However, the bulk of workers with major skills gaps have education levels above lower secondary education (Figure 20, a). Many signs point to significant inadequacies in the vocational training system, although this is the kind of training intended to provide specifically for labor market entry. Those workers identified as having the most significant skills gaps tended in fact to have vocational training (Figure 20, a), irrespective of the economic sector they are employed in. And there are, in fact, big differences in terms of skills use, between workers with vocational training and general education at tertiary level in (Figure 20, b). This is consistent with the evidence presented above, in section 3, namely that many of those with tertiary vocational training consider themselves overeducated for their jobs.

Figure 20: Problems are related to the quality of education



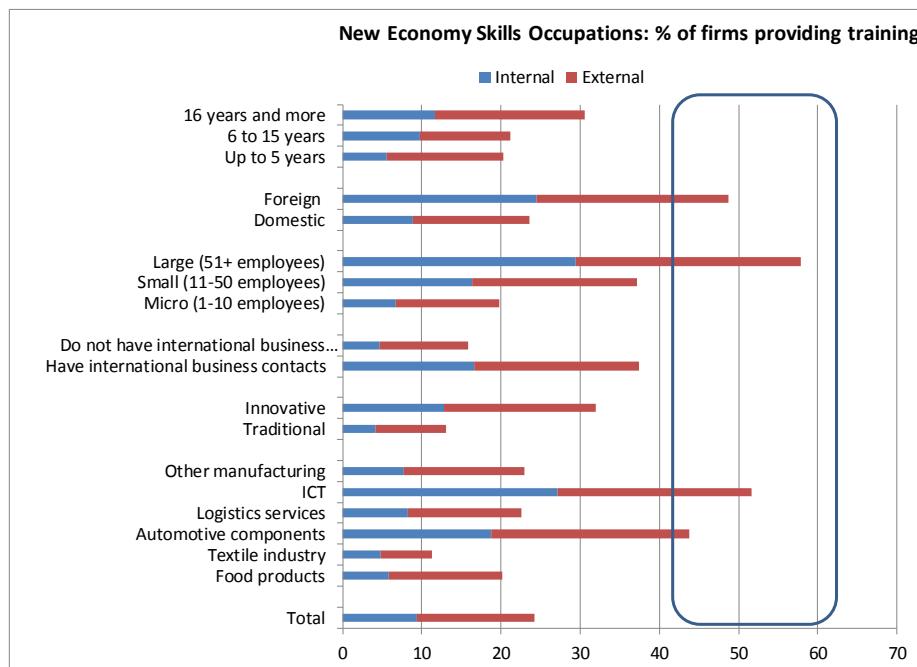
Source: Former Yugoslav Republic of Macedonia STEP Employer Survey (left), Household Survey (right). 1. Only statistically significant differences included. Skills (from left to right): Reading (at work), writing, numeracy, computer, thinking/problem solving, learning, autonomy, physical effort, make presentations, supervise others, driving, repairing, operating machinery,

5.2 Firms do not train their workers

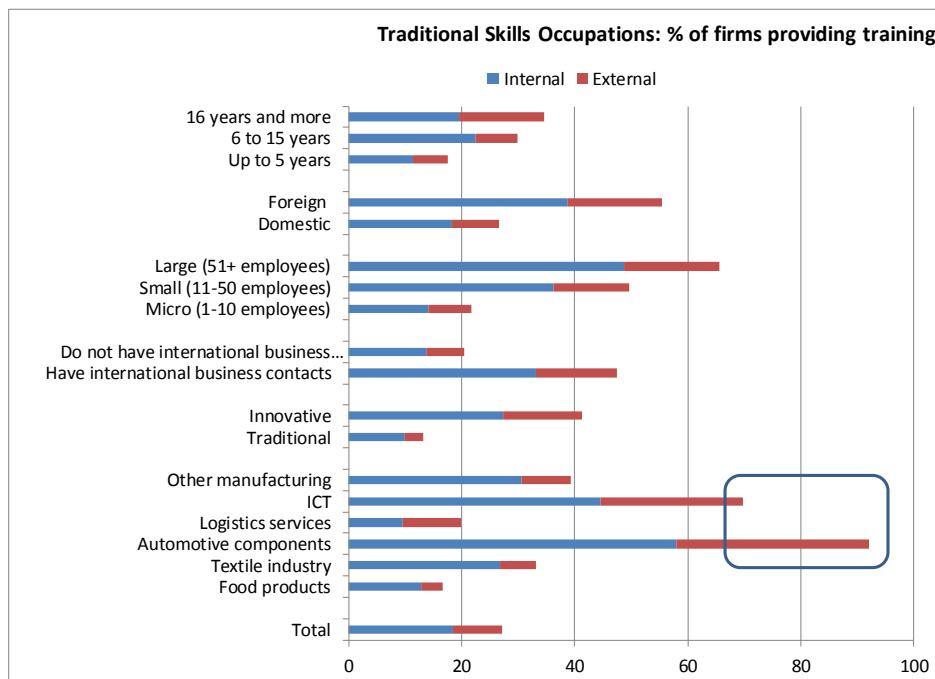
Skills development is also held back as because firms are not taking steps to train their workers or engage in training and skills development in a systemic way. There are several potential reasons why firms may not find skills development (here meaning training outside of normal on-the-job training) worthwhile. One possibility – supported by the relatively poor evaluation by firms of the education system - is that workers are simply not at the level where they are trainable: firms are not prepared to invest in building general skills that should have been part of worker's education and training prior to entering working life, but without such basic and intermediary skills, firm specific training is not possible. Another underlying cause could be a low level of organization on the employer side that preclude cost effective solutions to training: each firm finds it too costly to engage in skills development, although a joint effort with other firms, exploring economies of scale, would in fact pay off. It is also possible that employers and especially in smaller firms, have limited information on the value of investing in skills development. On average, only about one in four firms do in fact provide training (Figure 21, a and b). Firms with international links and foreign participation, notably the automotive industry, and firms with high intensity of new economy skills, specifically the ICT sector, make up a significant exception: they train workers, and are attempting to engage with the education sector, although they do not generally interact at a more systemic level. It is perhaps not surprising that the forms of training, when it happens, differ between different occupations. For traditional skills occupations, training is more internal – learning more repetitive and in some cases machine specific

tasks, perhaps with instruction from a colleague. For new economy skills, there is a higher chance of externally provided training.

Figure 21: Few firms provide training to their staff – with significant exceptions in ICT and automotive industries.



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

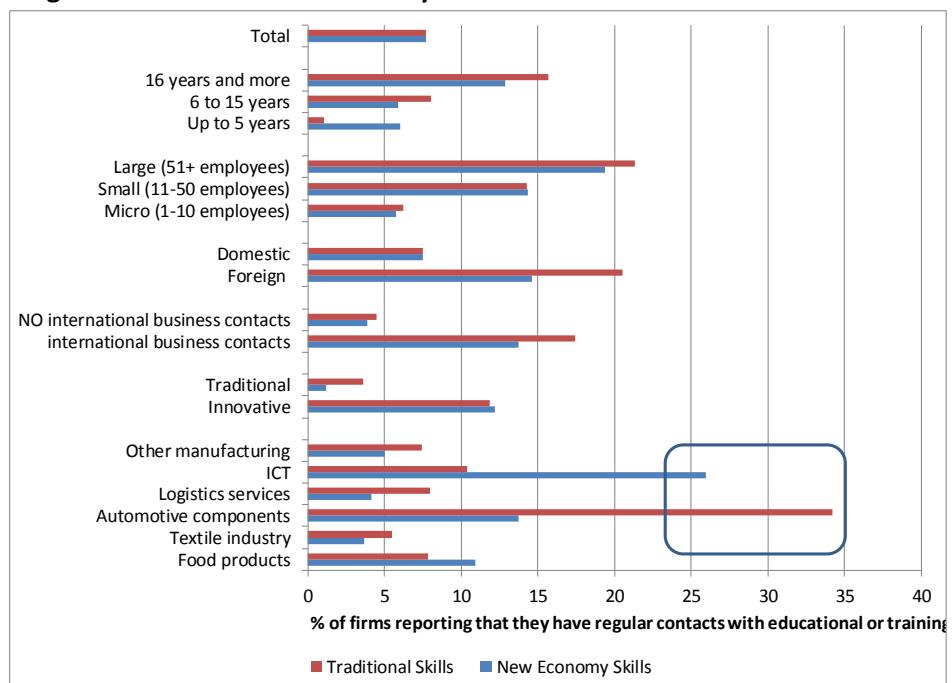
5.3 Firms and education systems are disconnected

In general, Macedonian firms are not linked with the education system. As seen in Figure 22, less than ten percent of firms, on average, are actually regularly in contact with educational institutions in

some form. The ICT and automotive industries again make up significant exceptions, however. Whereas these two sectors engage with education institutions for both New Economy Skills and Traditional Skills occupations, their specific skills needs profiles are also in evidence: the automotive industry is much more likely to be engaging with skills development institutions for Traditional Skills, while the ICT sector is engaging more significantly for New Economy Skills.

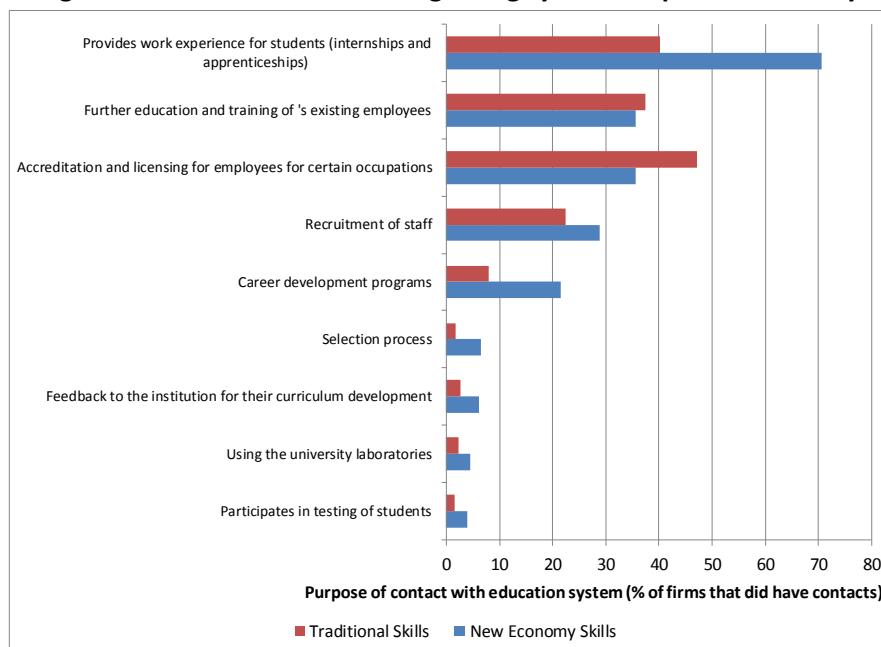
The interface between employers and educational institutions is largely focused on placing workers in educational institutions, or placing students for internships in firms. These forms of interchange are a significant pillar of any skills development system, but are not likely to provide enough direct contact and input from firms to educational systems and vice versa. Among firms who do engage with education institutions, very few provide input at a systemic or quality enhancing level, which would include for example developing curricula, help in the student intake process, or participate in the testing of skills.

Figure 22: Firms and education system remain detached from one another



Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Figure 23: Limited interaction regarding system output or efficiency.

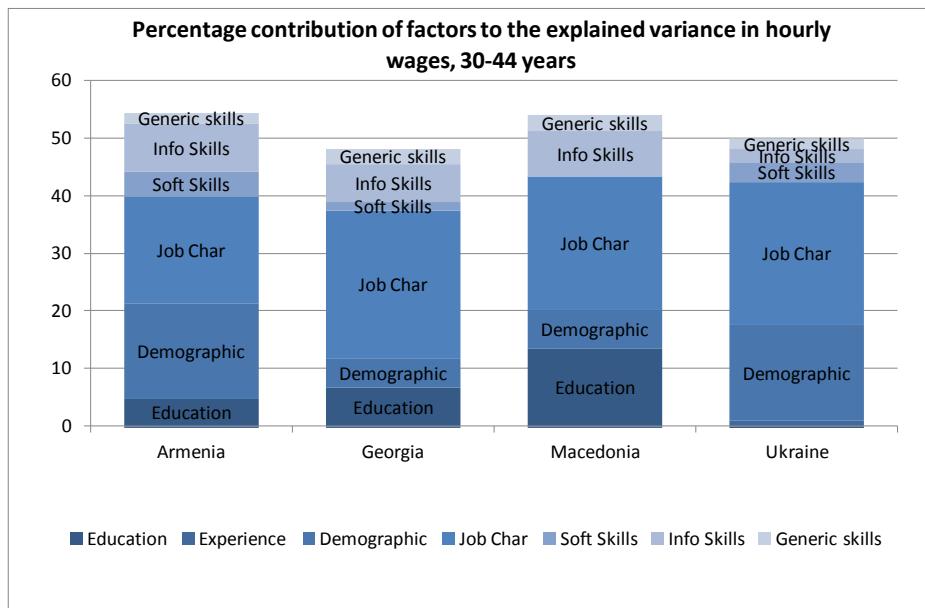


Source: Former Yugoslav Republic of Macedonia STEP Employer Survey. Multiple answers possible

5.4 Labor markets do not send the right signals

Diplomas matter more than skills in the former Yugoslav Republic of Macedonia, setting it apart from more modern economies. Skills gaps are also very much a result of the choices students make – what to study, and where to study. Both information and incentive gaps may play a role. If students are not well informed about what work opportunities will pay off, or where/which institutional track and institution provides the best form of training for a particular vocation, they are less able to make choices that respond to labor market needs. If skills are not well rewarded, the incentive to focus on quality education is also lower. A general conclusion from recent studies on the determinants of earnings is that at least in well-functioning labor markets, skills are what matters: once skills are considered, education by itself is much less significant. In other words, it is the output and result of the education system rather than the signaling value of a specific diploma, that matters. However, in the case of the former Yugoslav Republic of Macedonia, skills are not among the key determinant of earnings (Figure 24). Even compared to other ECA countries, Macedonia stands out for the strong role that education (rather than actual skills) play in determining wages, and the fact that skills (especially soft skills) matter much less in terms of hourly wages. Thus, unlike in most countries, diplomas, not skills, are rewarded in labor markets. This could suggest that there are not enough incentives to develop labor market relevant skills, even if students know what those skills are – getting a diploma, perhaps from an institution which provides networks in the world of work, or that gives access to public employment, is more important.

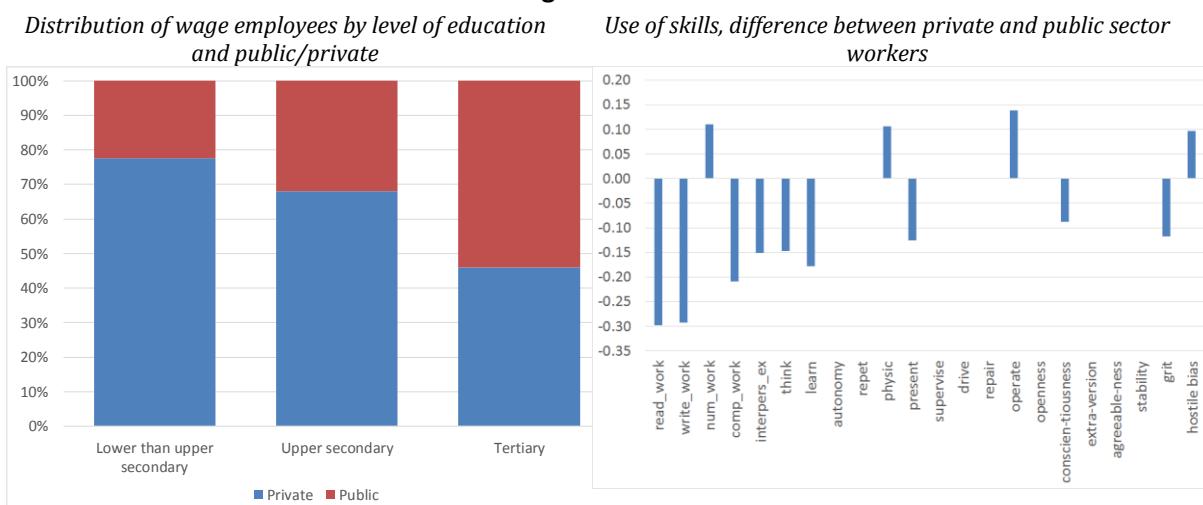
Figure 24: Diplomas, not skills, are rewarded in the labor market



Source: Estimates based on Former Yugoslav Republic of Macedonia STEP Household Survey. Note: Results obtained using regression-based decomposition according to the Field's approach (Fields, 2004) where the dependent variable is the log of hourly wages. The height of each bar represents the total R-squared for that regression. The sub-components of each bar show the contribution of each factor (or set of regressors) to the R-squared. Education = Years of education, Demographic = Demographic Characteristics, Job Char = Job characteristics, Info skills = Use of information-processing skills at work, Generic skills = Generic skills at work.

The advantages of public sector jobs—salary and benefit levels, relatively secure employment, status – may in fact contribute to increasing the skills gaps at the high-end level. The high – and increasing – share of tertiary educated workers in the public sector suggests that there are incentives for those with post secondary education to get a job in the public sector (Figure 25, left graph). This would both affect the kind of educational (and skills development) path that students chose, and their willingness to hold out for a job in the public sector, rather than looking for one in the private sector. But there is a *de facto* difference in the level of skills used in the public versus the private sector (Figure 25, right graph). Private sector workers are much less likely to read or write on the job, and to intensively be interacting with different people and teams, use computers, solve problems or work autonomously. This concentration of skills in the public sector may in fact be both a result of low general sophistication of production and services in the private sector, and a cause of skills gaps there.

Figure 25: Educated workers (especially women) in concentration in public sector; skills use is also higher there



Source: Former Yugoslav Republic of Macedonia STEP Household Survey.

6. Addressing the skills gap

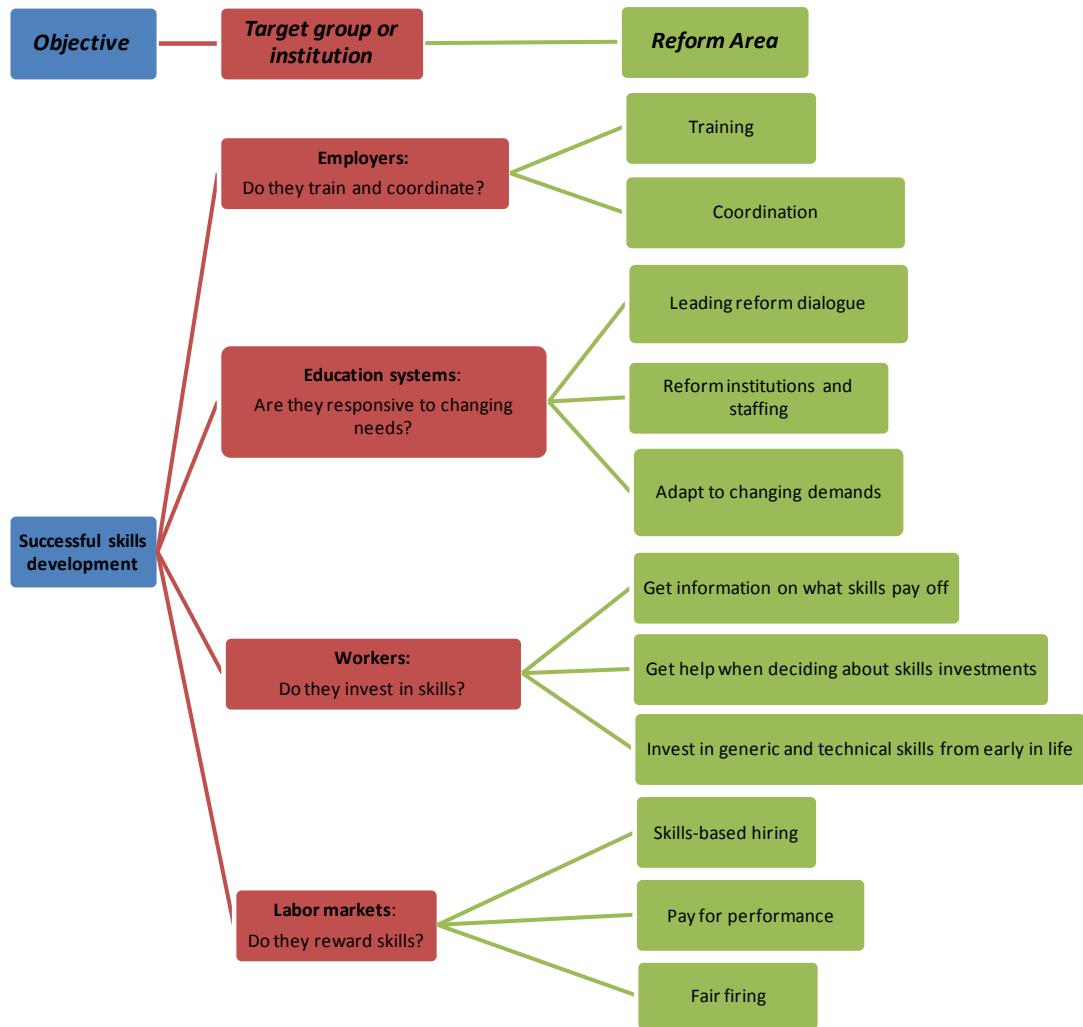
The STEPs surveys show evidence of skills gaps and the negative consequences for jobs and productivity growth. Employers find it difficult to identify skilled workers for the jobs, and this is true for a range of different kinds of occupations. These firms also identify gaps in what their current workforce knows and what would be needed to do the job well. These gaps include job-specific technical skills but also generic competencies like communication, problem solving, time management, and team work. Many workers, on the other hand, consider their skills and jobs mismatched, especially those with vocational training who feel overeducated for their jobs.

These skills gaps show that the skills development system in the former Yugoslav Republic of Macedonia needs strengthening. Returning to the framework presented in Section 2, there are issues with the choices students (can) make, the quality of training provided by the educational institutions, and the signals labor market sends. Moreover, different stakeholders do not interact sufficiently to improve matters. First, there are manifest quality problems in the education system, even at higher levels, and inequities in access. Once employed, workers have little access to training within firms, except those working in the ICT and automotive industries, both of which are finding difficulties in identifying skilled workers. Labor markets are not providing signals that favor skills development for private sector employment: education levels, rather than the actual skills that education has imparted on workers, explain differences in earnings between workers.

Coordination and collaboration is weak. There is also very limited interaction between the private sector and training institutions, neither at the strategic level (curricula development, certification, industry-wide training centers) nor at the “tactical” level (cooperation on work-based learning, like apprenticeships and internships). These conclusions are in line with those emanating from the World Bank’s SABER analysis of work force skills development systems in the country, focusing on the TVET system in particular. This review of strategy, system oversight and service delivery suggests that there is a lack of coordination along several dimensions: within the public sector, within the private sector, and between the private sector and the public sector, with negative effects on the quality and targeting of training (World Bank, 2014). The education and training sector remains disconnected from the private sector (employers) and as a result, much of the training provided lacks relevance for labor markets. Moreover, there are no collaborative mechanisms for forecasting labor market needs, and data collection and information systems remain underdeveloped. More generally, the system is centralized and “top-down”, rendering it more rigid and less attuned to the actual needs in the private sector. This lack of coordination and collaboration results in underinvestment in skills by all parties – concerted and coordinated action is needed for actions to pay off to each side.

What can be done? Figure 26, drawn from a recent research report on demand and supply of skills in some countries in Eastern Europe and Central Asia, summarizes different areas of reforms to help (i) employers train their workers and collaborate with other employers and education systems more broadly; (ii) education systems respond to student and labor market needs; (iii) students and current workers to invest in the right skills; and (iv) labor markets signal support for these skills.

Figure 26: Ingredients for successful skills development



Source: World Bank (2015)

Firms hesitate to train workers because of fear of losing trained workers to other firms thus having borne the cost but not reaped the benefit of training. In the former Yugoslav Republic Macedonia, firms appear to expect the formal education system to provide skills, and are not in bridging this gap themselves. Policy can then help firms by providing tax and other forms of incentives for training, or provide platforms that help firms coordinate between themselves and costs (and risks) equally. For example, the National Qualifications Framework is under reform, and involvement of employers in this project is critical to ensure its relevance. Policy can also focus on strengthening industrial and employer organizations. Another avenue to explore is the of apprenticeships systems. These dual education systems effectively share the cost of training firms (who provide training to workers on the job) and workers (who are hired at lower wages). Estimates prepared for a public-private skills development project in Slovakia suggest that apprenticeship systems can be a very effective way of dealing with skills gaps, compared to incentives from the government to hire current employees (needs to enable and support a constructive dialogue between employers and local TVET schools, the latter having to adjust curricula and accommodate employers' needs).

Box 3: Young Stars - Austrian-Slovakian Dual VET in the Nitra Region

The Slovak Republic is marred by imbalances in the labor market, where youth unemployment rates are high while there are many unfilled vacancies for skilled workers. Austrian firms had identified a significant shortage in the area of metal work and mechatronics skills. In order to help firms meet their demand for skilled workers, the Austrian Federal Economic Chamber supported piloting a dual training system in the Nitra Region.

The “Young Stars” project is a wide multi-stakeholder collaboration involving 8 companies (4 Austrian, 2 German, 2 Slovakian), the Slovak Ministry of Education, Science, Research and Sport and the local authorities in charge of education and youth, a local VET school, the Slovak Employer Association, the Automotive Industry Association of Slovak Republic, an Austrian Research Institute focusing on TVET, and the Austrian Ministry of Science, Research and Economy. The project also served as an input to the Slovak authorities’ reform process as they look towards establishing elements of a dual training system.

Through the project, a dual training system has been developed combining 40 percent class-room learning with 60 percent apprenticeship training in companies. Curricula have been adapted to business needs. Upon graduation, students receive a diploma and certificate of apprenticeship.

Based on Austria’s experience of dual training, the project is based on experience of good practice. There are several companies involved, providing economies of scales, diversifying risk and employment opportunities, reducing competition bias, and increasing the transferability of skills. These firms are geographically close to one another and the school, reducing traveling costs for students. They have been willing to collaborate between themselves to arrive at a common training program and prepared to deal with schools and local and central government institutions. These companies have agreed to a multi-annual commitment and to a minimum number of apprentices per year they take in. They provide human resources and equipment for the on-the job training. Companies and the school together prepare trainers and jointly take in applicants and unsuited applicants can still be eliminated after the training has started.

Estimates by one of the participating Austrian companies suggest that compared to training existing workers, dual vocational training is a cost-effective albeit slower way of getting skilled workers. Although it is estimated to take between one to two years longer for an apprentice to be trained, the lower cost of stipends and wages to student, compared to a full-time employee, makes it a significantly cheaper option (less than one third of the cost, in fact). In their experience, apprentices stay on as employees after graduation, by which time they have developed into co-workers, have absorbed company culture, and have the skills to do their jobs well. The apprenticeship system also permits strategic long-term planning of staffing.

The success of the “Young Star” pilot led to a broader reform the Slovakian TVET system, with many lessons learned from the pilot now being mainstreamed throughout the country.

Source: Information provided by Austrian Federal Chamber of Commerce.

Education systems are weakened by a lack of strategic direction, a lack of social dialogue to strengthen the relevance of training to firms and workers, and a lack of both quality assurance mechanisms, and, related to this, alternative pathways into different vocations. Spending on education by the Government of the former Yugoslav Republic of Macedonia (4.1 percent of GDP) is high by regional

standards, but has not translated into stronger performance on international student tests. Resources are not allocated according to measures of quality of services, reducing the incentives for educational institutions to aim for excellence. Public authorities should be capacitated to lead the reform process, coordinate stakeholders, and collect and disseminate information related to training and labor market prospects.

Students and workers need help to acquire the basic education, including soft skills, that is necessary to adopt new and more advanced skills, including technical skills, entrepreneurial skills and generic soft and analytical skills. But they also need assistance in making informed decisions in identifying career paths that take into account their aptitudes and inclinations, but also the jobs and earnings prospects from different types of training (as well as the quality of training available at different institutions). Experience from other countries suggest that labor market observatories and related research functions can assist both students, workers and potential employers in making choices regarding skills development. Similarly, effective career guidance in primary and secondary school can improve efficiency in both education and labor markets. Effective career guidance systems are characterized by independence (from schools), strong collaboration between different stakeholders, including private sector employees, and early and frequent exposure to the world of work. Efforts to collect and disseminate pertinent labor market and education information are underway in the former Yugoslav Republic of Macedonia but not yet well established.

Incentive systems are not working towards more jobs and higher productivity. As such, even with more information and more training opportunities, students may not choose vocations that close the skills gaps in the private sector. In the former Yugoslav Republic of Macedonia, diplomas, not skills, are rewarded with higher earnings. Public sector jobs, moreover, seem to be preferred over private sector jobs, and also use skills more intensively. This calls for labor codes and collective bargaining agreements that reflect merit, not seniority or personal characteristics such as gender and age, and for innovative screening processes, including direct skills testing, that reduce the need for diplomas as the only signaling of competencies in labor markets.

References

- Acemoglu, D. (1997, July). "Training and Innovation in an Imperfect Labour Market." *Review of Economic Studies* 64(220), 445-464.
- Almeida, R., Behrman, J., & Robalino, D. (2012). *The Right Skills for the Job? Rethinking Training Policies for Workers*. Washington, DC: World Bank.
- Arias, O., Sánchez-Páramo, C., Dávalos, M., Santhos, I., Tiongson, E., Gruen, C., . . . Cancho, C. (2014). *Back to Work: Growing with Jobs in Europe and Central Asia*. Washington, DC: World Bank.
- Autor, D., Levy, F., & Murnane, R. (2003). The Skill Content of Recent Technological Change: An Empirical Exploration. *Quarterly Journal of Economics*, 118(4), 1279-333.
- Hanushek, E., & Woessmann, L. (2008). The Role of Cognitive Skills in Economic Development. *Journal of Economic Literature*, 46(3), 607-668.
- Hanushek, E., Schwerdt, G., Wiederhold, S., & Woessmann, L. (2015, January). Returns to Skills Around the World: Evidence from PIAAC. *European Economic Review*, 103-130.
- Rodrik, D. (1996, February). Coordination Failures and Government Policy: A Model with Applications to East Asia and Eastern Europe. *Journal of International Economics*, 40(1-2), 1+22.
- Rutkowski, J. (2013a). *Skills Employers Seek: Results from the Armenia STEP Employer Survey*. Unpublished mimeo.
- Rutkowski, J. (2013b). *Workforce Skills in the Eyes of the Employers: Results from the Georgia STEP Employer Skills Survey*. Unpublished mimeo.
- Rutkowski, J. (2015, February 5). Labor Market Observatories: Critical Success Factors. *Powerpoint Presentation*.
- Søndergaard, L., & Murthi, M. (2012). *Skills, Not Just Diplomas: Managing Education for Results in Eastern Europe and Central Asia*. Washington, DC: World Bank.
- World Bank. (2012). *World Development Report 2013: Jobs*. Washington, DC.
- World Bank. (2013, April). What Matters for Workforce Development: A Framework and Tool for Analysis. *SABER Working Paper Series, no. 6*.
- World Bank. (2014a). *Step Skills Measurement Snapshot*. Washington, DC.

- World Bank. (2014b). *SABER Workforce Development Armenia Country Report*. Washington, DC.
- World Bank. (2014c). *SABER Workforce Development FYR Republic of Macedonia Country Report*. Washington, DC.
- World Bank. (2014d). *SABER Workforce Development Georgia Country Report*. Washington, DC.
- World Bank. (2014e). *SABER Workforce Development Ukraine Country Report*. Washington, DC.
- World Bank (2015). *Skills gaps and the path to successful skills development: emerging findings from skills measurement surveys in Armenia, Georgia, Former Yugoslav Republic of Macedonia, and Ukraine*. Report No. ACS14318. Washington, DC.

ANNEX 1. ADDITIONAL TABLES

Annex Table 1: STEP sample (unweighted) by sector

	Number of firms	Permanent employment	Total employment
Food products	217	6769	8119
Textile industry	197	9409	10469
Automotive components	17	856	1257
Logistics services	206	4413	4712
ICT	160	2337	2480
Other manufacturing	230	8444	9742
Total	1027	32228	36779

Source: Former Yugoslav Republic of Macedonia STEP Employer Survey

Annex Table 2: Share of firms by sector

	Micro 1-10 employees	Small 11-50 employees	Large 51+ employees	Young 0-5 years	Innovative	Foreign owned	International contacts
Food products	49%	35%	15%	14%	70%	2%	33%
Textile industry	51%	30%	20%	18%	76%	8%	46%
Automotive components	59%	18%	24%	13%	59%	12%	44%
Logistics services	57%	33%	10%	17%	51%	0%	45%
ICT	55%	41%	4%	31%	94%	19%	75%
Other manufacturing	47%	35%	18%	13%	81%	7%	45%
Total	52%	34%	14%	18%	73%	7%	47%

Source: Former Yugoslav Republic of STEP Employer Survey