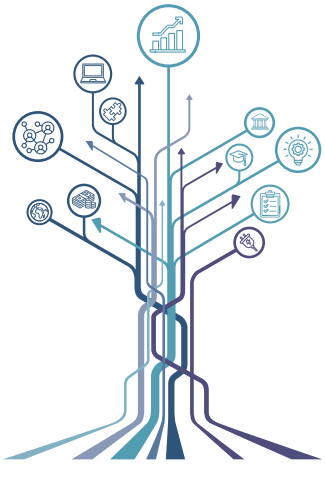
Talent and Social Mobility

Country Case in Brief: Finland

A largely agrarian society before World War II, Finland witnessed significant changes to its economy and a rapid increase in population in the postwar period. Industrialization and rapid urbanization led to the growth of the Finnish middle class, which clamored for higher-quality education among children. The Finnish education system was reformed to improve education quality and access; provide an educated workforce for the increasingly industrialized, postagrarian economy; and respond to a desire for greater social equality.

Reform of the education system started in the 1960s with comprehensive changes in schooling that included a transition to a common, unified, and compulsory curriculum. The reforms transferred control of the school system from the central authorities to local municipalities and teachers and fostered a competitive teacher selection process. The gradual nature of the reforms was a key factor in their implementation. Nine years of education were made mandatory in the 1970s, and, in the 1980s, lower-secondary education became comprehensive through the merger of all educational tracks into one. As a result, the two-tier system of grammar and civic schools was replaced by free comprehensive schools accessible to all children regardless of socioeconomic background or location of residence. This change involved the expansion of secondary schooling and the postponement of educational track selection to age 16. The reform significantly improved learning outcomes among students whose parents had only basic educational attainment (Pekkala Kerr, Pekkarinen, and Uusitalo 2013).



From the 1970s to the 1990s, Finland transitioned from a middle- to a high-income competitive economy based on its well-educated and skilled workforce. Different waves of education reforms contributed to this transition. In the early 2000s,

Finland ranked as the world's most competitive economy, with a high level of human capital, widespread adoption of information and communication technologies, and education and research institutions redesigned to foster innovation and research and development (R&D).

In education, standards increased, inequality declined, and attainment levels almost doubled. In the 2000s, Finland took nearly all the top spots in mathematics, scientific literacy, and reading globally. From 1965 to 2015, the number of students staying longer in education increased, and test scores improved by the equivalent of more than four years of additional learning. Finland also consistently ranked at the top of adult skills assessments. The reforms also improved intergenerational educational mobility. Finns with less well-educated parents are more likely to exhibit higher levels of literacy or numeracy than their international counterparts.

Finland's era of success remains a reference, although it has been followed by a period of decline. Finnish students who entered elementary school in the 1990s were the most well performing in the world. But their peers who followed them only a few years later were not nearly as successful. At the beginning of the Finnish miracle, the government centralized teacher training at major universities and employed national inspectorates to maintain school quality. Over time, more authority was devolved locally to trust educators, but this was also driven by budget pressure, and it is difficult to know whether the high scores of the early 2000s partly arose because of those discarded strategies (Daly 2024; Ripley 2013). The relative stagnation—although at high levels—in the quality of education in Finland in recent years also shows the importance of keeping up with good practices and ensuring a constant assessment of possible reforms.

Introduction

The earlier reforms of Finland's education system are among the best examples of the effectiveness of policy in transforming middle-income countries (MICs) into high-income, high-skill, innovation-centered economies.

This chapter attempts to answer the following questions:

- *How does ensuring equal access to opportunities among all segments of society contribute to optimal talent allocation and subsequently impact economic growth?* Technological progress is an essential driver of economic growth, and, for this to occur, countries require an increasing flow of well-trained, talented people. But, in socially immobile societies, where employment and education opportunities are not allocated by merit but by unrelated family circumstances, the flow may be weaker. This is particularly the case across countries in the ECA region, where an improvement in the indicators of mobility in access to higher education is associated with a rise in income.

- *In what ways do high-quality education systems foster innovation and human capital development, and how do these factors drive economic growth in an innovation-led model?* Research has found that cognitive skills among individuals are linked to a diverse set of innovation outcomes. Therefore, education systems that do not ensure that graduates are sufficiently proficient in basic skills will not help countries transition to innovation-led growth. Higher-education systems in ECA countries are fundamental in this process because they are one of the main centers of R&D in the region.
- *How does high-skill international migration impact a country's innovation capacity, human capital accumulation, and overall economic growth, and what policies might optimize the benefits of international migration while mitigating potential drawbacks?* The outflow of high-skill individuals may not undermine the development of homegrown talent if the proper incentives are in place. Remittances may support human capital development in origin countries, and returning migrants may improve productivity in the origin country by importing knowledge and best practices from the destination country. Bilateral migration agreements could allow destination countries to fund education and training programs in origin countries, thus achieving a more equal distribution of the benefits of migration across both sorts of countries.
- *How do expectations of social mobility influence public support for structural reforms, thereby overcoming the forces of preservation?* The more optimistic ECA citizens are about their own and their children's social mobility, the more they will be receptive to giving up part of their income to support educational reforms. This is particularly important in a context in which the middle class is becoming more vulnerable across the region. The less optimistic vulnerable households are about their future, the weaker will be their support for structural reforms to overcome the forces of preservation.

This chapter shows that innovation-led growth requires putting the right people on the right track. Innate ability is spread evenly throughout a population. Yet, not everyone has access to the same opportunities that would allow talent to flourish. A socially mobile, meritocratic society in which opportunities are not conditioned on family and social circumstances ensures that talent is not misallocated. But there is little to gain from equal access to education if the quality of education is low or if job opportunities are few.

Talent will flourish only if good education is available, only if basic education—primary and secondary education—provides foundational skills, and only if higher-education institutions produce innovation both in-house and in partnership with industry, thereby strengthening the forces of creation. If well managed, the flow of talented individuals across borders has the potential to boost innovation, human capital accumulation, and economic growth. Households also feature in this process, which requires the existence of a robust middle class that has the means and is effective in investing in the human capital of future generations.

Rewarding Merit: Social Mobility and Economic Growth in Europe and Central Asia

Creative destruction requires talent. Talented innovators drive creative destruction by developing novel ideas, technologies, and approaches to business that render old systems obsolete. Individuals need opportunities to develop their talents and an expectation that investment in their talents will improve their lives (World Bank 2024b). In socially immobile societies in which employment and education opportunities are not allocated by merit but by unrelated family circumstances, individuals may be denied the chance to develop their talent and put it to work. This stifles innovation and economic growth.

In the ECA region, educational mobility is decreasing among younger generations. Without government involvement, low intergenerational mobility will perpetuate cross-generational income inequality, reducing the chances that talented children in poor households will succeed. Merit- and ability-based policies are needed to boost mobility among talented children with disadvantaged backgrounds. Societies in which talented individuals are not engaged in the labor market miss the opportunities represented by productive populations. Addressing the barriers to labor force participation, particularly among women, migrants, refugees, and disadvantaged groups, is critical. Policies should focus on combating discrimination, challenging restrictive social norms, and providing equal labor market access to maximize the potential of talent.

Declining Mobility in Education among Younger Generations in the ECA Region

If a society's talent potential is realized, the labor market becomes more efficient and jobs become more plentiful, leading to more rapid economic growth. Technological progress is an essential driver of economic growth and improvements in living standards. Yet, greater spending on R&D alone may be insufficient to fuel breakthrough scientific innovations, which also require a rising flow of well-trained, talented people (Romer 2000).

The levels of intergenerational mobility in education reflect how well societies allocate talent. The size of investment in a child's education depends on parental income and parental human capital. More well-educated parents tend to earn more but also tend to be more effective at raising children's human capital. The complementarity between parental human capital and investments in children means that wealthier parents invest more than poor parents in the human capital of their children (Becker et al. 2018; Heckman and Mosso 2014).

Without government involvement, the intergenerational transmission of educational attainment will perpetuate cross-generational income inequality, effectively reducing the chances that talented children in poor households will

succeed (Corak 2013; van der Weide et al. 2023). By drawing such children into science and innovation, policies designed to improve intergenerational mobility could quadruple the number of inventors and significantly boost economic growth (Bell et al. 2019). Evidence from Europe shows that subnational regions with higher intergenerational mobility enjoy better innovation outcomes (McNamara, Neidhöfer, and Lehnert 2024).

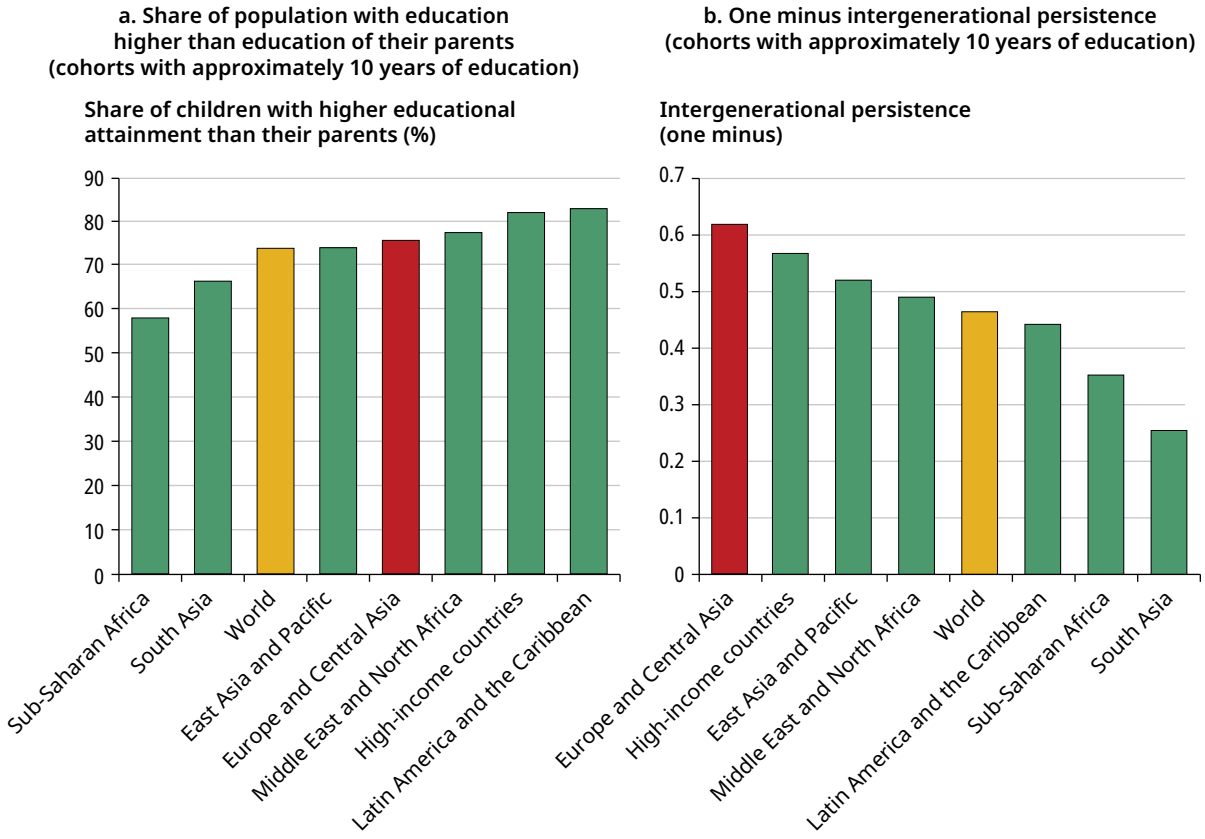
Talented individuals can fully realize their abilities only in societies with high social mobility. A study of recipients of a merit-based scholarship for graduate studies in Italy found that individuals in households with lower socioeconomic status were more likely to apply and win the scholarship if they came from provinces with high social mobility (Nano, Panizza, and Viarengo 2024). Moreover, applicants from provinces with low social mobility tended to come from more well-off households, indicating that individuals with disadvantaged backgrounds face barriers, particularly in settings with low social mobility.

The ECA region's average intergenerational mobility is equal to or greater than the world average depending on the measure used. Intergenerational mobility in education may be measured in an absolute or relative sense. Absolute mobility measures whether the level of education of an individual is higher than the level of education of his or her parents. Relative mobility measures whether the relative position of an individual in the education distribution is higher than the relative position of his or her parents in the education distribution to which they belong. The analysis here relies on three measures of absolute mobility: (1) the share of individuals who have achieved higher educational attainment relative to their parents; (2) the upward mobility gap, which weights the share of individuals who have achieved higher educational attainment relative to their parents by the difference in educational attainment between the generations (Foster and Rothbaum 2018); and (3) the probability of upward mobility in higher education, defined as the share of individuals with tertiary education born to parents without tertiary degrees (Torre, Lokshin, and Foster 2025).

The two indicators of relative mobility are (1) the *intergenerational correlation*, defined as the correlation between the education of an individual and the education of his or her parents, and (2) *intergenerational persistence*, defined as the additional years of education that an individual has attained for every year of education that his or her parents have achieved. For these two indicators, higher values imply lower relative mobility. The ECA region's absolute intergenerational mobility in education is similar to the world average (refer to figure 3.1, panel a), but its relative mobility is considerably higher than the world average (refer to figure 3.1, panel b) among individuals in birth cohorts with approximately 10 years of education.

Younger generations in the ECA region experience lower absolute mobility in education relative to older generations. The number of additional school years with respect to parents is smaller among younger cohorts than among older

FIGURE 3.1 ECA: absolute mobility is similar to, but relative mobility is greater than the world average

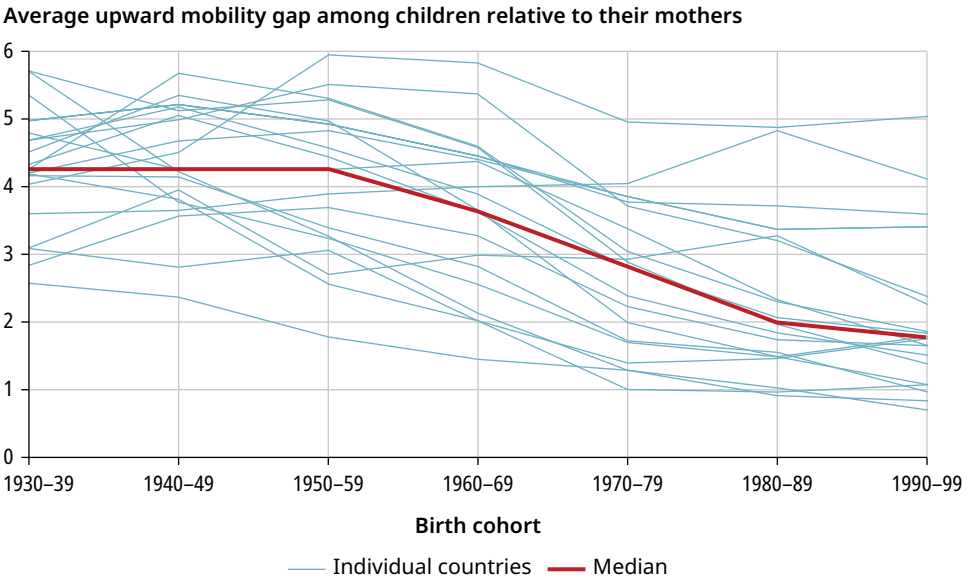


Source: van der Weide et al. 2023.

Note: A higher value indicates greater mobility. The values for each region correspond to birth cohorts with approximately 10 years of education. In ECA and high-income countries, this is the 1950s birth cohort. In the remaining regions, it is the 1980s birth cohort, although, in the case of Sub-Saharan Africa (6.5 years) and South Asia (7.4 years), the average education of the most well-educated cohort does not reach 10 years. One minus intergenerational persistence is plotted to preserve the directional sense of higher values, implying greater mobility. The average values of intergenerational persistence are 0.47 in ECA countries and 0.52 in the world. The average values of one minus intergenerational persistence are 0.53 in ECA countries and 0.48 in the world.

cohorts, largely because of substantial increases in educational attainment over the years (Torre, Lokshin, and Foster 2025). For almost every country, upward educational mobility is lowest among younger generations and highest among older generations (refer to figure 3.2). Median upward mobility was about 40 percent less among the cohort born in the 1990s than among the cohorts born in the 1930s or 1940s. The country with the largest difference in upward mobility between individuals born in the 1930s and 1990s is Kazakhstan, where upward mobility was almost 85 percent lower among the youngest generation than among the oldest generation. Meanwhile, in Kosovo and Türkiye, upward mobility is greater among younger generations.

FIGURE 3.2 Absolute upward educational mobility has declined among younger generations, ECA



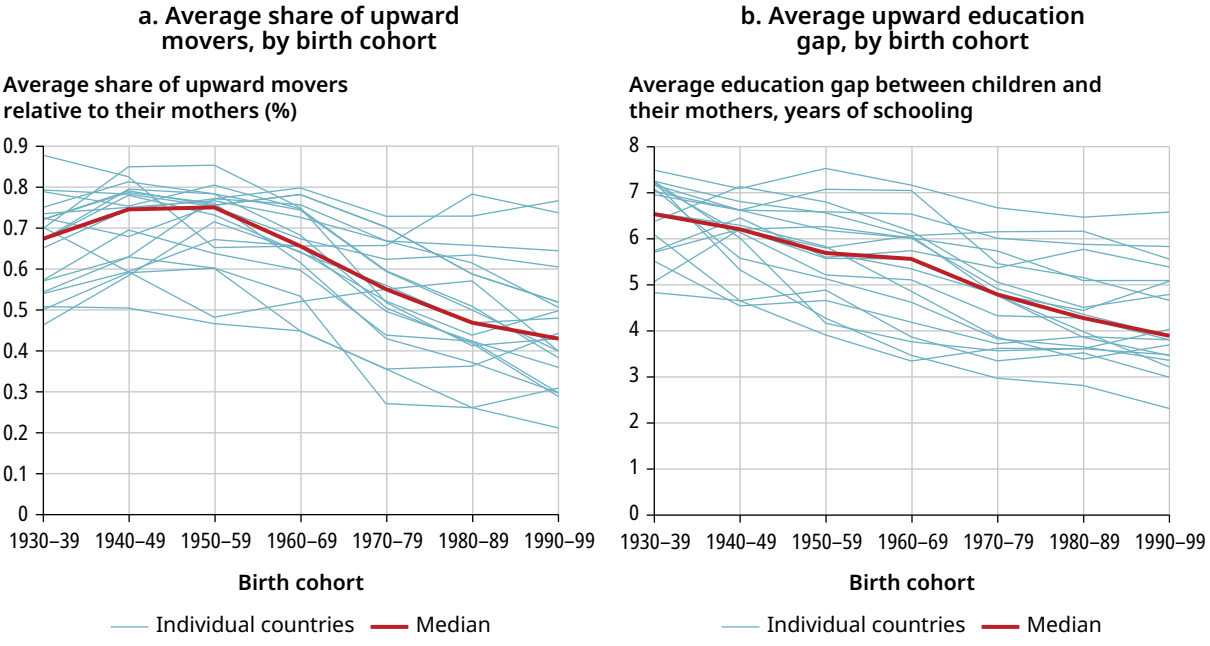
Sources: Torre, Lokshin, and Foster 2025; LiTS (Life in Transition Survey) (dashboard), European Bank for Reconstruction and Development, London, http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

Note: The figure plots the average upward mobility gap among birth cohorts across all waves of the Life in Transition Survey.

The declining trend in upward mobility across generations in most countries can be explained by a drop-off in the share of upward movers and a narrowing in the average difference in years of schooling affecting upward movers. About 70 percent of individuals born in the 1940s attained more years of education than their mothers. The median difference was more than six years of education. Among individuals born in the 1990s, the median share of upward movers (relative to their mothers) was 42 percent, with a median difference of 4.3 years of education (refer to figure 3.3). A similar pattern holds for the mobility measures calculated relative to the father's education. The decrease in absolute mobility could also be related to ECA's high levels of schooling, the so-called "ceiling effect" (Narayan et al. 2018).

Upward mobility in higher education—defined as the probability of the attainment of higher education among individuals whose parents did not attain it— is growing. Among the generation born in the 1930s, the probability was only 10 percent, while, among the cohort born in the 1990s, it was close to 20 percent (refer to figure 3.4). In some countries, such as Albania, the increase was greater: from about 10 percent to more than 40 percent over the same period.

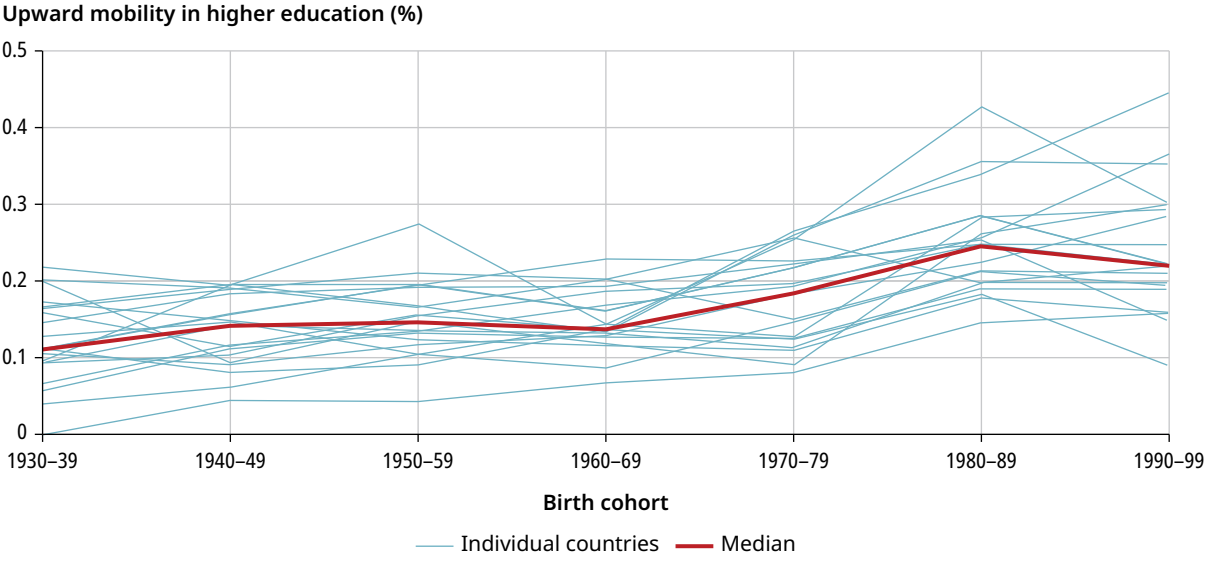
FIGURE 3.3 Upward mobility in education has declined across generations, ECA



Sources: Torre, Lokshin, and Foster 2025; LiTS (Life in Transition Survey) (dashboard), European Bank for Reconstruction and Development, London, http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

Note: The gray lines plot the values for individual countries.

FIGURE 3.4 Upward mobility in higher education has increased among younger generations, ECA



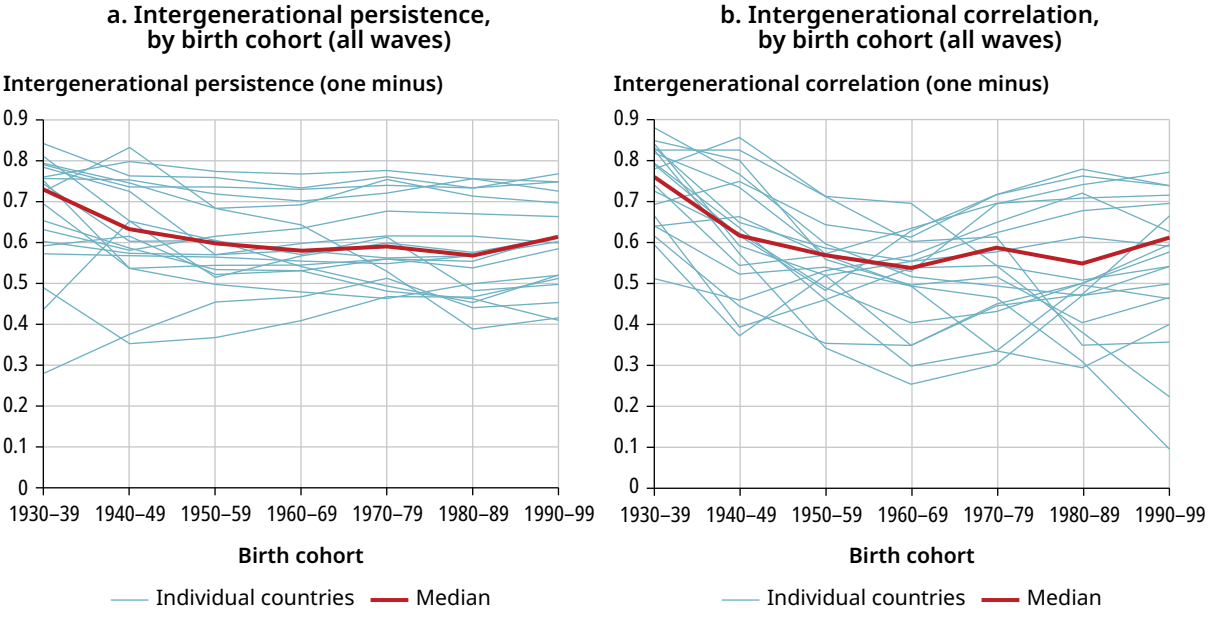
Sources: Torre, Lokshin, and Foster 2025; LiTS (Life in Transition Survey) (dashboard), European Bank for Reconstruction and Development, London, http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

Note: Upward mobility in higher education is measured as the probability in a birth cohort that an individual will attain tertiary education if his or her mother does not have tertiary education.

Relative mobility is lower among younger generations, although the changes across birth cohorts are small. Depending on the measure, relative mobility has been either stable or shows a U-shape across generations (refer to figure 3.5). The values of intergenerational persistence in the median country do not change substantially across birth cohorts. Some countries, however, experienced significant intercohort variation. For example, in Türkiye, mobility is much greater among the older generation relative to the younger generation. In North Macedonia, the opposite is true, albeit at smaller magnitude. The changes in intergenerational correlation across cohorts in the median country exhibit a somewhat inverted U-shape, that is, the correlation is lower among the oldest cohorts and among the youngest cohorts.

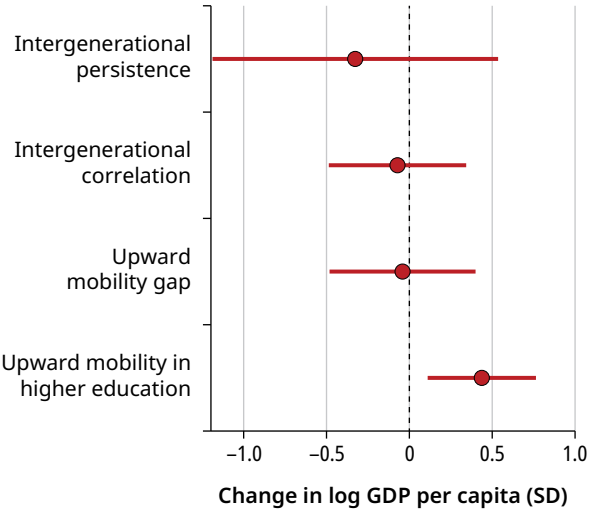
Upward mobility in higher education is associated with higher gross domestic product (GDP) per capita. A panel data analysis of trends in GDP per capita and educational mobility in 23 ECA countries in 2000–20 shows that, of all the mobility indicators, only the probability of upward mobility in higher education is associated with higher country incomes (refer to figure 3.6). A 1 standard deviation (SD) increase in the probability of upward mobility in higher education is associated with an approximately 0.50 SD rise in GDP per capita. The indicators of relative mobility are not associated with higher incomes per capita. The ECA patterns contrast with those reported by Neidhöfer et al. (2024) in Latin America, where both relative and absolute mobility indicators are associated significantly with regional GDP per capita.

FIGURE 3.5 Relative mobility may exhibit a U-shape across generations



Sources: Torre, Lokshin, and Foster 2025; LiTS (Life in Transition Survey) (dashboard), European Bank for Reconstruction and Development, London, http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

FIGURE 3.6 Upward mobility in higher education is associated with higher incomes, ECA, 2000–20



Sources: Torre, Lokshin, and Foster 2025; LiTS (Life in Transition Survey) (dashboard), European Bank for Reconstruction and Development, London, http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

Note: The figure plots the change in log GDP per capita associated with a 1 SD increase in each of four mobility measures. The underlying estimations correspond to regressions that include country-year-level controls (Gini index of inequality, log population, log population squared), cohort-level controls (average years of education, SD of years of education), cohort-specific initial conditions (log GDP per capita at decade of birth, population at decade of birth, infant mortality rate at decade of birth), country fixed effects, and year fixed effects. Standard errors are clustered at the country level. SD = standard deviation.

Improving Labor Market Participation among Women and Disadvantaged Groups

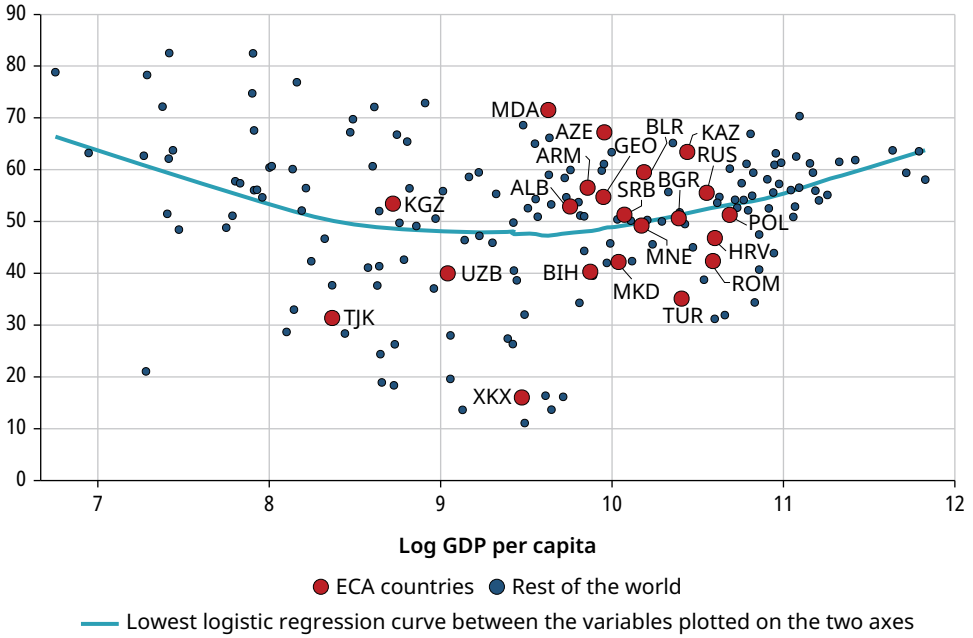
Because society cannot benefit from well-educated, talented individuals unless the talents are applied, an important dimension of the allocation of talent in society is the labor force participation rate. Societies in which talented individuals do not have jobs miss the potential represented by more productive individuals. This issue is especially so in the case of women, who tend to be more well educated than men in the ECA region, and in the case of disadvantaged groups, who may otherwise be less productive.

The average female labor force participation rate in the region is relatively high but heterogeneous. Some countries, such as Azerbaijan, Kazakhstan, and Moldova, exhibit a far higher rate—exceeding 60 percent of the female population ages 15 or older—than might be predicted based on income. Other countries have a lower rate, including Kosovo, which has, at 16 percent, among the lowest rates in the world, as well as Bosnia and Herzegovina, North Macedonia, Romania, Tajikistan, Türkiye, and Uzbekistan, with rates below 45 percent (refer to figure 3.7).

The low female labor force participation rate in some ECA countries is not explained by differences in skills but may be related to social norms. A study of six Western Balkans countries—a subregion with lower female labor force participation than the rest of the ECA region—found no clear evidence that gaps by sex in skills or payoffs for skills affect women in labor markets (World Bank 2018). Women do not have lower levels of skills relevant to the labor market, nor are women disadvantaged in how skills and education pay off. Yet, there is evidence that norms, perceptions of employers, and approaches to recruitment

FIGURE 3.7 The female labor force participation rate is heterogeneous, ECA, 2022

Women in the labor force as a share of the female population ages 15 or older (% × 100)



Source: Labour Force Statistics (LFS, STLFS, RURBAN databases), International Labour Organization, Geneva, https://ilostat.ilo.org/methods/concepts-and-definitions/description-labour-force-statistics/#elementor-toc__heading-anchor-1.

Note: For country abbreviations, refer to International Organization for Standardization (ISO), https://www.iso.org/obp/ui/#search.

may be responsible for the worse outcomes experienced by women in the labor market in the region.

Disadvantaged groups also face challenges. The Roma population in the Western Balkans exhibits extremely low labor force participation rates—as low as 19 percent in Montenegro—and lower than the rates among non-Roma at similar income levels (Robayo-Abril and Millán 2019). Moreover, returns to education among Roma are low, at 0 percent–3 percent (depending on the country) per year of education versus 4 percent–8 percent among non-Roma. These figures likely stem from discrimination and unequal treatment. Unless the barriers are also removed, narrowing the human capital accumulation gap between Roma and non-Roma may not be sufficient to allow Roma a fair chance on the labor market.

Migrants and refugees also face restrictions in putting their talents to work. Many ECA countries have become, for the first time in many years, a destination for migrants. The number of foreign citizens living in the four ECA countries that are part of the European Union (EU)—Bulgaria, Croatia, Poland, and Romania—rose from about 236,000 in 2013 to 802,000 in 2023.[1] Other ECA countries, such as Türkiye and some Western Balkans countries, have also seen large increases in

foreign migrants. Ukrainian migrants have the right to work and freedom of mobility across the EU (Bossavie, Sánchez, and Makovec 2024). Other migrants in other countries face more restrictions. Excessive restrictions on the right to work of migrants limit the productivity of their talent pools, and these may have negative consequences for the host countries.

The Forces of Creation: Better Education and Innovation

ECA governments need to build a larger pool of talent with advanced skills and unleash the forces of creation. This work requires that relevant authorities in MICs substantially upgrade education systems, particularly higher education (World Bank 2024b). The constraints in many countries include the deteriorating quality of basic education and the dismal performance of secondary vocational schools. Secondary vocational education systems, which cater disproportionately to students with disadvantaged backgrounds and deliver neither professional nor foundational skills, need drastic reform. Ensuring the learning of foundational skills throughout basic education should be a priority.

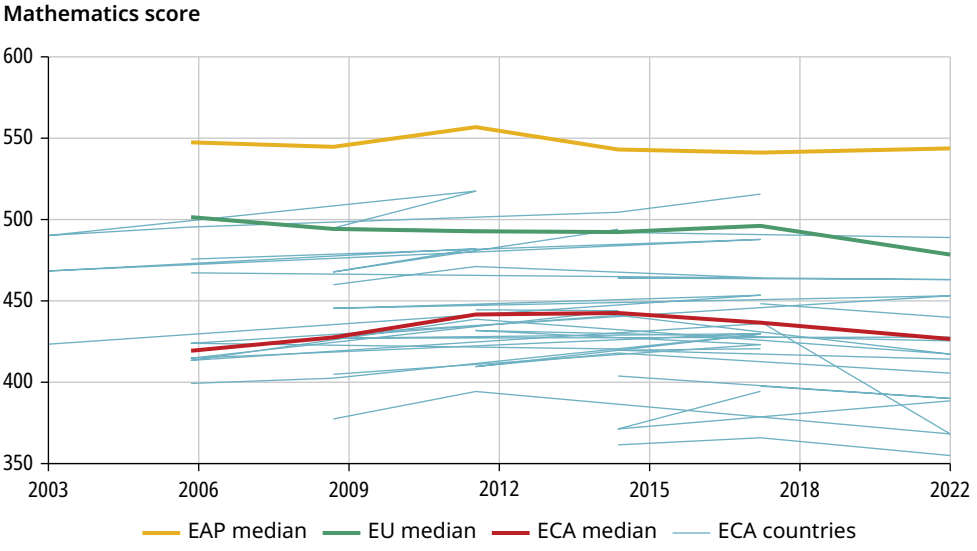
ECA countries, including several of the ECA high-income countries (HICs), also underperform in the quality of higher education, undermining innovation. Higher education in the region needs to be improved by enhancing institutional management and accountability, aligning research and the provision of skills more tightly, and strengthening the links to industry to promote innovation. Facing dwindling enrollment, public universities might consider consolidation as a response.

The Quality of Basic Education Is Trending Downward

The quality of education is fundamental to long-term economic growth. Relative to educational attainment, educational quality is much more closely associated with higher incomes (Hanushek 2020; Hanushek and Woessmann 2015). Keeping students in classrooms while ineffectively teaching them does not lead to better outcomes for society in the long run.

The quality of secondary education has been trending downward in the median country in the ECA region in the past decade or so and lags the quality among the best performers in the East Asia and Pacific region (refer to figure 3.8). The median mathematics scores in the Programme for International Student Assessment (PISA) evaluation among 15-year-olds in a group of ECA countries declined from 441 to 427 points in 2012–22, while the median scores among EU countries slipped from 490 to 475 points (refer to figure 3.8).[2] Scores among top performers, such as Finland and Poland, fell by 30 points in the same period. This decrease is equivalent to a loss of one or two years of schooling (Avvisati and Givord 2021). The education quality gap in PISA mathematics scores between the ECA countries and the best performers in the East Asia and Pacific region rose

FIGURE 3.8 PISA mathematics scores have been declining in the ECA region since 2015



Source: Data from PISA (Programme for International Student Assessment) (dashboard), Organisation for Economic Co-operation and Development, Paris, http://www.oecd.org/pisa/pisaproducts/.

Note: Eight ECA countries—Albania, Bulgaria, Croatia, Kazakhstan, Montenegro, Poland, Romania, and Türkiye—have participated in all PISA rounds since 2006. Other ECA countries have participated in fewer of the study evaluations. The participants in EAP are Hong Kong SAR, China; Japan; Republic of Korea; Macao SAR, China; Singapore; and Taiwan, China. EAP = East Asia and Pacific.

slightly, from 114 points in 2012 to 117 points in 2022, equivalent to about four and a half years of schooling.[3] The drop in student performance in the ECA countries was significant even among the region's top performers after the COVID-19 pandemic.

The quality of basic education among students with disadvantaged backgrounds is poor. These students are disproportionately streamed into vocational education, undermining their acquisition of foundational skills. Proponents have argued that vocational education programs promote youth employment, instill technological knowledge, equip students with marketable skills, and produce mid-level technicians. Yet, vocational education does not necessarily lead to better labor market outcomes (refer to box 3.1).

Vocational education students in the ECA region are overwhelmingly from disadvantaged backgrounds. Vocational education focuses on the acquisition of professional skills, but the students enrolled in this type of program perform poorly in basic subjects, such as reading and mathematics, which are skills in wide demand by employers (refer to figure 3.9). The lack of foundational skills puts students enrolled in vocational education in a vulnerable position in the labor market because the professional skills they acquire can quickly become obsolete as technologies change, and the labor market advantage that vocational education

BOX 3.1 Vocational Education and Training in Europe and Central Asia Need to Be Better

Vocational education and training (VET) systems are popular among policy makers worldwide (Crawfurd et al. 2021). Europe and Central Asia (ECA) has a sizable VET footprint. On average, 45 percent of its upper-secondary students are enrolled in vocational programs. This figure contrasts with 22 percent in the rest of the world. In some ECA countries, the enrollment exceeds 70 percent (World Bank, UNESCO, and ILO 2023).

The popularity of VET systems in the region stems from the belief that they improve employment outcomes, particularly among youth and disadvantaged groups. But the evidence is mixed. Postsecondary VET courses have a positive impact on labor market outcomes (Ghisletta, Kemper, and Stöterau 2021), although the mechanisms differ across countries at varying income levels, and design characteristics are important. Secondary VET systems struggle, meanwhile, to keep up with evolving labor market demands. Secondary VET graduates who pursue no additional education may perform the same type of jobs that their peers performed two decades ago, while the nature of jobs for the rest of the labor force has changed greatly. Jobs in Europe have become more intensive in social and nonroutine, cognitive tasks, while typical jobs held by secondary VET graduates have remained as intensive in manual and routine tasks as they were 20 years ago (Dalvit et al. 2023).

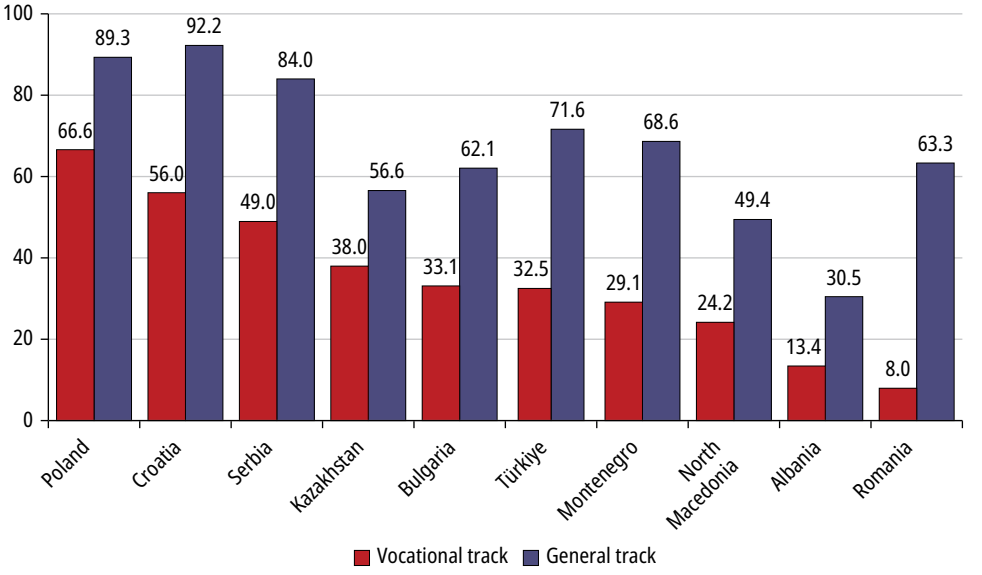
Secondary VET is generally of two broad types: classroom based or workplace based. Systems focusing on work-based learning and apprenticeships are associated with more seamless entry into the labor market, heavily involving private firms in providing education, as seen over centuries of tradition. However, this tradition did not formerly exist in most European countries, and vocational schools were typically created from scratch by governments without a strong link to private firms. This practice was also the case in planned economies, in which vocational education was mostly classroom based (Cedefop 2004).

While vocational graduates do slightly better from a labor market perspective in countries where the VET system is mostly work based, classroom-based VET may not be detrimental to labor market outcomes if foundational skills are provided. In Finland, in which students are among the best performers in Europe on the PISA evaluation and in which vocational education is mostly classroom based, although entry occurs at a later age (16–17), vocational-track graduates do well in the labor market relative to their academic-track peers (Silliman and Virtanen 2022). If vocational education systems do not involve private firms in the provision of professional skills or do not supply the foundational skills students may be lacking, the labor market outcomes among VET graduates may be underwhelming (World Bank, UNESCO, and ILO 2023).

VET systems in many ECA countries are failing to provide graduates with professional skills useful in the labor market, instead playing, imperfectly, a social policy role because they cater disproportionately to students with disadvantaged backgrounds. Unless countries can mirror the successful cases of apprenticeship-type systems, with the extensive involvement of private firms and a strong base of foundational skills, the rationale for investment in VET systems the ECA region will remain weak.

FIGURE 3.9 Vocational-track students perform significantly worse than general-track students

Share of students at or above level 2 proficiency in mathematics (%)



Source: World Bank estimates based on the 2022 evaluation of PISA (Programme for International Student Assessment) (dashboard), Organisation for Economic Co-operation and Development, Paris, http://www.oecd.org/pisa/pisaproducts/.

Note: Only countries with a meaningful sample of upper-secondary vocational-track students (10 percent of the total student sample) are included.

graduates have at the start of their professional lives can soon dissipate (Dalvit et al. 2023; Hanushek et al. 2017).

Early selection into vocational education results in higher costs and lower benefits and induces higher inequality relative to academic secondary schooling. This leads to inequality in academic and labor market outcomes by channeling poor and minority students into the less prestigious vocational track, while reinforcing ethnic inequalities (Foster 1965; Psacharopoulos 1987, 1991). Tracking contributes little to the efficiency (learning) of an education system. The effect of tracking on inequality is significantly positive, indicating that tracking increases the inequality in the education system (Terrin and Triventi 2023). Moreover, students streamed into vocational studies are sometimes not allowed to switch to another program and, later, enjoy only limited opportunities to enter tertiary education.

A comprehensive basic education system that does not sort students into different program tracks early on improves the academic and labor market performance of the students. Education reforms improve outcomes if they delay or eliminate the selection of students into separate programs at an early age (14 or younger) and if they introduce nationally unified curricula and comprehensive schooling. Cross-country comparisons

demonstrate that, for the same mean values, the variance in test scores is higher in countries in which track sorting takes place early, suggesting a higher degree of inequality (Hanushek and Woessmann 2006). The reason is that, in academic schooling, students spend more time on tasks that are the focus of greater expectations, they spend more hours learning subjects that are tested, and they benefit from the opportunity to move on to higher education. Moreover, reforms of track sorting lead to more schooling and earnings among students with low socioeconomic backgrounds, as shown in Finland, Norway, and Poland (Aghion et al. 2023; Jakubowski et al. 2016; Meghir and Palme 2005; Ollikainen 2021; Pekkala Kerr, Pekkarinen, and Uusitalo 2013; Pekkarinen, Uusitalo, and Pekkala Kerr 2009).

The Worrisome Low Quality of Higher Education in the Region

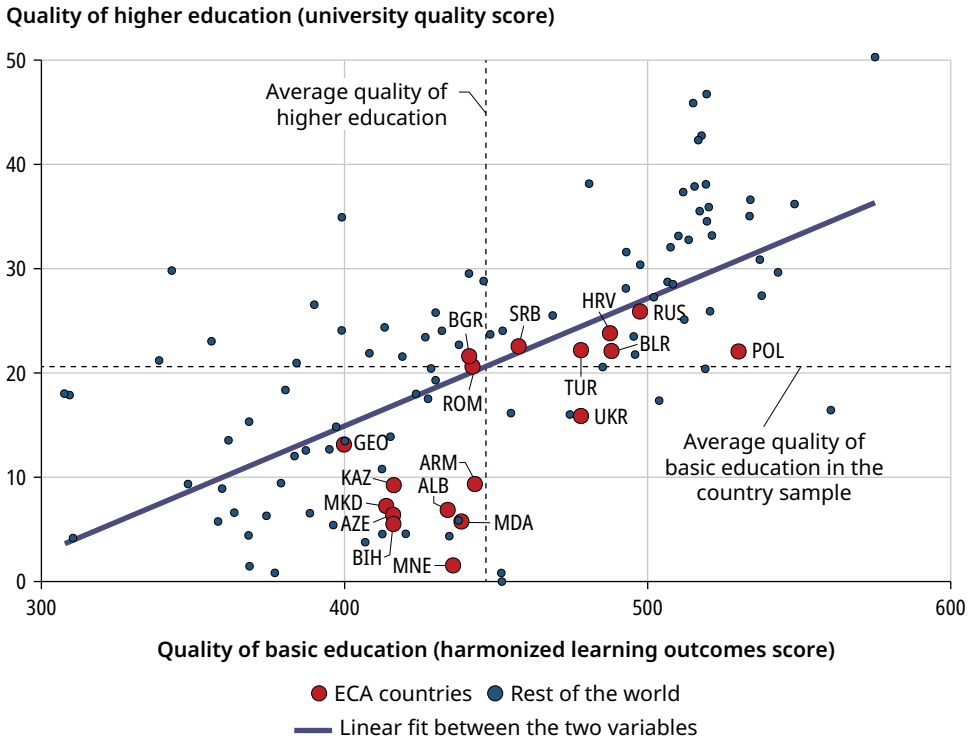
To move from adoption to innovation, countries need to be able to rely on solid higher-education institutions. The higher-education system is a main determinant of innovation. In countries in the Organisation for Economic Co-operation and Development (OECD), the higher-education sector accounts for more than three-quarters of all basic research (OECD 2017). While comparable data on ECA countries are not available, this share should be understood only as an upper bound, given the limited investment in R&D in the region by the private sector.

The poor quality of higher education in the region is especially worrisome. In most ECA countries, the quality of higher education is lower not only relative to global standards but also relative to the quality of basic education in the region (refer to figure 3.10).

The lower quality of higher education is mirrored by poor performance in cognitive skills among adults with tertiary degrees. An analysis comparing the skills proficiency of adults possessing tertiary degrees with the quality of higher education shows a significant correlation between the two. In countries in which the quality of higher education is lower, adults with tertiary degrees perform less well in literacy, numeracy, and problem solving (refer to figure 3.11). This issue is particularly concerning because substantial evidence demonstrates that cognitive skills are linked to innovation (Bell et al. 2019).

There is also a notable disconnect between the skills taught in tertiary education institutions and the needs of the labor market. Employers frequently report that graduates lack essential soft skills, such as communication and teamwork abilities, as well as technical skills specific to the industry of employment. This skills mismatch may result in graduate underemployment and overqualification and may also lead to a drain on human resources. Many universities in the region still instruct according to Soviet-era curricula that focus more on rote learning than on critical thinking and practical skills (Huisman, Smolentseva, and Froumin 2018). Reliance on outdated curricula fails to equip students with the skills required to compete and thrive in a dynamic job market.

FIGURE 3.10 ECA: higher education is worse than expected given the quality of basic education



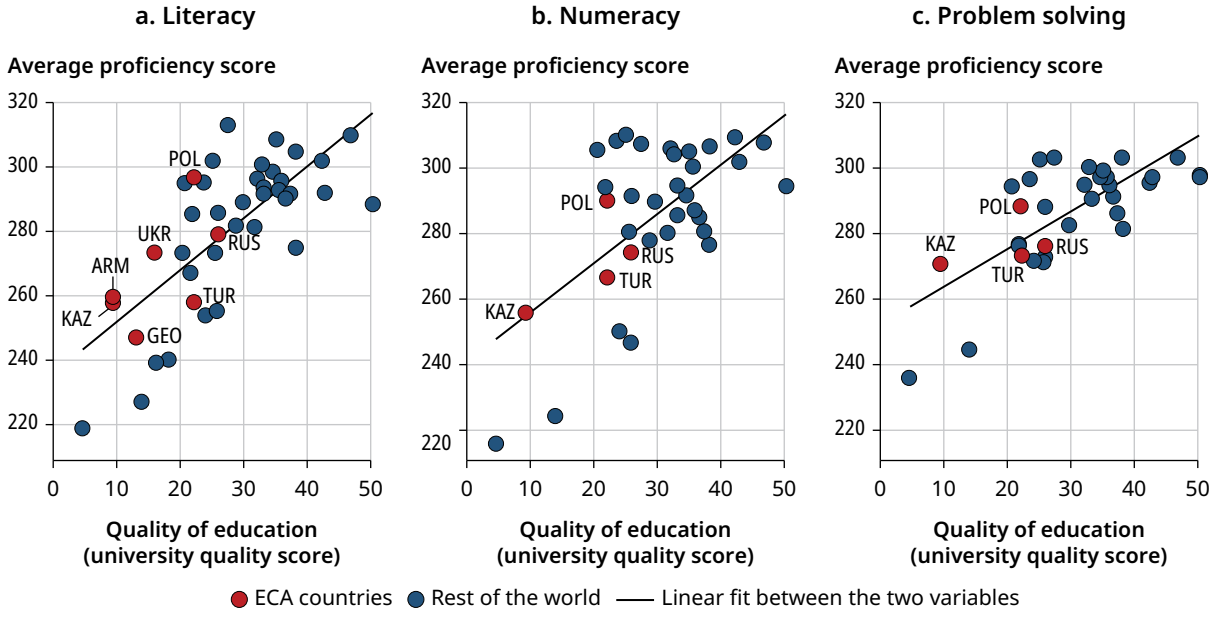
Sources: Demirgüç-Kunt and Torre 2022; HLO (Harmonized Learning Outcomes) Database, World Bank, Washington, DC, https://datacatalog.worldbank.org/search/dataset/0038001; Human Capital (Data Portal), World Bank, Washington, DC, https://humancapital.worldbank.org/en/home.

Note: The quality of basic education is proxied by the harmonized learning outcomes score by country (refer to the sources). The quality of higher education is proxied by the aggregate university quality score as calculated by Demirgüç-Kunt and Torre (2022). For country abbreviations, refer to International Organization for Standardization (ISO), https://www.iso.org/obp/ui/#search.

Insufficient funding for tertiary education leads to inadequate infrastructure and poor learning environments. Many institutions struggle with inadequate infrastructure, including poorly maintained buildings and outdated equipment.

Academic capture undermines education standards and deprives talented students of fair learning opportunities. The phenomenon occurs if corruption and conflict of interest compromise education standards, affecting the quality of many higher-education institutions in the ECA region. Close relationships between education institutions and political or business elites often erode academic integrity because decisions become based on personal or political interests rather than educational merit. The corruption damages the credibility of higher-education institutions and devalues the degrees these institutions offer. Talented students who might otherwise benefit from a robust education are deprived of fair, high-quality learning opportunities (Milovanovitch, Denisova-Schmidt, and Anapiosyan 2018).

FIGURE 3.11 The lower quality of higher education translates into low skill proficiency among adults



Sources: World Bank estimates based on Demirgüç-Kunt and Torre 2022; PIAAC Data and Methodology (dashboard), Program for the International Assessment of Adult Competencies, Organisation for Economic Co-operation and Development, Paris, https://www.oecd.org/en/about/programmes/piaac/piaac-data.html.

Note: The panels plot the country-level average skills proficiency scores for tertiary graduates (vertical axes) against the country-level quality of higher education (horizontal axes). The quality of higher education is proxied by the aggregate university quality score calculated by Demirgüç-Kunt and Torre (2022). For country abbreviations, refer to International Organization for Standardization (ISO), https://www.iso.org/obp/ui/#search.

Poor management, too, has been associated with weaker university performance. A study in the United Kingdom found that management quality in universities is heterogeneous across institutions and also within institutions, where some departments are much more well managed than others. Well-managed departments also perform better in conducting research and instruction and in student satisfaction (McCormack, Propper, and Smith 2014). The features of management that matter the most in university performance seem to be related to the provision of incentives, such as rewards for top performers, the removal of poor performers, attracting and retaining talent, and the management of general operations.

ECA university systems are facing dwindling enrollments. In Poland, for example, the number of students dropped by 28 percent in 2013–22, while the decline was about 20 percent in Bulgaria and around 10 percent in Romania.[4] In Moldova, tertiary enrollment fell from 128,000 in 2006/07 to 56,700 in 2022/23, a decrease of over 41 percent (Mazur 2022). The decline in student enrollment across the ECA was not matched by a reduction in the size of the higher-education system in the region. In 2017–18, Poland had more than 10.0 higher-education institutions per

million inhabitants, while Ukraine had 7.7 (World Bank 2019b). This finding contrasts with fewer than 5.0 in Germany and less than 2.0 in Spain. These trends have sparked discussions about consolidating universities, that is, merging two or more institutions. Consolidation can be a strategic response to demographic challenges and a way to avoid university closures that are costly for students. Many countries in the region have only limited resources for higher education. The extra resources resulting from the efficiency gains associated with merging institutions could be critical in maintaining and enhancing education quality.

In research performance, ECA universities lag universities in the East Asia and Pacific region, Europe, and the United States. Only 9 universities in the ECA region rank among the global top 500 universities, well below the number in the East Asia and Pacific region (116), the EU (154), the United Kingdom (55), and the United States (107) (refer to table 3.1). No ECA country appears in the top 50, and only 1 ECA university is in the top 100.

Although investment is low, higher-education institutions are major centers of R&D in the ECA region, relatively more so than in other global regions, accounting for about 30 percent of R&D investment in the ECA. This outcome also reflects the weak R&D efforts of the ECA private sector. The shares of higher-education institutions in total R&D investment range from more than 50 percent in Bosnia and Herzegovina and North Macedonia (although low in absolute terms) to around 40 percent in Kazakhstan; 30 percent in Poland, Serbia, and Türkiye; 25 percent in Romania;

TABLE 3.1 Number of universities in the global top 500 of the Times Higher Education ranking

Region, country	Universities in the global top 500
Europe and Central Asia	9
Russian Federation	6
Türkiye	3
European Union	154
United Kingdom	55
East Asia and Pacific	116
Australia	32
China	31
Japan	10
Korea, Rep. of	13
Rest of region	30
United States	107

Source: World Bank compilations based on 2024 data of THE (Times Higher Education) World University Rankings (dashboard), Times Higher Education, London, https://www.timeshighereducation.com/world-university-rankings.

and less than 10 percent in Bulgaria.[5] These shares are generally higher than the EU average of about 22 percent.[6] The relevance of universities to R&D spending in the ECA exceeds that in Japan (12 percent), the United States (10 percent), the Republic of Korea (9 percent), and China (8 percent). Still, university investment in R&D per inhabitant in the ECA, which is highest in Poland, at €81, and lowest in Bulgaria, at €6, does not match the corresponding investment in Japan (€132), Korea (€133), the EU (€172), or the United States (€214).

Lack of infrastructure and support hinders innovation in the ECA countries. Shortfalls are evident, for example, in research labs, technology parks, and the institutional support for intellectual property rights, venture capital, and pro-entrepreneurial policies. Without such support, it is difficult to concretize new ideas and bring them to market, and creative and groundbreaking efforts are easily discouraged. Part of this lack and shortfall may also derive from the characteristics of ECA higher education, which, unlike the higher education in the Anglo-American model, appears to fail in developing commercially viable research outputs, especially because research centers are not tightly associated with institutions of higher learning (refer to box 3.2).

BOX 3.2 Research and Higher Education: Germany, the United Kingdom, and the United States

The higher-education systems in Germany, the United Kingdom, and the United States have distinct approaches to integrating research and education and nurturing and identifying talent. The United Kingdom and the United States have historically emphasized embedding research within universities. These systems have developed robust mechanisms for identifying and nurturing talent, often through competitive admissions processes and specialized honors programs. In contrast, the German system relies on a dual structure whereby universities focus on teaching and basic research, while specialized institutions, such as the Max Planck Society, concentrate on applied research and industry collaboration. This model, followed by several European countries and most postcommunist nations, often identifies talent through performance in rigorous secondary education systems and develops talent through specialized academic tracks.

Universities in the United Kingdom and the United States often rank at or near the top globally and are able to attract high-quality faculty and abundant resources. They also serve as talent magnets, drawing in high-achieving students from across the world. The German system excels in identifying and nurturing talent in specific technical fields through the dual education system, which combines vocational training and academic learning.

Continued

BOX 3.2 Research and Higher Education: Germany, the United Kingdom, and the United States *(Continued)*

The higher-education system in former Soviet Union countries presents another dual structure model, with centralized control, specialized institutions, free education, limited institutional autonomy, and an emphasis on applied sciences and engineering (Smolentseva 2003). Talent is often identified early through specialized schools and competitions, with an emphasis on mathematics and sciences. Still, the rigid separation between research and teaching institutions often leads to a disconnect between cutting-edge research and classroom instruction. This system has produced highly skilled specialists in specific fields, but has struggled to develop a more diverse range of talent.

The US system encourages institutional autonomy, fosters innovation, and integrates research and teaching, unlike the post-Soviet model. The US system's flexibility and responsiveness to market demands contrast with the often rigid and slowly adapting post-Soviet institutions (Urquiola 2020). It is not clear, however, how easily the US model can be replicated in other societies.

Many postcommunist countries have been reforming their systems to align more with Western models. The steps they are following include integrating research into universities, introducing private universities and tuition fees, increasing institutional autonomy, and participating in the Bologna Process, the series of ministerial meetings and agreements among European countries to ensure comparability in the standards and quality of higher-education qualifications. Yet, challenges remain in funding, the modernization of curricula, and finding a balance between historical strengths and the need for reform and international integration (Huisman, Smolentseva, and Froumin 2018).

Talent on the Move: High-Skill Migration from and to ECA Countries

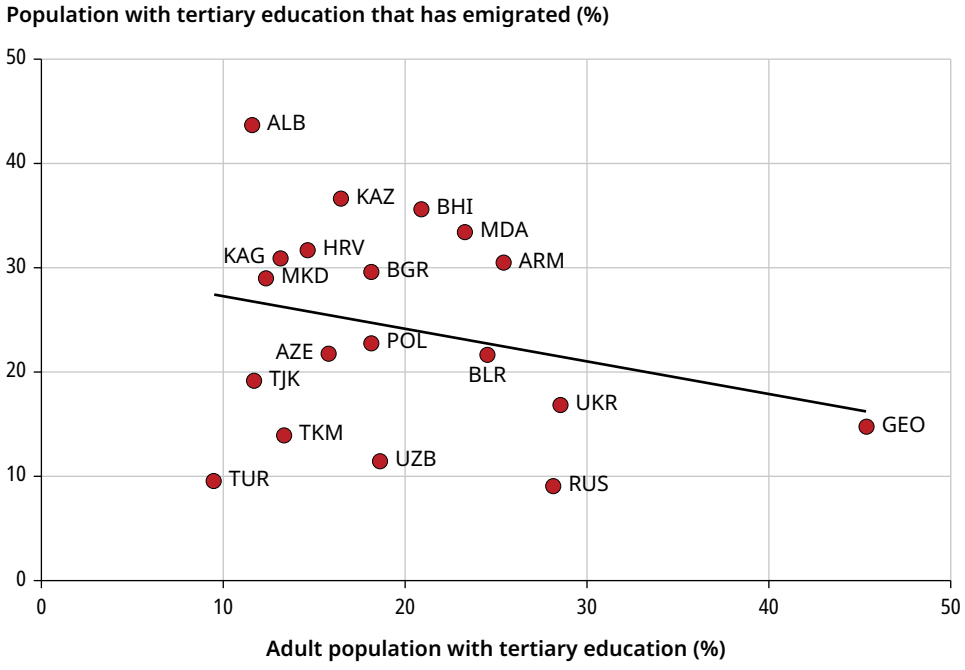
High-skill emigration raises worries in most ECA countries, although it may not undermine the development of homegrown talent. Emigration can incentivize education investment, and remittances can support human capital development in origin countries. Returning migrants may improve productivity in the origin country by importing expertise and best practices from the destination country. Bilateral migration agreements could allow destination countries to fund education and training programs in origin countries, thus achieving a more equal distribution of the benefits of migration across both types of countries.

How the Emigration of High-Skill Workers Can Hinder Development

A concern across ECA countries is the emigration of talented workers. Worldwide, migrants tend to have higher educational attainment than the population in the countries of origin of the migrants. But, in some countries in the ECA region, the share of individuals with higher education who migrate is quite high, exceeding a third in Albania, Bosnia and Herzegovina, Kazakhstan, and Moldova and more than a quarter in Armenia, Bulgaria, Croatia, the Kyrgyz Republic, and North Macedonia (refer to figure 3.12). Countries with fewer higher-education graduates experience the highest emigration rates among this group. A nontrivial share of high-school graduates also emigrate to study abroad, reflecting the low quality of universities in the region: 17.2 percent of individuals ages 20–24 who migrated to the EU from ECA countries in 2022 did so for reasons of education.[7]

The emigration of highly skilled workers can be an obstacle to development if the costs to the origin society from losing a highly qualified worker outweigh the benefits from the remittances and knowledge spillovers the worker generates during emigration and following return (World Bank 2023). In countries in which education is publicly funded, the emigration of individuals with higher-education

FIGURE 3.12 Small shares of university graduates may mean high emigration rates among graduates



Source: World Bank elaboration based on Migration Data Portal, World Bank, Washington, DC, https://www.migrationdataportal.org/international-data?i=stock_abs_&t=2024.

degrees represents the transfer of a subsidy from the origin country (typically an MIC) to the destination country (typically an HIC).

Pull factors, such as proximity to the EU, and push factors, such as limited job opportunities in some specialized professions in the origin countries, help explain outward migration. Origin countries can do little about the pull factors, but they can try to diminish the influence and strength of push factors (World Bank 2019a). They can, for instance, raise the competitiveness of wages in critical high-skill occupations. Smaller countries could focus on developing niche sectors, such as personal and health services for tourists, which may become a magnet for qualified workers once the niche sectors reach a critical mass (World Bank 2023).

Origin countries could also establish bilateral agreements with HICs to ensure that the benefits of migration are shared evenly. Global skills partnerships are a model of collaboration whereby the government or the private sector of the destination country finances training among potential migrants in the origin country before emigration (Acosta et al. 2025). Such training would benefit students who stay home and enter the domestic labor force, reducing the adverse effects of the drain on human resources (World Bank 2023).

How the Emigration of High-Skill Workers Can Promote Development

The emigration of highly skilled individuals does not necessarily erode the development of talent in origin countries. First, the prospect of emigration may incentivize individuals to invest in their own education even if they do not ultimately emigrate. For example, in Fiji, an increase in high-skill emigration to Australia, Canada, and New Zealand led to an increase in human capital investment—particularly, tertiary educational attainment—among the population that did not emigrate, generating a net rise in tertiary educational attainment even after accounting for those who emigrated (Chand and Clemens 2023).

Second, the budget constraints on households that receive remittances in the origin countries from the emigrants may be relaxed. If child labor is not the norm or is not fungible for adult labor, relaxed household constraints generally lead to a boost in household human capital investment. In Bosnia and Herzegovina, for instance, households receiving remittances tended to invest more in children's education than households without migrants (Oruc, Jackson, and Pugh 2018). Because high-skill migrants may remit more income and may originally be from households that do not rely on farmwork, high-skill migration may not be completely detrimental to talent development in the origin country (Bollard et al. 2011). Still, as Gao, Kikkawa, and Kang (2021) find in the Kyrgyz Republic, this positive remittance impact may be offset by the missing adult labor effect, which can be significant if child labor is a substitute for adult labor, as in households dependent on farmwork.

The belief that high-skill emigration always has a detrimental effect on innovation is unfounded. There is substantial evidence that migrant inventors promote innovation in destination countries, although it is unclear whether the innovation in the destination countries would have occurred in the origin countries had the inventors not emigrated (Bahar, Choudhury, and Rapoport 2020). The channels of knowledge diffusion may thus be important in driving innovation if high-skill migrants establish such channels between the destination and origin countries, which may boost innovation in the latter. Agrawal et al. (2011) label this the "knowledge access effect." Their study documents the role of such an effect in the most important inventions in India, explained by the activities of diaspora inventors.

High-skill emigrants may create productive connections to global sources of knowledge, capital, and goods. Returning migrants may improve productivity in origin countries by importing knowledge and best practices from the destination countries (Pekkala Kerr et al. 2016). This issue was particularly the case for returning high-skill migrants in Bosnia and Herzegovina who moved back to their country after staying in Germany in the early 1990s (Bahar et al. 2024). Even when remaining abroad, the diaspora can result in increased investment back home, as shown, for instance, by the Diaspora Invest Project, also in Bosnia and Herzegovina (World Bank 2024a). The diaspora can play a role in the discussion of economic development plans back home, as is currently the case in Korea and Viet Nam (World Bank 2023).

In destination countries, high-skill immigrants contribute decisively to better innovation outcomes (Bahar, Choudhury, and Rapoport 2020; Bahar and Rapoport 2018; Hunt and Gauthier-Loiselle 2010; Ozgen, Nijkamp, and Poot 2011). Likewise, foreign graduate students have been shown to contribute to innovation in the United States (Chellaraj, Maskus, and Matoo 2008; Stuen, Mobarak, and Maskus 2012). ECA's higher-education policy makers should see the internationalization of their student pools as a strategy for improving innovation outputs.

Weakening the Forces of Preservation: Perceptions of Mobility and Support for Reform

Preservation is an antagonist of creation because it is also an antagonist of destruction (World Bank 2024b). To spark a process of creative destruction, MICs need to overcome the forces that preserve the status quo. This implies structural reform. But such reform fails if households are not optimistic about the gains from reform. This section shows that expectations of social mobility significantly influence public support for structural reform.

Individuals optimistic about their own or their children's prospects are thus more likely to support higher taxes for education. This section also shows that vulnerability to poverty is eroding the middle class in many ECA countries. ECA countries should thus protect and strengthen the middle class and foster its economic security, promote fair socioeconomic mobility, and carefully design reforms to garner public support, especially in areas such as education, that are associated with long-term payoffs.

How Household Perceptions of Social Mobility Affect Support for Reform

The transition to innovation-led growth requires a solid middle class that will invest in human capital and support the reforms needed to level the playing field and foster growth. The middle class is the backbone of democracy (Alesina and Rodrik 1994; Birdsall 2010; Stewart 2001). It helps produce economic benefits and foster economic development (Easterly 2001). The entrepreneurial activities that originate in the middle class lead to employment creation and productivity enhancements, incentivizing investments in education and health, contributing to human capital accumulation and growth in consumption and savings, and creating a virtuous circle that expands the middle class (Acemoglu and Zilibotti 1997; Banerjee and Duflo 2008; Szymańska 2019; Zilibotti and Doepke 2007).

The effects of structural reform and investment in human capital are not instantaneous. They take time—maybe even a generation—to materialize. In low-income countries, upgrading education systems focuses on issues related to expanding access to primary and secondary education. In contrast, in MICs, the education reforms necessary to advance to high-income status require complex and longer-term investments in upgrading vocational and tertiary education that are critical to R&D (Doner and Schneider 2016). And, in HICs, the reforms focus on tertiary and postgraduate education.

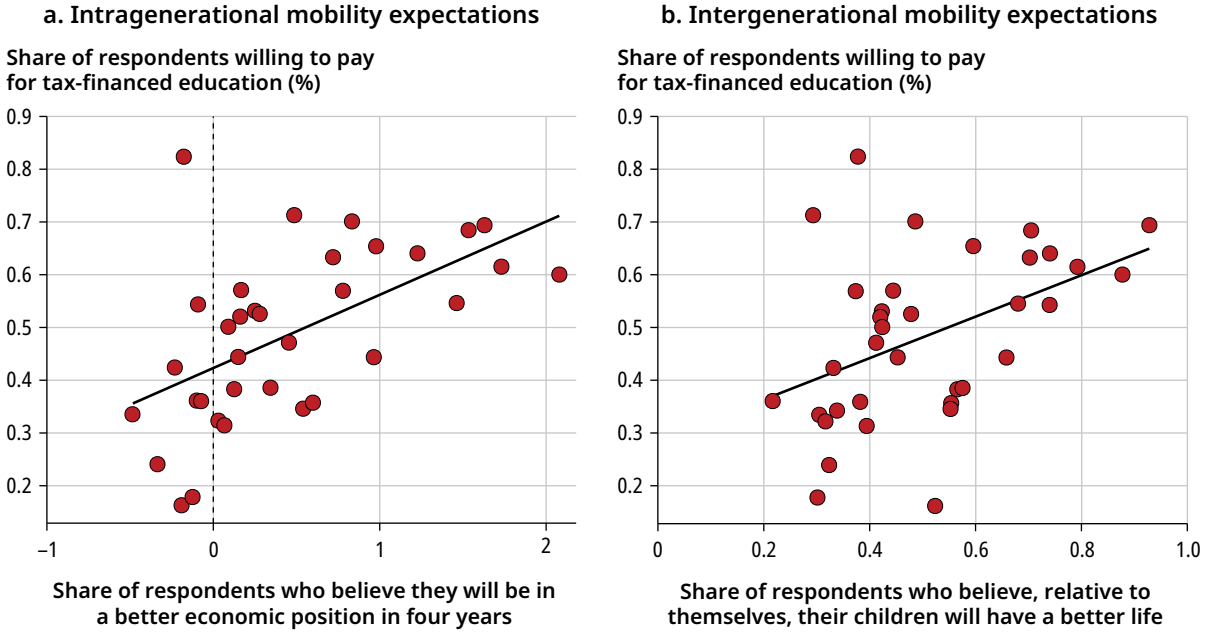
Expectations for the future influence people's support for reform. In deciding whether to support tax-financed investments in education, many individuals assess the probability of benefiting—individually or through household members—from the outcomes of such reforms and compare the discounted value of the benefits against the current consumption forgone because of higher tax outlays. Individuals with high socioeconomic status today, as well as those who expect to be upwardly mobile in the future, may be more likely to see the benefit of supporting investments in education if they expect their children to take advantage of tertiary education, while also having a greater capacity to sustain higher tax outlays today. Individuals with low socioeconomic status, or those who expect to be downwardly mobile in the future, may perceive a lower value in such investments or be less able to forgo current consumption. Yet, given that the future is uncertain for everyone, more

risk-averse individuals will discount the future more heavily, which, at the margin, would decrease their support for structural reforms.

Beliefs about social mobility are important in driving support for increased tax investment in education. A study by Cojocaru, Lokshin, and Torre (2024) shows that ECA countries in which expectations of future mobility (within the same generation) are more positive exhibit a higher share of the population willing to pay a part of their income or pay more taxes to support investments in education (refer to figure 3.13, panel a). A similar pattern is manifest between more positive beliefs about the life prospects of children born today (relative to the current generation) and greater willingness to finance education investments (refer to figure 3.13, panel b).

The pattern across countries is reproduced across individuals: more positive expectations of one's own future social mobility are associated with a greater willingness to support investments in education. According to estimates using the latest round of the Life in Transition survey, a 1 SD increase in expected future mobility is associated with a 2.3 percentage point rise in support for education

FIGURE 3.13 Optimism about social mobility is linked to greater willingness to invest in education



Source: Cojocaru, Lokshin, and Torre 2024.

Note: Respondents were asked to imagine a 10-step ladder. On the bottom, the first step, stand the poorest 10 percent of the population. On the highest step, the 10th step, stand the richest 10 percent of the population. Panel a plots responses to the question, "Where on the ladder do you believe your household will be four years from now?" Panel b plots whether respondents agree or disagree with the statement "Children who are born now will have a better life than my generation." The values in each panel scale the responses.

investments, controlling for main sociodemographic characteristics and one's current position on the income ladder (Cojocaru, Lokshin, and Torre 2024).[8] More positive expectations with respect to the life prospects of children born today are similarly positively correlated with a greater willingness to support investments in education. Among survey respondents who agree with the statement that "children who are born now will have a better life than my generation," support for education investments is 4.1 percentage points higher in the latest Life in Transition Survey round (2022–23) and as much as 7.3 percentage points higher in the 2016 survey round.

The effect of expectations of mobility on support for reforms is also mediated by a belief in fairness. As the study by Cojocaru, Lokshin, and Torre (2024) shows, respondents who believe that success in their society is meritocratic or determined by a combination of hard work, intelligence, and skills are more likely to forgo part of their income to invest in the education system. Individuals with a greater degree of tolerance toward losses may also be more optimistic about their mobility prospects. A belief in fairness and a level of risk aversion can be interacted with expectations of mobility in a model to assess whether the relationship between mobility expectations and support for reforms is moderated by these factors. The results show that, holding beliefs about fairness constant, the predicted support for reforms is higher among individuals who have a lower aversion to risk and is higher among those who expect to be upwardly mobile.

Support for education reforms is greatest among individuals with low risk aversion, who believe that success is generally fairly obtained, and who expect to be upwardly mobile in the future. It is the lowest among those who are averse to risk, believe that success in their society is not meritocratic, and have no expectations of upward mobility.

Middle-Class Vulnerability to Falling into Poverty

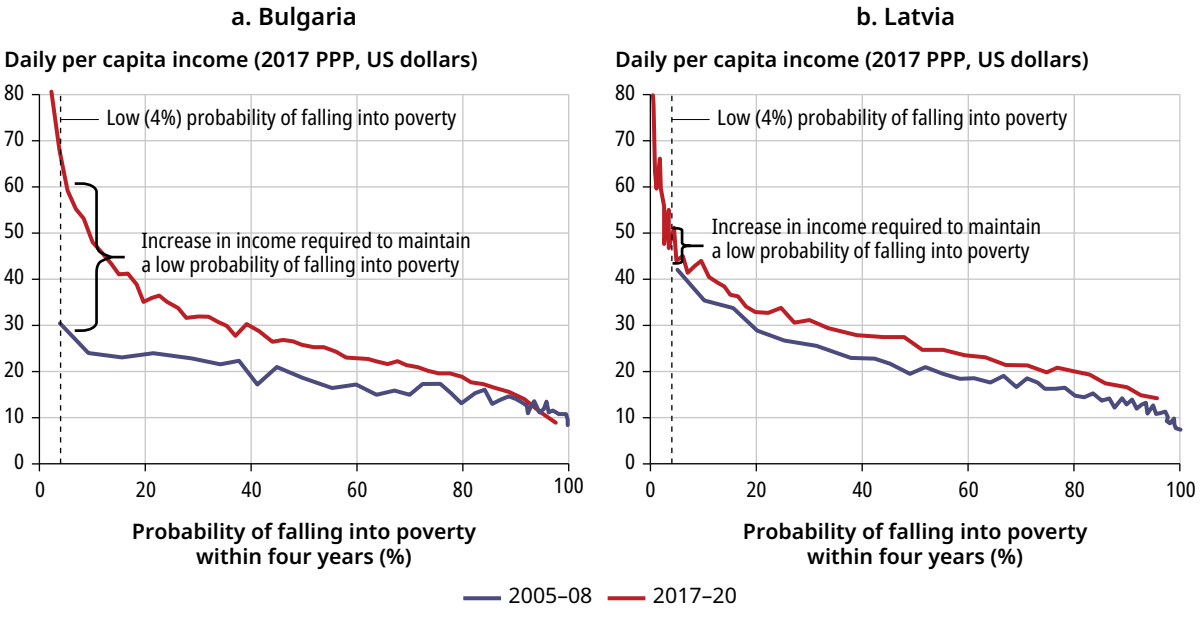
Income and welfare security—also understood as a lack of vulnerability to falling into poverty—are important aspects of middle-class identity. The concept of the middle class encompasses more than the opinion that one is able to afford a particular standard of living. One of the hallmarks of the concept is a sense of stability and economic security, often achieved through asset ownership, a high level of education and skills, or working in certain professions (Atkinson and Brandolini 2013). This sense of stability and security can be defined as the absence—or exceptionally low level—of the risk of falling into poverty (López-Calva and Ortiz-Juárez 2014).

In recent years, however, vulnerability to poverty has increased, meaning that some households with an income that would have previously been considered middle class are now vulnerable to falling into poverty. The permanent income needed to avoid vulnerability rose, on average, from about $42.50 a day in 2008 to

$46.00 a day in 2020 in a sample of 17 high-income European countries (Bussolo et al. 2025). The predicted income associated with the lower-middle-class threshold between 2005–08 and 2017–20 jumped, for instance, from $30 to $53 a day in Bulgaria (refer to figure 3.14). Bolch et al. (2023) also find an increase in the income needed to be safely out of poverty in other lower-middle-income and upper-middle-income countries. This increase in the income level may be interpreted as an insurance premium to maintain the same level of protection against the risk of poverty. Households that do not pay this premium and remain at the level of income of the previous period thus face a higher risk of falling into poverty.

The composition of the middle class in high-income Europe has changed, and higher levels of education are needed to safely stay out of poverty. Changes in the income thresholds that define the middle class have consequences for the composition of the middle class. In 2017–20, the composition of human capital needed to generate an income sufficient to insulate a household from the risk of poverty and remain in the middle class shifted toward higher levels of education and more professional or more management-oriented occupations. Households with lower levels of education and skills were more likely to fall into poverty in the later period than in the earlier period. In 2005–08, for example, nearly one household in four in the middle class had a head with only primary education; by 2017–20, this share had dropped to less than one

FIGURE 3.14 The income needed to avoid vulnerability has increased over time



Source: Bussolo et al. 2025.

Note: PPP = purchasing power parity.

household in seven, and nearly one household head in three at the threshold had tertiary education.

The existence of a large pool of households that is neither poor nor middle class casts some doubt on the volume of social support that strong, growth-enhancing reforms may enjoy in the ECA region. The share of the population that is not poor, but not safely out of poverty, is 20 percent in ECA lower-middle-income countries, 28 percent in ECA upper-middle-income countries, and 29 percent in ECA HICs (Bolch et al. 2023; Bussolo et al. 2025). Individuals in this group are particularly exposed to income shocks that can push them into poverty and may thus be less willing to incur risky tradeoffs that could put their welfare in danger.

Conclusions and Policy Recommendations

The transition to high-income status requires that talent be nurtured and that misallocations arising from inequality of opportunity and preservation of outdated education structures be reduced. The ECA countries need a high-skill labor force, and good-quality education is fundamental to such a labor force. The quality of basic education in the region has been showing a declining trend. The region also underperforms markedly in the quality of higher education. In any case, good-quality education is not sufficient if opportunities are not available to all and if merit is not rewarded. A high level of social mobility ensures that talent is not misallocated and wasted and that talented children from all backgrounds can fully flourish for their own benefit and the benefit of society.

To achieve these goals, governments and stakeholders in the ECA region need to consider several options.

- *Promote merit-based policies that help overcome barriers to entry and ensure equal access to higher education to all strands of society.* Education subsidies that fund talented individuals from disadvantaged backgrounds to pursue higher-education degrees may be more effective than only expanding enrollment, particularly in research-oriented programs (Akcigit, Pearce, and Prato 2024; Londoño-Vélez et al. 2023). Such policies should not, however, come at the expense of not rewarding merit. Selection for any education program and successful graduation should ultimately be determined by ability.
- *Facilitate the broader participation of women in the labor market and reduce job restrictions and other obstacles facing migrants.* In ECA countries with low female labor force participation, social norms play a fundamental role in depressing the prospects of women in the labor market. Norms change only slowly, but broadbased education and information interventions have been shown to help in weakening patriarchal norms (World Bank 2024b). Migrants may also represent a pool of talent that may be relied on, particularly in the context of a

shrinking population. Legal restrictions on work prevent migrants and, especially, refugees from fully contributing to host economies and societies.

- *Reform vocational education and training systems extensively.* Delaying vocational school tracking to the end of lower-secondary education will undoubtedly help reduce talent misallocation by improving the opportunities and academic outcomes among children with disadvantaged backgrounds. The ECA countries should support the development of strong foundational skills among students in vocational education and involve the private sector in providing work-based learning and apprenticeships. These countries should, too, consider resizing vocational education systems.

- *Integrate research centers and universities and strengthen higher-education–industry links to foster innovation.* Integrating research centers into the higher-education system can improve the quality and relevance of the system. Higher-education–industry links should be promoted to stimulate innovation. Governments should also reassess the needs in advanced research capacity required among institutions to participate in the global science network.

- *Consolidate universities to make better use of resources and improve the management and accountability of institutions of higher education.* University consolidation could address the decline in the number of students, improve education quality, and achieve significant cost savings by eliminating duplicate administrative structures and optimizing infrastructure. The resulting concentration of talent would enhance interdisciplinary collaboration and open funding opportunities. University funding should be linked to performance evaluations. Universities should compete on quality by increasing their reliance on competitive grants, enhanced competition for students and faculty, and yardstick competitions (which often involve assessment exercises).

- *Develop bilateral migration agreements between origin and destination countries to support the more efficient allocation of migrant talent.* Bilateral migration agreements could allow destination countries to fund education and training programs in origin countries, thus achieving a more equal distribution of the benefits of migration across both types of countries. To improve the allocation of talent, destination countries should enhance the recognition of migrant qualifications, provide refugees with the right to work, and improve or establish demand pathways for workers.

- *Implement adaptive and shock-responsive social safety nets to reduce the vulnerability of the middle class.* Protecting and developing a stronger middle class would ensure broad support for reforms, including tax-financed investment in costly education reforms. Such measures could also compensate for the lasting effects of the previous transition to a market economy, which may have decreased support for broad, structural reforms.

The appropriate mix of policy recommendations for each country depends on the specific context. For this purpose, as in the previous chapter, countries are placed into four groups: (1) EU member states (Bulgaria, Croatia, Poland, Romania), (2) EU candidates (Georgia, Moldova, Ukraine, Western Balkans), (3) Türkiye, and (4) Central Asia and the South Caucasus (Armenia, Azerbaijan, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan). Table 3.2 provides the relative priorities for each set of countries.

- For EU members, the key priority areas are related to the development of bilateral migration agreements to support the more efficient allocation of migrant talent, the implementation of adaptive and integrated social safety nets, and the provision of childcare services to increase female labor force participation.
- For the EU candidates, the key priority areas are related to the need to reform the vocational education system by delaying tracking and increasing the role of the private sector. Expanding affordable childcare and improving the opportunities of students with disadvantaged backgrounds are also important.

TABLE 3.2 Talent and mobility: summary of recommendations

Recommendation	EU members	EU candidates	Türkiye	Central Asia and South Caucasus
Improve the quality of education in a holistic way				
Delay tracking into vocational education	Medium	High	Medium	Medium
Consolidate higher-education systems	Low	Medium	Medium	High
Integrate research institutes with universities	Medium	Medium	Medium	High
Promote merit across society				
Establish transparent, merit-based university admission systems	Medium	Medium	Medium	High
Implement needs-based scholarship programs for students from disadvantaged backgrounds	Low	High	Low	Medium
Align skills and research with the labor market				
Increase the role of the private sector in vocational education	Medium	High	Medium	Medium
Strengthen university–industry partnerships	Medium	Medium	High	High
Develop bilateral migration agreements to improve the allocation of migrant talent	High	High	Medium	Medium
Ensure inclusivity				
Implement adaptive, shock-responsive, and integrated social safety nets	High	Medium	Medium	High
Expand affordable childcare services to increase female labor force participation	High	High	High	Medium

Source: World Bank.

- For Türkiye, the key priority areas are related to strengthening university–industry partnerships to improve R&D and expanding affordable childcare services to increase female labor force participation.
- For the countries of Central Asia and the South Caucasus, the key priorities are related to improving the higher-education system by consolidating large systems, establishing transparent and merit-based admission systems, integrating research institutes with universities, and strengthening partnerships between institutions of higher learning and industry. Implementing adaptive social safety nets is also a priority.

Notes

1. Refer to Migration and Asylum (dashboard), Eurostat, European Commission, Luxembourg, https://ec.europa.eu/eurostat/web/migration-asylum.
2. Albania, Bulgaria, Croatia, Kazakhstan, Montenegro, Poland, Romania, and Türkiye have participated in all PISA rounds since 2006. Other ECA countries have participated in fewer of the study evaluations.
3. The median reading score in ECA countries participating in PIRLS (Progress in International Reading Literacy Study) among fourth graders—Azerbaijan, Bulgaria, North Macedonia, Poland, Russia, and Türkiye—fell from 547 in 2006 to 518 in 2021, while, among EU countries, it declined from 542 to 526. Refer to PIRLS (dashboard), International Association for the Evaluation of Educational Achievement, Amsterdam, https://www.iea.nl/studies/iea/pirls.
4. Refer to Education and Training (database), Eurostat, European Commission, Luxembourg, https://ec.europa.eu/eurostat/web/education-and-training/overview.
5. Total R&D expenditure was estimated at about €38 million (57 percent executed by higher-education institutions) in Bosnia and Herzegovina in 2021 and at about €49 million (65 percent executed by higher-education institutions) in North Macedonia in 2022.
6. Refer to Education and Training (database), Eurostat, European Commission, Luxembourg, https://ec.europa.eu/eurostat/web/education-and-training/overview.
7. These values correspond to citizens of ECA countries who obtained their first permit of residence in any EU country in 2022. Citizens of Bulgaria, Croatia, Poland, and Romania are excluded. Refer to Migration and Asylum (dashboard), Eurostat, European Commission, Luxembourg, https://ec.europa.eu/eurostat/web/migration-asylum.
8. LiTS (Life in Transition Survey) (dashboard), European Bank for Reconstruction and Development, London, http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

References

Acemoglu, Daron, and Fabrizio Zilibotti. 1997. "Was Prometheus Unbound by Chance? Risk, Diversification, and Growth." *Journal of Political Economy* 105 (4): 709–51.

Acosta, Pablo, Çaglar Özden, Jeremy Lebow, Limon Rodriguez, and Evelina Dahlgren. 2025. *Global Skill Partnerships for Migration: Preparing Tomorrow's Workers for Home and Abroad.* Washington, DC: World Bank.

Aghion, Philippe, Ufuk Akcigit, Ari Hyytinen, and Otto Toivanen. 2023. "Parental Education and Invention: The Finnish Enigma." NBER Working Paper 30964 (February), National Bureau of Economic Research, Cambridge, MA.

Agrawal, Ajay K., Devesh Kapur, John McHale, and Alexander Oettl. 2011. "Brain Drain or Brain Bank? The Impact of Skilled Emigration on Poor-Country Innovation." *Journal of Urban Economics* 69 (1): 43–55.

Akcigit, Ufuk, Jeremy G. Pearce, and Marta Prato. 2024. "Tapping into Talent: Coupling Education and Innovation Policies for Economic Growth." *Review of Economic Studies.* Published ahead of print, April 18, 2024. https://doi.org/10.1093/restud/rdae047.

Alesina, Alberto Francesco, and Dani Rodrik. 1994. "Distributive Politics and Economic Growth." *Quarterly Journal of Economics* 109 (2): 465–90.

Atkinson, Anthony B., and Andrea Brandolini. 2013. "On the Identification of the 'Middle Class'." In *Income Inequality: Economic Disparities and the Middle Class in Affluent Countries*, edited by Janet C. Gornick and Markus Jäntti, 77–100. Stanford, CA: Stanford University Press.

Avvisati, Francesco, and Pauline Givord. 2021. "How Much Do 15-Year-Olds Learn over One Year of Schooling? An International Comparison Based on PISA." OECD Education Working Paper 257 (October), Organisation for Economic Co-operation and Development, Paris.

Bahar, Dany, Prithwiraj Choudhury, and Hillel Rapoport. 2020. "Migrant Inventors and the Technological Advance of Nations." *Research Policy* 49 (9): 103947.

Bahar, Dany, Andreas Hauptmann, Cem Özgüzel, and Hillel Rapoport. 2024. "Migration and Knowledge Diffusion: The Effect of Returning Refugees on Export Performance in the Former Yugoslavia." *Review of Economics and Statistics* 106 (2): 287–304.

Bahar, Dany, and Hillel Rapoport. 2018. "Migration, Knowledge Diffusion, and the Comparative Advantage of Nations." *Economic Journal* 128 (612): F273–F305.

Banerjee, Abhijit Vinayak, and Esther Duflo. 2008. "What Is Middle Class about the Middle Classes around the World?" *Journal of Economic Perspectives* 22 (2): 3–28.

Becker, Gary Stanley, Scott Duke Kominers, Kevin M. Murphy, and Jörg L. Spenkuch. 2018. "A Theory of Intergenerational Mobility." *Journal of Political Economy* 126 (S1): S7–S25.

Bell, Alexander M., Raj Chetty, Xavier Jaravel, Neviana Petkova, and John Michael Van Reenen. 2019. "Who Becomes an Inventor in America? The Importance of Exposure to Innovation." *Quarterly Journal of Economics* 134 (2): 647–713.

Birdsall, Nancy. 2010. "The (Indispensable) Middle Class in Developing Countries." In *Equity and Growth in a Globalizing World*, edited by Ravi Kanbur and Michael Spence, 157–87. Washington, DC: Commission on Growth and Development, World Bank.

Bolch, Kimberly B., Lidia Ceriani, Indermit Singh Gill, and Luis F. López-Calva. 2023. "Measuring the Global Middle Class." Paper presented at the 10th meeting of ECINEQ, Society for the Study of Economic Inequality, Aix-en-Provence, France, July 10–12, 2023. https://www.ecineq.org/wp-content/uploads/2023/06/EcineqAMSE-339.pdf.

Bollard, Albert, David J. McKenzie, Melanie Morten, and Hillel Rapoport. 2011. "Remittances and the Brain Drain Revisited: The Microdata Show That More Educated Migrants Remit More." *World Bank Economic Review* 25 (1): 132–56.

Bossavie, Laurent Loic Yves, Daniel Garrote Sánchez, and Mattia Makovec. 2024. *The Journey Ahead: Supporting Successful Migration in Europe and Central Asia*. Europe and Central Asia Studies Series. Washington, DC: World Bank.

Bussolo, Maurizio, Jonathan Karver, Michael Lokshin, Luis F. López-Calva, and Iván Torre. 2025. "Growing Vulnerability: What Happened to Europe's Middle Class in the Course of a Decade?" Policy Research Working Paper 11047, World Bank, Washington, DC.

Cedefop (European Center for the Development of Vocational Training). 2004. *Towards a History of Vocational Education and Training (VET) in Europe in a Comparative Perspective: Proceedings of the First International Conference, October 2002, Florence*, 2 vols. Cedefop Panorama Series. Luxembourg: Publications Office of the European Communities.

Chand, Satish, and Michael A. Clemens. 2023. "Human Capital Investment under Exit Options: Evidence from a Natural Quasi-Experiment." *Journal of Development Economics* 163 (June), 103112.

Chellaraj, Gnanaraj, Keith E. Maskus, and Aaditya Mattoo. 2008. "The Contribution of International Graduate Students to US Innovation." *Review of International Economics* 16 (3): 444–62.

Cojocaru, Alexandru, Michael Lokshin. and Iván Torre. 2024. "Perceptions of Economic Mobility and Support for Education Reforms." Policy Research Working Paper 10966, World Bank, Washington, DC.

Corak, Miles. 2013. "Income Inequality, Equality of Opportunity, and Intergenerational Mobility." *Journal of Economic Perspectives* 27 (3): 79–102.

Crawfurd, Lee, Susannah Hares, Ana Minardi, and Justin Sandefur. 2021. "Understanding Education Policy Preferences: Survey Experiments with Policymakers in 35 Developing Countries." Working Paper 596 (December), Center for Global Development, Washington, DC.

Dalvit, Nicolò, Rafael E. de Hoyos, Leonardo Iacovone, Ioanna Pantelaiou, Aleksandra Peeva, and Iván Torre. 2023. *The Future of Work: Implications for Equity and Growth in Europe.* Washington, DC: World Bank.

Daly, Tim. 2024. "The Rise and Fall of Finland Mania, Part Two: Why Did Scores Plummet?" *Flypaper* (blog), January 18, 2024. https://fordhaminstitute.org/national/commentary/rise-and-fall-finland-mania-part-two-why-did-scores-plummet#_edn3.

Demirgüç-Kunt, Asli, and Iván Torre. 2022. "Measuring Human Capital in Middle Income Countries." *Journal of Comparative Economics* 50 (4): 1036–67.

Doner, Richard F., and Ben Ross Schneider. 2016. "The Middle-Income Trap: More Politics than Economics." *World Politics* 68 (4): 608–44.

Easterly, William Russell. 2001. "The Middle Class Consensus and Economic Development." *Journal of Economic Growth* 6 (4): 317–36.

Foster, James E., and Jonathan Rothbaum. 2018. "The Mobility Curve: Measuring the Impact of Income Changes on Welfare." Unpublished paper, Department of Economics and Institute for International Economic Policy, George Washington University, Washington, DC.

Foster, Philip J. 1965. "The Vocational School Fallacy in Development Planning." In *Education and Economic Development*, edited by C. Arnold Anderson and Mary Jean Bowman, 142–66. Chicago: Aldine.

Gao, Xin, Aiko Kikkawa, and Jong Woo Kang. 2021. "Evaluating the Impact of Remittances on Human Capital Investment in the Kyrgyz Republic." ADB Economics Working Paper 637 (May), Asian Development Bank, Manila.

Ghisletta, Andrea, Johanna Kemper, and Jonathan Stöterau. 2021. "The Impact of Vocational Training Interventions on Youth Labor Market Outcomes: A Meta-Analysis." Working Paper 20 (July), Chair of Education Systems, Department of Management, Technology, and Economics, Federal Institute of Technology, Zurich.

Hanushek, Eric Alan. 2020. "Quality Education and Economic Development." In *Anticipating and Preparing for Emerging Skills and Jobs: Key Issues, Concerns, and Prospects*, edited by Brajesh Panth and Rupert Maclean, 25–32. Education in the Asia-Pacific Region: Issues, Concerns and Prospects Series 55. Manila: Asian Development Bank; Singapore: Springer.

Hanushek, Eric Alan, Guido Schwerdt, Ludger Woessmann, and Lei Zhang. 2017. "General Education, Vocational Education, and Labor-Market Outcomes over the Life-Cycle." *Journal of Human Resources* 52 (1): 48–87.

Hanushek, Eric Alan, and Ludger Woessmann. 2006. "Does Educational Tracking Affect Performance and Inequality? Differences-in-Differences Evidence across Countries." *Economic Journal* 116 (510): C63–C76.

Hanushek, Eric Alan, and Ludger Woessmann. 2015. "The Economic Impact of Educational Quality." In *Handbook of International Development and Education*, edited by Pauline Dixon, Steve Humble, and Chris Counihan, 6–19. Cheltenham, UK: Edward Elgar Publishing.

Heckman, James J., and Stefano Mosso. 2014. "The Economics of Human Development and Social Mobility." *Annual Review of Economics* 6 (August): 689–733.

Huisman, Jeroen, Anna Smolentseva, and Isak D. Froumin, eds. 2018. *25 Years of Transformations of Higher Education Systems in Post-Soviet Countries: Reform and Continuity.* Palgrave Studies in Global Higher Education Series. Cham, Switzerland: Palgrave Macmillan.

Hunt, Jennifer, and Marjolaine Gauthier-Loiselle. 2010. "How Much Does Immigration Boost Innovation." *American Economic Journal: Macroeconomics* 2 (2): 31–56.

Jakubowski, Maciej, Harry Anthony Patrinos, Emilio Ernesto Porta, and Jerzy Wiśniewski. 2016. "The Effects of Delaying Tracking in Secondary School: Evidence from the 1999 Education Reform in Poland." *Education Economics* 24 (6): 557–72.

Londoño-Vélez, Juliana, Catherine Rodriguez, Fabio Sanchez, and Luis E. Álvarez-Arango. 2023. "Elite Colleges as Engines of Upward Mobility: Evidence from Colombia's Ser Pilo Paga." NBER Working Paper 31737 (September), National Bureau of Economic Research, Cambridge, MA.

López-Calva, Luis F., and Eduardo Ortiz-Juárez. 2014. "A Vulnerability Approach to the Definition of the Middle Class." *Journal of Economic Inequality* 12 (1): 23–47.

Mazur, Jana. 2022. "The Activity of Higher Education Institutions in the Academic Year 2022/23." *Comunicates* (blog), December 19, 2022. https://statistica.gov.md/index.php/en/the-activity-of-higher-education-institutions-in-the-academic-year-202223-9454_60176.html.

McCormack, John, Carol Propper, and Sarah Louise Smith. 2014. "Herding Cats? Management and University Performance." *Economic Journal* 124 (578): 534–64.

McNamara, Sarah, Guido Neidhöfer, and Partick Lehnert. 2024. "Intergenerational Mobility of Education in Europe: Geographical Patterns, Cohort-Linked Measures, and the Innovation Nexus." ZEW Discussion Paper 24-004, Leibniz Centre for European Economic Research, Mannheim, Germany.

Meghir, Costas, and Mårten Palme. 2005. "Educational Reform, Ability, and Parental Background." *American Economic Review* 95 (1): 414–24.

Milovanovitch, Mihaylo, Elena Denisova-Schmidt, and Arevik Anapiosyan. 2018. "Conflict of Interest in Eastern Europe: 'Academic Capture'." *International Higher Education* 92 (Winter): 29–30.

Nano, Enrico, Ugo Gianluigi Panizza, and Martina Viarengo. 2024. "Merit-Based Scholarships for University Graduates: A Generation of Italian Economists." *Labour Economics* 90 (October), 102569.

Narayan, Ambar, Roy van der Weide, Alexandru Cojocaru, Christoph Lakner, Silvia Redaelli, Daniel Gerszon Mahler, Rakesh Gupta N. Ramasubbaiah, and Stefan Thewissen. 2018. *Fair Progress? Economic Mobility across Generations around the World.* Equity and Development Series. Washington, DC: World Bank.

Neidhöfer, Guido, Matías Ciaschi, Leonardo Gasparini, and Joaquín Serrano. 2024. "Social Mobility and Economic Growth." *Journal of Economic Growth* 29 (2): 327–59. https://doi.org/10.1007/s10887-023-09234-8.

OECD (Organisation for Economic Co-operation and Development). 2017. *OECD Science, Technology, and Industry Scoreboard 2017: The Digital Transformation.* Paris: OECD.

Ollikainen, Jani-Petteri. 2021. "Comprehensive School Reform and Labor Market Outcomes over the Lifecycle: Evidence from Finland." *Labour Economics* 68 (January): 101952.

Oruc, Nermin, Ian Jackson, and Geoffrey Pugh. 2018. "The Effects of Remittances on Education in a Post-Conflict Society: Evidence from Bosnia-Herzegovina." *Journal of Balkan and Near Eastern Studies* 21 (1): 90–103.

Ozgen, Ceren, Peter Nijkamp, and Jacques Poot. 2011. "Immigration and Innovation in European Regions." IZA Discussion Paper DP 5676 (April), Institute of Labor Economics, Bonn, Germany.

Pekkala Kerr, Sari, William R. Kerr, Çağlar Özden, and Christopher Robert Parsons. 2016. "Global Talent Flows." *Journal of Economic Perspectives* 30 (4): 83–106.

Pekkala Kerr, Sari, Tuomas Pekkarinen, and Roope Uusitalo. 2013. "School Tracking and Development of Cognitive Skills." *Journal of Labor Economics* 31 (3): 577–602.

Pekkarinen, Tuomas, Roope Uusitalo, and Sari Pekkala Kerr. 2009. "School Tracking and Intergenerational Income Mobility: Evidence from the Finnish Comprehensive School Reform." *Journal of Public Economics* 93 (7–8): 965–73.

Psacharopoulos, George. 1987. "To Vocationalize or Not to Vocationalize? That Is the Curriculum Question." *International Review of Education* 33 (2): 187–211.

Psacharopoulos, George. 1991. "Vocational Education Theory, Voced 101: Including Hints For 'Vocational Planners.'" *International Journal of Educational Development* 11 (3): 193–99.

Ripley, Amanda. 2013. *The Smartest Kids in the World: And How They Got That Way.* New York: Simon and Schuster.

Robayo-Abril, Monica, and Natalie Millán. 2019. *Breaking the Cycle of Roma Exclusion in the Western Balkans.* March. Washington, DC: World Bank.

Romer, Paul Michael. 2000. "Should the Government Subsidize Supply or Demand in the Market for Scientists and Engineers?" NBER Working Paper 7723 (June), National Bureau of Economic Research, Cambridge, MA.

Silliman, Mikko, and Hanna Virtanen. 2022. "Labor Market Returns to Vocational Secondary Education." *American Economic Journal: Applied Economics* 14 (1): 197–224.

Smolentseva, Anna. 2003. "Challenges to the Russian Academic Profession." *Higher Education* 45 (4): 391–424.

Stewart, Frances. 2001. "Horizontal Inequalities: A Neglected Dimension of Development." WIDER Annual Lecture 5, United Nations University–World Institute for Development Economics Research, Helsinki, December 14, 2001. https://www.wider.unu.edu/event/wider-annual-lecture-5-horizontal-inequality-neglected-dimension-development.

Stuen, Eric T., Ahmed Mushfiq Mobarak, and Keith E. Maskus. 2012. "Skilled Immigration and Innovation: Evidence from Enrolment Fluctuations in US Doctoral Programmes." *Economic Journal* 122 (565): 1143–76.

Szymańska, Anita. 2019. "The Structure of Income Inequality with Particular Emphasis on the Economic Middle Class." *Social Inequalities and Economic Growth* 60 (April): 45–60.

Terrin, Éder, and Moris Triventi. 2023. "The Effect of School Tracking on Student Achievement and Inequality: A Meta-Analysis." *Review of Educational Research* 93 (2): 236–74.

Torre, Iván, Michael Lokshin, and James Stephen Foster. 2025. "Does Social Mobility Affect Economic Development? Cross-Country Analysis Using Different Mobility Measures." Policy Research Working Paper 11056, World Bank, Washington, DC.

Urquiola, Miguel. 2020. *Markets, Minds, and Money: Why America Leads the World in University Research.* Cambridge, MA: Harvard University Press.

van der Weide, Roy, Christoph Lakner, Daniel Gerszon Mahler, Ambar Narayan, and Rakesh Gupta. 2023. "Intergenerational Mobility around the World: A New Database." *Journal of Development Economics* 166 (January), 103167.

World Bank. 2018. "Is There a Gender Gap in Skills in the Western Balkans? Summary Note Based on the Skills towards Employability and Productivity (STEP) Surveys." Conference Version, March 13, Poverty and Equity Global Practice, Europe and Central Asia Region, World Bank, Washington, DC.

World Bank. 2019a. *Migration and Brain Drain.* Europe and Central Asia Economic Update (Fall). Washington, DC: World Bank.

World Bank. 2019b. *Review of the Education Sector in Ukraine: Moving toward Effectiveness, Equity, and Efficiency*. RESUME3, Final Report. Washington, DC: World Bank.

World Bank. 2023. *World Development Report 2023: Migrants, Refugees, and Societies*. Washington, DC: World Bank.

World Bank. 2024a. *Retaining the Growth Momentum.* Western Balkans Regular Economic Report 26 (Fall). Washington, DC: World Bank.

World Bank. 2024b. *World Development Report 2024: The Middle-Income Trap*. Washington, DC: World Bank.

World Bank, UNESCO (United Nations Educational, Scientific, and Cultural Organization), and ILO (International Labour Organization). 2023. *Building Better Formal TVET Systems: Principles and Practice in Low- and Middle-Income Countries.* Washington, DC: World Bank; Paris: UNESCO; Geneva: ILO.

Zilibotti, Fabrizio, and Matthias Doepke. 2007. "Occupational Choice and the Spirit of Capitalism." CEPR Discussion Paper DP6405, Centre for Economic Policy Research, London.