# 06:

# Skills and migration

**Diversification into new areas of activity often requires new capabilities or skills. By international standards, Russia's performance in terms of skills and education appears mixed, and despite various attempted reforms, the education system remains largely focused on inputs, rather than outcomes. Survey evidence also reveals a significant mismatch between the skills demanded by the market and the skills provided by the education system. In the short term, migration policies could be used more actively to address specific skills gaps, while in the longer term, the Russian economy would benefit from moves towards greater diversity in the supply of education.**

KEY FACTS:

**33%** of respondents to Life in Transition Survey (2010) reported that unofficial payments were required to receive public education

**45%** of expanding firms thought skill shortages placed constraints on growth

**3-5%** share of Russian students achieving top grades in PISA compared with 13 to 25 per cent in top performer countries

# Skills and migration

## 1. Introduction[1]

The view continues to be widely held that Russia has a relative abundance of skills and a high-quality education system, at least compared with other leading emerging markets. On closer examination, this assumption is not entirely warranted. Not only has the country's legacy in terms of education and skills been less positive than is typically imagined, but the consequences of policies pursued over the past 20 years have contributed to the erosion of any advantages gained. More generally, economies with relatively undiversified and unsophisticated product mixes – such as Russia – appear to have under-performed in terms of their educational outcomes. This suggests that there is a feedback loop between (i) the product and trade mix and (ii) the level of investment and returns on investment as regards the core skills and abilities generated through education.

These failings have serious implications for Russia's ability to grow and diversify.[2] Not only does a good education system support and enhance innovation, but a higher average level of education aids the successful imitation and faster adaptation of existing modern technologies. Imitation and adaptation will be particularly important for a country (such as Russia) which lags substantially in terms of productivity compared with leading economies. Data for 50 countries over the period 1960-2000 show that countries with better education systems have significantly higher annual growth rates in terms of gross domestic product (GDP) per capita. This appears to reflect not only the fact that faster-growing countries may devote greater resources to education and the impact that better institutions have on both economic growth and the quality of education, but also – predominantly – the effect that education has on growth. An increase of one standard deviation in educational test scores leads to an increase of 1.3 to 2 percentage points in the annual growth rate of GDP. Consequently, were students' education to improve by just half of that amount over a period of 20 years, this would, on average, increase GDP by around 5 per cent over that period, and by as much as 36 per cent over a 75-year period.[3]

Aside from affecting productivity and growth directly, skill profiles are a significant factor determining the ability to diversify. This is because diversification necessarily requires the accumulation of new capabilities or skills. This will be particularly important if diversification involves moving into economic activities that do not rely on the sets of inputs and knowledge typically employed in current activities. Central to this is inevitably the quality of education, as without appropriate human capital it will be difficult – if not impossible – for an economy to shift into new areas of activity. One way of considering this problem is to think of the skills present in an economy as being summarised in the products and services that the economy generates. Where a country is reliant on natural resources, this tends to imply that the skills required for those activities are relatively specialised and cannot, therefore, easily be transferred to new activities. For example, the skills required by the oil or gas industry will be very different from those required by a knowledge-intensive activity, such as the software industry.

In the case of Russia, this skills problem may, in part, have been mitigated by the fact that, prior to 1992, the economy was significantly more diversified than at present, so skills and education were less narrowly focused. However, much of that diversified structure subsequently collapsed, as it was uncompetitive. Moreover, many of those skills – and the educational system behind those skills – proved to be fairly specific and non-transferable. This can be seen in the effective collapse of much of Russia's vocational education system over the past 20 years.

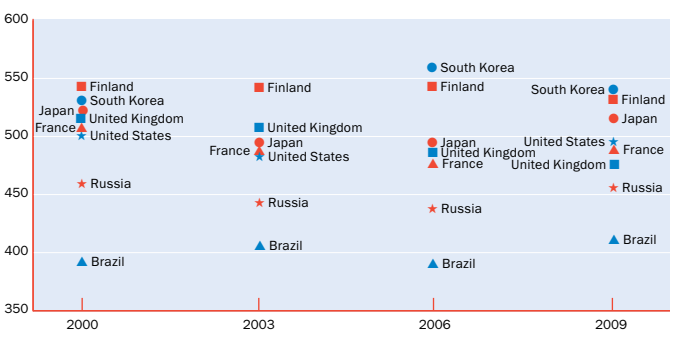
## 2. Russian education in context

The Russian education system, despite many changes, is still coloured by the legacy of the previous system and the incomplete reforms initiated since 1992. The Soviet system certainly achieved very strong enrolment results. These have subsequently declined. Between 2003 and 2008 alone, gross enrolment rates fell from 92 to 86 per cent for secondary education and from 122 to 98 per cent for primary education.[4] Spending on education has also fluctuated significantly. It fell below 3 per cent of GDP in the 1990s, before rising to just over 4 per cent by 2008-09. Despite the sharp rises seen in the price of natural resources and associated revenues, public spending on education appears to have risen only gradually.

The legacy of the previous system also included a highly centralised system of control – including control of curricula, personnel, management and financing. One feature of the changes introduced since 1992 has been the greater devolution of power by the federal government to authorities at lower

Chart 6.1

**Average PISA scores for selected countries: analytical reading**




Source: OECD PISA data.
Note: UK data for 2003 is based on surveys with low-response level and is not always included in the PISA reports.

[1]This chapter draws extensively on findings that are reported in greater detail in background papers prepared for this report by Amini and Commander (2012) and Commander and Denisova (2012).
[2]Benhabib and Spiegel (1994), drawing on seminal work by Nelson and Phelps (1966).
[3]Hanushek and Woessmann (2008). The long-term effects are based on simulations. See also Glaeser et al. (2004), who show that years of schooling have a robust effect on growth over a longer time period.
[4]Based on the World Bank's World Development Indicators. The gross enrolment ratio can exceed 100 per cent owing to the inclusion of over-aged and under-aged students on account of early or late school entrance and the repetition of school years.

levels. This has not necessarily been a positive development. Financial constraints have been significant and have also varied widely across jurisdictions. There has, de facto, been a creeping introduction of fees, with schools and teachers commonly imposing fees and levies, while some schools have also launched revenue-earning schemes of a non-educational nature. These have proved persistent. According to the Life in Transition Survey (LiTS) conducted by the EBRD and the World Bank in 2006, 39 per cent of respondents in Russia reported that unofficial payments were required in order to receive public education. This fell to 33 per cent in the 2010 survey, but remained well above the 8 per cent seen on average in advanced countries in Europe and the 19 per cent seen in Poland. Likewise, 20 per cent of respondents were personally required to pay for services that should be free in public schools (compared with 1 per cent of respondents in Sweden, 3 per cent in France and 4 per cent in Poland).

Russia has also seen the emergence of special institutions (such as gymnasia, lycées and colleges) that exist outside the basic public system. The shift towards greater decentralisation has been accompanied by great heterogeneity in terms of spending and decision-making across regions and municipalities. For example, in 2001 more than 35 per cent of oblasts or regions spent between 500 and 1,000 roubles per student, while just over 10 per cent of regions spent more than 1,500 roubles.

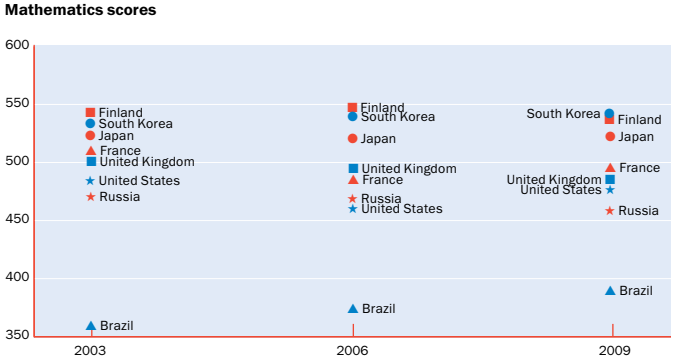
Although there is considerable debate regarding the policies that should be pursued, there is relatively broad agreement that Russia's education system has placed only limited emphasis on educational outcomes, giving priority instead to standardised measures of inputs. These have, in turn, been compromised by varying budgetary resources across regions. Antiquated curricula and low standards in terms of pedagogy and management have been highlighted. This has led to some promotion of policies designed to achieve new standards, the overhaul of curricula and teaching methods, more and better assessment of students and greater emphasis on learning outcomes, as well as increased autonomy for schools.[5]

## 2.1 Russia's educational scores in relative terms

We are now able to measure the evolution of Russia's education system and skills and compare them with those of other countries, thanks to several datasets that attempt to measure the quality of education over time.[6] In particular, the PISA (Programme for International Student Assessment) dataset compiled by the Organisation for Economic Co-operation and Development (OECD) constitutes an explicit attempt to measure the skills needed to function in a modern economy, rather than being concerned only with the formal curriculum. PISA is a standardised international assessment of 15-year-old students' performance in reading, mathematics and science which is carried out in all OECD countries, as well as a growing number of non-OECD countries (including Russia). Four assessment rounds have now been carried out (in 2000, 2003, 2006 and 2009), and Russia has been included in each round. Students are chosen at random in schools in each country[7] and given a reading, mathematics and science test. In addition, information on the students – such as details of their family background, attitudes towards schooling and learning strategies – is collected. Moreover, each assessment round sees information collected from school principals on school resources (for instance, the number of teachers in the school).

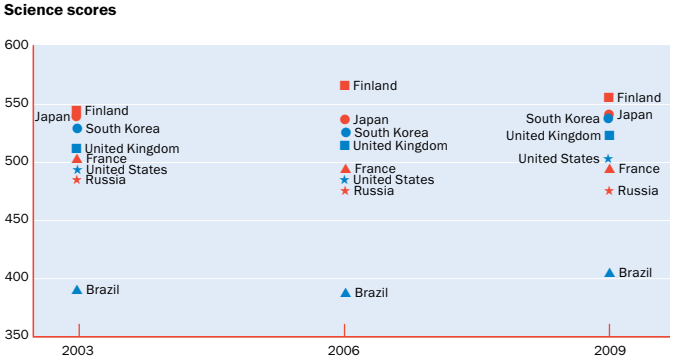
Charts 6.1, 6.2 and 6.3 show PISA scores for reading, mathematics and science for a selection of countries, including Russia, that have been involved in all assessment rounds. For mathematics, Russia consistently scores higher than Brazil – as well as other emerging markets covered by PISA. Its score is

Chart 6.2
**Average PISA scores for selected countries: mathematics**




Source: OECD PISA data.
Note: UK data for 2003 is based on surveys with low-response level and is not always included in the PISA reports.

Chart 6.3
**Average PISA scores for selected countries: science**




Source: OECD PISA data.
Note: UK data for 2003 is based on surveys with low-response level and is not always included in the PISA reports.

[5] See, for example, Canning (2004).
[6] Aside from PISA data, these include data from the Progress in International Reading Literacy Study (PIRLS) and the Trends in International Mathematics and Science Study (TIMSS).
[7] See the description in Anderson et al. (2010). The primary sampling unit is the school.

roughly comparable to that of the United States in all rounds, but is significantly lower than those of Asian countries such as Japan or South Korea, as well as leading European countries such as Finland. In 2009 the ratio of the top countries – South Korea and Hong Kong – to Russia was around 1:1.18 for mathematics. In 2000 Russia was ranked 25th out of 35 countries for mathematics, and this was stable through to 2009.[8] For both reading and science, Russia's scores tend to be weaker than those of most European countries (including other transition countries), as well as those of Asian countries, although they remain superior to those of emerging markets such as Brazil. For reading and science, the ratio of the top countries to Russia was 1:1.17 and 1:1.14 respectively in 2009. For reading and science, Russia was ranked 29th or 30th out of 35 in both 2000 and 2009. By 2009, Russia's mean reading score was significantly lower than the OECD average, being roughly equivalent to those of Chile and Turkey.

Given the policy objectives of diversifying the economy and raising productivity, one further aspect is also troubling. Charts 6.4, 6.5 and 6.6 provide evidence from PISA concerning the distribution of the upper part of countries' scores. This indicator may be particularly relevant when considering the ability of an economy to innovate and/or adopt new technology. Those charts show that in 2009 the percentage of Russian students achieving top grades – defined as Level 5 or above – ranged between 3 and 5 per cent for reading, mathematics and science. By contrast, in the leading countries, 13 to 25 per cent of students achieved Level 5 or above.[9] In mathematics, for example, around 5 per cent of students achieved top grades in Russia in 2009, compared with 20 to 25 per cent in Japan, South Korea and Finland. Moreover, that represented a sharp decline, with around 10 per cent of Russian students having achieved such grades in 2000. There has been no improvement in the percentage of students achieving top grades for reading, while no clear trend can be observed for science. In conclusion, the percentage of Russian students achieving top grades is relatively low, with declines observed in the case of mathematics and little or no improvement in the other disciplines over the past decade. Russia's educational scores remain superior to those of many emerging markets with comparable income levels, but are substantially lower than those of leading countries. The evidence suggests that the country has, over time, experienced a declining comparative advantage in the area of education.

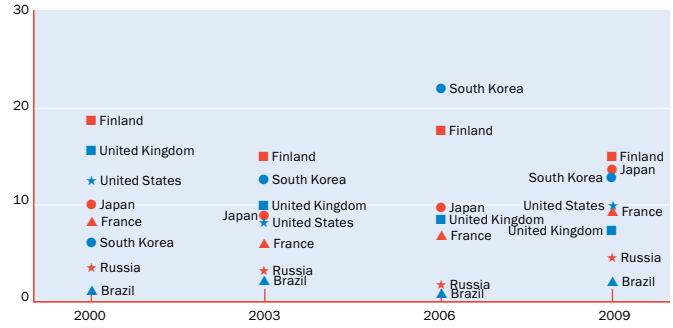
**38th**

Russia's ranking – out of 65 countries surveyed in PISA

Chart 6.4

**Percentage share of top performers in selected countries: analytical reading**

**% of students achieving Level 5 or above**

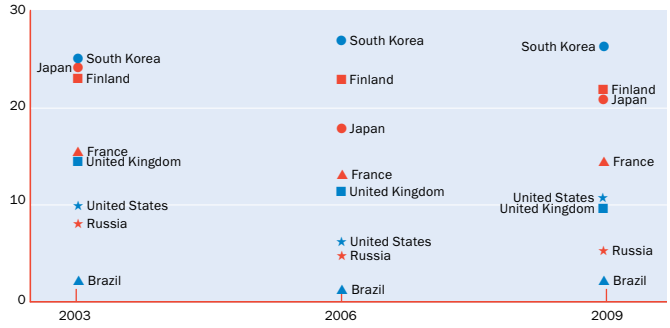



Source: OECD PISA data.
Note: UK data for 2003 is based on surveys with low-response level and is not always included in the PISA reports.

Chart 6.5

**Percentage share of top performers in selected countries: mathematics**

**% of students achieving Level 5 or above**




Source: OECD PISA data.
Note: UK data for 2003 is based on surveys with low-response level and is not always included in the PISA reports.

[8]This compares Russia with countries included in all assessment rounds. By 2009, the total number of countries involved in the PISA survey had risen to 57.
[9]PISA uses a five/six-level performance scale (depending on the subject and assessment year), with Level 1 representing the lowest level of proficiency in a subject and Level 5 (or Level 6) being the highest. Top performers are defined as those attaining Level 5 or above. For each level, PISA defines specific skills needed in order to qualify.

## 2.2 Skills

Evidence from surveys suggests that Russian firms have problems finding workers with the appropriate skill profiles. The 2009 round of the Business Environment and Enterprise Performance Survey (BEEPS) conducted by the EBRD and the World Bank found that just over 45 per cent of expanding firms thought that skill shortages placed constraints on growth.[10] Other evidence indicates that firms find it difficult to hire managers and professionals. However, the most acute shortages appear to concern skilled manual workers, and these shortages have increased since the 1990s.[11] Even within broader disciplines such as engineering, students' training is often too narrowly focused and not fully in line with the needs of employers.[12] And while this appears to be the situation for existing firms, it seems likely that any entrants in new, diversified areas of activity may, if anything, face even stronger constraints.

Overall, there appears to be a mismatch between the skills demanded by the market and the skills provided by the education system. However, such mismatches are very difficult to quantify and there is little evidence regarding the precise nature and size of the skills gap in Russia. To provide a more precise measurement of that gap as part of this project, we have, for the first time, looked at the perceived supply of various skills to Russian firms. We have also looked at whether skills constraints and gaps are addressed through migration.[13] For that purpose, a survey of the leading recruitment firms in Russia was launched at the end of 2010. Face-to-face interviews were conducted in 270 recruitment firms in 23 locations across Russia, including Moscow and St Petersburg. In an attempt to see whether skills gaps were more significant for innovative activities, we also conducted a small experiment involving firms in three fields: energy-conserving LED lighting, engineering services for the electricity sector, and internet technology aimed at social networking and marketing.[14] The aim was to see whether innovative activities faced more binding constraints when trying to hire.

The results of this survey are unequivocal. The picture is one of widespread skills gaps across all types of labour. While there was a fairly high degree of variation in terms of the number of days taken to fill a vacancy in different regions or oblasts, a clear pattern emerged. Not only does it take firms much longer to fill vacancies for skilled personnel (just under 40 days for managers, compared with 14-18 days for clerks and qualified workers), but this was particularly the case for relatively innovative activities. In innovative areas of activity, the recruitment of managers or high-level professionals in major Russian cities took, on average, three to five times longer than the recruitment of other workers. Even in Moscow, recruiting a manager or high-level professional in these innovative areas of activity took three to four times longer, and the gap was greater still in the Urals, Siberia and the Far East.

Moreover, looking at the sorts of skill that were lacking for each type of potential recruit (for example, managers or high-level professionals), it was noticeable that recruitment firms reported a widespread absence of essential skills. For example, a lack of problem-solving and management skills was by far the most commonly cited limitation for managers, while what high-level professionals most commonly lacked was problem-solving and practical skills. The consequences of these problems with skills and the filling of vacancies included firms deciding to postpone the launch of new products and/or the modernisation of plants.

In short, this new evidence points not only to widespread skill shortages (even when employers pay wages that are high relative to the skill-specific average in a given region), but also to clear constraints on the availability of personnel for firms wishing to embark on new or relatively innovative activities. These limitations will continue to act as a major brake on diversification if there are no changes to policy.

Chart 6.6

**Percentage share of top performers in selected countries: science**

**% of students achieving Level 5 or above**


Source: OECD PISA data.
Note: UK data for 2003 is based on surveys with low-response level and is not always included in the PISA reports.

## 3. Migration

One of the options for a country seeking to address skill shortages is allowing the migration of workers from abroad. Indeed, most advanced economies actively seek to attract highly skilled labour to their countries, using, in particular, visa channels and/or points systems to select eligible migrants. For example, the United States has used a visa programme to attract migrants working in specific industries, notably the software sector. Countries such as Australia and Canada operate migrant selection criteria that favour skilled individuals. Points are accumulated using formulae that take into account characteristics such as the person's education, occupation, language ability and age. This broad approach – with or without the explicit award of points – has, in recent years, increasingly been adopted by countries eager to compete in the international market for talent.

Russia is somewhat different in this respect. While migrants account for around 8.5 per cent of the total population, which

[10]This is in fact common to most countries of the former Soviet Union, which had a similar starting point in terms of their education systems. See EBRD (2010).
[11]Sondergaard and Murthi (2012).
[12]Dobryakova and Froumin (2010).
[13]Results are reported in detail in Commander and Denisova (2012). We decided to focus on recruitment firms, as companies tend to rely on such firms to fill vacancies that are specialised and/or difficult to fill, as well as when facing unusual hiring requirements (for example, in innovative sectors).
[14]In the experiment, recruitment firms answered questions about finding candidates for hypothetical openings in these sectors based on their experience and the available pool of candidates.

is relatively high compared with other emerging markets, many of these migrants are relatively unskilled workers from other states of the former Soviet Union. Certainly, the active attraction of talent to the country as an instrument of general – let alone migration – policy has been absent. Indeed, an assessment of Russia's migration policy framework in 2008, along with those of 27 other countries, both advanced and emerging, indicated that Russia's migration policy was generally very restrictive, particularly for highly skilled workers.[15] Moreover, the legacy of internal controls on migration has by no means disappeared. Various incarnations of the propiska system – a system to control internal migration and residency going all the way back to the Russian empire – still persist, notably in the capital city. Evidence from our survey of recruitment firms also clearly indicated a policy regime that is generally restrictive. For high-level professionals, as well as skilled workers, the predominant view was that migration could, in principle, help to address shortages and that the simplification of procedures would make an important contribution to that process. However, respondents also indicated that one of the barriers to hiring migrants for skilled work was language skills, as knowledge of Russian was viewed as essential. Indeed, the language barrier will probably ensure that migration from outside Russia's immediate vicinity remains relatively limited. However, the combination of a relatively restrictive policy regime and linguistic and other attitudinal constraints ensures that relatively few migrants enter the country, at least for professional work.

To understand the scale and composition of legal migration to Russia, it is possible to look at applications to the Federal Employment Service (FES) for permission to hire a migrant. These applications reflect prior discussions between employers and the employment service and thus effectively document all approved migrants. Moreover, although this information does not cover unauthorised migrants, of whom there are likely to be a fair number, it does cover the bulk of skilled migrants, for whom securing permission from the FES is important. For the purposes of this report, we analysed successful applications in 23 of Russia's major regions or oblasts, which were also covered by our survey of recruitment firms. These regions accounted for nearly 890,000 migrants – 77 per cent of the Russian total – of which more than 250,000 applications were accounted for by Moscow. In the interests of convenience, Table 6.1 aggregates the data by federal district. The information also allows a breakdown by occupation and sector. While migrants generally accounted for a limited share of employment, in some locations – notably St Petersburg, Moscow and the Far East – they made up 5 to 9 per cent of total employment. However, as regards migrants' skill levels, more than 80 per cent of requests were for unskilled

Table 6.1
**Distribution of migrant workers by region in 2010**

| | Profession | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Managers and lawyers | High level professionals | Technicians and associate professionals | Clerks | Service sector | Skilled agricultural | Craft and related trade | Plant and machine operators | Unskilled |
| **Area (Federal District or Federal City)** | | | | | | | | | |
| **Urals** | 9,637 | 1,690 | 4,269 | 49 | 3,237 | 3,934 | 26,982 | 8,635 | 35,096 |
| **%** | *0.23* | *0.04* | *0.10* | *0.00* | *0.08* | *0.09* | *0.63* | *0.20* | *0.82* |
| **North-West** | 621 | 185 | 136 | 2 | 70 | 50 | 9,911 | 1,836 | 295 |
| **%** | *0.19* | *0.06* | *0.04* | *0.00* | *0.02* | *0.02* | *2.99* | *0.55* | *0.09* |
| **South** | 3,703 | 1,656 | 1,490 | 39 | 1,337 | 14,323 | 28,498 | 4,215 | 13,596 |
| **%** | *0.11* | *0.05* | *0.04* | *0.00* | *0.04* | *0.42* | *0.83* | *0.12* | *0.40* |
| **Siberia** | 1,629 | 1,660 | 2,232 | 102 | 3,905 | 7,485 | 48,797 | 10,405 | 18,291 |
| **%** | *0.04* | *0.04* | *0.05* | *0.00* | *0.09* | *0.18* | *1.14* | *0.24* | *0.43* |
| **Moscow** | 55,385 | 19,388 | 11,173 | 621 | 13,107 | 161 | 65,698 | 23,938 | 61,459 |
| **%** | *1.08* | *0.38* | *0.22* | *0.01* | *0.26* | *0.00* | *1.29* | *0.47* | *1.20* |
| **Volga** | 2,433 | 1,376 | 1,941 | 19 | 1,993 | 8,145 | 27,111 | 4,468 | 12,908 |
| **%** | *0.05* | *0.03* | *0.04* | *0.00* | *0.04* | *0.15* | *0.51* | *0.08* | *0.24* |
| **Far East** | 2,591 | 2,176 | 4,522 | 43 | 3,014 | 5,227 | 28,910 | 5,068 | 8,341 |
| **%** | *0.23* | *0.19* | *0.40* | *0.00* | *0.27* | *0.46* | *2.54* | *0.45* | *0.73* |
| **St. Petersburg** | 10,885 | 3,580 | 4,991 | 393 | 16,138 | 273 | 55,356 | 21,879 | 76,219 |
| **%** | *0.54* | *0.18* | *0.25* | *0.02* | *0.80* | *0.01* | *2.75* | *1.09* | *3.78* |
| **Central** | 2,130 | 1,600 | 1,371 | 122 | 1,305 | 4,551 | 22,614 | 7,349 | 18,390 |
| **%** | *0.14* | *0.10* | *0.09* | *0.01* | *0.08* | *0.29* | *1.45* | *0.47* | *1.18* |

Source: Rosstat, survey data and authors' calculations.
Note: Numbers in italics are in per cent of the total employment in a given region.

[1]See Economist Intelligence Unit (2008), where Russia was ranked 42nd out of 61 countries, despite scoring relatively highly in terms of its need for migrants.

**45%**
of expanding firms thought skill shortages placed constraints on growth

or lower-skilled workers, with permits for the various types of lower-skilled worker accounting for the majority. Managers and high-level professionals accounted for only 14 per cent of total applications, with mid-level professionals contributing a further 4 per cent. Table 6.1 also shows that in areas that attracted a relatively large number of migrants – such as St Petersburg – the profile was overwhelmingly dominated by lower-skilled and unskilled workers. For more highly skilled migrants, Moscow was – predictably – the main destination, with the city accounting for more than 60 per cent of total migrants in the top two skill categories. Indeed, in 2010 migrant managers in Moscow accounted for around 1 per cent of the city's total employment in that category. These data suggest that migrants play a reasonably significant role in certain parts of the labour market, notably in the case of skilled and unskilled manual labour, but also (in Moscow, at least) in management.

In addition to details of migrants' occupations and skill levels, applications to the FES also include information on the remuneration levels offered to migrants. Comparing migrants' reported wages broken down by skill level with average wages in the same region for the same skill level, it appears that, for the higher skill categories, migrants are not generally offered a premium on top of average comparable wages. Moreover, migrants' wages are significantly lower than those reported in the survey of recruitment firms. This may, of course, reflect factors such as a lack of seniority. Even in Moscow, migrant managers' wages are generally lower than the average for the city and significantly lower than the wage levels reported in the survey of recruitment firms. However, when looking at the impact that the hiring firm's characteristics have on remuneration, it is also clear that foreign firms and local affiliates offer higher levels of remuneration, as do firms with relatively high levels of revenue per worker.

To summarise, evidence from surveys and official migration data points to several important conclusions. First, many Russian firms appear to face skill shortages that are hard to address – particularly in innovative areas of activity. It takes a relatively long time to find people and the wages offered need to be raised in order to fill positions. Second, relatively few Russian firms are looking to fill highly skilled vacancies through migration, and those that do are mainly concentrated in Moscow. Third, most authorised migrants are lower-skilled workers, with the majority tending to originate from other countries in the Commonwealth of Independent States (CIS). It remains relatively rare for firms to go looking for highly skilled employees. Lastly, wage data suggest that migrants are not well matched to specialist positions, in spite of the fact, as indicated by the survey of recruitment firms, that searching for labour is clearly costly.

Put together, these findings suggest that migration is not being used to any significant extent in order to address Russia's skill shortage. At the same time, there appears to be an exodus of predominantly young Russian talent. Although hard data are not available, anecdotal and other evidence indicates that such migration is occurring and may even be accelerating. There is clearly a risk that this will result in a "brain drain", rather than setting in motion other more positive developments – such as incentives for others to invest in education, remittances, investment in the emigrants' country of origin and, ultimately, the return of those emigrants – that might provide the basis for a "brain gain".[16] Presently, emigration appears to be concentrated among young highly educated and skilled individuals – the very kinds of people that Russia ought to be striving to retain if diversification and innovation are central objectives.

## 4. Policy implications

Russia's performance in terms of skills and education has been less than stellar. Yet improvements in cognitive skills could have an impact on long-term growth. Merely by catching up with the best-performing transition countries in PISA assessments, such as Estonia and Poland, Russia could, for example, increase its long-term annual GDP growth rate by between 0.065 and 1 percentage point. At the same time, its current skills gaps could, in part, be addressed by means of a more flexible and open set of migration policies. While important, however, these changes will only bear fruit if there is a radical improvement in the business environment in terms of the conditions that need to be met in order for diversified firms to enter and grow. Until that happens, Russia will suffer deteriorating educational results and an exodus of talent. Various policy options are available with a view to addressing these shortcomings.

First, the profile of educational scores and their evolution over time underlines the importance of educational reform in Russia. Despite a range of attempts by the Russian government aimed at improving the situation, there is still an inappropriate emphasis on educational inputs, rather than outcomes. The emphasis on resource targets – combined with the lack of any real positive impact as a result of decentralisation – has failed to ensure the raising of educational standards and outcomes at a time when other countries, notably in Asia, have been able to make noteworthy advances.

[16] See Commander et al. (2004) for a discussion of the various channels.

Second, there is scope for greater experimentation with the management and funding of schools throughout Russia. This is different from the piecemeal decentralisation – largely with schools continuing to be controlled and financed by the state – that has occurred over the past 20 years. The question of the role that government can play in helping to develop new capabilities is key. Indeed, a common characteristic of countries – such as India or China – that have been able to move into new, higher-value products and services has been strong, sustained investment in human capital, with much of that investment being made by the public sector. Increasingly, however, governments have adopted permissive strategies allowing the entry of private providers of education and training. In India, for example, the rise of the software sector was initially attributed to government-led investment in higher education and, in particular, emphasis on building a strong tertiary sector focusing on the natural sciences and management.[17] However, the government's subsequent willingness to allow private providers of training and educational services to enter the market for the acquisition and upgrading of skills also played an important role.

In the areas of primary and secondary education, recent experimentation with different institutional formats for the management of schools in countries such as Sweden and the United Kingdom offers interesting models that could potentially be applied, at least initially, in certain parts of Russia. The thing that these approaches have in common is their willingness to tolerate greater diversity in the supply of education, often with the state continuing to provide financing and overseeing the curriculum. In the United Kingdom, for example, a central aim of the new academy programme is to elicit resources from and participation by constituencies that have hitherto been neglected by the public-sector education system. These include companies, individuals, parents and interested parties at the local level, as well as the teachers and public-sector officials who have been the main players in the system until now. Mixing decentralisation with a shift towards greater diversity in terms of the management and control of the education system does not necessarily imply privatisation, merely a move away from a purely public-sector operation. Although the results of these initiatives – whether in Sweden, the United Kingdom or the United States, with its Charter Schools – are by no means conclusive (not least because these are relatively recent initiatives), some of the early findings do suggest that these sorts of innovation can be helpful and, indeed, relevant for a country such as Russia. Indeed, the great diversity of Russia in terms of culture and, at times, language suggests that related policies in the fields of decentralisation, empowerment and diversification of supply will be highly relevant. Transparency through public participation and feedback mechanisms – not least feedback from potential future employers – is also essential.

In some regions, there is already evidence that certain steps are being taken along these roads. In Kaluga, for example, where an automotive cluster has been formed, investors have found massive deficiencies in terms of training owing to the poor state of the vocational training system. To try to ensure an adequate supply of workers for their operations, large foreign companies investing in the region have joined up with the regional government to set up dedicated training centres and programmes. These have largely been state-funded, but there has also been some support by the firms in question. More generally, complementary measures – such as tax incentives encouraging workers and firms to take up training opportunities – can also be helpful in such situations. These have generally proved to be more fruitful than attempts to set up publicly managed training programmes. Building on good local initiatives, what is now needed is a far wider programme of educational renewal along the lines suggested above that targets not only vocational education, but primary and secondary education more generally across Russia.

Third, aside from tackling persistent and hard-to-shift obstacles relating to students' family backgrounds, there are a number of important policy options that are likely to help improve students' education. Some involve the provision of additional resources (not least to even out some of the regional imbalances indicated above), potentially facilitating lower student-teacher ratios, as well as greater autonomy for schools. Other desirable changes include improvements in curricula – which appear to be positively correlated with educational scores[18] – as well as concerted efforts to improve the quality of teacher training and instruction. Variation in scores across locations (and probably across regions) is also substantial. Students in larger urban centres perform markedly better than those in smaller settlements, again suggesting that there is scope for policy-driven improvements aimed at reducing this significant spatial variation in educational outcomes.

Fourth, another issue of concern relates to equal access to education. A student's background appears to be a key factor in educational performance in Russia and other transition countries, much more so than school resources or institutional arrangements.[19] Besides fostering inequality, this highlights the need for policy reforms to help secure funding and improve access to education (including pre-primary education) for children

**20%**

of respondents to Life in Transition Survey (2010) were required to pay for services that should be free in public schools

[17] The most commonly cited examples are the creation of the Indian Institutes of Technology and Management in the 1950s and 1960s.

[18] These findings are drawn from a background paper for this report; see Amini and Commander (2012).

[19] Amini and Commander (2012); Ammermueller, Heijke and Woessmann (2005).

from less well-off families. Furthermore, poorer regions need to be assisted by means of financial transfers from central government. The sustainability and fairness of the financing of education can be improved through the use of funding formulae based on expenditure per student. This can help to combat poverty by focusing public educational resources on the poor.[20]

Fifth, the available evidence indicates that a significant part of Russia's educational infrastructure, comprising school buildings and other facilities, requires renewal and further investment. Although recent initiatives in countries such as the United Kingdom have involved investment in schools infrastructure by private sponsors or companies, sometimes as part of public-private partnership (PPP) arrangements, these are unlikely to be a good option for Russia at the present time. This is because PPP-based funding needs a highly transparent and contractually enforceable framework. This is not present in Russia, which would probably result in any such initiatives being open to abuse, whether through the diversion of resources or the accumulation of excessive debt by schools or local education authorities. Consequently, it would be better, at this stage, for investment in educational infrastructure to remain in public hands, with stronger oversight wherever possible (including oversight by the management and boards of individual schools).

Lastly, migration policy could be used more actively to address specific skills gaps in the short and medium term. In particular, migration restrictions could be further reduced for highly skilled professions where labour is in short supply, in line with the approach adopted by a number of emerging market and advanced economies. Reducing remaining restrictions on internal labour mobility – the legacy of the propiska system – would also help to better match job-seekers' skills to available vacancies. The success of migration policies will ultimately depend not only on laws and their implementation, but also on the extent to which locations where skilled labour is needed are attractive for migrants and highly skilled Russians alike. Many factors can help to make Russian cities more attractive, including a higher quality of education, health care, infrastructure and public services, as well as a better overall institutional environment, as discussed in Chapters 3 and 4.

## References

**C. Amini** and **S. Commander** (2012), "Educational scores: how does Russia fare?", Journal of Comparative Economics, forthcoming.

**A. Ammermueller**, **H. Heijke** and **L. Woessmann** (2005), "Schooling quality in Eastern Europe: educational production during transition", Economics of Education Review, Vol. 24, pp. 579–599.

**J.O. Anderson**, **M.-H. Chiu** and **L.D. Yore** (2010), "First cycle of PISA (2000-2006) –international perspectives on successes and challenges: Research and policy directions", International Journal of Science and Mathematics Education, Vol. 8, No 3, pp. 373-388.

**J. Benhabib** and **M.M. Spiegel** (1994), "The role of human capital in economic development: Evidence from aggregate cross-country data", Journal of Monetary Economics, Vol. 34, No 2, pp. 143–173.

**M. Canning** (2004), "The modernization of education in Russia", World Bank, mimeo.

**S. Commander** and **I. Denisova** (2012), "Are skills a constraint on firms? New evidence from Russia", New Economic School, mimeo.

**S. Commander**, **M. Kangasniemi** and **L.A. Winters** (2004), "The brain drain: curse or boon?", in R. Baldwin and L.A. Winters (eds), Challenges to Globalization: Analyzing the Economics, NBER, University of Chicago Press, Chicago.

**M. Dobryakova** and **I. Froumin** (2010), "Higher engineering education in Russia: Incentives for real change", International Journal of Engineering Education, Vol. 26, No 5, pp. 1032–1041.

**EBRD** (2010), Transition Report 2010, Chapter 5, London.
Economist Intelligence Unit (2008), Global Migration Barometer, London.

**E. Glaeser**, **R. La Porta**, **F. Lopez-de-Silanes** and **A. Shleifer** (2004), "Do institutions cause growth?", Journal of Economic Growth, Vol. 9, No 3, pp. 271-303.

**E. Hanushek** and **L. Woessmann** (2008), "The role of cognitive skills in economic development", Journal of Economic Literature, Vol. 46, No 3, pp. 607-668.

**R. Nelson** and **E. Phelps** (1966), "Investment in humans, technological diffusion and economic growth", American Economic Review, Vol. 56, No 1-2, pp. 69-75.

**L. Sondergaard** and **M. Murthi** (2012), "Skills, not just diplomas. Managing education for results in Eastern Europe and Central Asia", World Bank, Washington, D.C.

**World Bank** (2000), Educational strategy in ECA – hidden challenges to education systems in transition economies.

[20] World Bank (2000).