CHAPTER 17

Uzbekistan: Higher Education Reforms and the Changing Landscape Since Independence

Kobil Ruziev and Umar Burkhanov

Introduction

Higher education (HE) played an important role in the pre-independence period under central planning, as it helped to provide the economy with specialist skills to support the country's industrialisation drive; it also served as a means through which the prevailing ideology was promoted. HE plays a no less important role in modern market-based economies. In well-functioning meritocratic economic systems, HE can serve as a catalyst for achieving social mobility and cohesion, matching individual aspirations and societal goals in the process.

Uzbekistan has a long tradition of HE, albeit in a narrower sense of the term. It inherited territory mostly comprising the three independent khanates (kingdoms ruled by *Khans*) centred in Bukhara, Khiva

K. Ruziev (✉)
Bristol Business School, University of the West of England, Bristol, UK

U. Burkhanov
Tashkent Institute of Finance, Tashkent, Uzbekistan

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and Kokand, which ruled central Asia between the sixteenth and nineteenth centuries. The education system in pre-Soviet times in central Asia, also known as Turkistan at the time, included *maktabs* (schools) and *madrasas* (colleges), both funded by landed estates and charitable donations. *Maktabs* taught basic reading and writing skills, and more talented students went to study at *madrasas* by the age of 14, where they would spend another 10 years studying theology, literature, law, philosophy and other worldly wisdom (Allworth 1994; Majidov et al. 2010). One of the universities in modern Uzbekistan, Samarkand State University, claims to be a spiritual heir to Samarkand's well-known fifteenth century *Madrasai Oliya* (Higher Madrasa) established by Timurid king and astronomer Ulugbek, where advanced math and astronomy were also taught. The country's first modern and secular HE institution, Turkistan National University, was created in April 1918 in Tashkent under Soviet rule. The name of the university has changed several times since then: to Central Asian State University in 1923, Tashkent State University in 1960 and finally to the National University of Uzbekistan in 2000.

This chapter is the first study that carefully documents the evolution of higher education reforms in Uzbekistan since the demise of the Soviet Union (SU). It examines key HE reforms undertaken in Uzbekistan since independence and analyses the impact of these reforms on the changing landscape of the HE system in the country. The study highlights complex interactions between policy legislation and its implementation on the one hand, and the demands of the new market-based economic system and the requirements of building and strengthening state institutions on the other hand.

In the next section, we provide brief background information on Uzbekistan's unique approach to transition, as it closely resonates with the country's HE system reforms. The basic determinants of HE demand since independence are discussed in the section 'Determinants of HE Demand'. In the section 'Key HE Reforms Since Independence', we discuss the key characteristics of the HE system at the time of independence and examine fundamental and systematic HE reforms introduced since 1991. The impact of HE reforms in shaping the current HE landscape in the country is analysed in the section 'Reforms and the Current Landscape of HE'. Finally, discussions and concluding remarks are presented in the section 'Discussion and Concluding Remarks'.

Uzbekistan's General Approach to Economic Reforms

Unprecedented political and economic developments that swept across the former communist bloc countries in the late 1980s and the early 1990s did not leave Uzbekistan unaffected. Similar to other former Soviet republics, the country gained its independence in 1991 after the dissolution of the SU. The disintegration of the SU was seen by many as final proof of the triumph of a market-based economic system over one that is centrally planned. Following the prevailing euphoric expectations at the time about the advantages of a market-based economic system, Uzbekistan also joined other post-communist economies and committed itself to a transition towards a market economy.

Transition from a centrally planned economy to a market-based economy, as promoted by influential international financial institutions such as the International Monetary Fund and the World Bank, required fundamental and comprehensive reforms in both sociopolitical and economic spheres of life. In terms of the former, this entailed a move away from a single-party administrative bureaucratic system towards a multiparty civil society based on democratic institutions and a replacement of communist ideology with a national ideology that was consistent with free market principles. In terms of the latter, this involved the introduction and protection of private property rights, privatisation of state-owned enterprises and facilitation of private entrepreneurial initiatives. Further institutional reforms in the monetary, banking, fiscal and judiciary systems, as well as price liberalisation and the achievement of macroeconomic stabilisation, were needed to support the transformation process. Changing the structure and composition of disciplines taught at higher education institutions (HEIs) and reorienting the priorities of the HE system were equally important as the system prepared personnel for the new economic system and social order.

Although the Uzbek government agreed with the essence of this comprehensive reform package, its gradualist approach to transition was unique in terms of the pace, sequencing and prioritisation of reforms, resulting in the so-called Uzbek model of economic development (Pomfret 2000). The Uzbek model emphasised, among other things, the guiding role of the state during transition, the precedence of economics over politics and a gradualist approach to reform implementation (Karimov 1995, 1998). Hence, in principle, Uzbekistan adopted a 'developmental state'

approach to transition: the authorities decided to maintain complete control over the 'commanding heights' of the economy, including the HE sector as well as the transport, communications and media industries and the financial, agricultural and extractive sectors.

The regulations allow the entry of small-scale private enterprises to certain sectors such as finance and agriculture, but large organisations with systemic importance remain state-owned and hence state-controlled. In other sectors, such as HE and extractive industries, no direct private sector participation is permitted. It is therefore not surprising that Uzbekistan's general approach to HE reforms has been described as top-down and strictly centralised, offering little or no autonomy to HEIs in matters concerning course design, student intake and management of own finances (Weidman and Yoder 2010).

Determinants of HE Demand

The supply of and demand for HE services play equally important roles in shaping the structure of a national HE sector. Public policy and regulation ultimately determine the quantity of HE supply and at what cost it will be provided. The key demand-side factors, on the other hand, include structural transformation of the economy, improvements in per capita income levels, demographic conditions, and the changing aspirations and preferences of the general public. Before embarking on a detailed analysis of HE policy and regulation, we will briefly discuss some of these demand-side phenomena.

With a population of over 20 million, Uzbekistan was the third largest former Soviet republic in 1990 after the Russian Federation and the Ukraine. It was, however, one of the poorest and least industrialised countries of the Soviet Union: its per capita income level in 1988 was only 62 % of the USSR average and the share of industrial production in GDP was 33 % in 1990 (Ruziev et al. 2007). The country's population increased from around 21 million in 1991 to around 31 million in 2014 (ADB 2015). Further, the share of 14- to 24-year-olds in the general population expanded by over 1 million between 1990 and 2015, which highlights a significant growth in demand for HE services during independence.

Figure 17.1 shows data on the changing structure of the economy during independence. In 1993, in terms of the national income, agriculture accounted for 36 %; manufacturing, mining, energy and construction jointly accounted for 35 %; public administration, trade and transport for

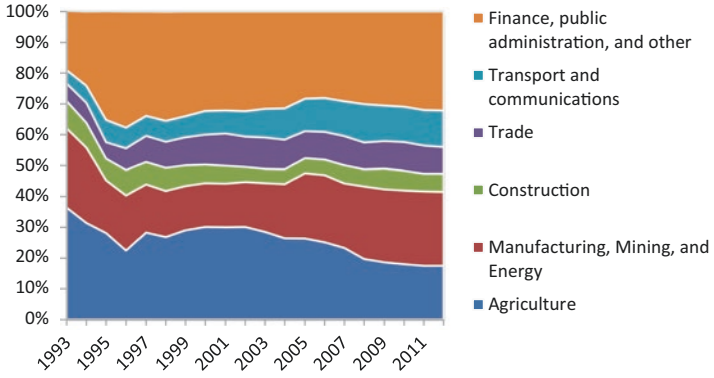

Fig. 17.1 Share of GDP by industrial origin in Uzbekistan, 1993–2012 (Source: ADB (2015))

around 10 %; and financial and other services for the remaining 19 %. As the economy slowly moved towards a free market system, some sectors shrunk and others expanded in relative size. The most notable changes can be observed in relation to agriculture, which fell by almost half, to 17 % of GDP by 2012, and services, which increased from around 30 % of GDP in 1993 to more than 50 % of GDP in 2012. Although the share of manufacturing, mining and energy in the national income remained relatively stable during this time, the composition changed. While some industries shrank in size or disappeared (agricultural machine building shrank, and airplane building industries disappeared), others emerged and expanded (a strong automotive industry emerged, and the mining and energy sectors expanded).

As the composition of the economy changed, so did the structure of the demand for labour. As can be seen in Fig. 17.2, in 1991 more than 40 % of the employed labour force worked in agriculture, 14 % in industry and the rest in other sectors. By 2012, only 27 % of the employed labour force worked in agriculture, 13 % in industry and the remaining 60 % in the services sector. The growing importance of services is a natural phenomenon, as the sector was underdeveloped in the centrally planned economy. Further, the demand for services is expected to increase even more with rising per capita income levels: it is estimated that four of every five new jobs created in the economy between 2010 and 2030 will be in the services sector (World Bank 2014, 28).

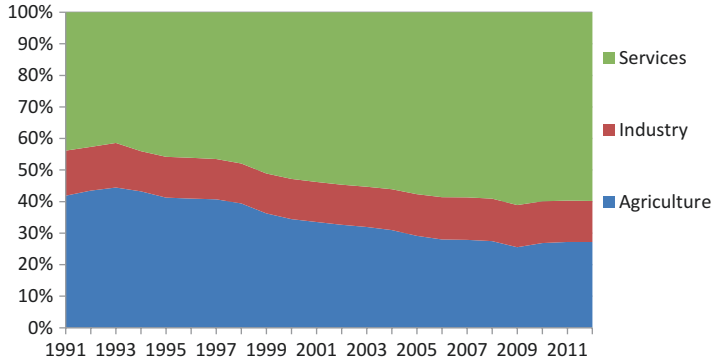

Fig. 17.2 Employment by economic sector in Uzbekistan, 1991–2012 (Source: ADB (2015))

In terms of economic performance, the size of the economy expanded and per capital income levels also rose notably during transition, after a slight dip in the early 1990s (Ruziev et al. 2007). The economy has experienced strong and sustained growth of around 8 % per year since the mid-2000s. The country's GDP, measured in current US dollars, grew from around $US13 billion in 1990 to more than $US63 billion in 2014. In PPP dollar terms, it grew from $US62 billion in 1990 to around $US165 billion in 2014 (World Bank 2015). Per capita income levels also rose during this period. GDP per capita rose from around $US650 in 1990 to more than $US2000 in 2014 in current US dollars, and from around $US3000 in 1990 to $US5300 in 2014 in PPP dollar terms. In terms of income distribution, limited available data indicate an inverted U-shaped behaviour for the period between 1988 and 2003: the Gini coefficient was 24 in 1988, 44 in 1998, 36 in 2000 and 35 in 2003 (World Bank 2015).

The demand for HE increased strongly during independence in response to changing economic conditions and demographic dynamics, necessitating a supply-side transformation in the HE sector. In line with a generally cautious and gradualist approach by the authorities to transition, however, HE sector reforms were introduced only slowly and gradually. Some important changes, although ad hoc in nature, were introduced in the first half of the 1990s. These included the enactment of the Law on Education in 1992 combined with growth of student intakes in accounting, banking, economics and other business related disciplines, which

were deemed particularly important in the early years of transition. Truly fundamental and systematic reforms, however, were not introduced until the second half of the 1990s.

Key HE Reforms Since Independence

Upon independence in 1991, Uzbekistan inherited an education system that was organisationally and structurally similar to those found in other members of the Former Soviet Union (FSU). As can be seen in Table 17.1, in 1988–89 there were 43 HEIs in Uzbekistan, including 40 specialised institutes and 3 comprehensive universities. Around 310,000 students studied 5-year taught degree courses in these HEIs, of which around 45 % were enrolled in evening and correspondence courses (Brunner and Tillett 2007, 158). Almost half of the student population specialised in education, a quarter in industry and construction, around 10 % in agriculture, and the rest in other areas such as healthcare and sports, transport and communications, and economics and law (Goskomstat 1989). With approximately 15 % of the relevant age cohort studying at HEIs in 1991, access to higher education in the country was among the lowest in the former Soviet Union (UNDP 2008).

Of the 40 specialised institutes that concentrated on specific fields of knowledge such as agriculture and medicine, 14 were teacher-training institutes specialising in education, 10 in engineering and technical studies, 7 in medical-pharmaceutical studies, 3 in agricultural studies, 3 in arts and culture, 3 in national economy and cooperative services, and 1 in physical training and sports. The three comprehensive universities offered HE courses in a wide range of specialisations, except for medicine, and were also larger, collectively accounting for around 12 % of the overall student population. The universities were better funded in terms of physical infrastructure and human capital, more prestigious and located in major politically and economically important cities such as Tashkent (the capital city since 1930), Samarkand (Uzbekistan's first capital city until 1930 and the country's cultural centre) and Nukus (the capital of the Karakalpak Autonomous Republic).

Another peculiar feature of the pre-independence HE system in Uzbekistan was that almost half of all HEIs were located in Tashkent, where around 60 % of the student population studied (see the last two columns of Table 17.1). The concentration of HEIs in Tashkent was influenced by a combination of factors. First, most manufacturing industries in

Table 17.1 Horizontal diversity by HEI type in 1988–89

HE types	*Number*	*Student population*	*Located in Tashkent*	*Student population in Tashkent*
Comprehensive universities	3	36,964	1	19,300
Specialised institutes	40	271,908	18	162,900
Total	43	308,872	19	182,200

Source: Goskomstat (1989)

pre-independence Uzbekistan were concentrated in and around Tashkent, which made the city the most prosperous administrative region in the country; its per capita output exceeded the national average by more than two and a half times. Second, Tashkent was the largest regional city in central Asia with a population of around 2 million in 1990 and had been historically seen as a higher education hub for the country and the central Asian region. For example, the National University of Uzbekistan bore the name the Central Asian University until 1960, and the Tashkent Institute of Paediatric Medicine was called the Central Asian Institute of Paediatric Medicine until 1988. Both played regionally important roles in central Asia at certain points in their history. Third, as a rule, almost all regions had teacher-training institutes. Regionally important agricultural and medical institutes existed only in some regions such as Samarkand and Andijan. Other regions such as Bukhara and Qashqadarya, which had strong natural gas and associated processing industries, also hosted technical institutes.

Reforms were introduced to the general education system only gradually, particularly the HE sector. The Law on Education, which was enacted on 2 July 1992, provided the legal foundations and laid the underlying philosophical principles for carrying out further reforms in the education system. It emphasised, among other things, a secular and ideology-free nature for the new education system. The timeline of the key HE changes since independence is illustrated in Fig. 17.3 below.

Several new HEIs were created in quick succession in the early 1990s, taking the total number of HEIs in the country to 58 by 1995–96. Twelve of these new HEIs were institutes which specialised in business studies, law, engineering and medicine. Two were specialised universities which focussed on foreign languages and international relations, respectively, and only one was a comprehensive university established on the foundations

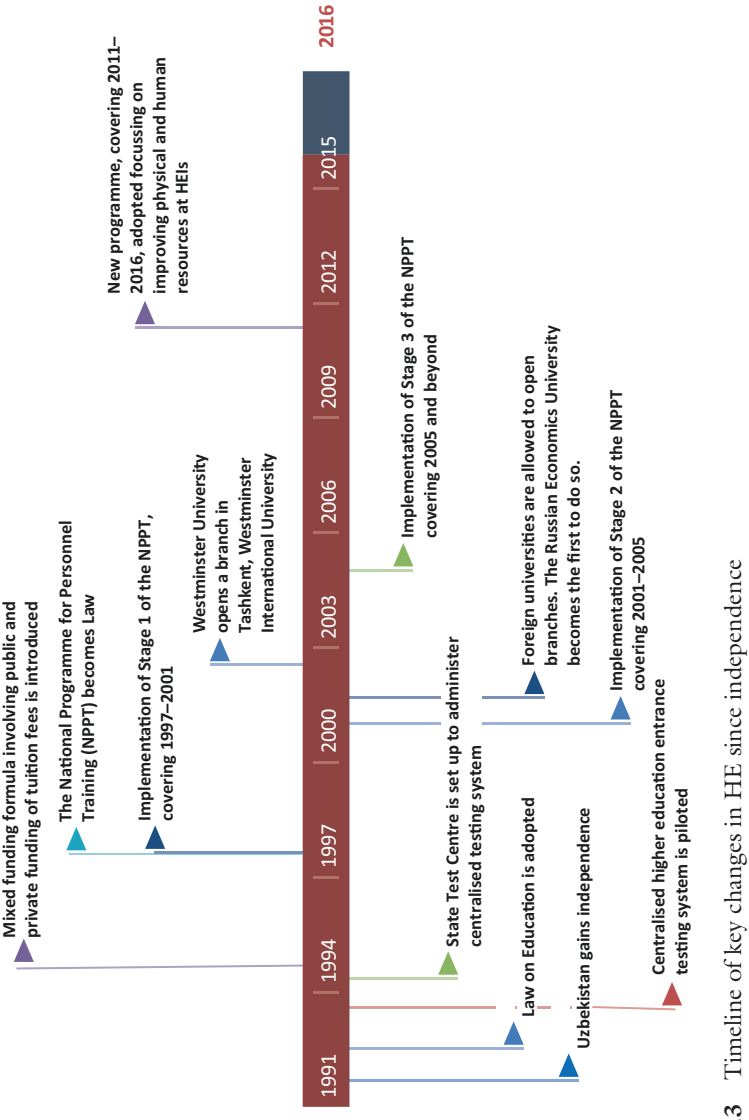

Fig. 17.3 Timeline of key changes in HE since independence

of a regional teacher-training institute. The rationale for setting up these new HEIs was dictated by the demands of the new economic system and new statehood, which necessitated strengthening and expanding state institutions. For example, transition to a market economy required a considerable expansion of the financial sector to ease the financing constraints of the emerging private sector. Further, the decentralisation of inter-enterprise relations, coupled with the exponential increase in the number of small and medium enterprises, necessitated the enlargement of the tax collection apparatus to fill the state coffers. In response, some new HEIs were established such as the Tashkent Institute of Finance and the Tax Academy, and new finance departments were created in comprehensive universities and other HEIs specialising in business studies. Likewise, independent statehood also required establishing new state ministries and agencies such as the Ministry of Foreign Affairs, the Ministry for Foreign Economic Relations and the State Customs Agency. It also required expanding others such as the Ministry of Internal Affairs, and the Ministry of Defence to maintain the law and patrol the national borders. In the short term, personnel shortages in these areas were filled by selecting and retraining teacher-training graduates who were in relatively abundant supply by default. The authorities set up new specialist HEIs, also expanding the profiles of existing ones, as a longer-term solution to prepare specialists for new and emerging sectors. The decision-making process was centralised at the top of the government structure and each decision was supported by an individual presidential decree. Most of the new HEIs were created by dividing existing HEIs and only a few were created as entirely new institutions.

For example, the Tashkent Institute of Finance and the Tashkent State University of Economics emerged from the foundations of the former Public Economy Institute. The World Economy and Diplomacy University, which focussed on preparing specialists for state institutions in the areas of international economic and political affairs, was freshly established in 1992 at a venue previously occupied by the former Communist Party School in Tashkent. The Samarkand State Institute of Foreign Languages was created in 1994 to prepare specialists for tourism industries. The Navoiy State Institute of Mining was set up in 1995 to prepare specialists for mining and other related industries in the region. The Andijan State Institute of Mechanical Engineering was created in 1995 to prepare specialists for the emerging automotive industry in the Andijan region, where the government had previously established an automobile production plant in 1992.

The Tashkent State Aviation Institute (TSAI) was created in 1995 on the basis of several institutions, including the Aviation Engineering Faculty of the Tashkent Polytechnic Institute, the Tashkent branch of the Kiev International Institute of Civil Aviation Engineering and the Tashkent Aviation College, to cater for the needs of the country's aviation industry. However, the aviation industry struggled to survive in the post-independence period and the country's only airplane construction plant went bankrupt in 2010. Anticipating this outcome, the authorities disbanded TSAI and merged it with the Tashkent State Polytechnic University in 2008.

Several private HEIs briefly emerged in the first few years of independence. Generally, these institutions had low entry requirements, and most were not adequately resourced in terms of personnel and physical infrastructure. Only one of these institutions, the Tashkent Institute for International Economic Relations and Entrepreneurship (TIIERE), was able to obtain an official licence. However, fearing sub-standardisation of HE degrees, the government soon decided not to allow any private sector involvement in HE, resulting in the demise of a newly emerging market segment. TIIERE's licence was also revoked just a few weeks after the start of the academic year in 1993. To this day, all HEIs in the country with the exception of foreign university branches remain publicly owned.

The reorganisation of HE entrance examination rules, which attempted to remove abusive discretion from the HE examination process, was arguably the most significant reform of the early 1990s. Admissions to HEIs before independence were based on oral and/or written entrance examinations, usually in three relevant subject areas, administered locally at each HEI. However, public concerns about the subjectivity of such exams and their susceptibility to corruption grew especially strong in the late 1980s and the early 1990s. In order to radically improve fairness of access to HE and to limit widespread corruption practices, a new centralised testing system based on multiple choice questions and an automated marking system was piloted in selected HEIs in 1993. The new system of testing HE candidates was formally adopted across all HEIs (except those specialising in performance-based disciplines such as arts and sports) in 1994. The State Test Centre (STC), accountable directly to the Cabinet of Ministers, was formally set up in May 1994 to administer the new HE entrance examination system. The new system is meritocratic, at least in principle, which contributes to the deepening of vertical differentiation

amongst HEIs. As a rule, applicants need to score more than 85 % to study traditionally lucrative fields such as law, medicine and business in HEIs specialising in these fields, and the competition for places at Tashkent-based HEIs offering similar subjects is usually even fiercer.

As elsewhere in the FSU, HE was universally free in pre-independence Uzbekistan: there were no tuitions fees and students were paid stipends, scaled on academic performance, to cover living expenses. But the Uzbek authorities changed this tradition partially in 1994 by introducing a dual-track funding formula for HE tuition fees. Under the new funding scheme, only some HE places were publicly funded, the so-called grant places, and the remaining places were privately funded, the so-called contract places. The Cabinet of Ministers centrally determines the total number of grant and contract places. It takes into account HE demand as well as labour market conditions in its decision making (World Bank 2014). The allocation of fixed grant places, which are subject to an annual review, are merit-based depending on entrance examination results, with top performers being offered government grants. The distribution of grant places varies across disciplines depending on demand conditions and market rewards for graduates. For example, in 2015–16, the share of grant places in total student places was around 10 % for law and jurisprudence, 16 % for economics, 35 % for medicine, 50 % for mathematics and around 55 % for physics and chemistry. However, the process is not transparent, which makes it difficult to judge whether or not the authorities also take into account institutional selectivity in their decision making. Whether they are funded publicly or privately, students are still offered merit-based monthly stipends as in the past. Those with government funding are expected to work in government-owned enterprises once they graduate, usually for about 2 years. But in practice this is not monitored strictly, as neither government bodies nor HEIs can guarantee work placement opportunities to graduates.

Although the reforms of the early 1990s changed the nature of the HE system to a considerable extent, the institutional structure of the system remained relatively intact. Comprehensive reforms requiring a complete overhaul of the entire education system were initiated only in the second half of the 1990s. The government's vision for the education system was formulated in an official reform programme, 'The National Programme for Personnel Training' (NPPT), which became law in August 1997. The programme was born from government belief in the non-reversibility of

the move towards a market-based economy and an appreciation of the fact that developing an education system consistent with market principles was vital in pursuit of economic prosperity (ADB 2004, 94). Nevertheless, the NPPT was still an embodiment of the government's strictly top-down approach to HE reforms, as it did not grant HEIs any autonomy in important matters such as designing new HE courses and managing own finances.

The NPPT aimed at creating an education system that reflected national values, met personal aspirations and produced highly qualified specialists that the new economic system demanded; it was also seen as an opportunity to formally and comprehensively de-ideologise the education curriculum, and to increase the range and structure of degree programmes offered at HEIs. The NPPT was a state-initiated and fully funded programme involving a strict top-down implementation plan coordinated by the Cabinet of Ministers and aided by other government institutions such as the Ministry of Higher and Secondary Specialised Education (MHSSE), and various other ministries linked to particular HEIs (e.g. the Ministry of Health is linked to medical HEIs).

The NPPT set out clear timescales to achieve its reform targets. Stage 1, which covered 1997–2001, involved the creation of an appropriate infrastructure necessary for the implementation of the programme, which included developing new curricula, teaching and learning resources, and exploring alternative HE funding sources. Stage 2, which covered 2001–2005, set out to promote a nationwide drive for the development of teaching content including textbooks as well as electronic and online learning materials. It also reorganised the existing 5-year academic degree courses, and research-based *aspirantura* and *doktorantura* programmes into Bologna Process Bachelor degrees (4 years), Master degrees (2 years) and PhD programmes. And Stage 3, which covered the period beyond 2005, was intended to fine-tune the programme after the first 5 years of implementation. In May 2011, the government adopted a new programme, covering 2011–2016, which focusses on improving physical and human resources at HEIs including upgrading information-technology facilities and raising the quality of HE degrees and courses. Despite its importance, the NPPT only set the general direction of reforms; establishing new HEIs and expanding existing ones were determined on the basis of individual presidential decrees and resolutions from the Cabinet of Ministers.

Reforms and the Current Landscape of HE

As a result of the reforms mostly associated with the NPPT, both HEI and full-time student numbers increased significantly in the post-independence period. The number of HEIs affiliated with the MHSSE increased from 43 in 1989 to 78 in 2015, and the number of full-time students increased from around 180,000 to around 250,000 during this time. However, HE courses offered in the evenings and by correspondence were gradually phased out by the late 1990s, thereby effectively making HE study a full-time preoccupation. The relatively poor quality of these programmes in terms of design, delivery and student engagement was the main rationale behind the government's decision. The reforms also affected the vertical and horizontal organisational structure of the HE system. Table 17.2 provides some information about the horizontal diversity of the HE sector in terms of types of HEIs. HEIs can be classified into six types under the new HE system, which are comprehensive universities, specialised universities, institutes, academies, regional branches of specialised HEIs and branches of foreign universities. Of the 78 HEIs in Uzbekistan in 2015, 11 were comprehensive universities, 9 were specialised universities, 36 were specialised institutes (including the Higher School of National Dance and Choreography and the Uzbek State Conservatoire), 2 were academies, 13 were regional branches of domestic HEIs and 7 were branches of international HEIs. All domestic HEIs in Uzbekistan are state-owned.

With the exception of the three universities that existed before independence, the new comprehensive universities were created on the foundations of the former regional teacher-training pedagogic institutes.

Table 17.2 Horizontal diversity by HEI type in 2015

HE types	*Number*	*Average student population*	*Average number of subject specialisation*
Comprehensive universities	11	6,242	35
Specialised universities	10	5,054	23
Institutes[a]	35	3,236	17
Regional branches of domestic HEIs	13	671	4
Academies	2	2,305	3
Branches of foreign universities	7	820	na

Note: [a]Includes the State Conservatoire and the Higher School of Dance and Choreography

Source: Author calculations from various official sources

Comprehensive universities, for example, the National University, the Samarkand State University and the Ferghana State University, are the largest of the HEIs in terms of both student numbers and the number of taught specialisations. As a rule, institutes considered relatively important in their area of specialisation with large student populations are given official 'university' status. These specialised universities, for example, the Tashkent State University of Economics, the University of the World Economy and Diplomacy and the Tashkent State Technical University, offer programmes in narrower areas of specialisation and are smaller in size compared to comprehensive universities.

In terms of regional branches of domestic HEIs, these belong to Tashkent-based HEIs and are established by government decrees in regional capitals to improve HE access in the regions. For example, the Tashkent Institute of Pediatric Medicine opened a branch in Nukus in 1991, and the Tashkent Academy of Medicine opened branches in Urgench in 1992 and Ferghana in 1998. The Tashkent University of Information Technologies opened branches in Samarkand, Ferghana, Qarshi, Nukus and Urgench in 2005. The Uzbek State Institute of Arts and Culture opened a branch in Nukus in 2008. The Tashkent Institute of Irrigation and Melioration opened a branch in Bukhara in 2010. And finally, the Tashkent State Dental Institute opened branches in Andijan and Bukhara in 2015.

Academies are leading scientific-methodological centres in specific fields, so their status is more superior compared to that of universities and institutes. They offer postgraduate degrees and continuous professional development (CPD) as well as executive retraining courses; some, for example, the Academy of Medicine, also offer undergraduate degrees. For example, the Banking and Finance Academy, considered to be the most prestigious HEI in the area of banking and finance, offers postgraduate studies and regularly runs CPD workshops and executive retraining courses for banking and finance specialists.

Foreign university branches (FUBs), which are set up as public-private partnerships (World Bank 2014), are a relatively new phenomenon in Uzbekistan's HE system and are the result of a government initiative. In the late 1990s, the government experimented with competitively selecting up to 800 HE students annually from Uzbek HEIs and funding their HE studies in advanced economies such as the USA, the UK, Germany and Japan. The government saw the establishment of FUBs as a cost-effective alternative to this scheme, as they offered internationally recognised HE courses at home, and hence ensured greater positive externalities and spillover in terms of specialist preparation.

The Russian Economics University was the first FUB to establish a branch in Uzbekistan in 2001. London-based Westminster University established a branch in Tashkent in 2002. The next FUB was opened in 2006 by the Moscow State University. The Russian Oil and Gas University and the Management Development Institute of Singapore opened Tashkent branches in 2007. The Turin Polytechnic University, Italy, opened a branch in 2009, and Inha University, South Korea, opened a branch in 2014. FUBs administer their entrance tests independently and enjoy complete autonomy on curriculum design. However, mostly due to regulation, FUBs have not yet grown into serious players in the HE market: their combined student population was less than 6000 in 2015–16, which is less than 3 % of the country's HE student population.

Figure 17.4 illustrates a peculiar HE sector structure that emerged in the post-independence period. HEIs are subject to multiple layers of

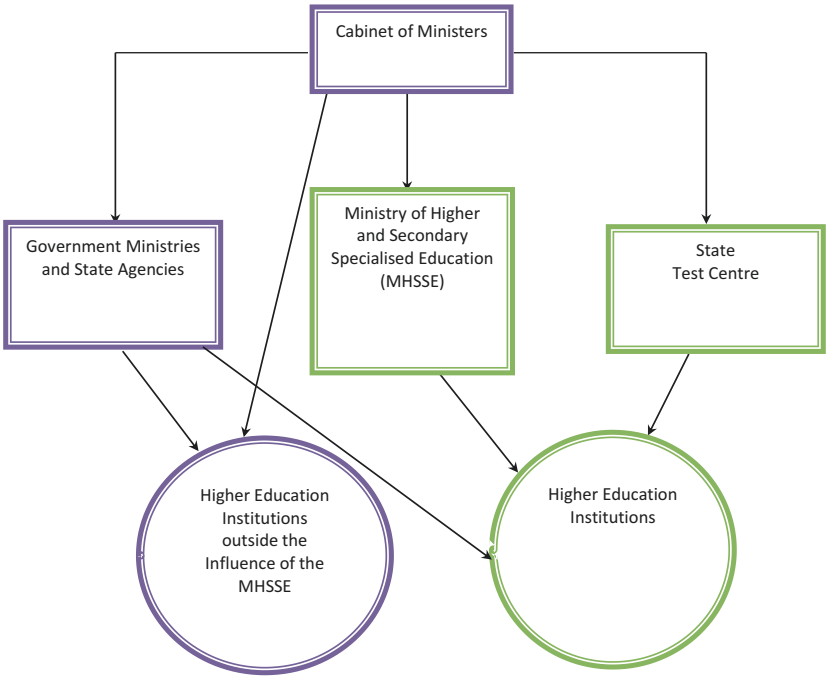

Fig. 17.4 Hierarchical structure of the higher education system in Uzbekistan

accountability, resulting in the duplication of administrative control, which limits the capacity of the MHSSE to strategically manage the HE system. It also limits the HE system's ability to flexibly adapt to changes (Weidman and Yoder 2010, 63). The Cabinet of Ministers, which sits at the top of the governance hierarchy, is in charge of all key decisions concerning the HE system. It sets the state educational standards and determines funding methods, number of study streams and student enrolment numbers including the proportion of enrolment places that are publicly funded. It also approves senior management appointments at HEIs and sets HEI strategies. The STC administers HE entrance examinations and carries out HEI accreditation and ranking. The role of the MHSSE in managing the HE sector is therefore mostly complementary and limited to HEI supervision, approval of secondary legislation, provision of methodological guidance and organisation of the academic year. The administrational influence of the MHSSE over HEIs is further weakened by the fact that of the 78 HEIs supervised by the MHSSE, 27 are also accountable to various ministries and state agencies to which they are formally attached. For example, the Academy of Medicine is attached to the Ministry of Health and the University of Agriculture is attached to the Ministry of Agriculture and Water Resources.

In addition to the 78 HEIs affiliated with the MHSSE, there are several other providers of specialist HE training which are outside the influence of the MHSSE, as depicted in the bottom left corner of Fig. 17.4. These institutions specialise in personnel preparation for various state departments and agencies. Some of the HEIs belonging to this category are directly linked with various government offices serving national security and upholding the rule of law, such as the National Security Service and the Ministry of Internal Affairs. Others have more civilian credentials, for example, the Academy for State and Social Construction under the Office of the President, the Graduate School of Business under the Cabinet of Ministers and the Banking and Finance Academy affiliated with the Bankers' Association. All of these HEIs are accountable directly to the Cabinet of Ministers and respective government ministries to which they are attached, and little information is publicly available on internal factors such as student enrolment figures and funding models.

Given Uzbekistan's peculiar context, it is difficult to differentiate HEI diversity in terms of status and prestige afforded by legislature. For example, all HEIs with the exception of regional HEI branches are allowed to offer undergraduate, postgraduate and PhD courses. In de facto terms,

however, specialist institutions supporting state bodies are considered the most prestigious by both the general public and civil service institutions, as they play an important role in elite regeneration. As proxies for talent, HE certificates from these institutions are often used as the minimum requirement for appointment to relatively important bureaucratic positions. They are followed in order of importance by academies, comprehensive universities, specialist universities and institutes. Anecdotal evidence from HE insiders at the time of this study suggests that the most senior positions in academies and universities are appointed by the president, while those in institutes are decided by the Cabinet of Ministers.

Due to data limitations, we cannot construct any robust measures of quality ranking indicators across HEIs. However, the information presented in Table 17.3 can provide a rough guide on the diversity of quality across HEIs. The results are based on our judgement in terms of demand, selectivity and general public perception of prestige accorded to individual HEIs. As can be seen from Table 17.3, academies and branches of foreign universities are all highly regarded. Most of the comprehensive and specialised universities in the table are ranked 'medium' on the basis of 'average' quality perception across all fields with varying popularity. Institutes score the most variable ranking and this is mostly related to area of specialisation; those specialising in lucrative fields are in high demand, and hence are more selective and highly regarded by the general public.

Figure 17.5 illustrates the geographic distribution of HEIs and their student populations across the country in 2012–13, another measure of

Table 17.3 HE quality diversity based on demand, selectivity and public perception

	Tashkent			*Regions*			
	High	*Medium*	*Low*	*High*	*Medium*	*Low*	*Total*
Academies	2	0	0	0	0	0	2
Comprehensive universities	1	0	0	1	8	1	11
Specialised universities	3	5	1	0	0	0	9
Institutes	9	4	3	3	2	15	36
Branches of domestic HEIs	0	0	0	0	6	7	13
Foreign university branches	7	0	0	0	0	0	7
Total	22	9	4	4	16	23	78

Note: Based on author judgement

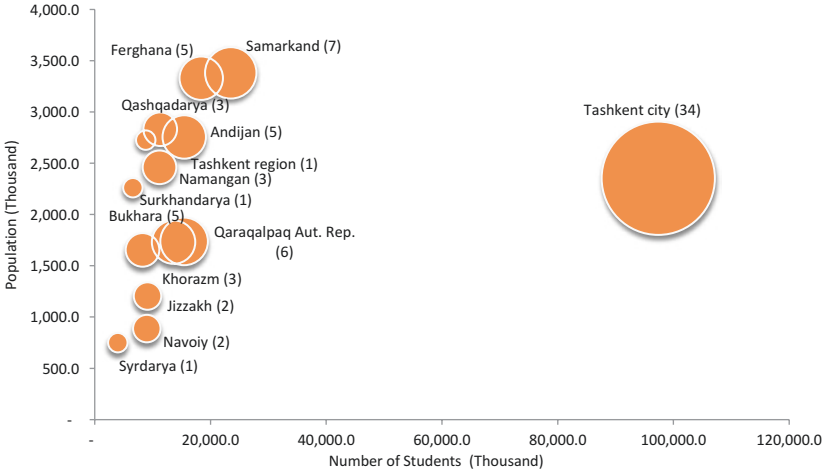

Fig. 17.5 Geographic distribution of HEIs and student population in 2012–13 (Source: MHSSE (2013))

horizontal diversity. The vertical axis measures the population and the horizontal axis measures the number of students studying in each of the 14 administrative regions in the country. The size of the bubbles measures the number of HEIs in each region. Almost half of all HEIs were based in Tashkent in the pre-independence period. Although a number of HEIs have been created across the regions since the early 1990s, a disproportionately high number of HEIs are still located in Tashkent city: 34 out of 78. Of the approximately 252,000 students enrolled in HEIs in 2012–13, around 40 % studied in Tashkent. The figure is a slight improvement from the pre-independence figure of 60 %, which is mainly due to the transformation of regional teacher-training institutes into comprehensive universities and size expansion as a result of the government's attempt to improve HE access in periphery regions.

The number of full-time students studying at HEIs increased noticeably during the post-independence period. However, more robust measures of HE access that take into account population demographics and HE demand dynamics depict a gloomy picture. The number of HE graduates per 10,000 people dropped from around 28 in 1993 to around 14 in 2001; similar, but less dramatic, trends can be observed regarding the gross enrolment rates (number of HE students divided by the number of

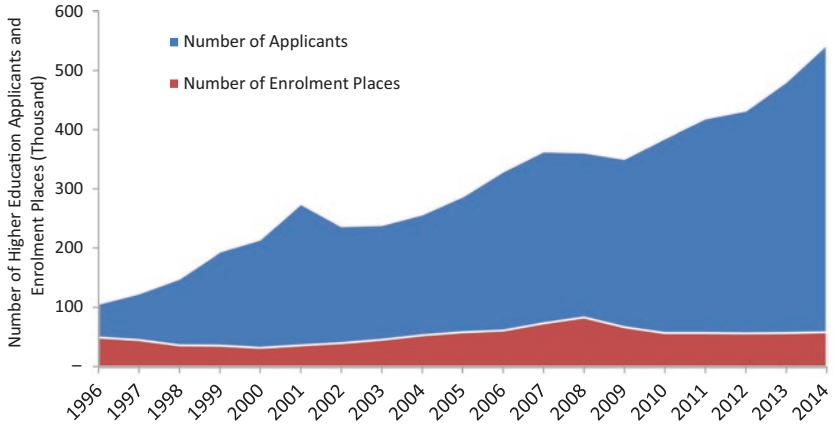

Fig. 17.6 Demand for and supply of higher education places, 1996–2014 (Source: MHSSE (2015))

19- to 24-year-olds), which fell from around 15 in 1991 to around 9 in 2012 (World Bank 2014, 23).

Additional data that sheds further light on this matter is presented in Fig. 17.6, which illustrates the growing mismatch between the demand for and the supply of HE places between 1996 and 2014. The number of HE applications, which measures the effective demand for HE, increased from 106,000 in 1996 to more than 540,000 in 2014; a more than five-fold increase in demand. Unfortunately, HE enrolment places as a measure of supply increased only modestly during this period, from around 49,000 in 1996 to 58,000 in 2014. As a result, the mismatch between HE demand and supply has widened significantly since 1996. Furthermore, the number of applicants per 100 HE places increased from 342 in 1989 (Balzer 1992, 178) to 938 in 2014; an almost threefold increase.

The observed mismatch between HE supply and demand can be explained partly by the changes observed in population demographics and improvements in per capita income levels since independence. However, the authorities' conscious choice to expand secondary specialised education (SSE) at the expense of HE also contributed to the increasing mismatch between HE demand and supply. The implicit argument behind the government's choice was that, given the relatively unsophisticated state of the national economy which relied largely on commodity production, services and small-scale manufacturing, the economy would be best served by

the expansion and modernisation of the vocational education sector (Ruziev and Burkhanov 2016). The expansion of the SSE sector lowered the labour market return on middle education and encouraged a greater number of SSE graduates to seek entry into HE. This, coupled with the rigidity of HE supply and the fact that applicants are given only one single university choice each year, created a bottleneck effect as unsuccessful but ambitious applicants attempted HEI entry the following year. Therefore, it is no surprise that in 2014 the number of applicants for HE places exceeded the number of secondary and SSE graduates by about 8 %.

Furthermore, the data on HE student specialisations from 2007 to 2012 shows that the distribution of specialisations was driven mostly by the government's policy priorities rather than being in line with changing economic conditions (World Bank 2014). Despite the changing structure of the economy as described in Figs. 17.1 and 17.2, the distribution of the student population across most of the broad specialisation areas did not change notably during this period: around 5–7 % of students specialised in transport and communications, 7–10 % in economics and law, around 8 % in healthcare and around 1 % in other disciplines such as arts. Furthermore, although the share of agricultural production in the country's output nearly halved, the share of students specialising in agriculture fell only marginally from 9 % in 1989 to 7 % in 2012. The most dramatic changes, however, occurred in relation to education. The success of the government's decision to fundamentally reform and expand the SSE sector depended on the availability of subject-specialist teacher trainers for professional colleges. Subsequently, more than half of HE entrance places were allocated to education. Of the approximately 300,000 HE students studying in the peak period in 2009, around 170,000 specialised in education. Since then the number of students specialising in education has fallen by about 45,000, also driving the overall student population down to around 250,000 by 2012.

The analysis of supply and demand factors in HE indicates an urgent need for the expansion of HE supply. However, this has to be done without sacrificing quality standards. The existing human resource capacity of the HE system seems inadequate for this task; as can be seen in Table 17.4, which details the highest academic qualifications of full-time academic HEI staff in 2013, almost two-thirds had no scientific qualifications. In addition, Uzbekistan's HE system scores low in important human capital indicators such as the number of patent applications and journal publications. In 2009, the number of patent applications per million people was

Table 17.4 Academic qualification of full-time HEI staff in 2013

	Domestic HEIs		*International HEIs*	
	Number	*% of total*	*Number*	*% of total*
Doctor of philosophy/science	1,314	*6.1*	21	*9.7*
Candidate of science	7,491	*34.5*	56	*25.9*
No scientific qualification	12,893	*59.4*	139	*64.4*
Total	21,698	*100.0*	216	*100.0*

Source: MHSSE (2013)

only 19, and the number of technical and scientific journal publications per million was only 5 (World Bank 2014, 8). The relatively poor quality of human capital at HEIs hinders the HE sector's contribution to overall economic performance in terms of research and innovation; more importantly, it also significantly constrains the government's future attempts to expand access to HE.

Uzbekistan spends around 8–10 % of GDP on its education system, a relatively high figure given Uzbekistan's per capital income level (Weidman and Yoder 2010; World Bank 2014). However, only a small proportion of this budget is spent on HE; in fact, the share of HE spending on education declined from 10 % in 1990 to around 5 % in 2013 (World Bank 2014, 72). This is partly explained by the authorities' conscious attempt to fund an increasingly higher proportion of HE expenditure through private (personal) financing. With the introduction of private funding in the form of HE tuition fees, the share of government funding for HE enrolment places decreased from 100 % in 1990 to around 33 % in 2015 (MHSSE 2015). In 2013, the average tuition fee for domestic HEIs was around US$1400 and for international HEIs around US$4400 (World Bank 2014, 62). Another peculiarity of Uzbekistan's HE funding model is that up to 40 % of the HE system budget is spent on student stipends, of which only one-third comes from the state budget (World Bank 2014, 80).

Discussion and Concluding Remarks

Uzbekistan has undertaken important reforms in its HE sector since becoming independent in 1991, which significantly changed the country's HE landscape. Initially in the early 1990s, some important albeit ad hoc reforms were implemented. But this changed when the NPPT was

formulated and made into a national law in 1997, transforming the structure and organisation of the HE system drastically. The most important changes since independence can be highlighted as follows: introduction of an automated entrance examination scheme overseen by the STC; adoption of a Bologna Process-style three-cycle HE system comprised of Bachelor, Master and Doctorate programmes; allowing the entry of foreign HEIs into the HE system; and moving away from a fully public HE funding model towards a system that increasingly relies on personal financing. The variety of HEIs and the number of students studying full time also changed during this period. HEI numbers increased from 43 in 1989 to 78 in 2015 and types of HEIs now include academies, comprehensive universities, specialised universities, institutes, regional branches and FUBs.

The demands of the new market-based economic system and the requirements of building and strengthening state institutions to support the transition process were the key drivers for HE reforms; these are factors inspired by global events beyond the control of the national authorities. Uzbekistan's general approach to transition has been about managing, rather than resisting, the prevailing 'winds of global change'. Therefore, although the creation of new HEIs, including expanding taught HE subject disciplines, was dictated by global trends, ultimately the state is still the main initiator and implementer of HE sector reforms. This strictly top-down approach to reforms, however, has not been successful in improving a number of key areas including management and organisation of HEIs, access to HE, and quality of human and physical capital at HEIs.

The current structure of HE management, with several levels of official control over HEI activity, is too rigid to adjust the provision of HE services to the changing needs of a dynamic market economy. To date, student enrolment numbers as well as the number of study streams and subject areas, and even curriculum content, are all presided by various government departments. Despite generating more than two-thirds of their funding from the private sector, HEIs are unable to use these funds freely, including in matters concerning staff remuneration. As a result, staff salaries are generally low and do not incentivise a sufficient number of talented individuals to commit themselves to, invest in, and remain in the long-term. Further, although HE enrolment numbers increased during the early years of independence, this did not take into account demographic factors and changing demand conditions. As a result, the mismatch between the demand for and supply of HE increased considerably in the post-independence period.

References

Asian Development Bank. 2004. Education Reforms in Countries in Transition: Policies and Processes Six Country Case Studies, Azerbaijan, Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan, and Uzbekistan. http://www.pitt.edu/~weidman/2004-educ-reforms-countries.pdf. Accessed 21 Sept 2015.

———. 2015. Key Economic Indicators for Asian and the Pacific. Country Tables: Uzbekistan. http://www.adb.org/publications/key-indicators-asia-and-pacific-2015. Accessed 21 Sept 2015.

Balzer, H. 1992. Educating Scientific-Technical Revolutionaries? Continuing Efforts to Restructure Soviet Higher Education. In *Soviet Education Under Perestroika. Papers from the 4th World Congress for Soviet and East European Studies*, ed. J. Dunstan, 165–195. Harrogate: Routledge.

Brunner, J.J., and A. Tillett. 2007. *Higher Education in Central Asia: The Challenges of Modernization: Case Studies from Kazakhstan, Tajikistan, the Kyrgyz Republic, and Uzbekistan*. Washington, DC: World Bank.

Goskomstat. 1989. *Narodnoe Obrazovanie i kultura v USSR* [Statistical Collection of the National Education and Culture in the USSR]. Moscow: Financi i Statistika.

Karimov, I. 1995. *Uzbekistan on the Way of Deepening Economic of Reforms*. Tashkent: Sharq.

———. 1998. *Uzbekistan on the Threshold of the Twenty First Century*. New York: Saint Martin.

Majidov, T., D. Ghosh, and K. Ruziev. 2010. Keeping Up with Revolutions: Evolution of Higher Education in Uzbekistan. *Economic Change and Restructuring* 43: 45–63.

Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan. 2013. *Statistical Collection: Main Activities of the Higher Education Institutions 2012–13*. Tashkent: MHSSE.

Pomfret, R. 2000. The Uzbek Model of Economic Development, 1991–1999. *Economics of Transition* 8: 733–748.

Ruziev, K., and U. Burkhanov. 2016. Higher Education Reforms in Uzbekistan: Expanding Vocational Education at the Expense of Higher Education? *Higher Education in Russia and Beyond* 2: 14–15.

Ruziev, K., D. Ghosh, and S. Dow. 2007. The Uzbek Puzzle Revisited: An Analysis of Economic Performance in Uzbekistan Since 1991. *Central Asian Survey* 26: 7–30.

United Nations Development Programme. 2008. *Education in Uzbekistan: Matching Supply and Demand*. Tashkent: United Nations Development Programme.

Weidman, J., and B. Yoder. 2010. Policy and Practice in Education Reform in Mongolia and Uzbekistan During the First Two Decades of the Post-Soviet Era. *Excellence in Higher Education* 1: 57–68.

World Bank. 2014. *Uzbekistan: Modernizing Tertiary Education*. Washington, DC: World Bank.
———. 2015. World Development Indicators: Uzbekistan. http://data.worldbank.org/data-catalog/world-development-indicators. Accessed 25 Oct 2015.

Kobil Ruziev is Senior Lecturer in Economics at the University of the West of England, Bristol, England. He obtained his master's degree from Vanderbilt University, Nashville, USA, and PhD degree from Stirling University, String, Scotland. His main research interests include financial development and reform in emerging economies, institutional economics and economic transformation in the former Soviet Union.

Umar Burkhanov is a consultant at the Ministry of Higher and Secondary Specialized Education of Uzbekistan and Associate Professor of Finance at the Tashkent Institute of Finance, Uzbekistan. Dr Burkhanov also worked as the Chief Consultant on Education at the President's Office (2012–13) and Pro-rector of the Tashkent Institute of Finance (2014–15). He obtained his PhD from the Tashkent Banking and Finance Academy, Uzbekistan.