Socioeconomic Aspects Affecting University Education in Japan

A. Belov, A. Zolotov

Andrey Belov
Doctor of Science, Professor, Fukui Prefectural University, Japan. Address: Japan, 910–1195, Fukui, Eiheiji-Town, Matsuoka, Kenjojima 4–1–1. E-mail: abelov@fpu.ac.jp
Alexander Zolotov
Doctor of Science, Professor, Lobachevsky State University of Nizhny Novgorod. Address: 23, Gagarin str., Nizhni Novgorod, 603950, Russian Federation. E-mail: avzolotov2@gmail.com

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Abstract. Reduction of available financial resources, increased social differentiation of society, and drop in students in 1990–2000s gave an impulse to structural reorganization of Japanese universities. Reforms affected coverage of higher education, as well as cost and quality of university education. As state financing was being reduced, the problem of preserving the achieved opportunities of university education was solved through restructuring higher education and expanding its private sector. The state concentrated resources in a small number of selected universities, denying both strict regulation and broad support to the bulk of private educational institutions. The consumer was made responsible for comparing themselves the cost and quality of provided education and for selecting a suitable university, while the state restricted its function to disclosing information about university activities and to eliminating asymmetry of such information. Concentration of resources in a small number of educational institutions, along with overall resource reduction, resulted rather in increased differentiation between the groups of universities than in a higher average level of education in the country. A situation close to a market failure was created, and the state had to intervene in order to build vertical relations and inter-university cooperation. The search for the best possible combination of cost, quality, and social characteristics of university education in Japan is by far not over. However, the experience accumulated and the lessons of implemeыted reforms may be of interest for many countries including Russia.
Keywords: national education systems, Japan, university reforms, quality of education, financing of education.

Coverage, cost, and quality as three axes of the education coordinate system

In the early 1990s, Japanese universities faced funding cuts, declining number of students, and at the same time, felt the need to enhance their quality of education as an essential component of national competitiveness. A broad public discussion outlined the direction and mechanisms of university reforms, which were implemented in the middle of 2000s. In the past two decades, Japanese universities have undergone a series of reformations that have produced cer-

Table 1. **Three characteristics of countries with developed education systems**

	Japan	Russia	Korea	France	USA	OECD*
"Width" (coverage) of population with tertiary education by age cohort (%, 2010)						
25–34 year old	58.7	56.4	63.8	43.0	43.1	38.6
25–64 year old	46.4	53.4	40.4	29.7	42.4	31.5
"Height" (level) of aggregate expenditures in education (% GDP, 2010)						
All levels	5.1	4.9	7.6	6.3	7.3	6.3
Tertiary level	1.5	1.6	2.6	1.5	2.8	1.7
"Depth" (quality) of education in the secondary and tertiary levels (mean score, number of universities, 2012–2013)						
PISA scores**	538	475	536	505	498	496
Universities in the top 500***	20	2	11	20	149	436

* The number of universities in the top-500 of the Shanghai ranking is presented as the total number for all OECD countries

** Mean score obtained by students aged 15 years in the PISA reading comprehension test

*** Number of universities in the top-500 of the Shanghai ranking

Source: Education at a Glance 2013 [OECD 2013], PISA 2012 Key Findings [OECD 2012], Academic Ranking of World Universities 2013 [ARWU 2013]

tain outcomes and provided a bulk of information, which are scarcely available abroad. Russia, who is also experiencing major transformations in its higher education system, faces a similar situation of shrinking financial resources and the need to use them more productively. Given these commonalities, the experiences and learnings of Japanese reformers can be of particular interest to Russia.

However, our analysis of Japanese universities—which is the focus of the present research—with respect to Russia is restricted by the latter's concept of higher education. In Russia, students receive education and relevant diploma in accredited higher education institutions after completing their secondary (high school) education[1]. In Japan, this type of education is provided by universities awarding bachelors", masters", and doctoral degrees through four-, two-, and three-year programs, respectively.

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[1] UNESCO's International Standard Classification of Education (ISCED) defines higher or tertiary education as comprising all types of education programs beyond secondary education, irrespective of the type of educational institution. Russia's higher education corresponds to ISCED level 5A (at least three years of study, and a combination of theoretical, research, and practical training) and level 6 (leading to an advanced research qualification). Japan's higher education system has largely attempted to conform to UNESCO's definition by including special training schools, various colleges, and short-term universities.

This paper primarily considers Japan's national education system as a network of institutions seeking to achieve a balance between educational opportunities, costs, and quality. Figuratively speaking, these three axes determine the width, height, and depth of the education building whose interior is uniquely decorated by each country. The coordinate systems of higher education can be simplified using certain indicators (Table 1).

Table 1 clearly shows that higher education is widespread in Japan and is provided not only at high international standards but also at a moderate cost. The strongest point of the Japanese education system is its cost-performance ratio.

National, public, and private universities in Japan

Historically, higher education institutions in Japan developed under the strong influence of Humboldt University of Berlin's principles of state funding, academic autonomy, and the universal scope of education and scientific research. After the World War II, Japan adopted many organizational concepts similar to those in the United States, namely the unification of educational institutions, increased private financing, and academic degrees and credits. There was a rapid growth in the number of private and public (regional) universities during the 1960–1975 and 1990–1995, owing to the less stringent laws to establish new institutions by the Ministry of Education, Culture, Sports, Science and Technology (hereinafter MEXT or Ministry of Education).

The expansion of the higher education system can be largely attributed to structural changes, for example, former colleges were upgraded to universities. However, this quantitative expansion resulted in decreased control by the MEXT, thus worsening the quality of education. The prolonged depression and deteriorating public finances strongly influenced the Japanese society of the late 1990s in developing a firm opinion that the higher education system did not meet the needs of the time. As a result, during 2003–2004, the MEXT began to redefine the management structure, financing principles, and assessment methods, which were applied to national and later public universities. Although this "Big Bang" in Japan's higher education system provoked strong criticism in the academic community, by the end of the decade, almost every suggestion to upgrade the system was implemented, which led to its overall improvement.

Presently, Japan's universities comprise three types of institutions— national, public (regional) and private—classified by the form of ownership. According to a report by MEXT [2012], the highest number of universities is privately owned (Table 2); however, in terms of quality of education, national institutions supersede the rest. The latter is concluded from numerous regular rankings that are based on aspects typical of a higher education institution: (1) selectivity of universities and rigor of entrance criteria (published since 1974 by Ka-

Table 2. **Quantitative characteristics of Japanese universities** (2011)

	Total	National	Public	Private
Number of institutions	780	86	95	599
percent share	100.0	11.0	12.1	76.9
Number of employees*	76,091	23,948	3711	48,432
percent share	100.0	31.4	4.1	64.5
Number of students	2,842,167	608,718	140,965	2,092,504
percent share	100.0	21.4	4.9	73.7
Number of undergraduates	2,569,716	450,854	124,502	1,994,380
percent share	100.0	17.5	4.8	77.7
Number of postgraduates	272,451	157,864	16,463	98,124
percent share	100.0	57.9	6.0	36.1

* Tokai University Higher Education Research Institute [2010:97]
Source: MEXT [2012]

wai and Yoyogi cram schools), (2) integrated assessments of university status for high school graduates and their parents (Asahi Shimbun, since 1994), (3) students' and graduates' satisfaction with quality of education (Recruit, since 1997), (4) university's brand recognition (Nihon Keizai Shimbun, since 2004), (5) teaching and research quality (Yomiuri Shimbun, since 2008), (6) financial position, material resources, and management's network/understanding of potential investors employers' opinions of potential investors (Toyo Keizai, since 2008), and (7) performance of Japanese universities in global rankings, such as ARWU, THE, QS, and Asian Universities.

The National Seven Universities occupy the top of the pyramid in all qualitative indicators. They are traditionally specialized in natural sciences, fundamental research, and trainings for government services. Among the private universities, only Waseda and Keio provide world-class research and development programs, while the others are a highly diversified group of institutions that significantly differ by size, level, and field of research. Public universities fall in between. The established hierarchy and division of labor are universally acknowledged, fixed, and highly unlikely to change in the foreseeable future.

Every national university since 2004 has been incorporated as a "national university corporation." They are each governed by a president (rector) and board of directors (pro-rectors) with sweeping powers to determine the level and procedure of professor and teacher remuneration, employment terms, and budgetary expenditures. The rector is elected by the board of directors from among the candidates put forward by university departments or the founders. Members of the board of directors are appointed either by the rector or by the founders. Neither the rector nor the pro-rectors are allowed

to continue working in their respective universities once their term in office has ended. The rector and pro-rectors supervise faculties, research departments, affiliated institutions, and the administrative office. Emerging issues are discussed with management advisory committees and education and science committees and the participation of independent experts is mandatory.

Between 2005 and 2010, most public universities were incorporated as "public university corporations' and obtained an organizational structure similar to those of national university, which was further configured by the universities' founders. Thus, the management of national and public universities is almost identical to that of a typical private institution.

Coverage of and equal access to higher education

During the 1930–1940s, only 1–3% of Japanese school graduates could afford higher education. Postwar reforms expanded access to higher education to 9.8% in 1956 and 10.3% in 1960, and factors such as demographic changes, explosive economic growth, and vigorous government policies expedited the increasing student enrollment. By 1975, the rate of university enrollments almost tripled to 27.5%, which can be largely attributed to private educational institutions. At the time, Japan sharply increased access to higher education by shifting expenditures to individuals, rather than increasing government spending. Unfortunately, along with the expected benefits, it deteriorated education quality and available facilities and increased tuitions in the private sector. In response, the government tightened control over establishments of new universities, imposed facility standards, and provided state assistance to private institutions. As a result, the proportion of school graduates advancing to universities declined to 25.1% in 1990.

The past two decades have witnessed another wave of higher education expansion, which can be divided into two phases. The first was in the early 1990s, when the government simplified the procedure of upgrading colleges to universities and that of regional authorities establishing higher education institutions while retaining existing standards. It was during this period that most prefectures in Japan independently established public (regional) higher education institutions with satisfactory facilities and skilled staff. The second phase began in 2003, when the government was required to revoke certain standards and restrictions (e. g., foreign language and physical training as compulsory subjects) under their extensive administrative reforms. In fact, the government adopted a type of laissez-faire policy toward the private sector of higher education (i. e., the right to refuse both stringent control and extensive support) and authorized the establishment of new private universities. By 2011, 49.1% of high school graduates continued to receive university education. Further dynamics of university education expansion depended on the cohort

size of 18 year olds, the structure of tertiary education institutions, financing opportunities, labor market demands, and Japanese population's preferences.

In 1991, the number of high school graduates in Japan peaked at 1.81 M. By 2009, this number declined to 1.21 M and is expected to further decrease to around 1.09 M by 2024. While the number of Japanese universities rose from 523 in 1992 to 780 in 2011, primarily owing to private educational institutions, that of promising students continues fall. As of May 1, 2012, student enrollment was below capacity in the 246 private universities of which 18 had more than 50% seats vacant [Mismatch: Universities on rise...2012: 3]. This increased competition for student enrollment and compelled numerous private institutions, mainly small and provincial ones, to relax their requirements and accept almost any candidate willing to pay. Consequently, although the number of school graduates with access to university education increased, it widened the gap in education content and quality among different types of universities.

The number of private universities was rising basically because of the decreasing flow of students to short-term universities and special training schools. The rate of school graduates opting for short-term universities and special training schools reduced from 25% and 36% in 1991 to 6.3% and 22.9% in 2011. Subsequently, the number of such institutions dropped from 591 to 372 within the same period of time. This shift in preference can be easily explained by economic factors. First, employment opportunities in Japan positively correlated with educational levels. In 2011, among those aged 24–65 years, 61% with secondary education, 66% with secondary vocational education, and 68% with higher education were employed. Second was the declining unemployment rate, which was 5.0, 3.9, and 3.0%, respectively. Third, remuneration generally increases faster for employees with a university degree than a college diploma. In 2007, the remuneration rate for university graduates was 48% higher that of employees with secondary education [OECD 2013a]. In addition to economic factors, emerging social trends such as women's education and the transfer of vocational training to universities contributed the existing preferential shift. Traditionally, women constituted the majority of student population in short-term university education, which was later deemed insufficient to secure a job, given the growing numbers of women seeking employment. Another influencing trend in Japan's social welfare system was the transfer of nurse and social worker trainings from colleges to regular universities. Given that these socioeconomic factors continue to have an effect even currently, the substitution of colleges with regular universities is highly likely to last in the years to come. In addition, various underlying socioeconomic changes can help determine future developments.

Over the years, the Japanese lifetime employment model has undergone several changes, deviating from its traditional pattern,

with the following trends gaining much popularity: non-regular employment (from 16.4% in 1991 to 35.2% in 2012), young employees switching jobs in the first three years of employment (from 9.4% in 1999 to 15.3% in 2008), and fewer employers offering on-the-job training (from 9.1% in 1994 to 5.1% in 2008). Thus, it is no surprise that recruitment policies have started to shift its focus from hiring young university graduates to experienced professionals.

Other forms of training programs have been developed to replace those in companies. However, the increase in number of lifelong learners has been insignificant. In 1998, only 2% students in Japan were over 35 years of age (the lowest among OECD countries), and in 2011 this figure increased to only 2.3%. Nevertheless, Japan has shown a positive rate of return on education, which was very low until recently. During 2005–2006, the rate of return in Japan was 5–6% against the average 14% in the EU and 12.3% in the United States.

In addition, employers' expectations from the education system have changed. At first, the key criterion for employee value was learning ability, which was judged by one's admission to a prestigious university rather than educational content. However, over the past few years, employers have increasingly emphasized leadership, decision making, and communication skills. Employer representatives have strongly criticized the quality of higher education and the university system as being responsible for this gap [Amano 1999:16].

Coverage of population with university education is also affected by accessibility of the latter. Japan has made considerable progress and stands out in this regard. When compared to other OECD countries, performance of Japanese students in primary and secondary schools correlates much less with their social background and family income [Ichikawa 1991:18]. In addition, corrupt practices and power abuse are rare cases when students enter universities or take the National Center Test for University Admissions, which is similar to the Unified State Examination in Russia[2]. Finally, Japan has a highly diversified network of tertiary education institutions that provide ample learning opportunities. Persistent and deliberate government policies have helped achieve the uniform distribution of educational institutions across the country, providing many with an equal access to education. In particular, at least one national university had to be established in each of the 47 prefectures. By establishing national universities with standardized education at subsidized prices, students from low-income families were able to access higher education. OECD experts believe that Japan's provision of equal access to education should be aimed at maintaining what has already been achieved, although problems do exist [Newby et al. 2009:54].

[2] While working for 16 years in a Japanese university, it was only once that I read in a newspaper about an exam leak in Japan. The case involved a question sheet of an upcoming test being used in pre-entry courses.

First is the dramatic gender gap: 51.3% male and 36.8% female school graduates enrolled at universities in 2009; 15.1% male university graduates advanced to post-graduate schools as compared to 7.7% women. Women represented only 10% (6.1% in national universities) of the total number of university professors. Improving this situation will require a considerable amount of time and depends on numerous factors: dynamics of women employment, size of education premium, changes in the types of relationships in the academic community, and the redefinition of work–home balance.

Another problem that has gained much attention in the past years is the increasing social inequality. The Gini coefficient for per capita income in Japan is steadily rising and has been higher than the OECD mean value since 2005. Meanwhile, aggregate personal income has been falling with similar persistence. Between 1995 and 2012, the index of monthly average wages has fallen by 11.5 points. In addition, the drop in income of young graduates who have not yet found a permanent job has largely aggravated inequality.

The next factor of inequality affecting access to education is that in 2005 Japan's total household spending to raise a child from birth through university graduation was estimated at roughly 21 M yen (about 200,000 dollars), while the average household income was 5.7 M yen (about 53,000 dollars). During primary and secondary education, a major share of the family budget is directed to private cram schools that prepare students to pass entrance examinations for high schools and universities. In other words, parents' income determines children's opportunities for additional training and, thus, largely defines the level of accessibility to educational institutions. Families of students who entered the prestigious University of Tokyo in 2013 had an average income of 10 M yen (about 100,000 dollars), which is almost two times the average national income. Ideally, expensive cram schools can be substituted by a home setting conducive to independent learning; however, this requires families to consistently guide the child throughout their education. Unfortunately, such guidance is not considered important by all Japanese families. This socioeconomic phenomenon is clearly demonstrated by the fact that during the 2000s, 60% of educated professionals' children and only 15% of farm workers' children graduated from universities [Okada 2011:140, 145, 158].

Government policies in Japan did not include effective measures to reduce income inequality. Thus, in the 2000s, the university education system was dominated by middle- and high-income social groups, while the low-income population was left with fewer opportunities for a university education. With the widening wealth gap, real income dynamics, the heavy cost of private cram schools, narrowing opportunities for public finance, and the relatively high and continuous growth in tuition payments, it is highly unlikely that children from low-income families will gain access to university education in

the near future [Ishida 2003:57]. Unfortunately, measuring the percentage of population that will be deprived of a university education is difficult owing to the lack of crucial long-term economic and public finance forecasts.

In countries with fee-paying schools, the state can regulate access to education by providing student financial aid such as grants and loans. However, in Japan, the grant and scholarship system is relatively weak. During 2010–2011, only 3% students benefited from the system. In addition, zero- and low-interest student loans were obtained by only 33% college and university students as compared to 71% in the United Kingdom and 76% in the United States [OECD 2013b]. As a rule, loans must be repaid five years after graduation through monthly installments, irrespective of the former student's current income. Thus, such loan systems combined with decreasing real income and vague employment prospects can diminish the equalizing effect.

Financing university education

Private sources clearly dominate the financing of higher education in Japan (Table 3).

The ratio of education expenditure to Japan's GDP is 5.1%, which is higher, for example, than the ratios in Turkey, Greece, Hungary, the Czech Republic, Slovakia, and Italy (2.5–4.7%), but it is considerably lower than the average OECD ratio (6.3%) and those of leading countries, such as Denmark (8.0%), Korea (7.6%), and the United States (7.3%). Most countries outperform Japan in expenditure growth. Since 1995, the GDP share of education expenditures increased by 9% on average in OECD countries and only by 0.2% in Japan.

Public expenditure on tertiary education in Japan accounts for as little as 0.5% of the national GDP, which is the lowest among all OECD and G8 countries whose data is available. The percentage of education expenditure is low in budgets of all levels and continues to diminish; it decreased from 9.4% in 2008 to 8.9% in 2010. The major sponsors of tertiary education in OECD countries are public sources, although there has been a gradual shift to private sources in the past years. Thus, the average rate of public funds in OECD's tertiary education financing has reduced from 77.4% in 2000 to 68.4% in 2010. Like many other East Asian countries, Japan traditionally uses family budgets to support education in general and university education in particular. In 2010, private funds accounted for 65.6% of tertiary education financing, of which 51.5% were families and 14.1% private organizations. At the time, Korea had the highest percentage of private financing in the (East Asian) region (72.7%). While Korea's public financing of university education has augmented over the last decade, Japan's percentage of public funds dropped from 27.3% in 2000 to 23.3% in 2010.

Table 3. **Quantitative characteristics of higher education financing**

	Japan	Russia	Korea	France	USA	OECD*
Expenditure on education (% GDP, 2010)						
All levels of education	5.1	4.9**	7.6	6.3	7.3	6.3
Tertiary education	1.5	1.6**	2.6	1.5	2.8	1.6
college	0.2	0.2**	0.3	0.3	...	0.2
university	1.3	1.4**	2.3	1.2	...	1.4
Education expenditure in budgets at all levels (%, 2010)						
All levels of education	8.9	...	15.3	10.4	13.3	13.0
Tertiary education	1.8	...	2.6	2.4	3.0	3.1
Education expenditure by financing sources (% GDP, 2010)						
All levels of education						
Public sources	3.6	4.1	4.8	5.8	5.1	5.4
Private sources	1.5	0.8	2.8	0.5	2.2	0.9
Tertiary education						
Public sources	0.5	1.0	0.7	1.3	1.0	1.1
Private sources	1.0	0.6	1.9	0.2	1.8	0.5

* Simple mean
** Public expenditure only
Source: OECD [2013a]

The present difficulties that Japan faces in financing its education system are evident. The expansion of private sources is limited because of uncertainties in the economy and personal income. The public finances are in a critical condition. In 2012, the national budget deficit alone was 7.5% of GDP, while 49.0% of the budget revenue was composed of bond issuance and 24.3% of total expenditures were directed toward debt services. The ratio of general government gross debt to GDP approached 220%, which is higher than those in major developed countries (80–120%). Problems of such magnitude cannot be resolved without cutting budget expenses of all types, including those on education.

From the various facts already discussed, we know that these cuts have already been initiated. For example, in 2004 the state incorporated national universities as university corporations and since then started to reduce subsidies on their current activities by 1% each year. More importantly, universities were no longer regulated by MEXT and thus, employees lost their civil servant status, which unfortunately provided legal grounds for job cuts.

The present revenue structures generated by private and national universities significantly differ in Japan (Table 4). State allowances

Table 4. **Current revenue structure in Japanese universities** (%, 2005)

Revenue sources	Universities		
	National	Public*	Private
Government (all levels)	55.4	76.4	10.7
Tuition fees	16.2	23.5	57.0
University hospitals	27.9	0	23.7
Private donations and grants	0	0	0.0
Supplementary education**	0.6	0.1	2.9
Student services***	0	0	0.0
Endowments	0	0	2.2
Other	0	0	3.5

* Simple mean value for the three largest universities
** Supplementary education services over and above the fundamental learning program
*** Accommodation, healthcare, and social and other services.
Source: Newby et al. [2009:47], Moriya [2009:238], and Ueyama et al. [2013:98]

account for 55.4% of national institutions' revenue, while private institutions receive approximately the same amount (55.7%) from tuition fees. Student services and supplementary education generate such a small proportion of income, even in private universities, that it is hardly statistically measurable. The major difference between Japanese and U.S. universities is the role of private donations: the budget share of private donations and grants is 5–10 times higher in American universities than in Japanese ones. Japan provides substantial tax credits for contributions to education, but the culture and lifestyle of people and businesses in Japan unfortunately are evolving too slowly to meet the expectations placed on donations as a new revenue source in the context of university corporatization.

The varying characteristics of revenue structures significantly explain differences in national, public and private universities' financial policies. National universities have a little cushion time that allows them to adjust to annual cuts in state financing and make tough decisions regarding rising tuition fees and the need to push up enrollment numbers while cutting expenses, driving down wages, and increasing the workload. By contrast, public universities seem to have depleted the most obvious sources of performance enhancement. As for the private universities, in 2008 25% of them (and 35% colleges) were unable to cover their operating costs with their revenues, and the situation has only worsened since. The future of 30–40% private institutions offering tertiary education is being increasingly discussed in the context of "restructuring." To this effect, measures such as development of inter-university cooperation, promotion of mergers and

acquisitions, and advancement of university bankruptcy are being suggested—in 2001–2007, 22 private universities were deemed economically unviable [Iwasaki et al. 2011:104].

The fewer resources a university has at hand, the more important it is to find means of performance enhancement. Here, we are specifically referring to university mergers and acquisitions, the redirection of public financing from a cost-based approach to the performance-based one, a more flexible tuition fee system, income diversification, and the prioritizing of university performance issues. Japan has both achievements and drawbacks in each of these aspects.

Thus, although the number of national universities dropped from 101 in 1997 to 86 in 2011—primarily because independent medical education institutions were merged with nearby national universities—Japan still has 40 local and 36 technical higher education institutions, many of which are neighboring prefectural or other public educational institutions. Prefectural universities are small in capacity with 1,660 students on average and half of them have only one faculty. Thus, consolidating local national and prefectural universities is an economically viable option for the country.

Increasing the number of mergers and acquisitions is desirable for both the public and private sector. According to the Association of Private Universities of Japan, this is "the most efficient way to revitalize underperforming education institutions' [Iwasaki 2008:105]. However, between 2002 and 2011, only six private university corporation mergers were registered. Experts believe that the Ministry of Education can take a more assertive stand on the issue. In 2008, it was suggested underperforming private universities should be assigned a system of management consulting, which generally provides recommendations to field-specific associations [Ibid. 108–109]. However, this remains a topic of discussion in the professional community, with no explicit action being taken since the beginning of 2014.

Following national universities reforms, the Ministry of Education introduced the competitive allocation of funds in research and development. In 2008, competitive funds accounted for 20% of the research budget for tertiary education. The rest was distributed using a formula based on the number of students and professors and available assets, that is, associated expenses. Competitively allocated funds averaged 10% of the MEXT's grants for a typical mid-sized national university and did not exceed 3% of the university's overall budget.

In Japan, students are required to pay for any type of entrance examination or university education. The government determines the approximate fee for national universities, which is subject to a 20% increase or decrease. This fee, however, serves as a reference point for national universities only, while public and private institutions are free to set their own fees structures. Among the national universities,

only few exercise their right to vary the state-established fee by 20%. Public universities, although not affected by these regulations, set their fees at the same level as national universities. Tuition fees do not differ by type of educational institution, demand, cost of a specific learning program, or prospective income of graduates. While the Ministry of Education considers this to be a step toward equality, experts criticize the policy because it subsidizes fees even for the most wealthy and education-oriented families, whose children often learn in prestigious national universities.

In 2010, the average annual tuition fees in Japan's national and public universities was 535,800 yen (about 5,700 dollars), compared to 817,900 yen (about 8,400 dollars), plus an admission fee for the first year of learning, in private universities. Tuition is paid twice a year, and a 2–3 month delay in payment leads to expulsion from the university. Some universities apply discounts or exemptions for academically talented students for the entire or half the academic year; however, these practices are rare.

Education quality and measures of improvement

For years, Japan's quality of education has often been the focus of many discussions, although no comprehensive or universally recognized assessment methods have been developed. The only objective indicators allowing for a dynamic analysis are PISA (data available since 2000), which tests 15-year-old students, and the Academic Ranking of World Universities (ARWU, or the Shanghai ranking, since 2003)[3]. PISA scores for Japanese school students fell during 2003–2006, but are on the rise ever since. In 2012, Japan ranked seventh in mathematics and fourth in natural sciences as compared to first and second in 2000[4]. Among the top universities in the 500 Shanghai ranking for 2013, only 20 educational institutions belonged to Japan (compared to 35 in 2003). This is a significantly quoted fact when discussing the declining quality of Japan's education, which is particularly noticeable in comparison to the rapid progress in China and Korea. The most logical explanation for this situation is the lack of financing. Also, Japan's delayed efforts to reform higher education added to this plight—it was only in 2013 that the Ministry of Education set the objective to promote 10 Japanese universities so that they

[3] We do not use the well-known Times Higher Education (THE) ranking as comparable indexes are only available from the period 2010–2011.

[4] In 2000, Japan's secondary school curricula were revised to include time for creative activities. However, after a significant drop in core subject performance, which led to strong public reaction, the original curricula were restored in 2010. The positive PISA scores reflected the success of this counterchange. Although this case is considered a failed experiment, it is noteworthy that the effects were mitigated with the help of an efficient feedback system in the secondary education.

could stand a chance in the Times Higher Education (THE) World University Ranking. Another factor was the ambiguous results from the reforms introduced. We will dwell on this aspect below.

University accreditation, provision of incentives, internationalization, competitive financing, and concentration of research in a limited circle of institutions that have been competitively selected are time-tested measures designed to improve education quality.

From the late 1940s to 1991, Japanese universities were only accredited once established. In 1991, self-assessment procedure was introduced and was mandated in 1999. The university establishment procedure was being further simplified. In 2004, the MEXT took another step in this direction by revising the minimum requirements for new educational institutions, that is, university standards in terms of organizational structure, staff qualifications, facilities, curricula, student population, and graduation criteria, among others. Along with simplifying the university establishment procedure and legally extending university rights, the MEXT also stipulated that the universities be assessed every seven years by one of the specifically created licensed organizations. Eight associations (three universal and five specialized) were entitled to accredit universities in the academic year of 2013–2014 and apply their own techniques. After the new system was introduced, 56% of all universities passed the accreditation tests in the first four years. If necessary, the MEXT would develop a series of compulsory corrective measures on the basis of the university's assessment results. In addition, national and public universities were required to design six-year plans and submit annual reports to the MEXT or the founders. Overall, Japan's university accreditation seems to be a matured and multilayered system.

The accreditation triggered numerous procedural changes that were designed to improve education quality, such as development of syllabi, establishment of faculty development (FD) committees, introduction of student course evaluations, discussion of individual courses by professors, and sharing of experiences and best practices. As a result, both the nature and organization of the learning process have remarkably changed over the past decade, particularly in national and public educational institutions. Perhaps, the greatest progress has been achieved in the field of engineering. Japan Accreditation Board for Engineering Education, founded in 1999, introduced a set of international teaching standards for various subjects. In humanities, however, several Japanese universities are still paving their way to developing into educational institutions that are open to unbiased assessments of teaching quality: detailed contents of lecture courses are not published or discussed at both the department and faculty levels, participation of FD members and student course evaluations are yet to be mandatory, cross-university cooperation is poor, and international certification is limited to rare instances.

Following the accreditation of educational institutions, in 2005–2010 professors' accreditations was introduced in national and public universities. Accreditation patterns were developed by the Ministry of Education on the basis of suggestions and ideas derived from extensive discussions in the academic community. In general, universities independently define accreditation procedures in accordance with a set of criteria that are based on the objectives of the assessment: academic research, teaching, university management, and contribution to regional (country) development. Every professor performs an annual self-evaluation using these criteria and submits it to the faculty evaluation commission, which makes the final decision. The assessment results are then used to allocate university funds for research and development and sometimes, even affect salaries, for instance, when the annual pay rise is calculated depending on age and years of experience. Although accreditation has increased the commitment of professors, the long-term effects are yet to be determined, particularly in the case of reducing the overall size of financing.

In Japan, internationalization of education is considered an indispensable step in improving its quality and increasing global competitiveness. It encompasses an extensive series of measures, from learning abroad to establishing foreign educational institutions. The top-priority goals include enhancing foreign language competence (English courses are taught in about 300 universities); developing the "Global 30" Japanese universities, which would be centers of internationalization (13 universities initiated practices in 2013); and increasing the number of foreign students.

Among the mentioned priorities, attracting foreign students appears to be of much significance because it is the focus of not only the competitive power of education but also state financing, language and social environment, and immigration and labor laws. The first international student attraction plan in Japan was introduced in 1983 to increase the number of foreign students from 10,000 to 100,000 by the beginning of the 21st century. This target was accomplished in 2003, with 109,500 foreign students enrolled in Japanese universities. Of these, 93% were from all over Asia and more than two-third from China. Only 20% enjoyed state scholarships and 25% lived in state-funded dormitories, while the rest depended on private sources for their tuition fees and accommodation. The number of foreign students increased by almost 50,000 and peaked 2001–2003, when the government simplified the student visa application procedure and increased the size of scholarships to keep pace with the original plan. In 2012, international students numbered at 137,800, and the government has aimed to increase this figure to 300,000 by 2025. This will increase the rate of foreign students from 3.3% to 7–8%, which would be in line with the average OECD rate (7.3% in 2006). However, a major obstacle in implementing this plan is the employment of prospective graduates. In 2011, Japan granted 8,586 work visas

to international students who were employed after graduation. Although in theory, repeatedly increasing the indicator in the next 15 years is possible, in practice, it will entail substantial transformations in employment policies, the judicial system, and the Japanese society as a whole. These are the fundamental changes that can overcome the predominantly domestic nature of contemporary Japanese education.

Expenditure on scientific research in Japan amounts to 3.36% of GDP, which surpasses the average OECD rate (2.4% in 2009) and those of countries with comparable economic and scientific potential (2.9% in the United States and 2.82% in Germany) [OECD 2012]. However, research has been traditionally financed by the private sector (2.53%), whereas the proportion of public funds (0.59%) is significantly lower than the average OECD indicator (0.73%). Such schemes of financing influence the contents of works (R&D mainly) and results in the relatively low involvement of universities in industry-oriented research.

In the 1990s, the Japanese government and business community realized the importance of combining applied and fundamental research. Thus, in 1996, the first five-year science and technology development plans were introduced. In 2001 the MEXT founded the Council for Science and Technology and measures were taken to increase researcher mobility and the efficient use of allocated funds. Subsequently, in 2006 development priorities were established and suggestions were made on how to increase state expenditure on scientific research to 1% GDP. Nevertheless, during 2001–2009, the total financing of tertiary education plunged from 2,090 billion yen to 1,874 billion yen. At the same time, the rate of competitively allocated funds grew from 14% to 29%, and the efficiency gains partially compensated the plunge.

Since 2004, most academia efforts have been targeted toward providing grant financing and creating 28 academic centers of excellence (COE). This provided the foundation to build a competitive system of academic research financing. Nevertheless, the percentage of funds received through grants remains comparatively low in university budgets (3–4% in national universities). Experts strongly criticize the practice of concentrating grants on few projects, which leave some projects "overfinanced" and the others practically languishing. Moreover, grant application and reporting procedures are time consuming and require efforts that can otherwise be invested in research and teaching. As a result, Japan's academic community is yet to come to a consensus on competitive financing.

Several other research areas requiring reconstruction are in a similar situation, with considerable organizational efforts applied and little actually achieved. This has resulted in a low rate of university employee mobility (52.5% never change their job throughout their career) and short-term contract employment (6% of all employees).

Moreover, the revenues generated from business–university research are insignificant (2.6% of university research budgets as compared to the average 6% in the OECD countries). Thus, increasing researcher mobility, enhancing hiring transparency, expanding competitive financing and strengthening industrial relationships remain as urgent as it was at the dawn of the reforms.

The THE ranking has been reflecting the contradictory dynamics of university education in Japan over the last three years. Five Japanese universities were on the list of the world's top 200 universities for the academic years 2010–2011 and 2013–2014. During this period, the most prestigious universities, Tokyo and Kyoto, moved up from 26th and 57th to 23rd and 52nd, respectively. However, there was a substantial drop in the positions of three universities—Tokyo University of Technology, Osaka University, and Tohoku University—which caused the average ranking of Japanese educational institutions to fall from 89 to 99. These facts clearly demonstrate the ambiguous outcomes of the reforms and confirm the need to work harder in the future.

Conclusions from reforms made to Japanese universities

Having analyzed Japan's experiences in reforming its higher education system, we can draw few conclusions that may be of interest to Russia.

First, the optimal design of an education system must achieve a reasonable balance between coverage, cost, and quality. Although the public financing of Japanese universities is being reduced, there is an apparent ambition to preserve, if not enhance, the existing opportunities of university education. This is achieved primarily through expanding and restructuring the private education sector. The state invests mostly in a limited number of public and national universities, while it adopts a laissez-faire policy toward most private institutions. The consumer is allowed to compare education quality and costs and decides whether a specific private university is a viable option, while the state retains the right to disclosing university data for use in numerous rankings, that is, the function of eliminating information asymmetry. The Japanese education market has been developing over the years and has now entered a phase of maturity, with the supply side being represented by hundreds of diverse institutions, consumers with the opportunity to make informed decisions, and competition mechanisms to balance quality and prices. If Russia decides to cut back on public financing and expand private services in higher education, Japan's experience in developing market mechanisms can be of great use.

Second, Japan's policy in improving the quality of university education is largely based on public funds that are concentrated on selected institutions to improve quality of education and research and transform these institutions into global examples. However, this strat-

egy widens the existing gaps rather than increasing the average education level in the country (as determined by the positions of Japanese universities in the THE ranking). The reason is that the overall staff mobility and cross-university cooperation are largely underdeveloped in Japan, and leading universities have far surpassed others in all aspects without sharing their accomplishments. This situation can be described as a market failure, which requires state intervention. Japan's experience teaches us about the importance of vertical university relationships and the need to use both the highest achievements and average indicators of the national education system when evaluating reform outcomes.

Third, education quality is an extremely complicated construct that affects various aspects of social life, with no universally recognized methods of assessment. Any reform in this area, especially related to the reduction of directed public resources, should be evolutionary in nature and have a developed feedback system. A gradual approach, public discussions, and correction of negative effects are some of the aspects addressed in Japan's reforms and can certainly be adopted to restructure higher education in Russia.

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