OECD Reviews of Tertiary Education

JAPAN

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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Table of contents

This report is based on a study visit to Japan in May 2006, and on background documents prepared to support the visit. As a result, the report reflects the situation up to that point.

1. Introduction

1.1 Purposes of the OECD Review

This Country Note on Japan forms part of the OECD Thematic Review of Tertiary Education. This is a collaborative project to assist countries in the design and implementation of tertiary education policies which contribute to the realisation of their social and economic objectives.

The tertiary education systems of many OECD countries have experienced rapid growth over the last decade, and are experiencing new pressures as the result of a globalising economy and labour market. In this context, the OECD Education Committee agreed, in late 2003, to carry out a major thematic review of tertiary education. The principal objective of the Review is to assist countries in understanding how the organisation, management and delivery of tertiary education can help them to achieve their economic and social objectives. The principal focus of the Review is upon tertiary education policies and systems, rather than upon the detailed management and operation of institutions.

The project's purposes, methodology and guidelines are detailed in OECD (2004a).[1] The purposes of the Review are:

- To synthesise research-based evidence on the impact of tertiary education policies and disseminate this knowledge among participating countries;
- To identify innovative and successful policy initiatives and practices;
- To facilitate exchanges of lessons and experiences among countries; and
- To identify policy options.

1 Reports and updates are available from *www.oecd.org/edu/tertiary/review*

The Review encompasses the full range of tertiary programmes and institutions. International statistical conventions define tertiary education in terms of programme levels: those programmes at ISCED[2] levels 5B, 5A and 6 are treated as tertiary education, and programmes below ISCED level 5B are not. In some countries the term higher education is used more commonly than tertiary education, at times to refer to all programmes at levels 5B, 5A and 6, at times to refer only to those programmes at levels 5A and 6. An additional complication is presented by the practice, in some countries, of defining higher education or tertiary education in terms of the institution, rather than the programme. For example, it is common to use higher education to refer to programmes offered by universities, and tertiary education to refer to programmes offered by institutions that extend beyond universities. The OECD Thematic Review follows standard international conventions in using tertiary education to refer to all programmes at ISCED levels 5B, 5A and 6, regardless of the institutions in which they are offered.

The project involves two complementary approaches: an *Analytical Review strand;* and a *Country Review strand.* The Analytical Review strand uses several means - country background reports, literature reviews, data analyses and commissioned papers - to analyse the factors that shape the outcomes in tertiary education systems, and possible policy responses. All of the 24 countries involved in the Review are taking part in this strand. In addition, 13 of the tertiary education systems have chosen to participate in a Country Review, which involves external review teams analysing tertiary education policies in those countries.

Japan was one of the countries that opted to participate in the Country Reviews and hosted a review visit in April 2006. The reviewers comprised an OECD Secretariat member, and academics and policy-makers from the United Kingdom, Sweden, the United States, and the Netherlands. The team is listed in Appendix 1.

1.2 The Participation of Japan

Japan's participation in the OECD Review was co-ordinated by Yoshinori Murata, Director, Student Services Division, Higher Education Bureau, of the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT). The Country Background Report (CBR) for the

[2] The International Standard Classification of Education (ISCED) provides the foundation for internationally comparative education statistics and sets out the definitions and classifications that apply to educational programmes within it.

OECD Review was the product of collaboration between MEXT officials a team of expert researchers (details are provided in Appendix 2).

The Review Team is deeply grateful to the authors of the CBR, and to all those who assisted them for providing an informative and policy-oriented document. The CBR covered themes such as the background and content of tertiary education reforms; the structure of the tertiary education system; the role of tertiary education in regional development, the research effort of the country; the shaping of labour markets; and the challenges faced in funding, governing, achieving equity in and assuring the quality of the tertiary education system.

Japan CBR forms a valuable input to the overall OECD project and the Review Team found it to be very useful in relation to its work. The analysis and points raised in the CBR are cited frequently in this Country Note.[3] In this sense, the documents complement each other and, for a more comprehensive view of tertiary education policy in Japan, are best read in conjunction.

The Review visit took place from May 15-24, 2006. An itinerary is provided in Appendix 3. The Review Team held discussions with educational authorities and relevant agencies and visited institutions of tertiary education in the country. Discussions were held with representatives of Ministries such as education and finance; tertiary education institutions; student organisations; representatives of academic staff; the business and industry community; and officials responsible for quality assurance. This allowed the team to obtain the views of key stakeholders in the system concerning the strengths, weaknesses, and policy priorities regarding tertiary education in Japan.

This Country Note draws together the Review Team's observations and background materials. The present report on Japan will be an input into the final OECD report on the overall project. The Review Team trusts that the Country Note will also contribute to discussions within Japan, and inform the international education community about developments in Japan that may hold lessons for their own systems.

The Review Team wishes to record its grateful appreciation to the many people who gave time from their busy schedules to assist in its work. The Review Team is grateful also for the informative and frank meetings that were held during the visit, and the helpful documentation provided by our hosts.

3 Unless indicated otherwise, the data in this Country Note are taken from Japan Country Background Report (MEXT, 2006, also referred to as CBR).

This Country Note is the responsibility of the Review Team. While the team benefited greatly from Japan CBR and other documents, any errors or misinterpretations in this Country Note are its responsibility.

1.3 Structure of the Country Note

The remainder of the report is organised into ten chapters that focus on key issues within the scope of the Review. Chapter 2 provides a brief context and background of tertiary education in Japan, Chapter 3 reviews the governance of the tertiary system and its institutions. Chapters 4 and 5 examine the financing of the tertiary system and questions of equity, respectively. Chapter 6 considers the linkages between tertiary education and labour markets in Japan. Chapter 7 examines the role of tertiary education in research and innovation, while Chapter 8 examines issues of internationalisation of tertiary education policies and practices. Policies assuring and improving the quality of tertiary education are examined in Chapter 9. Chapter 10 contains a brief conclusion, and is followed by a set of appendices.

2. The Context and Background of Tertiary Education Policy in Japan

As a recent OECD report concluded (OECD, 2006a), Japan has finally emerged from an extended period of economic stagnation following the collapse of the asset price bubble in the early 1990s. This has allowed the economy to sustain growth based upon a rise in domestic demand. As a result business and household confidence have now reached the highest level since the early 1990s. The government's reform measures have played an important role in laying the foundation for sustained and robust growth, and these positive trends are expected to continue in the short- and medium-term.

The Japanese tertiary education system has been at the centre of these public reforms. The traditionally close control of the sector by the government - not just of the public, but also of the private institutions - made it a likely testbed of the wide reform of public institutions introduced by the Koizumi administration. This has given the reform of the universities, in particular, a symbolic prominence which in other OECD countries has not been so apparent.

But the importance which the government has attributed to university reforms relates to more than public reform symbolism. There is a widespread recognition, as in other OECD countries, that tertiary education is a major driver of economic competitiveness in an increasingly knowledge-driven global economy. As elsewhere, there is a widely recognised imperative to raise higher-level employment skills, to sustain a globally competitive research base and to improve knowledge transfer mechanisms, particularly those between universities and industry. In a very real sense universities have come to be recognised in Japanese society as being too important to be left entirely to the academy alone to determine their structure, function and future priorities. Japanese universities have therefore come under intense public scrutiny, focussed in particular on concerns about learning and teaching quality and on cost-efficiency.

In many respects there exist in Japan the same public policy dilemmas which afflict the funding of tertiary education in many other OECD

countries. Japan, no less than other OECD countries, understands the need to expand participation in tertiary education in order to sustain its global economic competitiveness. In common with other nations, there is a strong desire in Japan to ensure that any expansion is accompanied by social inclusivity: in other words that increases in participation rates should proceed on a socially equitable basis. However, both increasing and widening participation are likely to make additional claims on the public purse, notwithstanding the comparatively low level of dependence of Japanese tertiary institutions on public funding. Moreover, the public demand is not merely for greater opportunities to participate in tertiary education, but for any expansion to be accompanied by not merely the assurance, but the enhancement, of quality. Given the stagnation of the Japanese economy throughout the 1990s the dilemma of how to fund an expanding, improving tertiary sector has been most acutely felt. This led to demands from business and party leaders that reform, especially in universities, was necessary in order to make the sector both more effective and more efficient.

The decade of economic stagnation in Japan in the 1990s was not one, however, of complete economic stasis. It was also a decade which witnessed quite extensive structural changes in the economy of Japan. There was both a shift towards the service sector and companies themselves re-structuring in order to overcome the negative impact of domestic stagnation. Significant parts of Japanese manufacturing capacity were transferred to low-wage economies elsewhere, including elsewhere in Asia. These changes provoked the need for labour force adjustments with a rapid increase in more flexible patterns of employment and, in particular, a decline in the strong internal labour markets which have traditionally characterised the corporate Japanese sector. In other words, there are fewer "jobs for life", including graduates from even the most prestigious Japanese universities. In this way, it seems that changes in the labour market are having a strong effect on graduates from tertiary education.

There is one further factor that is also due to have a major impact upon Japanese tertiary education. By 2050 the Japanese population will have declined by over 25%. Japan is experiencing a shift to an ageing society, and there is also expected to be a rapid decrease in the working population. This changing demography represents a huge challenge for all aspects of Japanese society and economy. In particular it places huge constraints on public finances which are faced with massive potential increases in health, welfare and pensions. To mitigate these effects there is likely to be a requirement to increase substantially labour productivity and a consequent requirement to invest in education, skills and scientific and technological research. Yet squeezing the resources from the public purse is likely to be

more, rather than less, difficult, given the fiscal and demographic pressures described above. At the very least, the human resources development function of tertiary education will need to be exploited to the full. And there will need to be sufficient public and political confidence to invest in tertiary education based on institutions which are demonstrably well-managed, efficient, of high quality and competitive in an emerging global - and not just, national - marketplace.

It is against this background that, on April 1st 2004, Japanese higher education underwent the kind of 'big bang' reform which was unprecedented. Though regarded with some hostility within the universities themselves, there was a widespread political and public sentiment that reform was overdue and that, in comparison with the higher education systems among Japan's traditional peers in North America, Australasia and Europe, Japanese universities were falling behind. The reforms, at least in their intention, were fundamental and far-reaching. As a result, though a few years have elapsed since the reforms were introduced, their impact is still working its way through. Japanese tertiary education is still in transition. The desired benefits of the reforms are not yet secured and if they do not materialise, both political and public patience is likely to wear thin. There is a widespread demand that the tertiary education system become, via the modernisation agenda embedded in the reforms, more responsive, more agile, more globally competitive and accompanied by higher standards and higher quality all round.

2.1 Structure and Change in Japanese Tertiary Education

The tertiary education system in Japan is not a homogeneous entity. Although the reforms of 2004 - and therefore this report - focus disproportionately on the universities, the tertiary sector extends well beyond the universities themselves:

- Universities have as their aim to conduct teaching and research in depth in specialised academic subjects, to operate as "centres of learning" and to "develop intellectual, moral and practical abilities".
- Junior colleges "cultivate such abilities as are required in vocation or practical life", typically offering two-year sub-degree qualifications within a baccalaureate four-year bachelors degree framework. There are typically progression opportunities to university programmes.
- Colleges of technology, or *kosen* are institutions offering high-level vocational qualifications through teaching and related research.

- Professional training colleges offer practical vocational and specialized technical education aiming to foster abilities required for vocational or daily life, or provide general education.
- Graduate schools conduct academic research, in particular basic research, and train researchers and professionals with advanced skills.
- Professional graduate schools are oriented towards high-level graduate entry to key professions - for example, law, business studies, etc.

Historically Japanese universities have been heavily influenced by the nineteenth-century concept of the Humboldt University, originating in Germany. There was therefore an emphasis on research as well as teaching and a degree of separation of universities from the mainstream of Japanese society. However, in the period after the Second World War, Japan has moved rapidly from an "elite" to a "mass" higher education system and the rapid expansion in both the number and the size of Japanese universities has also witnessed the introduction of a trend towards more "vocational" degree programmes - *i.e.* ones which offer more of a fit-for-purpose licence to engage in professional practice. Thus the expansion of tertiary education has been accompanied by increasing diversity in the mission and purposes of tertiary institutions, both within and between those categories outlined above. The cultivation of such mission diversity is now a stated policy aim. For example, in 2005 the Central Council for Education in its report, *A Vision for the Future of Higher Education in Japan* stated that:

> *"for the universal stage of tertiary education, it is necessary for each institution to clarify its own individuality and distinctiveness. Universities, junior colleges, colleges of technology and professional training colleges must all put education and research into operation that are fully based on each position and expected role / function and each institution must clarify its own individuality and distinctiveness. In particular, even for the same type of institution, each institution should clarify their own functions and goals out of a wide range of functions and goals based on the institution's own choices".* (Central Council for Education, 2005)

In addition to this function diversity there is also another dimension to diversity which makes the Japanese system particularly distinctive. This relates to the very high proportion (by OECD standards) of private institutions and students therein (see Table 2.1).

Table 2.1 Number of Tertiary Education Institutions

Category	Total Institutions	Universities	Junior Colleges	Colleges of Technology	Professional Training Colleges
Total	4167	716	415	63	2973
National	157	87	2	55	13
Public	301	73	29	5	194
Private	3709	556	384	3	2766

Source: Calculations based upon Table 2-1 in Annex of Japan's Country Background Report (MEXT, 2006).

Over 90% of junior colleges and professional training colleges are private institutions, as are nearly 78% of universities (556 out of 716). In terms of student numbers this means that nearly 80% of undergraduates are enrolled in private universities. Moreover, even within the publicly funded universities there is a distinction between the 87 national universities, funded directly by the Ministry of Education (MEXT) in Tokyo, and the 73 public universities funded at the local and regional level. Taken together this produces a huge and amorphous sector with consequent risks for nationally consistent quality control that the 2004 reforms were largely designed to address (see Table 2.2).

Table 2.2 Number of Students by Type of Institutions

Unit: persons, percentage in parentheses

Category	Total	Graduate Schools	Subtotal	Universities (Department)	Junior Colleges (Regular course)	Colleges of Technology (4th and 5th grade)	Correspondence Course (Incl. graduate schools)	Professional Training Colleges
Total	**3,157,159**	**254,483**	**2,741,817**	**2,508,091**	**212,202**	**21,524**	**160,859**	**695,472**
(%)	**(100.0)**	**(100.0)**	**(100.0)**	**(100.0)**	**(100.0)**	**(100.0)**	**(100.0)**	**(100.0)**
National	**630,857**	**150,781**	**480,076**	**459,804**	**1,439**	**18,833**	—	**732**
(%)	**(20.0)**	**(59.2)**	**(17.5)**	**(18.3)**	**(0.7)**	**(87.5)**		**(0.1)**
Public	**136,683**	**13,928**	**122,755**	**107,254**	**13,774**	**1,727**	—	**27,895**
(%)	**(4.4)**	**(5.5)**	**(4.5)**	**(4.3)**	**(6.5)**	**(8.0)**		**(4.0)**
Private	**2,389,619**	**89,774**	**2,138,986**	**1,941,033**	**196,989**	**964**	**160,859**	**666,845**
(%)	**(75.7)**	**(35.3)**	**(78.0)**	**(77.4)**	**(92.8)**	**(4.5)**	**(100.0)**	**(95.9)**

As of 1 May, 2005

Source: Table 2-2 in Annex of Japan's Country Background Report (MEXT, 2006).

It is important to stress that there is considerable diversity within, and not just between, public and private institutions. Even within the public universities there is a wide range of institutions, varying in scale, size and mission. This is shown in Table 2.3. The seven former imperial universities are comprehensive, multi-faculty, predominantly research-led institutions. Others, however, have a particular local or regional focus (so that tertiary education is accessible to the inhabitants of all parts of Japan) and/or are of a specialist professional or technical character.

Table 2.3 National Universities

- **Former Imperial universities 7**
  (Tokyo, Kyoto, Tohoku, Osaka, Kyushu, Hokkaido, Nagoya)
- **Local universities..... 40**
- **Professional / Technical universities 36**
  (Technology, Education, Medicine, Art, Commerce etc.)
- **Graduate Universities 4**
- **Differences among 87 national universities:**

	Largest	Smallest	Ratio
Budget	193	2	88.1
Property	981	65	15.09
Administrative expenses	93	15	6.2
Staff	6 730	138	48.8
Students	24 066	662	36.3

Budget: Billion yen

Source: Figures provided by Gifu University to Review Team.

Table 2.4 shows that while the national universities dominate the research activity of the sector (especially in science and technology subjects), this is by no means uniformly the case. Three private universities have developed a significant research base by international standards.

Table 2.4 World Ranking of Citation

Ranking	National U.	Public U.	Private U.
1-50	●●●		
51-100	●●		
101-200	●●●		
201-300	●●		
301-400	●●●●●●●		●
401-500	●●●	●	●●
501-600	●●●●	●●	●●●
601-700	●●●●	●●●	●●●●●●●
701-800	●●●●	●●	●●●
801-900	●●		●●
901-1000	●●●	●●	●●

Based on numbers of cited papers in 1995-2004

Source: The Japan Association of National Universities.

This diversity is partly a product of the historical evolution of the Japanese higher education sector - for example, the imperial universities were founded by the government in the nineteenth century and were directed, in effect, by the Ministry, with a customary rotation of civil servants between the two. Also, after 1948, there was an important objective to make higher education available in every region, something which could only be accomplished by government. However, diversity has also been the product of competitive forces - the number of private universities has actually increased in the face of demographic decline by, in some cases, replacing junior colleges and exploiting niche markets. Nevertheless, the structure is not quite as chaotic as may appear at first sight. Universities in Japan, most especially national universities, have operated within a public regulatory framework in which market entry and student volume have been determined by the government. MEXT's position reflects the view that national universities play important public roles. Institutions, including those in the private sector, are required to meet the University Standards as set out in the School Education Law (see Chapter 9). All established universities are required to be accredited regularly. Private institutions, while privately managed, are not completely comparable to private universities in countries such as the United States.

The importance of the private sector also partially explains another distinctive feature of Japanese tertiary education, namely the very low level of government funding (second lowest among OECD countries) even when normalised for level of GDP. This produces an extraordinarily high level of

private financial support for tertiary education and although this might be thought to be a matter of political policy, in fact it is as much a matter of cultural choice - the Japanese population places an extremely high value on education and will devote substantial disposable income and even more savings to ensure educational opportunity for their children in the absence of state support.

There is one notable exception to this portrayal, which is worthy of note. As Tables 1 and 2 indicate, when it comes to *kosen*, 87.3% of the institutions and 87.5% of the students are in publicly funded, national institutions, organised through the Institute of National Colleges of Technology. They provide vocational education for those between the ages of 15 and 20, with the possibility of "topping up" to a full degree. They are widely admired internationally, not only for the quality of the high-level vocational training they offer, but also for their degree of responsiveness to the needs of Japanese industry, especially the manufacturing sector. They also provide a socially inclusive progression pathway for students from lower socio-economic groups in Japan. We, like countless other overseas evaluators, were impressed by their management, quality and innovation.

The Institute of National Colleges of Technology works within that part of the higher education sector which, in many other countries is covered, in part at least, by "further education" colleges or "community" colleges. Japan, in comparison with North America and Europe, has traditionally blurred the distinction between further and higher education, whilst retaining a degree of distinctiveness (now eroding) between vocational and academic programmes and qualifications. This renders post-16 education in Japan a loosely articulated tertiary system, rather than one in which the distinction between further and higher education is a defining characteristic.

This has traditionally allowed a junior college segment to flourish in Japan, providing post-18, sub-bachelor qualification. Many junior colleges are vocationally oriented, but also with a strong liberal-arts component, the degree of which are capable of being "topped-up" by progression to full university degrees. Many have particular historical (*e.g.* Christian) or cultural (*e.g.* female-only) roots. Many of them place a strong emphasis on pastoral care as well as vocational training. In recent years their numbers have declined, in part due to the rising aspirations of young people for four-year university education, partly because of competition from four-year universities (see above) and partly, we suspect, because of underlying cultural changes, especially among female students.

On the vocational front the junior colleges have also faced stiff competition from the burgeoning *Senmon Gakko* (vocationally-oriented professional training colleges), which exist almost exclusively within the

private sector and are very focussed on delivering employability skills for their students. In fifteen years they have increased their share of secondary graduates from 14.2 to 19.3%. They remain, however, separate from the university / junior college sector and, as such, are relatively free of regulation by MEXT. They specialise in providing practical training leading to knowledge, skills, and qualifications which are accepted directly by employers. Since 1999 *senmon gakko* students have been able to transfer to a junior college or university, although few have availed themselves of this opportunity - approximately 2 000 in 2005. Significantly, though, over 25 000 students have transferred in the opposite direction as employability skills come to be more valued in today's more volatile labour market.

These issues of employability, as well as management, quality and innovation lay at the heart of the 2004 reforms. They were principally, although not exclusively, aimed at the 87 national universities, although certain aspects of the reforms - for example, those relating to quality control and enhancement - encompass the sector as a whole (for a comprehensive series of accounts, see Eades *et al.*, 2005). These reforms are widely regarded as pivotal to the future of Japanese tertiary education, especially the universities, most notably the 87 national universities, where most of the political and public attention has been focussed. Although we do not have the space in this Report to describe the reforms in detail, it is nevertheless necessary to assess their main features as a background to the more specific analyses which follow in subsequent chapters.

The most apparent aspect of the reforms concerned the fact that the national universities were turned into independent agencies with their staff no longer civil servants guaranteed jobs for life. At the same time the position of the university President was greatly strengthened - in effect a change from a Humboldt-style rector, answerable to - and elected by - his or her academic peers, to a position more akin to a chief executive, answerable to a board containing a majority of external members. The intention was that the national universities would become autonomous from the Ministry. However, the Ministry (MEXT) still defines a student enrolment cap, the level of fees, and the majority of academic reorganisations at the department or programme level.[4] MEXT's position is that it should retain its authority over certain aspects of operations of national universities on the grounds that they are run with public funds and play important public roles. Universities

[4] If universities make changes to academic departments that are "not significant" they may notify MEXT of the changes, and are not obligated to obtain approval (MEXT, 2006, Figure 2-26). In 2005 there were 838 academic reorganisations, of which 482 (57.5%) required MEXT approval, and 356 instances in which universities were obligated to notify MEXT, but did not need to obtain approval.

are also required to produce strategic plans containing objectives, the achievement of which may influence future funding levels - however, such a performance management system is so far rudimentary in practice. Thus the national universities now have the power to hire and fire, set budgets and adjust pay and develop external (*i.e*. non-governmental) sources of funding. In the Japanese context this is a major, almost revolutionary, set of reforms.

What are the expected benefits? First and foremost, the expected benefits are about changing the culture and behaviour of institutions: providing incentives for universities to become more agile, more responsive to societal needs, more innovative, creative and enterprising, and more competitive, in terms of both teaching and research quality, with the best in the world. By opening up the national universities to increasing competition, they will, it is believed, be fitter to face the challenges of the emerging global competition in higher education in the twenty-first century.

Alongside the move towards greater autonomy and more "corporate" governance systems there has also been an emphasis on greater transparency and public accountability. Closely modelled on the quality assurance systems introduced in certain European countries, Japanese universities are now subject to the evaluation of their programmes by certified agencies. These evaluations are made available to the public. They are also required to submit a range of output performance measures to MEXT which are publicly available, introducing the hitherto alien concept of performance (as distinct from selectivity) rankings driving student choice and competition.

These reforms were heavily contested in the run-up to their implementation. Indeed many of the details were modified under intense lobbying from the national university presidents. The private universities, too, were concerned that their market situation might be undermined, bearing in mind that their fees are set the national university "standard fee" as a point of reference. The result has been that some of the changes have been more evolutionary than revolutionary; the perception remains widespread of a 'big bang'. However, to us, the changes seem to herald not so much the introduction of total autonomy as a shift from control to supervision. It is much too early to establish empirically the consequences of this. So, instead, we limit ourselves to a few general observations. We should emphasise that these are based on an immersion in the Japanese tertiary sector over a short period of time. They are necessarily preliminary, but we offer them as a contribution to the ongoing debate in Japan and in the OECD.

Our first point is to draw a distinction between the rhetoric and the reality of the reforms. We have no doubt that reforms were necessary, indeed long overdue. They represent a necessary, but not a sufficient,

condition for the Japanese tertiary system to become internationally competitive and to allow the multiplication of sustainable world-class universities. There is no doubt that the reforms were intended to jolt the national universities out of their perceived complacency and inertia. This, at least, has been achieved, but there remain powerful cultural forces within the academic community which could render this change temporary unless the changes are embedded within the universities' own structures and management.

The centrepiece of the reforms has been to grant the national universities greater "autonomy". Within a Japanese historical context we do not doubt that there has been a number of significant steps taken towards granting national universities greater autonomy *vis-à-vis* MEXT. For example:

- increased freedom to manage resource allocation, human resources and internal administrative structures by a corporate senior management team under the leadership of an appointed President;
- more flexibility over setting budgets with no "line-itemed" prescription from MEXT; and
- incentives to increase external revenue in both teaching and research.

These reforms are not yet four years old, and both the ministry and universities are still adapting to the new opportunities and challenges that they present. Viewed in international terms, Japanese national institutions continue to exercise less strategic initiative with respect to hiring and setting wages, reallocating resources, and exploiting investment opportunities than do comparable universities in the United States, United Kingdom, and the Netherlands. Some of this is due to the continuing legal constraints within which they operate, *e.g.* with respect to issuing debt, and reorganisation, where MEXT retains substantial supervisory authority. MEXT's position is that it should retain its authority over certain aspects of operations of national universities on the grounds that they are run with public funds and play important public roles. In other instances universities have won legal authority to take decisions, but infrequently exercise it - *e.g.* with respect to terms of employment and compensation.

In our estimation the new landscape of Japanese tertiary education - marked as it is by expanded legal autonomy for national universities - creates a corresponding need for MEXT to become a "steering body" of the sort that operates in the moderate to high autonomy tertiary systems of the Anglo world, many Nordic countries, and the Netherlands, among others. Successful steering (what is called in this chapter "planning") requires three things: the capacity to articulate a vision for the system (*e.g.* increased

institutional differentiation), appropriate policy instruments to implement this vision (*e.g.* an institutional funding methodology that supports differentiation), and a way of monitoring performance (*e.g.* indicators or benchmarks of wider differentiation). In our view, developed fully in the next chapter, MEXT has endeavoured to develop the first and second of these capacities, but both remain incipient. It has articulated a vision which can be found in documents such as "A Vision for the Future of Higher Education in Japan" and "Graduate School Education in a New Age", among others. "A Vision" proposes that each tertiary institution "will gradually differentiate into...one with distinctive functions based on its own identity/distinctiveness." Planning documents contain injunctions to institutions ("differentiate") but they do not yet provide a vision of a tertiary *system*, outlining how much diversity, of what sort sorts, and to what ends, is desired. There is an emerging repertoire of policy instruments that hold the potential to connect ends and means, such as the 21st Century Centres of Excellence Programme, but some are not clearly connected to a wider vision of the tertiary system.

At the institutional level this tendency is exacerbated by the fact that Japanese universities do not yet have a pool of academic administrators with extensive management and financial experience to take on the strategic management of more autonomous and entrepreneurial university institutions. This is to be expected, since the development of substantial and financial autonomy is recent. To compensate for this, universities have to recruit managers from firms (as Japan does not have a highly developed not-for-profit sector to its economy). During our campus visits university leaders acknowledged that this not always a fully satisfactory solution, since management in public non-profit and private sector organisations is very different.[5]

The result of all of this is that the rhetoric of change has been accompanied by the reality of conservatism. This is creating a worrying policy vacuum, with an attention to means rather than ends. This is engendering political pressures in some quarters for the privatisation of national universities, as evidence begins to accumulate of a lack of change in certain crucial areas - curriculum development, learning outcomes, pedagogical innovation, internationalisation, research quality and the effectiveness of knowledge transfer. We consider these in more detail in subsequent chapters.

5 For a comparative analysis of university management in the United States, United Kingdom, and Japan that points to the near-absence of "hybrids" (academics with management and financial experience), see Hatakenaka (2004).

Equally important is the strategic relationship between MEXT and Japan's extensive system of private universities. Here demographic pressures being placed on private universities have resulted in substantial under-enrolment (compared to agreed enrolment quotas), and widespread forecasts - including those appearing in popular books - about the number of private institutions that will be likely to cease operation.

MEXT exercises detailed review over institutional finances and enrolments of private universities, and, when a school juridical person faces financial difficulty, MEXT "gives advice to the school based on an analysis of its financial situation… in order to prompt a voluntary effort of the school… to improve its management."[6] Further, it has established a policy framework to protect students enrolled in such institutions, permitting them either to continue their studies until graduation or transfer to a nearby institution.[7]

However, we formed the view that Japan needed to give further consideration to how the tertiary system might adjust in response to demographic change (with due consideration to changes in enrolment rates). This is particularly an issue in rural Japan, where demographic trends pose the greatest challenge and the need for rationalisation - such as consolidation or co-operation agreements[8] between national and public universities - are greatest. This is occurring elsewhere in the OECD, such as in Finland, where falling student numbers are compelling a strategic re-examination of the binary line separating polytechnic and university institutions.

2.2 Conclusion

This brief overview of Japanese higher education indicates that the sector is being driven by a combination of internal and external dynamics. It is impossible to understand the nature of the changes in Japanese universities and colleges simply by examining factors which are internal to the higher education sector itself. Rather it is possible to view the recent reforms in the context of a wide range of challenges, all of which we shall return to in the chapters which follow.

6 MEXT response to Review Team questions, December 2006.

7 "Policy Line for Dealing with School Juridical Persons with Management Difficulties," May 16, 2005, Private University Management Support Project Team, MEXT.

8 Examples include sharing common resources such as libraries and cooperative activities such as setting up a joint international office.

These include:

- Responding to a **new political context** marked by sustained public budgetary pressures and an anti-regulatory (liberalisation) orientation, which, in combination, constrain the possibility of funding increases to tertiary education, while at the same time challenging the traditional role of the Ministry vis-à-vis higher education institutions. These constraints shape the role of MEXT with respect to controlling the administration of national universities, and the establishment of private institutions.
- Responding to a **new demographic context**, which poses a serious challenge to the continued viability of many private institutions, and challenges of efficiency within the public sector institutions.
- Responding to a **new global context** - in at least four senses, including:
  - cross-border flows of students (exploiting this opportunity, for commercial and diplomatic reasons) - within a new quality scheme;
  - responding to the possibility of new/alternative providers (within a new, somewhat liberalised regulatory environment);
  - meeting the challenge of international competition in research, so as to be internationally competitive with respect to the recruitment and retention of high-impact researchers, and to provide the basis (along with public research institutes and firms-based research) for knowledge-based innovation, in both established and new industries;
  - facing this competition within an environment pressured by international research ranking that exposes domestic institutions to international benchmarking.
- Responding to a **new labour market context**, in which:
  - The proportion of workers who are "non-regular workers" (part-time or short-term) has risen from 19% (in 1994) to 29% (in 2004). (Some of whom are tertiary graduates.)
  - Students and employers appear to be developing somewhat different expectations of higher education, *i.e.* that higher education will provide employability skills and a more strongly vocational orientation.

These pose challenges for the national policy framework, and for MEXT, which finds itself challenged to relinquish traditional policy tools,

options and ways of thinking - and to develop a new way of operating, and a new conception of its role.

2.3 Recommendations

At this stage of our report, the recommendations emanating from this chapter are necessarily fairly general:

1) We recommend that the momentum of the 2004 reforms should not be lost and that it should continue to support, rather than undermine, the traditional strengths of the Japanese higher education sector in terms of diversity, participation, accessibility and research quality. This could be achieved by a formal evaluation of the reforms after not less than five years.

2) The role of MEXT should continue to be focussed on strategic planning, rather than detailed operational plans, which should be the province of the institutions.

3) The reforms should be regarded as the beginning of a dynamic policy process which will require a clearer specification of public policy goals, *i.e*. the reforms are a means, not an end.

3. System Structure and Institutional Governance

In the previous chapter we briefly described the complete structure of Japanese tertiary education. The mixture of universities and colleges, public and private, national and local, add up to a system of considerable diversity. This is a characteristic that we see as a notable strength of the Japanese system. For example, it means that, in geographical terms, tertiary education is highly accessible - indeed, almost ubiquitous - with institutions present in every province and region no matter how remote. Such diversity also offers the potential for a healthy division of labour between institutions, each focussing on its niche in the market place, whilst being responsive to the needs of external stakeholders at both the national and regional levels.

The potential weakness of such diversity is that it could lead to an unhelpful and uncoordinated provision lacking an overall 'steer' which would optimise the benefits to society as a whole. There is always the risk that the interests of more than 4 000 tertiary institutions (see Table 2.1 above) will not add up to an overall national interest. We referred in the previous chapter to the paradox of over-regulation and under-planning. Thus while the tertiary sector is being "de-regulated" - in some ways - there are few signs that the need for more effective strategic planning, at both the institutional and the national level has been recognised.

The exception to this is the *kosen*. They are effectively planned and co-ordinated through the Institute of National Colleges of Technology and combine high levels of quality assurance, innovative pedagogy, attentiveness to stakeholder needs (especially employers) and a wide geographical spread. They also provide access to tertiary education from families whose children have traditionally been under-represented - those from lower socio-economic groups, from rural areas, etc. We believe that the success of these colleges owes something to the mixture of planning at the national level allied to operational autonomy and responsiveness to markets at the local level.

As far as the sector as a whole is concerned, there is a belief in MEXT - though perhaps not the government as a whole - that diversity should not lapse into *laissez-faire*. This is particularly the case with respect to teaching quality (see Chapter 9) where lower barriers to market entry are seen to risk

of degrading quality. Indeed one of the motivations for the 2004 reforms was a strongly-held view in some quarters that teaching quality had declined, if not absolutely, then certainly in relative terms compared with Japan's international peers. The path taken by the reforms was to place the sector in a tight framework of nationally organised quality control, while de-regulating the institutions in order to encourage greater innovation, creativity and enterprise at institutional level.

3.1 System Structure: Strengths and Challenges

In Chapter 2 we described the institutional structure of the Japanese tertiary education system. Here we explore some of its dimensions in greater detail. We emphasise once more, however, its extreme diversity. Within a single system there are institutions which run from some of the greatest research universities in the world to small private training colleges offering specialist vocational skills at the local level. The sector is not only diverse; it is also mature. In Japan there is a wide public consensus on the status hierarchy of institutions, both between and within each category. Thus while the sector is nominally very diverse, in reality it is very hierarchical. Each institution "knows its place" and there is a societal consensus on institutional rankings. Statistically Japanese tertiary education is a "mass" system; but culturally it retains all the attributes of an "elite" model.

Consequently there is fierce competition to enter the most prestigious universities, public or private. There is a widespread adoption of supplementary private instruction of those students seeking entry to the "top" universities and a number of prestigious private universities are also vertically integrated into the schools system through having established their own (private) feeder schools. Therefore the universities continue to perform one of their traditional roles in Japanese society, providing a kind of social sorting mechanism for entry into the elite professions in both the private and the public sectors. In a more self-contained, more corporate Japanese society, this process functioned quite well. Now, however, under the pressures of globalisation and enhanced economic competition, adaptations are necessary (see Chapter 6).

It is into this mature system, with a consistent ranking over time, that the 2004 reforms were inserted. There was a political requirement to make the sector more dynamic. However, the introduction of dynamic forces always creates winners and losers, and certainly increases the potential risks - both in terms of finance and, more importantly to the elite institutions, public reputation. In a highly diverse system, different institutions respond to this in different ways. For example, in Japan some of the smaller, niche colleges are highly innovative in response to the market, especially those in the private sector. However, price differentiation is low (relative to that in other

highly differentiated systems, such as the United States), so quality is not reflected in price and there is little impact on public reputation. At the other end of the scale the national universities are widely regarded as the "price leaders" - *i.e*. other institutions set their fees in relation to national university fee levels. The prestige of many of these universities is such that it is not clear how far their teaching quality can be seriously and publicly challenged should the need arise. It is too close to call whether it would be the credibility of the quality assurance process or the reputation of the university that would be most effectively challenged.

The sum total of all of this is that, while the government wishes to introduce increasing dynamism into the sector, it also (especially MEXT) wishes to see dynamism without risk. Moreover, at the institutional level the perception of increased risk - which we found to be widely prevalent in a tough financial and demographic climate - easily produces greater risk aversion, particularly where it is combined with greater operational autonomy. Some institutions are no doubt seizing the opportunities offered by the reforms and responding in the ways in which the government intended. But many are adopting a more risk averse, conservative approach, mindful that their high status in Japanese society will (they hope) carry them through.

As the dynamics of change become played out, it is too early to state what the outcomes will be. The policy dilemmas are by no means unique to Japan and, as elsewhere, the outcomes will depend as much on internal leadership and management within the institutions as it will on the nationally determined policy levers. We shall return to this issue below. We should emphasise, however, that the stakes are quite high. The desire for dynamism and 'modernisation' relate not only to enhancing teaching quality and standards, but also to improving the quality of its research base as a contribution to Japan's global economic competitiveness operated in such a way as to congregate the bulk of the high-cost, science and technology research base in the national universities, while even the most prestigious private universities have focussed their research base on the lower-cost social science and humanities subjects. The division is not quite as sharp as this might suggest, but the overall pattern is clear (see Table 3.1). Thus the responses to the reforms not only fall differentially across different kinds of institutions in the sector; they also fall differentially across Japan's scientific and technological research base. This is likely to produce two major consequences: the concentration of scientific research in fewer universities; and a focus in these universities on research and post-graduate training at the expense of undergraduate teaching. But will these universities be prepared to respond in this way given the strong social pressures in Japan for them to continue to act in their traditional social-sorting role?

Table 3.1 Number of Persons Engaged in R&D at Universities, etc. by Type of Profession (Fiscal Year, 2003)

	Japanese universities										
	Number of persons engaged in R&D										
	Total number of persons engaged (reference)	Total	Total number of researchers	Researchers (full-time staff)				Researchers (Part-time staff)	Assistant research workers	Technicians	Clerical and other R&D supporting personnel
					Teachers	Doctoral course students	Medical staff and others				
	(persons)	(persons)	(persons)	(persons)	(persons)	(persons)	(persons)	(persons)	(persons)	(persons)	(persons)
(Number of persons)											
Total	684,275	335,983	284,330	261,369	171,975	68,476	20,918	22,961	10,236	12,103	29,314
(By kind of organisation)											
National	256,388	161,510	131,081	124,872	66,165	48,637	10,070	6,209	5,402	9,013	16,014
Public	48,473	24,533	21,963	18,415	12,832	3,811	1,772	3,548	871	583	1,116
Private	379,414	149,940	131,286	118,082	92,978	16,028	9,076	13,204	3,963	2,507	12,184
(By kind of university and college)											
Departments of universities	593,089	289,456	249,238	232,274	146,098	67,039	19,137	16,964	8,775	8,555	22,888
Junior colleges	49,471	14,974	13,117	13,062	13,048	..	14	55	326	137	1,394
Research institute attached to universities	16,308	14,627	10,378	5,859	3,724	1,188	947	4,519	443	1,252	2,554
Others	25,407	16,926	11,597	10,174	9,105	249	820	1,423	692	2,159	2,478
(By field of science)											
Natural sciences and engineering	409,279	222,458	184,978	166,906	98,739	48,090	20,077	18,072	8,461	11,468	17,551
Physical sciences	30,258	24,731	18,607	17,233	9,624	6,507	1,102	1,374	1,394	1,569	3,161
Engineering	104,631	66,373	55,093	51,757	34,263	16,165	1,329	3,336	1,104	4,355	5,821
Agricultural sciences	20,639	14,986	11,850	10,860	6,330	4,164	366	990	562	1,031	1,543
Medical sciences	253,751	116,368	99,428	87,056	48,522	21,254	17,280	12,372	5,401	4,513	7,026
Social sciences and humanities	181,379	77,100	68,118	64,732	48,100	15,877	755	3,386	735	242	8,005
Literature	64,293	25,401	22,471	21,957	15,373	6,272	312	514	351	91	2,488
Law and political sciences	17,874	8,172	7,103	6,709	5,134	1,494	81	394	34	9	1,026
Economics	49,166	20,501	18,113	17,259	13,921	3,217	121	854	167	55	2,166
Other social sciences and humanities	50,046	23,026	20,431	18,807	13,672	4,894	241	1,624	183	87	2,325
Others	93,617	36,425	31,234	29,731	25,136	4,509	86	1,503	1,040	393	3,758
Family and consumer sciences	21,326	7,944	6,728	6,698	6,513	183	2	30	263	74	879
Pedagogy	35,841	15,691	13,656	12,872	11,153	1,678	41	784	218	128	1,689
Others	36,450	12,790	10,850	10,161	7,470	2,648	43	689	559	191	1,190

(Reference)

Distribution ratio (Assuming the total number of full-time researchers to be 1)				
Total	100.0%	65.8%	26.2%	8.0%
(By kind of organisation)				
National	47.8%	25.3%	18.6%	3.9%
Public	7.0%	4.9%	1.5%	0.7%
Private	45.2%	35.6%	6.1%	3.5%
(By kind of university and college)				
Departments of universities	88.9%	55.9%	25.6%	7.3%
Junior colleges	5.0%	5.0%	..	0.0%
Research institute attached to universities	2.2%	1.4%	0.5%	0.4%
Others	3.9%	3.5%	0.1%	0.3%
(By field of science)				
Natural sciences and engineering	63.9%	37.8%	18.4%	7.7%
Physical sciences	6.6%	3.7%	2.5%	0.4%
Engineering	19.8%	13.1%	6.2%	0.5%
Agricultural sciences	4.2%	2.4%	1.6%	0.1%
Medical sciences	33.3%	18.6%	8.1%	6.6%
Social sciences and humanities	24.8%	18.4%	6.1%	0.3%
Literature	8.4%	5.9%	2.4%	0.1%
Law and political sciences	2.6%	2.0%	0.6%	0.0%
Economics	6.6%	5.3%	1.2%	0.0%
Other social sciences and humanities	7.2%	5.2%	1.9%	0.1%
Others	11.4%	9.6%	1.7%	0.0%
Family and consumer sciences	2.6%	2.5%	0.1%	0.0%
Pedagogy	4.9%	4.3%	0.6%	0.0%
Others	3.9%	2.9%	1.0%	0.0%

Source: Table 5-8 in Annex of Japan's Country Background Report (MEXT, 2006).

3.2 Institutional Governance

Many OECD countries have autonomous education and research institutions, based on a more or less universal idea of a "university". But in many of these countries traditional conceptions of a "university" have come under challenge as their systems have moved from "elite" to "mass" sectors. Given the diversity of Japanese tertiary education it is not surprising that similar debates also continue to take place in Japan. The significance of the private sector also means that considerable attention is paid in Japan to ensuring that university title is granted only to those institutions which fulfil clearly stated quality criteria. In particular, in giving approval for the establishment of a university, considerable energy is devoted to the assessment of teaching staff (see Chapter 9).

Beyond this, however, the relationship between the government and the institutions is played out somewhat differentially, which is hardly surprising given the importance of the private sector. To somewhat over-simplify, the national tertiary education institutions are required to play an important "political" role in order to lead the sector towards achieving desired public policy objectives. These might include:

- equal opportunities for tertiary education;
- regional equity;
- disciplinary balance;
- personal development;
- maintenance of diversity; and
- standards and quality.

In a sense, the national universities are expected to fulfil the public duty of possessing almost a national leadership role (disputed, no doubt, by the most prestigious private universities). They have certainly embodied the government's tertiary education policies more directly, while the government, in turn, has guaranteed the sustainability of high-cost disciplines through utilising the national universities. This was essentially the rationale for the close control of the national universities by MEXT. The reforms of 2004, as we have seen, altered this nexus. In terms of governance the national universities became subject to incorporation - *i.e.* they became autonomous corporations with their own board, chief executive (President) answerable to this board, rather than the ministry, and with authority for budgets, planning and the employment of staff.

These changes are complex and far-reaching and we can only select a few features salient to the internal governance of institutions here. However, we have attempted to summarise the changes diagrammatically below.

Figure 3.1 shows the reforms intentions and objectives. It is taken from the University Council Report, *A Vision for Universities in the 21st Century and Reform Measures*.

Figure 3.1 Outline of the University Council Report "A Vision for Universities in the 21st Century and Reform Measures"

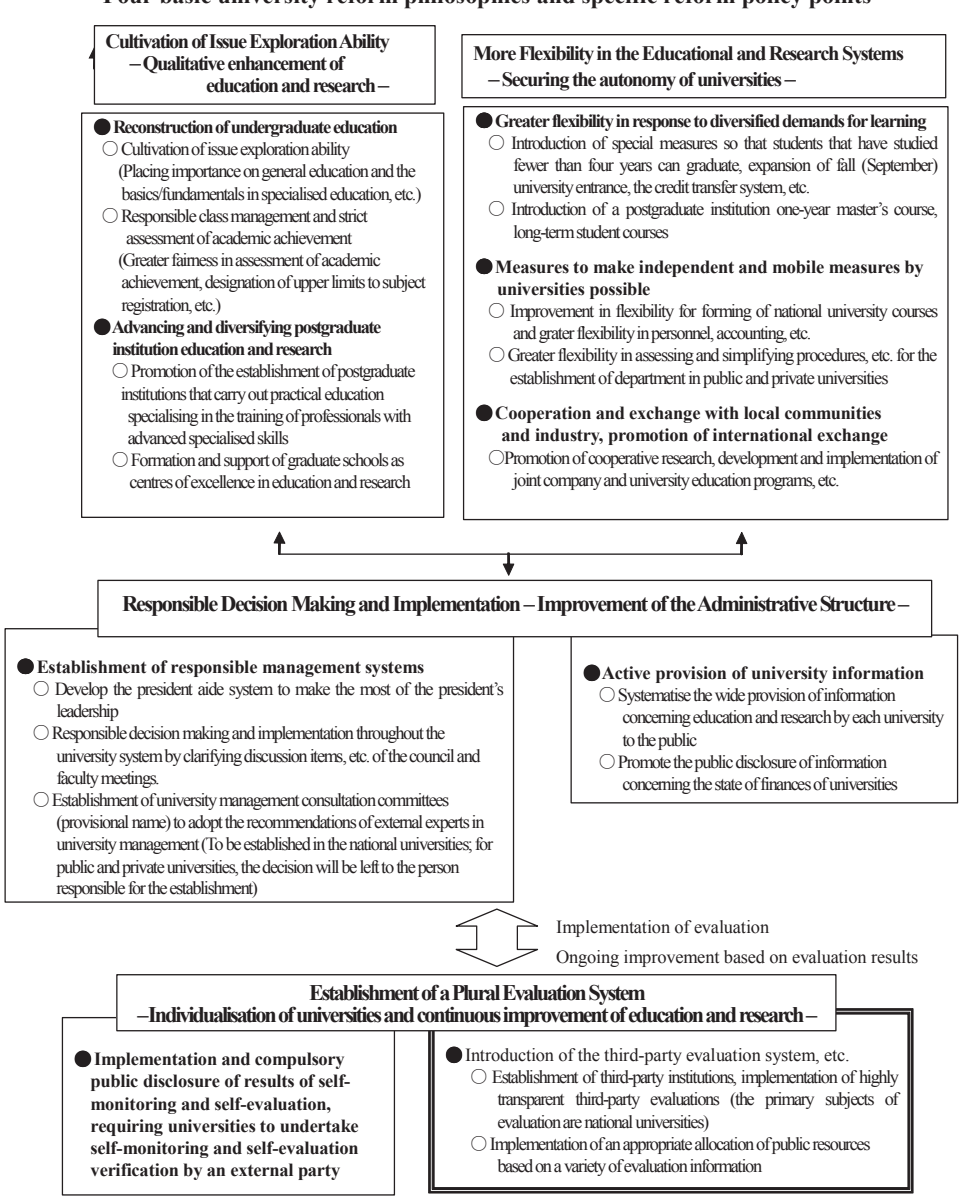


Figure 3.2 builds on this and concludes with specifying the role of government post-incorporation.

Figure 3.2 Outline of "A Vision for the Future of Higher Education in Japan"

January 28, 2005

A Vision for the Future of Higher Education in Japan
<Report of the Central Council for Education>

【Purpose】

This report present a vision for the future of tertiary education in Japan (It should be called the "overall design") assuming mid to long-term (After 2005, 2015-2020) and measures to be taken to realize its content.

【Fundamental Ideas】

The 21st century is refereed to as the age of "Knowledge-Based Society"

↓

Tertiary education is exceedingly important in personal development as well as in national strategies

- Rapid progress of tertiary education reforms in the world (especially in countries near Asia)
- Japan's education since the Meiji era has been a great success as a basis of today's prosperity and development.
- However, for a long time after the war, discussions on tertiary education (especially its financial base) have not been stimulating in overall society.
  - → Tertiary education has depended on economic development of the nation and the trend of individual earnings.
  - → Now, fundamental discussion on the quantity and quality of tertiary education is indispensable.

It is time to pay more attention to comprehensive potential of the national higher education system and policy.

↓

The government must take responsibility for tertiary education in the future.

- The crisis of tertiary education is nothing but a crisis for society.
- Sustainable development of our nation through establishing a new era of higher education.

  The 18-year-old bracket population remains at approximately 1.2 million.
  The restraining policy on establishing universities faculties and departments has been abolished in principle.

↓

Moving from an age of "Plotting Tertiary Education Plans and Putting Various Regulations" to "Presentation of Future Visions and Provision of Policy Guidance"

Future roles of the government should be mainly to:

(1) Present ideal visions or desirable direction of tertiary education

(2) Set up and revise a framework of the system

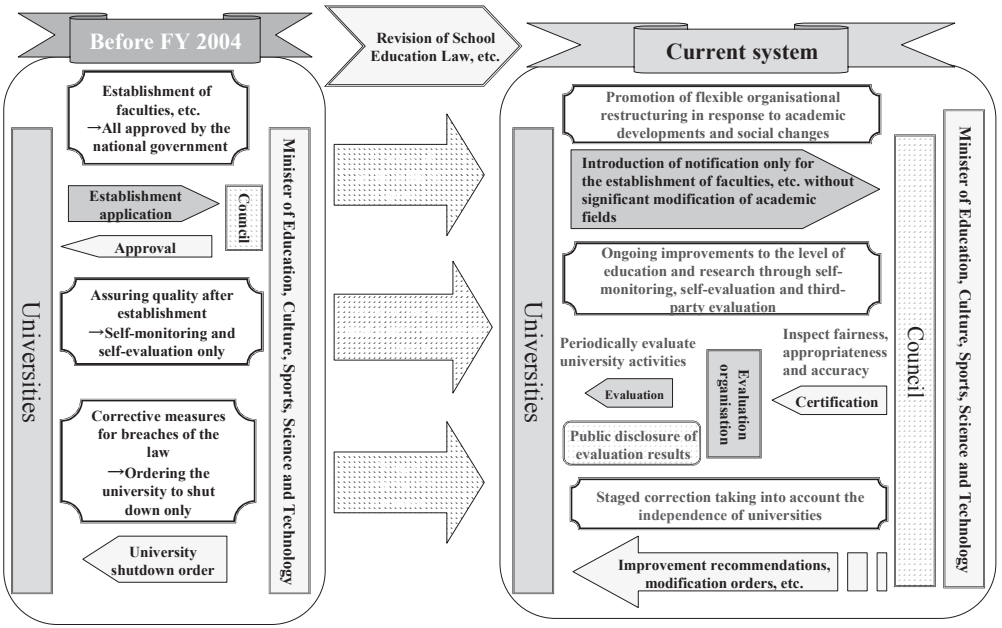
(3) Establish a quality assurance system

(4) Provide a variety of information to tertiary education institutions, society, and studentss

(5) Provide financial support

In Figure 3.3 we present a before-and-after comparison.

Figure 3.3 Building of a New System to Secure the Quality of Universities



As we have already indicated, the introduction of these reforms - let alone their implementation - created great controversy within the university sector, both national and private. The Humboldtian model had bequeathed to Japanese universities an extreme form of self-governance, with control in all national, public and many private universities in the hands of a professors' council. Only in a few, newer private universities has the President and/or School Board been in a position to make key financial or academic decisions, but many of these were family-run educational conglomerations where the separation between executive control and non-executive oversight was weak or non-existent. For the bulk of institutions, however, all academic decisions had rested with the professors' councils in each faculty and while financial decisions could be made by the university's board, in practice the professors' councils had huge powers of veto, without being responsible for the financial and strategic consequences of their decisions. Indeed, since decisions of any significance were normally only arrived at after a consensus had been received, the system of checks and balances tended to operate in a reactive, even negative, way, rather than in a positive and pro-active manner.

The reforms swept much of this aside - at least, in theory. The President, who is appointed rather than elected, now has unprecedented powers. Indeed, it would be no exaggeration to suggest they are greater than his or her equivalents in other OECD countries. The President presides over a university administration which, for the system to operate effectively, rapidly needs to be transformed into a professional management team. There is a huge staff development requirement here, one which the reforms seem to have seriously underestimated. Given the traditional dependency on MEXT for even basic administrative requirements, neither the skills nor the systems are sufficiently robust or widespread to ensure the implementation of the reforms at the pace which the government intended.

In this context we were pleased to see the progress that had been made in those universities where the President has been prepared to seize the opportunities which the 2004 legislation has afforded. Change has, indeed, been brought about in many national universities, driven by the leadership qualities of their respective presidents. At Gifu University the Review Team saw an example of a professionalised management team under guidance of a university president with a keen strategic vision. Together they, along with external stakeholders and the Gifu faculty, appear to have created a model of national university governance that embodies the aspirations of reformers, and is worthy of wide emulation within the national university system.

While progress across the entire nation university system is inevitably variable, we would summarise it as follows:

Before Incorporation	After Incorporation
1) Planning	
- No definite targets or plans	- medium-term targets for 6 years, (2004-2009) proposed to, and approved by, MEXT
	- subjected to evaluation by MEXT every year
	- Several medium-term target (2010-) based on evaluation of 2004-2009
2) Evaluation	

- Voluntary	- Legal requirement for:
	  - medium-term plans (see above)
	  - teaching quality

Academic performance evaluation absent or not linked to compensation	- Seven national universities undertaking performance review and linking to compensation by end of 2006
3) Personnel Management	
- Public servants	- Non-public servants
	- Administration costs frozen at 2003 levels
- Numbers and positions controlled by MEXT	- Numbers and positions decided by university
- Salaries set by civil service pay schedule	- Legal authority for salary determination at institutional level
4) Finance	
- All expenditures controlled by MEXT	- Administrative costs subject to 1% per annum efficiency gain
- Financial data collected and controlled by MEXT	- All expenditures are the university's responsibility
- Deficits may be covered by MEXT	- Deficits not covered by MEXT
- Surpluses are returned to MEXT	- Surpluses returned by university
5) Management	
- Consensus-based, elected	- Presidential, appointed

One national university president summarised these changes as representing a shift from "little autonomy" to "limited autonomy". We would concur with this view - based upon discussions with a number of university Presidents, professors and senior administrators, other officials inside government and scholarly publications analysing the recent changes

in Japanese higher education. There remain significant areas where autonomy is quite limited. These include:

- creation of new departments/faculties, where universities must consult with MEXT;
- changes in student numbers;
- student tuition fees (although a 20% variability was permitted in 2007);
- the appointment of the President and the auditors by MEXT.

MEXT's position is that it should retain its authority over certain aspects of operations of national universities on the grounds that they are run with public funds and play important public roles.

At the heart of this issue lies the rudimentary approach to strategic planning. As part of the reforms each national university was required to produce a six-year strategic plan which in turn responds to MEXT's own six-year mid-term goals. The intentions here are not entirely clear, not least to the universities themselves. The universities have been informed that future funding may be based on performance over the six years covered by their plans but the precise relationship between performance, evaluation and funding remains unclear. In addition national universities are also required to submit annual operating plans to MEXT and these are used to evaluate progress towards the six-year goals. In 2006 eight national universities were assessed as falling behind on their six-year plans. The results of the mid-term evaluation will be reflected in an adjustment of the administrative expenses subsidy. But all universities find it difficult to plan meaningfully over the longer term while their budgets continue to be determined annually. In the meantime the universities have been placed on a regime of 1% real-terms funding cuts across the board. In this context it is not surprising that many universities proceed in a risk-averse manner. They have dutifully produced plans - many aspirational, most statistically empirical - but little in the way of strategic planning. In many cases they simply lack the professional capacity to do so; but in all cases there is a lack of clarity from MEXT about the purposes of these documents.

The lack of institutional and professional capacity in the universities to engage in strategic planning is also mirrored in MEXT. The 'big bang' approach to the reform meant that not only did the universities lack the appropriate experience and skills mix, but so, too, did the Ministry. Traditionally MEXT has been geared to collecting and monitoring very detailed information on the performance of the sector and the universities' data systems and administrators were geared to supplying the requisite

information. However, the new system places different responsibilities on MEXT with regard to different kinds of data collection and analysis as well as policy analysis, strategic planning capabilities and international benchmarking. This cannot be achieved overnight, yet we found little evidence of a concerted plan to change the balance of professional skills within MEXT, an issue to which the cuts in administrative costs give particular urgency.

There is a real risk here, in our view, of creating, unintentionally, a kind of compliance culture in the universities. We were informed by a number of institutions we visited - which was necessarily a small and unrepresentative sample - that they produce two plans: one to comply with (perceived) government requirements; and one which was used as an internal management tool to identify and develop priorities.

We focus on the planning function because it provides a crucial nexus between the capacity of the government to steer the system nationally and the capacity of institutions to capture the benefits of customising locally. Policymaking for Japanese tertiary education would benefit from a sharper distinction between planning (or, "steering") and regulation.

As far as we could see the six-year plans are essentially about the utilisation of public money for the administration of teaching. They do not, significantly, include plans for internal structural reform (for example, the re-structuring of faculties and departments) although we know that many universities, in reality, do have plans for this. Moreover, many Presidents are now exerting a level of leadership that simply was not possible in the past. But the "official" plans developed for purposes of compliance do not invite the senior management of the universities to make crucial choices - for example, over mission differentiation, institutional positioning in the market place, the balance between research and teaching, etc. These aspects may be set out in University Charters or other long-term documents. All national universities still wish to perform all the functions of a modern university equally, but given the financial constraints, especially in high-cost research, no one believes this is realistically achievable. However, in 2005, MEXT proposed moving towards wider institutional differentiation within the university sector on the basis of seven identified functions. Yet the plans delivered to MEXT scarcely address these issues. However, the successful implementation of the reforms will rest on the capacity of institutions to use their autonomy effectively to develop a sustainable division of labour between universities that will ensure that world-class research and teaching is present somewhere within the sector as a whole.

For all these reasons we see the reforms as a beginning, not an end. The funding mechanisms still do not have a rational basis when related to (still

ill-defined) policy goals. They enshrine short-term goals of cost-reduction and efficiency gains but do not address the longer-term investment needs for the sector, nor its future size, shape and structure. De-regulation should not be mistaken as the absence of strategic, systemic planning.

3.3 Recommendations

1) MEXT needs, as a matter of urgency, to set out clearly and transparently a more strategic approach to planning.

2) There needs to be a clearer distinction drawn, at the policy level, between regulation and planning. The goals of strategic planning need to be stated more explicitly and should form the basis of the evaluation by MEXT of the institutions' medium-term plans.

3) There is an urgent need to invest in staff training and development in both the universities and in MEXT in order to provide a skills mix which is fit-for-purpose under the new system. Professional capacity needs to be developed on both sides if the continuing implementation of the reforms is not to be thwarted.

4. Funding Tertiary Education

4.1 Strengths in the Funding of Japanese Tertiary Education

Japan is blessed with a substantial and highly diverse set of tertiary institutions. Further, most students who seek study places in tertiary education are able to enrol: by Ministry estimates the 2006 enrolment capacity of universities and junior colleges relative to demand was 89%.[9] In some sectors and regions, however, enrolment capacity exceeds the demand for study places. Among the private universities and junior colleges, about 30% of the universities and 40% of the junior colleges do not fill their current enrolment capacities (MEXT, 2006, p. 86). In 2003, an estimated 24.9% of the private universities and 34.8% of the junior colleges did not cover their operating costs with annual income (Yonezawa and Kim, 2006).

Among the educational strengths of this diverse system is the applied vocational/technical training that students receive in the colleges of technology, within the public universities and two-year colleges, and in professional training colleges. We believe that the array of courses of applied study is a strength not found in many OECD countries. The richness of offerings within the total system, from the theoretical and academic work found in the research universities to the applied, vocational focus of the above institutions, helps to explain the high participation rate (76%) of high school graduates in some form of tertiary education (MEXT, 2006, p. 9).

Throughout the OECD funding to tertiary institutions is led by public spending (76%), followed by households (17%) and other private entities (7%). In Japan, as is true elsewhere in East Asia, there is a tradition of strong family support for education. In fiscal terms this is reflected in the leading role played by households in higher education spending, and by a

9 Enrolment capacity is defined as "the value obtained by dividing the number of actual entrants to universities or junior colleges by the total number of applicants (who are still enrolled in high school or recently graduated) (MEXT, 2006, p. 225).

comparatively modest role for public spending. In 2003 60% of all expenditures on tertiary education institutions in Japan came from private sources, while the remaining 40 came from public sources. Only in Korea is the share of non-governmental spending higher (77%). By way of comparison, governmental spending comprises 43% of funding to tertiary institutions in the United States, 48% in Australia, 56% in Canada, and 70% in the United Kingdom (OECD, 2006b, Table B3.2b). Between 1998 and 2003 Japan increased its public spending on tertiary institutions by 32%, when measured in constant 2003 prices, while private spending rose 45% (OECD, 2006b, Table B2.2).

Total public expenditure on tertiary education institutions in 2003 equalled 0.6% of GDP, as compared to the OECD average of 1.3%. Japan stands alongside Korea at the bottom of OECD member countries in public tertiary expenditure, and below countries such as the United States (1.5), Canada (1.7), and Australia (1.1) (OECD, 2006b, Table B4.1).

Throughout OECD member countries public funding for tertiary education flows typically to institutions, rather than students as purchasers of educational services: 83.1% of public spending flows to institutions, while the remainder flows to households (and other private entities). In Japan 81.4% of public expenditures flow to tertiary institutions, a share lower than that of systems like Switzerland or France (98 and 92%, respectively), though higher than that of New Zealand and Australia (in which 57 and 65% of funds, respectively, consist of expenditures to institutions). As it true in many OECD countries, public funds to institutions are allocated through formula-based subsidies that are strongly input-oriented, providing national universities with operational grants equivalent to 55.4% of their current fund revenues, and private universities with administrative expense subsidies equivalent to 11.7 of their current fund revenues (FY 2005). However, in keeping with the goals of the second Basic Plan for Science and Technology, MEXT has begun to shift public research and development expenditures away from recurring funding awarded to institutions on a formula basis, and towards funds that are awarded on a competitive basis. The two principal avenues for doing so have been Grants-in-Aid for Scientific Research (GIA) (188 billion yen, FY 2005) and the 21st Century Centres of Excellence Programme (COE), which awarded 38.2 billion yen in FY 2005 budget. These programmes have provided a foundation of peer-reviewed, competitive funding for university-based research.[10] Moreover, MEXT has introduced other funding streams outside the framework of the formula-based operating subsidies, such as the "good

10 A small share of GIA funds (0.3%) are also awarded to research carried out by teachers or individual citizens.

practice subsidy" and the "support programme for contemporary educational needs".

Together all public and private spending in Japan generated per pupil expenditures in tertiary education equivalent to 41% of the country's GDP per capita, a level of per pupil spending nearly equal to the OECD average of 43%, though significantly below that of high spending nations such as the United States (64) and Switzerland (78).

The national policy framework for institutional resource allocation and financial management has undergone a series of reforms that have created substantially wider opportunities for the efficient management of human and financial resources. For example:

- For the past decade public research institute and universities have had the opportunity to appoint researchers to fixed-term rather than indefinite contracts, and since national university incorporation they have had the legal authority to link salaries and advancement to performance, rather than seniority.
- National and public university corporations are now awarded funds on a lump sum basis, and are authorized to carry-over funds to the next fiscal year.
- In 2003, MEXT issued a notification allowing fund-raising not only from students, graduates and others who are related to the institution, but also from the general public.

Additionally, institutional consolidation has taken place within the national university sector. In 1997 there were a total of 101 national universities, while one decade later the number reduced to 87. These consolidations were typically mergers between medical universities and university institutions without a medical school. Mergers among these complementary institutions should, with time, provide greater efficiency arising from economies of scale, and greater financial stability through the diversification of institutional missions and financing.

4.2 Challenges in the Funding of Japanese Tertiary Education

The first and greatest challenge facing the funding of Japanese tertiary education is the large structural budget deficit facing the Japanese government: this places sharp constraints on public spending increases of all sorts, including tertiary education. A key figure in the Ministry's publication, a table entitled "Trends in General Account Expenditures and Tax Revenues" highlights the overall long-range fiscal problem facing the

country (Ministry of Finance, 2006, p. 4). Beginning in the early 1990s, tax revenues began to lag total expenditures by significant amounts, forcing the central government to finance a growing deficit with government bonds. The result has been a cumulative national debt equal to 170% of annual GDP, a figure that vastly exceeds that of other OECD countries. (The comparable figure for the United States in 2005 was 65%.) The interest payments alone on the national debt now make up 22.4% of annual public expenditures, putting a severe squeeze on other outlays (Ministry of Finance, 2006, p. 4). When this difficulty is coupled with the rising expenditures on social security for an ageing population, it is clear that the national government faces a prolonged period of fiscal constraint, which has led the current government to impose budget cuts and structural reforms throughout the public sector. For the national and public universities in Japan, the cuts amount to a scheduled 1% per annum reduction until 2010.[11]

This fiscal challenge is compounded by a policy framework that contains - in spite of recent reforms - some structural impediments to the efficient allocation of public resources. These impediments include: (a) a need for continuing consolidation within public sector tertiary education; (b) a funding methodology that continues to award the bulk of funds on the basis of inputs; (c) a tuition fee structure that is insufficiently diversified; (d) insufficient diversification of institutional revenues; (e) institutional-level management practices that remain weakly oriented towards efficiency. These are discussed below, in turn.

4.3 Consolidation

While MEXT has encouraged the consolidation of national university institutions, reducing their number from 101 (in 1997) to 87 (in 2007), we believe that further consolidation within the public sector of tertiary education is possible and desirable.[12] The consolidations of the preceding decade combined single-purpose higher education institutions with adjacent universities, *e.g.* the University of Yamanashi with the Yamanashi Medical College. However, two key aspects of the system were not examined: the long-standing policy of one national university per prefecture (adopted in 1948), and the existence of two parallel systems of public sector university institutions, prefectural and national. Today some 40 "local" national

11 The reforms also call for a 2% annual reduction in public support for university hospitals.

12 It should be noted, however, that the number of applications in all national and public universities exceeds the enrolment level. The applicant/entrant ratio was 4.1:1 for national universities and 5.3:1 for public universities in 2006.

universities exist alongside 36 specialist, "professional/technical" national universities, and 73 prefectural or "public" institutions. Most prefectural universities are quite small and specialized. In FY 2005 their average enrolment was 1 660, and one-half of these institutions had only one faculty. Likewise, many national universities are quite small and specialised, *e.g.* 41 national universities have three or fewer faculties. It appears that there are opportunities for continued consolidation within the national university sector, and between it and the prefectural university sector, although we acknowledge that further consolidations may be politically difficult. Nonetheless, such consolidations could result in more programmatically diversified institutions that are better able to take advantage of economies of scale, to develop professionalised management, and to compete with greater success on a regional or global basis for students.

4.4 Funding Methodology

As we have noted, MEXT has begun to shift public research and development expenditures away from recurring funding awarded to institutions on a formula basis, and towards funds that are awarded on a competitive basis. It is important to recognise, however, that these new funding streams continue to comprise a modest share of the public funding envelope for national and private universities. As Table 4.1 shows, MEXT competitive funds aimed at university reform (*e.g.* the support programme for distinctive university education) totalled 16.4 billion yen in FY 2006, while MEXT competitive funds to support research totalled 352.1 billion yen - both of which dwarfed by formula-based, input-oriented subsidies.

Table 4.1 Distribution of MEXT Tertiary Education Budget (Fiscal Year, 2006)

MEXT Tertiary Education Budget, FY 2006	Amount (billions of yen)
Operational Grants and Capital Development Funds for National University Corporations, etc.	1 272.7
Competitive Research	*352.1*
Funds Grants to Private Universities to Cover Current Expenses	331.3
Scholarship Programmes	113.4
Competitive Funds for University Reforms	*16.4*

Hence, these new funding streams now comprise a very small share of income for most national universities. At Gifu University, for example, these three streams of funding were estimated in 2006 to be equal to about

one-tenth the amount of the administrative expense subsidy from MEXT (see Table 4.2).

Table 4.2 Source of Income for Gifu University (2006/3 estimate)

	Amount (millions of yen)
Traditional Funding Bases	
Administrative Expense Subsidies (from MEXT)	13 151
Tuition and other fees	4 559
Income from Hospital	12 897
Others	763
Capital Investment Subsidies	6 812
Donations	1 732
Subtotal	*39 914*
Performance-Related External Income	
Grants-in-Aid for Scientific Research	1 056
21st Century Centres of Excellence	118
Good Practice Subsidies	73
Subtotal	*1 247*
Total Income	41 161
Performance-Related External Income as Percent of Total Income	3%

Source: Gifu University, May 2006.

4.5 Tuition Fee Structure in the Public Sector

As it is frequently noted, *average* tuition fees for national universities in Japan are broadly comparable to those for public universities in the United States, and higher than those charged by public institutions in many other OECD member countries.[13] According to OECD calculations, the estimated average public tuition fees charged by tertiary type-A institutions for full time students in 2003 were as depicted in Table 4.3.

13 See, for example, Country Background Report (MEXT, 2006), Figure 6.2.

Table 4.3 Average Tuition Fee in Selected Countries, 2003

Country	Average Tuition Fee, Full-time Students at Public Institutions, 2003
United States	4587
Chile	3845
Australia	3781
Japan	3747
Korea	3623
Canada	2967

(US Dollars, in international PPP)

Source: OECD (2006b).

However, undergraduate tuition fees within the public sector of university education are distinctive in yet a second way: they are largely undifferentiated by institutional mission, prestige, programme costs, or ability to pay.

MEXT now sets a standard annual tuition level of 535 800 yen ($4 326) per student and allows each of the national universities to set tuition fees at an amount up to 20% more than the standard level (up to $5 191). At the level of undergraduate study, only Saga University charges less than the standard level of tuition, while Tohoku University and Tokyo University of Agriculture and Technology are the only two that offer courses with higher tuition fees than standard. Graduate schools at only six universities - Hokkaido University of Education, Kitami Institute of Technology, Chiba University, University of Tokyo, Mie University and Saga University - set tuition fees lower than standard. Prefectural universities do not have a statutory restriction on tuition fees; however, most set their tuition fee at the same level as the national university standard amount. These pricing policies and practices contrast quite sharply with the United States, where public sector tuition may vary from 50 to 100% among public universities within a single jurisdiction, public sector tuition fees at highly selective research institutions reach approximately $12 000 per year, and tuition fees for undergraduate students are increasingly differentiated by faculty or programme to reflect differences in enrolment demand, programme costs, and graduate earnings.

In sum, tuition fees charged to students in the public sector of undergraduate university education appear to be largely unrelated to either the willingness and ability of families to pay for these study places or to graduate earnings, or to the cost of providing these study places. This tuition

policy constrains the capacity of the tertiary sector to raise additional private resources, and it limits in a very material way the capacity of national universities to develop a resourceful and entrepreneurial orientation to their financial management. Additionally, continuation of such an undifferentiated fee structure is questionable on grounds of equity even though MEXT argues that tuition fees must be kept low (and undifferentiated) so that all courses remain affordable for many students. Viewed in terms of family resources, this tuition policy heavily subsidises the study of students who enter the nation's most prestigious national universities, such as Tokyo and Kyoto, and whose families are likely to be among the most affluent in the nation. Viewed in terms of graduate earnings, it is also inequitable, since those who graduate from the nation's most prestigious national universities are likely to have higher graduate earnings than those who study at "local" national universities or prefectural universities.

4.6 Diversification of Revenues among Private and Public Institutions

The combined effects of wider philanthropic giving and a strong tradition of commercialisation result in a substantial difference in the diversification of revenues among universities in Japan and the United States. Consider, for example, two leading private universities in Japan and the United States. In 2004 Keio University enrolled 32 000 students, and had an annual budget of about one billion dollars (including its university hospital). 4% of its income came from private gifts and grants, and 6% from business activities.[14] By way of comparison, Duke University enrolled 13 000 students (about one-half of whom were graduate students) and operated a medical school, like Keio. Its budget was 2.81 billion dollars. At Duke, investment income, private gifts and grants, and auxiliary enterprises account for about 25% of its budget, or approximately two and one half times that of Keio.

The revenues of public institutions in the United States are likewise more diversified than those of national universities in Japan, as Table 4.4 shows (and these differences would be far wider if restricted to United States public *research* universities).

14 Gifu University, an incorporated national university, reported that an estimated 4.3% of its income came from donations.

Table 4.4 Distribution of current fund revenue by source, 2005

Source of Current Fund Revenue (2005)	Japanese National Universities (%)	United States Public Universities (%)	Japanese Private Universities (%)	United States Private Universities (%)
Government (All levels)	55.4	46.7	10.7	17.6
Tuition and Fees	16.2	17.8	57.0	34.0
Hospitals	27.9	11.5	23.7	8.5
Educational Activities	0	3.3	0.0	2.9
Private Gifts and Grants	0.6	5.9	2.9	13.6
Auxiliary Enterprises	0	10.2	0.0	9.3
Endowment	0	0.9	2.2	8.9
Other	0	3.7	3.5	5.2

We were interested to learn that gifts from individuals above 5 000 yen made to public and private universities are deducted from taxable income, with an upper limit of 40% of total income. Furthermore, donations from corporations to colleges and universities can be entered as a reduction in corporate earnings when calculating corporate taxes.[15] Thus, some tax incentives for philanthropy are in place, and we assume that over time the newly incorporated national and public universities will seek increased support from these private sources. If the culture or habits of Japanese people and companies do not change in a way that increases philanthropic giving, then one of the arguments for incorporation will be diminished in value. We do not know enough to predict the prospects for this revenue source, but highlight its importance.

4.7 Orientation of Management Practices towards Efficiency

Elsewhere in this Country Note we discuss management practices in national university institutions. We acknowledge that the policy framework for institutional resource allocation and financial management has undergone a series of reforms that provide *opportunities* to substantially increase the scope for efficiency in the use of human and financial resources. Further, we note that the government has imposed upon national universities an annual 1% reduction in subsidy, forcing institutions to develop methods for setting internal priorities and reallocating funds, phasing out less-valued activities in favour of those with greater value. It

15 *Ibid*.

must be acknowledged, though, that the legal opportunities made possible by incorporation have not yet been fully exploited, either with respect to the management of financial assets or human resources.

Public universities are constrained in their investment options for private funds, directing the bulk of their investments to "capital-safe options" that is, options without risk (such as bank deposits). This would seem to have a dampening effect on the incentives to give in that donors have opportunities to earn higher returns managing their own funds than the universities can supply. In the United States, for example, it is common for university endowments to be invested in a range of instruments, from government bonds to equities, and to earn 12 to 15% annual returns, generally higher than many donors can earn on their own. Encouraging greater investment freedom and risk-taking would seem consistent with the increased emphasis on encouraging entrepreneurial behaviour in the universities.

Some evidence of growing sophistication with respect to financial management appears to be emerging in Japanese private universities. Waseda University, for example, is reported to be shifting its investment portfolio to include securities, and to be charging fees for examinations held on its properties. These initiatives with respect to financial management are being supported by developments in Japan's capital markets. For example, Nomura Securities, its largest securities firm, has formed a research team on universities and colleges, and has taken Japanese universities on a tour of the United States to learn about financial management practices there.

Finally, we note that management practices with respect to human resources - including hiring and compensation - remain less fully developed than exist in the United Kingdom, the United States, and in other systems. As we note in Chapter 7 (Research and Innovation), the use of fixed-term appointments is far more advanced in some public sector research institutes (*e.g.* Riken) than it is in national universities, and the use of performance-based compensation in national universities is still rare.

4.8 Recommendations

Throughout the OECD where there is a mixed economy of public and private financing in education - or other policy areas - claims for additional public resources (an added share of GDP) do not succeed unless claimants can show that existing public resources are being wisely and efficiently used, and that opportunities to command private contributions have been fully and equitably exploited.

We think that that there is a basis for increased public investment in Japanese tertiary education - in return for (a) continuing consolidation

within public sector tertiary education; (b) further use of funding linked to performance; (c) increased diversification in the structure of tuition fees; (d) the accelerated diversification of institutional revenues; (e) the widening of institutional-level management practices that are conducive to efficiency. Below we outline the direction that some of continued changes might take, recognising that MEXT and central budget authorities must fashion their own agreement - best understood as a sort of contract - about how to link additional resources to continued reforms.

4.9 Consolidation

We recommend that, building on past experience, a broadly consultative process be organised to review the possibility of achieving voluntary consolidation among public sector institutions, both national and public. MEXT, working with prefectural governments and following institutions' initiative, could play a role in facilitating this. We acknowledge that prefectural universities differ from national universities in important ways, including mission, legal status, and governance - and that national universities differ from one another. However, conditions are now more conducive to consolidation than ever before. At the time of our study visit, 22 of Japan's prefectural universities had been incorporated, and others were proposing to become incorporated. Among these incorporated institutions legal and organizational - if not political - impediments to closer cooperation or mergers should be significantly reduced.[16] It is worth noting that other OECD member countries with binary systems of tertiary education - differentiated by funding, governance, and formal mission - have responded to declining student cohorts and international competition in university-based research by grasping this difficult but valuable opportunity. Finland, for example, stands out as an exemplary case, and its process and methods of consolidation deserve careful scrutiny.

Consolidation within the private sector of university institutions will take place, we expect, as demographic forces work themselves out within a market setting. MEXT has shown commendable restraint in permitting private institutions to enter bankruptcy, the first of which occurred in 2005. Experts indicate that 30% of Japan's private universities and 40% of its junior colleges do not fill their current enrolment cap which could spur

16 To promote co-operation among universities, MEXT has recently created a system whereby universities may provide joint courses and deliver joint degrees. In addition, MEXT has launched a programme to support strategic co-operation among universities through centres for knowledge. These programmes are at an incipient stage of development.

consolidation or closure.[17] MEXT officials note that institutions might improve their financial status by reorganizing faculties and departments, downsizing themselves, and tapping adult students. Academic studies suggest that the opportunities available to private universities to find new markets and income streams may be quite limited (Goodman and Yonezawa, 2006).

4.10 Performance-Based Funding

We recommend that the funding of national and prefectural universities should continue to shift resource allocation from inputs to performance, as it has done, for example, by the introduction of the 21st Century Centres of Excellence Programme. This can be accomplished by permitting new public funding to be channelled into this programme. National universities are diverse institutions, and funding formulae need to support the diversity of their missions, such as excellence in teaching and professional education, and engagement with regional employers and governments. Thus, we think that MEXT will need to diversify the performance-based funding instruments now available to it.

The public funding of private universities has also begun to shift in the direction of wider reliance on "special subsidies" that are "linked to actual teaching and research results": about one third of the subsidy to private universities consists of these "special subsidies," while the remaining two-thirds is a general operating subsidy, or "administrative subsidy" (MEXT, 2006, paragraph 247).[18] We are aware of the claim that the activities of private university institutions may provide valuable public benefits which need some element of public subsidy to continue. If so, then we recommend that the results of evaluation of activities of private universities be reflected in results-based resource allocations.

4.11 Tuition Fees

We recommend that university institutions be permitted substantially greater flexibility in setting of tuition fees. Further, we recommend that undergraduate courses of study be permitted to vary much more widely than

17 Brender (2005) cites "an official in Japan's education ministry, Kiyotaka Ido." See also Financial Times (2006), in which the head of a private university association estimates that 40% of junior colleges may face restructuring.

18 Correspondence from MEXT puts the figure at 33.9% of total subsidy in the 2007 budget.

at present. In our view this would be a beneficial development since it would encourage differentiation among institutions much more effectively than existing competitive grant schemes, and it would promote some differentiation in the price of courses that is sensitive to instructional costs and returns to schooling. Both of these already exist within the private sector of Japanese higher education. We anticipate that the overall student share of institutional revenue will increase only modestly, and with a proper lending system in place - which we discuss in the following chapter - there will be no adverse effects with respect to equity.

4.12 Revenue Diversification

Universities should hasten their efforts to raise philanthropic support from alumni, parents, friends, foundations, and corporations. Some tax incentives are now in place, and outlays on development staff should begin to return a benefit. Leaders of some universities have proposed to widen tax incentives. In light of the comparatively modest role that philanthropic support plays in financing universities, we recommend a careful review of the sufficiency of existing tax incentives.

If universities (or other tertiary institutions) raise funds from private sources and place these funds in accounts that are legally and financially separate from state funds, *e.g.* under the control of a foundation, they should be permitted to invest them in any way that they deem suitable. In a competitive marketplace of charitable giving, institutions that do not invest donated assets wisely will be sufficiently disciplined by a loss of donor confidence and financial support.

5. Equity in and through Tertiary Education

The concept of equity is complicated, nuanced, and less objective than other economic concepts, such as efficiency. Two notions commonly used in analysis are those of "horizontal equity" and "vertical equity," the first being the like treatment of individuals who are similarly situated financially, and the second being suitably differential treatment of those differently situated financially. In addition, the term often refers to treatment by gender, race, age, religious belief, sexual orientation, or geographic location; in short, just about any measure on which individuals can be seen to differ.

In higher education, the indicators of greatest importance are access and opportunity to enrol and complete educational programmes. The lodestar is "equal educational opportunity." A just society finds suspect any limitations on individual opportunity that are based on morally dubious grounds, *e.g.* religious, racial, or sexual discrimination.[19] In what follows, we will examine the equity of Japanese higher education on the dimensions of socio-economic status and gender.

5.1 Equity Achievements in Japan Tertiary Education

For the past half century equity with respect to tertiary education has been rooted in five important and durable characteristics of Japanese education.

First, Japan has an extraordinarily strong emphasis on elementary and secondary education. For many years, Japanese elementary and secondary preparation has been viewed internationally as among the best in the world. While some observers are critical of the emphasis on rote learning, memorisation, the reliance on "cram schools," and the heavy pressure put on the young to perform well on examinations, nonetheless Japanese youngsters clearly have the opportunity to develop skills, particularly in mathematics and science, at levels that exceed those of many other

19 Indeed, educational opportunity is enshrined in the Japanese Constitution; see MEXT, 2006, pp. 62-3.

countries.[20] For example, in the 2003 TIMMS assessment Japanese fourth and eighth grade students placed among the top five nations both in mathematics and science (out 26 participating nations at the 4th grade level and 48 nations at the 8th grade level). What is more, the opportunity for strong elementary and secondary education appears to be less closely linked to family incomes and social background than is the case in many other OECD countries.

Additionally, Japan has a highly diverse system of tertiary education that, in itself, contributes to educational opportunity, providing students with different skills and interests an institution that offers a programme likely to suit their educational aspirations. Thus, a student who is not theoretically inclined may enrol in a college of technology after grade 9, focusing over the next 5 to 7 years on an applied curriculum in business or technology. This option, coming at the close of lower secondary school, probably keeps many young people engaged in further learning, while in other OECD countries such students may simply drop out of high school, ending further education. The OECD Review Team was highly impressed with the range of educational options available to the young at several points in the secondary and post-secondary years, and we judged the array of options to be a significant strength of the system.

International comparisons show a relationship between access and equity: the fewer the numbers of study places for an age cohort, the less likely young people from disadvantaged backgrounds are to be included among the student population. Thus, systems that meet the demand for study places - whether through public financing, private financing, or mixed funding - tend to be more equitable than those that do not (Mateju, 2004). The Japanese tertiary education system has been marked by a substantial expansion of tertiary study opportunities during the past quarter century. By 2005, 51.5% of 18 year-olds enrolled in university or junior college, and if one includes enrolment in colleges of technology and other specialty and vocational schools, the rate is 76.2%, among the highest to be found anywhere (MEXT, 2006, pp. 64-5). As we have noted elsewhere, Japan has now reached an historic point in which study places meet (or even exceed) the number of prospective students.

A fourth feature of the system favourable to equity - in addition to high quality and inclusive secondary education, tertiary variety, and wide access -

20 The mean score of Japanese 15 year-olds on the PISA mathematics assessment is lower than that of only one OECD member country, Finland (and statistically indistinguishable from that of five others) (OECD, 2006b, pp. 62-69). Japan also has the sixth highest rate of upper secondary completion within the OECD, over 90%.

has been the broad geographic dispersion of tertiary institutions. With a national university in every prefecture, coupled with the sizable numbers of public universities and the hundreds of private colleges and universities, it appears that all areas of the country provide opportunities for tertiary education.

Lastly, we note that the national university system has been perceived in Japan, at least in some quarters, as an equity-enhancing feature of the tertiary system, on the grounds that it provides high quality education at high affordable (highly subsidized) rates of tuition, creating opportunities for students from families of modest means.

The challenge now facing Japan is how to preserve - and indeed, how to widen equity in the decades ahead - while at the same time responding to the very real need for changes in some of the country's basic policy commitments. Below we outline our thinking on how this might be done.

5.2 Equity Challenges in Japan Tertiary Education

Notwithstanding these favourable bases for equity in tertiary education, there is cause for concern with respect to socio-economic and gender equity in tertiary education.

Gender equity is an aspect of the tertiary system marked by considerable change - and opportunities for still greater advances. The enrolment of women in bachelor and advanced degree study - while not yet at the level of men - has been increasing rapidly in recent years. The aspirations of young Japanese women for lifetime careers - as distinct from a spell of pre-family employment - rose substantially in the 1980's in response to important anti-discrimination legislation adopted in 1985, and widening enrolment and labour market opportunities. And, as the career ambitions of Japanese women changed, so too did their decisions about tertiary education. By the beginning of the 1990's advancement rates to university began to rise sharply (nearly trebling between 1986 and 2005), and by the mid-90's the junior college advancement rate began a steady decline. In FY2005, 51.3% of males and 36.8% of females enrolled in university bachelor's degree programmes, while 15.1% of recent male college graduates proceed to graduate programmes, compared to 7.7% for females (MEXT, 2006, pp. 70-71).

Given the relatively recent rise in female advancement rates to university, and the low rate of female advancement to graduate study, women are poorly represented among the ranks of the professoriate and in higher education administration compared to many OECD countries. For example, about 10% of full professors in Japan are women - as compared to

22% in Finland, 18% in the United States, and 16% in Sweden. In national universities 6.1% of full professors in fiscal year 2004 were females - an increase over the level of 2.6% in 1991 - while women hold about 10% of associate professorships. In the sciences and engineering, 3.7 and 1.2% of full professors, respectively, are women.

These modest rates of advancement into graduate and academic life have been identified by Japanese women as arising from two sources. The first they describe as *akahara* - abuses of power by senior professors who hold near absolute power over their subordinates, and who are prone to exercise this power unfairly concerning female graduate students and instructors (Ueno, 1997).[21] Additionally, Japanese women note that academic life continues to be organised around the life biographies of men, while the child-bearing and domestic obligations of married women leave them hard pressed to manage the extraordinary time demands placed upon them.[22]

Our second principal equity concern is that of socio-economic differences in enrolment. Throughout OECD member countries equity analysis is based upon rates of entry or attainment among different racial or ethnic groups, or different social classes (identified by family income, education, or occupational status). It is on this basis, for example, that the United Kingdom calculates higher education entry rates by social class.[23] This analysis requires not only data with respect to enrolled students, but census data with respect to the wider population. MEXT collects data on the (self-reported) family income of enrolled students through the Survey on Student Life. This Survey, which has been carried out since 1968, is based on responses to a questionnaire from approximately 50 000 students who are randomly selected out of 3 000 000 students. What we did not obtain from MEXT are census data on the characteristics of the wider population, without which comparative rates of entry or attainment among different social groups cannot be calculated. It appears that MEXT cannot, from its own data resources or those made available to it, compare rates of tertiary

21 Highly publicised incidents include that of Kumiko Ogoshi, at Nara Medical University. See Normile (2001).

22 As surveys indicate, in double-income households men bear responsibility for .25 hours per day of household chores, while women bear responsibility for 4.12 hours (Japan Society for the Promotion of Science, 2006).

23 "The Future of Higher Education", White Paper presented to Parliament, 2003, p. 50, cited in the United Kingdom's Country Background Report for OECD's Thematic Review of Tertiary Education (Clark, 2006).

entry, for example, among young persons who families are in the lowest and highest quartiles of family income.

Independent academic research by Ishida (2003) suggests that gaps in university attendance by parental education and income did not diminish as the tertiary system expanded in the 1980's and 1990's. As Ishida concludes,

> *"There was neither a clear correspondence between the pattern of the effects of social background and stages of [tertiary enrolment] expansion, nor a linear pattern of diminishing or increasing effects of social background. Although the educational policies of the Ministry of Education did not explicitly attempt to reduce the impact of social background [on tertiary enrolment], the expansion of the higher education system did not necessarily bring about equality of access to higher education."*

In recent years Japan has experienced some widening of its traditionally modest income differentials. This growing income inequality - when coupled with the growing role of private high schools, populated by children of wealthy parents; sizable payments required for tutors in preparing students for university entrance examinations; and relatively high and rising tuition fee levels in universities - all point to the likelihood that growing numbers of youngsters from low-income families will be unable to gain admission and pay for university education. We simply cannot imagine any other situation obtaining, given what we understand about the financing of higher education and the process of admission.

In countries where tuition fees are charged, equitable opportunities for tertiary study are secured through student financial aid systems that have the effect of ensuring those who have the ability and desire to participate in tertiary study have the means to do so, either through the provision of grants (bursaries) which reduce or eliminate study costs, or through lending systems. At the time of our Review Japan had in place a student lending system distinguished by the characteristics depicted in Table 5.1.

Table 5.1 Characteristics of Student Loan Scheme, 2006

		Category 1 (Interest-free loans)	Category 2 (Low-interest loans)
Number of loan recipients		460,000 students	631,000 students
Loan amount		272.1 billion yen	527.8 billion yen
School type		universities (undergraduate and two-year junior colleges), graduate schools, colleges of technology, specialized training colleges	
Monthly loan amount		Fixed amount (example: 64,000 yen for a student to go to private institution away from home)	Variable (in case of universities, choice among 30,000, 50,000, 80,000 or 100,000 yen)
Loan criteria	Academic ability	(1) above 3.5 GPA at high school (on 5.0 scale) (2) maintain class rank in top 1/3 at university	(1) above average (2) recognized to be excellent in certain field of study (3) high motivation to study
	Family Income	less than 9.97 million yen (student enrolled at private institution, living at home /family of four, parent is office worker)	less than 13.43 million yen (student enrolled at private institution, living at home /family of four, parent is office worker)
Repayments		continue for up to 20 years after graduation	continue for up to 20 years after graduation
Interest		no interest	interest rate currently 1.3% (3.0% maximum)

The interest-free loan programme has grown slowly since 1999, with loan volume rising from 212.7 billion yen to 227.1 billion, while the positive interest loan programme has grown far more swiftly, from 166 to 527.8 billion in loan volume since 1999. Three characteristics of these lending programmes raise equity concerns.

- About 27% of tertiary students are participating in the two lending programmes, a proportion that is modest by international standards. This suggests an opportunity for further growth in the loan programme - or a revision of its terms of lending.
- Loans are repaid on a mortgage-style (fixed repayment schedule), rather than income-contingent basis.
- While tertiary education is profitable for the average student, some students are not confident of doing as well as the average. These students may choose not to enrol because they are not confident of being able to make loan repayments. Or, they may choose to enrol, but invest less than is optimal, i.e. by undertaking a shorter, less costly course of study than they would do if they were able to borrow on an income-contingent basis. If levels of indebtedness at graduation increase in the years ahead, or employment becomes less regular (see Chapter 6), then this will become a serious policy challenge.

5.3 Recommendations

To address the challenge of equity within an environment of public spending austerity and a financing system led by household spending, we recommend the following combination of initiatives.

We recommend that MEXT remedy the deficiencies of mortgage-style lending, modifying the student lending system to allow student borrowers to repay their loans after graduation with loan repayments varying with income. Broad-based income-contingent lending programmes have been introduced in Sweden in 1988, Australia in 1989 (extended in 1997 and 2005), New Zealand in 1991, South Africa in 1991, Chile in 1994, and the United Kingdom in 1997 (extended in 2006). These lending systems may serve as useful models in the development of income-contingent arrangements suited to Japan. This loan repayment system is an essential companion to a system of variable tuition fees with the public sector of Japanese higher education (national and prefectural universities), since it provides an equitable system of repayment that links higher schooling costs for some to higher graduate wages. Additionally, we think that loan limits should be increased to accommodate rising tuition fees we have proposed that national universities be authorised to charge.

We strongly believe that MEXT (with the assistance of its fellow ministries, where necessary) should embark upon a programme of data collection and analysis sufficient to permit a clear understanding of enrolment rates in higher education in Japan by family characteristics, including income and parental education.

We urge that MEXT continue - and redouble - its recent attention to the question of gender equity in tertiary education. As we have acknowledged, the rise of female enrolment in Japanese universities was not the result of decisions taken within the tertiary system, but rather a response to widening opportunities for women in Japanese labour markets - and future increases in university advancement rates are more likely to be spurred by still wider opportunities.

Lastly, we commend recent initiatives taken by the Council for Science and Technology Policy and MEXT, such as the introduction of female workforce targets for Third Science and Technology plan, the introduction of grants to help parents returning to the scientific workforce after extended child raising breaks, and the introduction of funding for temporary replacements for women on maternity leave. However, in a system where only a handful of universities are known to have childcare centres - Tokyo, Ochanomizu, Tsukuba, Nagoya and Tohoku - considerable opportunities for improvement with respect to gender equity remain.

6. Tertiary Education and Labour Markets

6.1 Introduction

As observers throughout the past four decades have noted, the Japanese system of tertiary education was highly adapted to a graduate labour market distinguished by the norm of lifetime employment within a single firm. Given this prevailing pattern of lifetime employment, firms rationally paid modest attention to a graduate's skills upon entry to the firm - and focused chiefly on a graduate's expected *aptitude* for a lifetime of learning and growth within the firm. Under such conditions, higher education institutions were expected by firms to signal the aptitude of graduates, rather than impart specific skills necessary for entry to the firm (*i.e.* to develop human capital). The key signal of graduate aptitude for learning was provided by the institution in which the student enrolled: the more selective the institution, the higher the graduate's underlying ability for learning, and the more likely they were to obtain the most highly coveted positions in large firms recruiting in the graduate labour market (MEXT, 2006, paragraphs 55-57, 63).

Naturally, the connection between tertiary education and labour markets is complex and varied, and for some study fields - and some students - these patterns did not prevail. For study fields such as engineering, medicine, accounting, the balance of signalling versus human capital development was different, since firms often prize specific technical competencies.[24] For female students, the link between tertiary study and work was very different

[24] This qualification must be approached with caution. "Even in [university-based] science and engineering courses, there remains today a much greater emphasis on general education and one-way lectures than on practical work and placements compared to North American or European universities. This may be due to the fact that companies which hire graduates from universities even in the sciences are less interested in what they did there than where they had been; around 40% within 2-3 years in any case would be following a specialism in the company quite different from what they had studied in university" (Goodman *et al.,* 2006, p. 15).

to that of males. Women had low rates of labour force participation, with a distinct M-shaped period of labour force inactivity during child-raising years. Under these labour market conditions, women made smaller investments in education and training than males, typically studying for a two-year (associate) degree at a junior college, rather than a four-year (bachelor) degree at a university.

This pattern of lifetime, firm-based employment has shaped many of the distinctive characteristics of Japanese tertiary education, including teaching and learning practices, the pattern of graduate recruitment followed by employers, the system of graduate education in Japan, rates of private return on investment in higher education, and the government's system of monitoring labour market outcomes.

6.2 Links between tertiary education and labour markets

Teaching and Learning: Low Engagement, Weak Connections to Working Life. It is difficult to make robust international comparisons about student engagement and learning outcomes due to the absence of comparable international data on either student engagement or learning outcomes. However, for forty years those who have first-hand experience of both Japanese higher education institutions and those of Europe or North America, whether as students or professors, have uniformly noted that Japanese higher education is, *on average*, distinguished by a comparatively low level of investment by professors and students in classroom-based teaching and learning, or mentoring activity.[25] For example, a 2005 survey of undergraduate students in eight Japanese universities revealed that nearly half of students (47%) reported that they receive no "advice or guidance about their educational programme" from their professors (Yamada, 2007).

Japan's university system was deeply influenced by the German university tradition, and the Humboldtian model of the university. For many professors, their status and reputation have been rooted in their accomplishments as a researchers and members of an expert community, rather than as an undergraduate teacher. Moreover, the circulation of personnel between universities and the working world is modest by international standards, (*e.g.* between universities and firm-based research

25 For example, the 1970 OECD Review of education in Japan observed that "since the entrance examination is used by society [*e.g.* employers] as the primary certificate of scholastic ability, rather than achievements at university, there is less incentive for students to work seriously at university studies… [and tends to] diminish the total significance of the university experience" (OECD, 1970, p. 88). See also Dore (1982), Reischauer (1983), or, more recently, Eades *et al.* (2005).

labs), strengthening the separation of tertiary education, particularly university education, from working life. This culture of university life has shaped the wider tertiary system, and even instructors in junior colleges noted their obligations as scholars - an orientation one would not find in like institutions elsewhere in the world.

For many students, low levels of engagement in classroom-based instruction (*e.g.* infrequent attendance, and a strong orientation towards extra-curricular activities) was a rational adaptation to a labour market that rewarded university entry results, rather than classroom-based achievement at university - and to a curriculum and pedagogy are shaped by the professor's research programme, rather than the development of skills and competencies suited to working life.

We note that reform efforts launched by the National Council for Education Reform (1989) and carried forward by *Monbusho* in the 1990's aimed to improve the quality of education. These initiatives focused directly on changing the teaching and learning practices of Japanese universities - including the introduction of syllabi, office hours, small group education, student evaluations, and teacher training/faculty development.[26] Additionally, MEXT has sought to spur student motivation and engagement in studies by linking academic performance to financial aid, providing no-interest loans to those who rank in the top third of their university class.

However, in the view of academic experts (see, for example, Goodman, 2005) and those with whom we met during our study visit that these initiatives did not change the underlying incentives shaping the behaviour of students and professors.[27] Thus, for example, a survey of higher education graduates in Japan and ten European nations conducted at the end of the 1990's found that 54% of European graduates reported making "extensive use of knowledge and skills acquired during [university] study" - as compared to 24% of Japanese graduates. While European and Japanese graduates were equally likely to report that problem-solving was a key competency for working life, 58% of European students reported that this was a competency acquired by the time of graduation - as opposed to 39% of Japanese graduates (Teichler and Lenecke, 2005). Throughout OECD

26 These are described in a variety of *Monbusho* White Papers from the 1990's, such as the 1995 White Paper, Chapter Two, *How Universities Are Changing*.

27 For example, in fiscal year 1992 approximately 7% of universities implemented class evaluations by students; by 2007 nearly all do so, according to MEXT. However, academic compensation and advancement are not closely linked to student evaluation results, and thus their behavioural effects are much more modest than in systems in which they are linked.

member countries vocationally oriented study fields such as journalism or architecture are closely connected to professional life; in Japan these same students reported to our Review Team that their education was not linked to professional practice, and they had little knowledge of or engagement with the working world outside their university.

Low rates of participation in graduate education. Japanese employers have not rewarded graduate study; indeed, in many instances it is viewed with disfavour, since it may actually impair adaptation to the firm's corporate culture. One important exception to this has been the field of engineering, where Japanese firms have sought engineers who have studied to the master degree level - but not to the Ph.D. level. Predictably, the masters' graduates in engineering outnumber those in social sciences and humanities by 3 to 1, and their employment prospects are vastly better (MEXT, 2006, Table 3-8). Outside of master-level study in engineering, however, graduate enrolments, while increasing, have been quite small by international standards.[28] In 2002, for example, the number of graduate students in Japan was equivalent to 8.9% of the undergraduate student population - as compared to 13.3% in Korea, 13.7 in the United States, 21 in the United Kingdom, and 22 in France (OECD, 2004b).

Low rates of participation in lifelong learning. Given the pre-eminence of firm-based training, the demand for lifelong learning on the part of adults has traditionally been quite small, and tertiary institutions, particularly universities, have had few incentives to engage in the development of flexible instruction suitable to this market.[29] The study programmes of university institutions were adapted to the needs of fulltime students enrolling directly from secondary school and ill-suited to the needs of working adults. About 30 000 working adults are enrolled in conventional site-based tertiary education, and a total of 220 000 students are enrolled in distance education, most often through the University of the Air (which accounts for nearly 100 000 enrolments, of whom 57 000 are enrolled in degree programmes). These numbers, as the Country Background Report acknowledges, are extremely small, and leave wide scope for future development.

Modest rates of return to higher education. Econometric estimates of the private internal rate of return to tertiary education show that the average

28 Figure 1-1-12, Ratio of Graduate School Students to Undergraduate Students in Various Foreign Countries, FY 2003, in MEXT (2003).

29 An OECD Review of lifelong learning found that Japan had the smallest share of adult enrolment in tertiary education of any of the 22 countries examined: 2% of students were age 35 or older (OECD, 2000).

rate across 14 EU countries was nearly 9%. The lowest rates of private return within the European Union were for graduates in Sweden (4.28%) and the Netherlands (6.95%), while the highest were for those in the United Kingdom and Ireland (at 12.25 and 11%, respectively) (Fuente and Jimeno, 2005). Estimates for the private internal rate of return for Japanese graduates are considerably lower than those in Europe, and have been estimated to be in the range of 5-6%. Yano (2005) estimates a rate of 6.3% for university-educated males (as distinct from all tertiary graduates of both sexes), while Arai (2001), using data for workers continuously employed in the same firm, estimated a rate of return of 5.3% for male tertiary graduates and 6.4% for females. As Kazuhiro Arai notes, this is due (in part) to one characteristic of lifetime employment in Japan: "Japanese age-wage profiles are quite steep, and wage differences between different educational careers are small when [workers are] young."

Though the Japanese system of tertiary education was very different to those of other OECD countries, one must note that it was closely adapted to the limitations and opportunities presented by the Japanese economy - in which firms played a much greater role in the development of competencies than in other economies with high levels of job mobility in an occupation-based labour market, such as the United States or the United Kingdom.

Japanese labour markets in general - and the graduate labour market in particular - are *beginning to* change. These changes do not appear to be ephemeral, but rather part of a wider and more enduring change in labour practices in Japan, in which "corporations have come to put less emphasis on long-term employment, and …individuals are [increasingly] responsible for establishing their own careers" (MEXT, 2006, paragraph 58). The major changes are as follows:

- A growing percentage of all Japanese workers are so-called irregular workers, who are employed on a part-time or temporary basis. The share of such workers rose from 17.6% in 1987 to 32.5% 2005. Firms have increasingly relied upon these workers both to reduce personnel costs (through the use of part-time workers) and to enhance the specialized skills available to them (through the use of dispatched workers) (Japan Institute for Labour Policy and Training, 2007).
- A rising share of tertiary graduates begins their careers in temporary, rather than permanent employment. 90.6% of graduates who entered the workforce between 1969 and 1971 (the 1947-1949 birth cohort) initially took regular employment. Among graduates entering the workforce between 1997 and 2001, the share declined to 85.9%.

- One reason for this change was the growth of so-called "dispatched workers" - workers under contract to a dispatching agency who are entrusted with specific duties by the companies to which they are assigned. Very nearly prohibited under labour laws prior to 1986 - and excluded from employment duration of more than one year or employment in manufacturing industries until 1999, this category of workers grew from 144 000 in 1986 to 2.13 million in 2002, among whom graduates now constitute about 46% of workers, sought by employers for their specialized knowledge.

- A rising share of tertiary graduates is experiencing a change in employment in the first three years of their working lives - from 28% (1987) to 35% (2001). (In the decade of 1993-2003 the share changing jobs in first year after university graduation rose from 9.4 to 15.3%.)

- A majority of Japanese firms hold the view that the system of lifetime employment must be subject either to "inevitable partial adjustments" (40%), or that fundamental review of this policy is necessary (15.3%) - as compared to just over a third of firms that report they will maintain existing lifetime employment policies without modification (Japan Institute for Labour Policy and Training, 2007).

- Firm investment in worker training has diminished. The percentage of firms that had in place a system of paid leave for employees to receive education and training fell from 9.1% in 1994 to 5.1% in 2003. More broadly, education and training costs as a share of total labour expenses have declined from an average of 0.36% of expenses in 1985-1991 to 0.28 in 2002.

In an economy where graduates must increasingly "establish their own careers" and employers more often seek graduates with work-relevant skills, students, tertiary institutions, and public policies have begun to respond to the changing Japanese economy.

The proportion of tertiary students going to fulltime tertiary non-university vocational education, *senmon gakko*, has increased to nearly one-fifth of all secondary school graduates, and there are now roughly 3 400 such institutions enrolling about 750 000 students (MEXT, 2004). Experts point to two reasons for the sector's growth. First, in comparison to both public and private universities, private *senmon gakko*[30] are seen to have

30 93% of all *senmon gakko* institutions are private, and together they enrol 96 % of the sector's students.

greater autonomy vis-à-vis public authorities and stronger management (vis-à-vis faculty committees), enabling them to act with comparatively greater responsiveness to market forces. *Senmon gakko* do not receive operating subsidies from MEXT, and standards with respect to student numbers and other matters are relatively loose compared to those for universities.[31] Second, *senmon gakko* are perceived by students to offer market-oriented skills, as distinct from university education that is theoretical and academic, and strong employment results (some, in fact, guarantee employment to all who complete courses). While offers of employment fell for university graduates in the 1990's, those for *senmon gakko* graduates remained robust. Thus, not only are they attractive to secondary students, but also to students who drop out of university or junior college studies, as well as about 25 000 university and junior college graduates (in 2005), and to tens of thousands of "double-schoolers" who are simultaneously enrolled in at a university and *senmon gakko* (Goodman *et al*., 2006).

Universities have also developed add-on courses and modules, outside the normal course of study, which have the purpose of providing students with work-related skills. These may be offered either by universities, or *senmon gakko* set up alongside their campuses. Other universities have tried to increase their attractiveness to students by facilitating "double schooling" on campus either by hiring in lecturers from specialized schools or by contracting with specialised schools to offer "on campus" programmes (Kimmoth, 2005). However, it is against the law and regulations to contract out an entire course to a professional training college.

Professionally oriented education is expanding at the graduate level. Graduate professional education was adopted in April 2003 replacing a pattern of general undergraduate study followed by examinations open to all regardless of educational background, and one year later, enrolments began. By 2005 there were about 15 000 students engaged in professional graduate education, chiefly in the field of law. While these professional schools originated as a response to a crisis in the training of lawyers, they show signs of gaining wider acceptance among students and tertiary institutions. New programmes are being introduced in a range of professional areas. At Waseda University, for example, graduate professional programmes have been introduced not only in law, but also in management of technology, public management, economics and finance, environmental studies, and information, production, and systems. These professional schools offer the possibility of providing high-level specialist skills in fields such as business services and public affairs that have been obtained outside of Japan,

31 *Senmon gakko* receive very little in the way of public funding, and that which is provided is obtained from prefectural governments (MEXT, 2006, paragraph 249).

developed only through in-firm training - or, in some instances, were lacking.[32]

Opportunities for flexible study have substantially widened. By far the greatest impetus for the transformation of tertiary study has been the sharp change in the market for tertiary education - in particular, the diminishing number of traditional 18 year-old students. Faced with great difficulty in filling seats, universities have responded by introducing flexible schedules and evening courses; accepting transfer credits; and building facilities to permit increased attendance among disabled students. Many universities have also made lifelong learning programmes an integral part of their institution.

MEXT has encouraged the introduction of internships as part of the undergraduate study experience, promoting the engagement of undergraduate education with working and professional life.

6.3 Recommendations

We acknowledge that many employers, especially large and prestigious firms recruiting in the graduate labour market, may continue to rely heavily upon institutional reputation and university entrance examinations as leading criteria for graduate recruitment - thereby creating strong incentives for prospective students to invest heavily in preparing for entrance examinations, and weaker incentives for engagement in studies after matriculation on the part of students (and limited interest in the development of professional capabilities on the part of instructors). Nonetheless, there now appears to be a rising interest on the part of employers in recruiting graduates with some specialized skills and work-related competencies, and keener interest among students in acquiring these (as evidenced, for example, by the development of *senmon gakko* enrolments and employability-related courses at universities). What is missing, however, is reliable information, particularly among prospective students, about the teaching, learning, and labour market outcomes associated with different tertiary institutions.

In Japan, as in many other tertiary systems, such as the United States, prospective students have extensive information available to them about the

32 Reform of legal education was necessitated not only by the very small number of lawyers produced each year (1 200), but also by the fact that "lawyers sometimes find themselves inadequately equipped to handle sophisticated legal issues that require broader intellectual training in fields such as science and economics" (Waseda Law School, 2006).

selectivity and reputation of institutions - but very little about teaching practices, learning experiences, and labour market outcomes. Japanese tertiary education stands at an historically unprecedented point, in which supply and demand for tertiary student are broadly in balance, and in which consumer choice, grounded in high quality information, can be a powerful force in steering tertiary institutions towards a closer engagement with the development of abilities suited to professional life.

1) *MEXT should focus on creating an environment within which prospective students and employers have information about the engagement and learning, so that these might become a basis for student choice and institutional competition.*

Throughout OECD member countries initiatives are now being launched, or being developed to assist in the development of teaching and learning information for prospective students *qua* consumers.

- In 2005 the United Kingdom launched the National Student Survey (NSS), which aims to gather feedback on the quality of students' courses through a survey asking final-year undergraduate students a series of questions about the quality of their courses. The NSS aims both to help inform the choices of future applicants, and to strengthen accountability.
- In the United States foundations and researchers have worked with tertiary institutions to develop the National Survey of Student Engagement (NSSE), and 557 colleges and universities participated in the 2006 survey of undergraduates in which they were queried about the level of academic challenge, "time on task", and other dimensions of their learning experience. This information is made available to institutions for the improvement of the learning atmosphere, and, less frequently, to prospective students, their parents, and their academic advisors.
- In Germany the Center for Higher Education Development (CHE) has introduced student-based externally available assessments of their learning experience at the programme level, providing prospective students with information that they may use in choosing among institutions.

We note the work of a 2005 pilot study, the Japanese College Student Survey (JCSS), in which a set of eight Japanese universities, both public and private, participated (Yamada, 2007). An adaptation of the National Survey of Student Engagement, the JCSS generated a potentially valuable body of information about student engagement and satisfaction,

and how these vary across institutions and faculties. We see this as a commendable first step in developing deeper engagement between professors and students in universities, and information about institutions beyond selectivity. We warmly encourage its continued and widened support.

2) *MEXT should focus on the development of information about longer-term labour market outcomes of tertiary students, and make this information available to prospective students, so that these might become a more prominent basis of student choice and institutional competition.*

Throughout the OECD Ministries are also increasingly focused on the development of information about long-term labour market outcomes for tertiary graduates. MEXT has produced data and reports focusing on job offers received by the time of graduation, or type of employment taken at completion of tertiary studies. While this was suitable to a labour market in which nearly all transitions consisted of university and junior college undergraduates entering directly into regular employment, it is becoming less suited to a tertiary education system with more diversified provision (*e.g.* growing graduate professional education) and more diversified career paths. To assist students and families in better understanding the connection between tertiary enrolment choices and labour market outcomes, we recommend that MEXT, working in conjunction with internationally recognised centres of expertise (*e.g.* the Japan Institute of Labour), aim to revise its data and analysis of labour market outcomes.

3) *We encourage the development of career and benefit policies for academics that will permit them to move more easily between academic and external posts - in firms, public research institutes, or other external settings.*

Undergraduate and graduate professional education appear likely to create a demand for academics who can join theoretical knowledge and professional life, and this will demand that career policies make circulation between the two less difficult than at present (OECD, 2006c, Section 5.29-5.31). This will have the effect of influencing not only connections between teaching and professional life, but also strengthen the link between university-based research and its application outside of the university (see Chapter 7).

7. Tertiary Education: Research and Innovation

7.1 Introduction

For much of the past half century the Japanese economy was one in which innovation was carried forward by the engineering and manufacturing prowess of Japanese firms, most especially large firms, and the research and development expenditures their commercial achievements made possible. Public research institutes, and especially universities, have played a modest role in research and development spending compared to other OECD countries, and in making research-based contributions to innovation.

To the extent that Japanese tertiary education institutions were engaged in research, this was undertaken predominantly (though not exclusively) at the former imperial universities. As institutions with a strongly Humboldtian orientation, their research activities were organized by the *koza* (chair) system in which full professors controlled funds that flowed into the *koza* - along with the allocation of office space, travel authorisation, other preferment, and research themes. Once academics were attached to a *koza*, there was little movement either between universities or research centres in firms or public institutes The number of researchers trained through graduate education was, by international standards, quiet small, and training organised by the *koza* was apprentice-like in character. And, once graduate students became university-based researchers, they worked within a system of lifetime employment and non-competitive research funding that did not always spur the highest levels of achievement. Although Japanese national universities had a very long tradition of collaboration between engineering faculty and manufacturers, in disciplines other than engineering, scientific university-based research was characteristically theoretical and weakly oriented toward application. Where research yielded patents, faculty members "transferred knowledge to private sector businesses on an individual basis": as administrative organs of the state, national universities had no separate legal personality, and could not take ownership of property rights (MEXT, 2006, pp. 57).

By the 1990's this higher education research system was judged by business and governmental leaders to require sweeping change. In part this was a response to the economic difficulties of the bubble economy. Equally, however, the desire for change was based upon an understanding that future economic innovation would be based less upon industrial products and processes improved through experience, empirical knowledge, and trial and error, and instead rely increasingly upon science-based innovation, as in biotechnology and other new industries. Henceforth, Japan would need a larger share of world leading research communities, and need to link public scientific research more fruitfully to commercial life.

In 2001 the governmental framework of science and technology policy underwent comprehensive change. *Monbusho*, the ministry of Education, Culture, and Sports, became MEXT, the Ministry of Education, Culture, and Sports, *Science and Technology*. Of the ministries responsible for national science and technology-related spending in Japan MEXT is by far the most important, comprising 63.3% of the national government's science and technology budget.[33] However, responsibility for science and technology spans a wide range of governmental activity, including the Ministry of Economy, Trade and Industry, the Defence Agency, and the Ministry of Health, Labour, and Welfare, among others. Thus, a coordinating body, the Council for Science and Technology Policy (CSTP) was created with responsibility for formulating and coordinating policy on a government-wide basis. Chaired by the Prime Minister and supported by a secretariat established in the cabinet office, the CSTP's primary responsibility is to formulate the basic plan for Science and Technology Policy, and to assess ministerial budget proposals.

The government has implemented Basic Science and Technology Plans for 1996-2001, 2001-2006, and in March 2006 began the implementation of its third plan, for the years 2006-2010. In each it has sought to set a target for R&D outlays, to identify key reforms in the public science and technology system, and to identify research priorities. For example, the Third Basic Research Plan sets a 1% of GDP per year goal for spending for 2006-2010; proposed systemic reforms that include strengthening international linkages and the mobility of researchers; and identified four priority areas for R&D investment, including life science, information technology, environment, and nanotechnology and materials.

No less important to the future of the nation's research system, the key institutions responsible for public scientific activity - the national universities and national research institutes - underwent reform through

33 Fiscal year 2004. Includes the budget of the national university corporations.

incorporation, providing them with much greater legal autonomy (and responsibility) vis-à-vis government than they had previously enjoyed.

Below we outline some of the key strengths of the current policy framework and research activities of the higher education system. Next we examine some continuing challenges that limit the research and innovation capacities of the higher education system. We conclude with some recommendations.

7.2 National Policy Framework and Higher Education Research System - Strengths

High Aggregate R&D Spending

Notwithstanding the ambitious public investment goals of the CSTP, research and development in Japan remains centred in firms. Private R&D financing in Japan is equivalent to 2.4% of GDP, far higher than the OECD average of 1.4% of GDP. Government-financed R&D, at 0.7% of GDP is at the OECD average. When combined with public R&D spending, this results in the third highest level of R&D intensity within the OECD (3.2%), a level substantially higher than that of the United States (2.6%) or the European Union (2.0%). About 75% of all R&D spending is business financed (compared to an OECD average of 62%), while higher education comprises a smaller share than average (14% versus 19%), and public research institutes 9% (versus an OECD average of 11%).

Widening Use of Competitive Allocation of Public R&D Spending

Reflecting the key goals of the second Basic Plan, MEXT has made an effort to shift public research and development expenditures away from recurring funding awarded to institutions on a formula basis, and towards funds that are awarded on a competitive basis. These have taken the form of Grants-in-Aid for Scientific Research (GIA), which in FY 2005 provided 188 billion yen to individual researchers or groups of researchers, and the 21st Century Centres of Excellence Programme (COE), awarded to create "world class education and research centres in the doctoral courses." With a total FY 2005 budget of 38.2 billion yen, the 21st Century COE programme selected in 2004 28 proposals from 24 universities (among 320 proposals from 186 universities). Taken together these programmes have provided a

substantial foundation of peer-reviewed, competitive funding for university-based research.[34]

Strengthening Graduate Education, Researcher Diversity, and Increasing the Mobility of Researchers

Japan has made a significant investment in the expansion of graduate and postdoctoral training, increasing the number of Ph.D. students from 43 774 in 1995 to 74 907 in 2005 (MEXT, 2006, Figure 2-7). The number of postdoctoral students rose to 12 583 by FY 2004 (MEXT, 2006, Table 5-14), of whom about one-third now receives fellowship type support, and half were supported by competitive and extramural funds (MEXT, 2006, Table 5-15). PhD student funding has also been strengthened. Concerted efforts have also been made to move away from a model of apprentice-like model of graduate training, centred on the graduate student's participation in the professor's research programme, to graduate training that is based upon international best practice.

Important changes have been introduced to the career system of researchers. Academic researchers previously enjoyed indefinite term employment, and were not subject to performance-based evaluation as a means of gaining additional compensation or rank, but rather advanced by seniority. The legal framework of researcher careers has changed: for the past decade public research institute and universities have had the opportunity to appoint researchers to fixed-term rather than indefinite contracts, and since national university incorporation they have had the legal authority to link salaries and advancement to performance, rather than seniority.

A Focus on University-Industry Partnerships and Strengthening Knowledge Dissemination

The policy framework for university-industry partnerships has undergone extensive redevelopment in recent years. The number of joint research centres at national universities has grown dramatically, increasing from 28 in FY 1992 to 62 in FY 2002. By 2004 virtually all national universities had established offices for university-industry cooperation (92.2%), as do municipal universities with natural science departments (90.9%). (Given the more limited natural science research commitments of private universities, fewer than half had such an office). More importantly,

34 A small share of GIA funds are also awarded to research carried out by teachers or individual citizens.

the number of university-industry joint research projects increased, particularly at national universities, and the share of jointly authored papers between company researchers and universities researchers rose as well. The number of academic spin-off companies rose from 22 in 1997 to 179 in 2003, reaching a level comparable to that of the United States (Kondo, 2006).

Throughout OECD countries a leading challenge in building industry-university relations is to get small and medium size companies involved. Such companies may well have as good potential for turning new scientific knowledge into reality in the form of processes, products and services as larger corporations. Japan appears to have a unique asset in this respect in its Colleges of Technology. With respect to interaction between the Higher Education System and small and medium size enterprises (SMEs) the Colleges of Technology appear to be extremely well connected to the SMEs in their communities. The Colleges of Technology are impressive in skills development and training, social inclusion, and regional development. It is strength that they are part of the higher education system and that people who are well connected in the traditional university system manage them. Through the colleges of technology the Japanese higher education system has a road to the small and medium sized companies in different regions of Japan.

7.3 National Policy Framework and Higher Education Research System - Challenges

Competitive Resource Allocation Still Modest

In spite of an increase in competitively awarded funds to researchers (GIA) and graduate programmes (COE), most of the financial resources for research in tertiary education are not provided by these sources. Rather, most of the financial resources continued to be obtained from entrance and tuition fees, administrative cost subsidies received from the state by national universities, and subsidies for ordinary expenses received by private universities (MEXT, 2006, paragraph 126). For example, at Gifu University, which ranked 20th among Japanese national universities in international research citations between 1995-2004, 1.2 billion yen were obtained from GIA and COE research funds - which comprised 4% of the university's 2005 income - a figure dwarfed by the university's 14.36 billion yen administrative expense subsidy.

Obstacles Remain in Strengthening Graduate Education, Researcher Diversity, and Mobility

Fixed-term employment, though it exists among national universities, covers a very small percentage of faculty members, less than 6% (NISTEP, 2005a). This compares quite unfavourably to organisations like Riken, in which for FY 2004 there were 2 808 researchers, among whom 14% (397) held permanent appointments, while 86% (2 411) held fixed-term appointments.[35] Among those who do hold fixed-term appointments, many report that it is difficult to find employment at the end of their contract, and that achieving results within the short time frame of their contract is not possible (MEXT, 2003). And, for a host of reasons, including the design of pension systems, inter-organisational mobility among researchers remains low (NISTEP, 2005b). A survey revealed that just over half of all researchers (52.5) had worked in one institution for their entire career (MEXT, 2003, Fig.1-3-32).

Although in has been partially reformed, graduate education continues to retain a strong element of apprentice-style training. Employers note that "since much of their [graduate] work was assistance for a professor's research, they [graduate students] lack experience in their own research, particularly regarding the originality and creativity that are such important qualifications for researchers." Other criticisms centre on excessive specialisation in graduate study and on a lack of *practical* education in research planning and management, experiments, and data processing. Taken together, these characteristics show evidence of the continuing Humboldtian orientation of Japanese universities.

Graduate students continue to receive a level of financial support for their studies that is lower than graduate students in the United States, and in a 2000 survey the majority (63.7%) reported that they had to take on part-time work outside of their studies to meet living costs. The economic returns to PhD education, on average, appear not to outweigh the opportunity costs of PhD study. As a result, graduate student numbers, though rising, remain modest by international standards (MEXT, 2003).

Human resource management and evaluation systems are still not as fair and transparent as they might be. For example, while 81% of public research institutes recruited through publicly announced vacancy notices in 2003 (up from 69% two years earlier), far fewer universities did so. Researcher recruitment continues to be dominated by same-school hiring, resulting in significant inbreeding. About 6 out of 10 professors in graduate schools

35 *Outline of Riken*, undated, provided by Riken Yokohama Institute to Review Team.

graduated from the same school in which they worked, as compared to less than 1 in 10 in the United States (MEXT, 2003, Tables 1-3-35 and 1-3-36). Moreover, the discretionary funds that researchers need to be successful are still closely linked to age (MEXT, 2003, Figure 1-3-41), and are most widely available to researchers between the ages of 50-54. Not surprisingly, researchers in Japan continue to be much more likely than those in Europe or the United States to perceive that opportunities to be "on the front line" are linked to age (MEXT, 2003, Table 1-3-22).

Continuing Challenges in University-Industry Partnerships and Knowledge Dissemination

The pattern of research and development spending in Japan reveals clearly the continuing challenges in university-industry relations. Business finances its own R&D, and government finances the R&D expenditures of public research institutes and universities - while very little money flows from the public to private sector, or vice-versa. Only about 2.6% of the higher education expenditure on R&D is financed by the private sector, as compared to an OECD average of about 6% (MEXT, 2006, paragraph 127).

And, while a bevy of policies have been put in place to foster academic spin-offs and university licensing, these activities are more numerous than they are economically consequential. The number of patent applications and licensing contacts awarded Japanese universities are still significantly smaller than in the United States. Most revealing, licensing income for Japanese universities in 2003 was 0.54 billion yen, as compared to 145 billion yen in the United States, suggesting that much of this activity had been spurred by heavy public investments and guided by policy targets, but had not yet achieved real and substantial integration with the private economy.

7.4 Recommendations

The Third Basic Science and Technology Plan of March 2006 contains key recommendations for the reform of the nation's public science and technology system, including: (1) increased transparency in the recruitment and evaluation of researchers; (2) diversification of research community, particularly increasing support for female, foreign, and young, and elderly researchers; (3) enhancing researcher mobility; (4) expanding the use of competitive funding; (5) increasing the proportion of private sector research carried out in universities; (6) easing the entry of international researchers by extending permissible lengths of stay and easing requirements for

permanent residence requirements; (7) establishing long-term internship programmes between university and industry.

These are recommendations with which we are in full and enthusiastic agreement. In our view, the central challenges in the further development of the nation's capacities to undertake and apply scientific research are rooted in the structure of scientific training and careers, and will require their reform in the ways proposed in the Third Basic Plan.

8. Internationalisation

8.1 Introduction

Japan's system of tertiary education has been distinguished for much of the past half century by its modest international engagement - in a limited flow of students in and out of Japan, in a very small flow of researchers to and from Japan, in the limited scope of foreign higher education within Japan, and in the near absence of Japanese higher education institutions operating beyond Japan's borders. However, in response to the trends reshaping higher education in all OECD countries, and government policy initiatives, the international engagement of Japanese education has grown significantly.

Until recently, student flows were quite modest, and primarily one-way, with few tertiary students opting to study in Japan compared to the number of Japanese students abroad. To increase the enrolment of international students within Japanese higher education institutions, the first internationalisation strategy was presented in the 1983. Known as the "International Student 100 000 Plan", the plan set the goal for increasing the number of international students enrolled in Japanese higher education institutions from 10 000 (in 1983) to 100 000 by the beginning of the 21st century. The plan was a high priority, and well financed, with 15% annual budget increases directed at increasing the number of government scholarships for international students (Umakoshi, 1997). The plan's target was reached by 2003 when almost 110 000 foreign students were enrolled in Japanese higher education, with a further increase to around 120 000 foreign students in 2005.

In some respects, the achievement of the 1983 target can be regarded as a success. There has been a rapid growth of the number of international students, and Japan is now the 7th largest higher education exporter (*i.e.* recipient of students) in the world (OECD, 2006b, p. 289). International student numbers rose modestly between 1991 and 1997, from 45 066 to 51 047. However, as the plan target date approached, procedures concerning immigration examination were relaxed and various measures to support

foreign students were strengthened. International student numbers soared from 64 011 in 2000 to 109 508 in 2003 (Horie, 2002).

Undergraduate international students are currently concentrated chiefly in less selective private institutions, while post-graduate students are concentrated in prestigious national universities and some private universities (Goodman, 2007). Among private institutions faced with overcapacity, the prospect of fee-paying international students offer some measure of relief from financial difficulties, while among research-intensive foreign students offer the possibility of contributing to the talent, quality and international status of their graduate programmes.

A closer look reveals that the increase is to an overwhelming degree the result of the rapid increase in Chinese students from 24 000 (1995) to 80 000 (2005),[36] representing two-thirds of the total number of international students in Japan. In total, Asian countries account for 93% of all international students in Japan. At the same time, there has been a very slow increase of non-Asian student numbers since 1983.

Additionally, most of the growth in enrolments has taken place at the undergraduate level, rather than at the graduate level, which accounted for only 26.1% of international enrolments by May 2003. Japanese government scholarships for international students are heavily targeted to this student population, with 78.6% of scholarship recipients enrolled in graduate schools (MEXT, 2004).

Notwithstanding these important trends in the regionalisation of Japanese tertiary education, enrolment in Japanese tertiary education remains predominantly national in character; with 3.3% of all tertiary students enrolled of international origin, a share that is 45% of the OECD average, 7.3%. Likewise, the share of Japanese tertiary students enrolled abroad is a modest 1.6%, a proportion that is 40% of the OECD average of 4.0% (OECD, 2006b). And, the asymmetry that has long marked the flow of students to and from the United States, and, to a lesser extent, the United Kingdom persists.[37]

As we have noted in the preceding chapter, national policy initiatives have been taken as well to widen the international movement of researchers. The number of international researchers working in Japan remains modest compared to other OECD countries, and the chief constraints on further internationalisation of researcher professionals remain embedded in the

36 MEXT (2006), Table 10-1, p. 224.

37 In 2003, 46 810 Japanese students enrolled in the United States, and 1 553 United States students in Japan.

structure of faculty careers, including salary compression, limited control over research agendas and funding.

If the Japanese tertiary system has been deeply national in character with respect to its students and researchers, it has also been traditionally territorial with respect to the question of tertiary institutions and their recognition. The traditional legal framework for institutional recognition required institutions seeking to be recognized as a higher education institution in Japan to be accredited by MEXT, regardless of their status in their home country. The territorial principle applied equally to the Japanese offshore sites of Japanese higher education institutions: though the parent institution was accredited in Japan, degrees offered in offshore campuses would not be recognised as Japanese degrees, even if the institution sought (and obtained) accreditation from the recognised accrediting authority in the host country.

By the end of the 1980's, an estimated 40 United States universities had established offshore operations in Japan, though none sought to obtain accreditation from MEXT, owing perhaps to the arduous process of approval under the pre-reform Standards of University Establishment. As a consequence, students enrolled at those institutions were unable to obtain benefits available to those enrolled at recognised Japanese universities, such as financial aid or student discounts on public transportation. Moreover, graduates of these institutions did not obtain accredited degrees, and were therefore ineligible to apply to graduate programmes of Japanese universities. The institutions themselves, having opted to remain outside the legal framework of Japanese higher education, were also unable to obtain beneficial tax treatment available to those accredited institutions operating under the School Law. Of these institutions, only one, Temple University, has remained in operation and continued to offer full degree programmes.

Japanese higher education institutions undertook only very limited provision outside of Japan, for the purpose of providing a Japanese home institution for undergraduate students studying overseas. By 2005 there were only five Japanese offshore campuses, operating in the United States (3), United Kingdom (1), and New Zealand (1) (Arimoto and Ye, 2005).

In November 2004 the Koizumi government, working within the framework of the General Agreement on Trade in Services (GATS) - and aiming to fortify its wider programme of university reform - departed from the principle of territoriality, opening new possibilities both for foreign institutions to operate within Japan, and, in 2005, for Japanese institutions to operate abroad. If the branch campuses of higher education institutions operating in Japan are accredited in their home country, students who enrol at them may now have their credits recognised by Japanese institutions, and

may apply for graduate study in Japan.[38] A small number of institutions, including those from Australia and the United States, now operate programmes within Japan, with what appear to be modest student numbers.[39] Likewise, the Japanese government now recognises offshore programmes and degrees offered by Japanese colleges and universities accredited that have been accredited with their national quality assurance framework, and the offshore campuses of Japanese institutions may additionally choose to be accredited by the country with which they operate.

8.2 Strengths

Although faced with the growing competition in the region, most especially from Korea, Japan has the most mature higher education system in Asia, with a diverse set of institutions offering degree programmes that have the potential to be attractive to many overseas students. Its top research universities are among the best in the world, and have the capacity to be attractive to highly talented graduate students from around the world, most especially in those disciplines where Japan is a global front-runner, such as engineering, materials, and nanotechnology. Likewise, Japanese research universities, with the support of large-scale increases in research funding, particularly in science and technology, have the capacity to be highly competitive, albeit not comprehensively so, in attracting global research talent.

Even though the international dimension is not central in the Japanese culture, a gradual awareness is growing that the Japanese knowledge society has to be more seriously and more comprehensively internationally and globally oriented and integrated. Recent reforms have stimulated the international-mindedness of Japanese higher education.[40] This manifests itself, for example, in the efforts of Japanese universities to attract a larger number of overseas students, and in the fact that a sharply rising number of universities provide instruction in a foreign language. In 2003 nearly half of all universities (306) were offering lessons in foreign languages, while at some universities all courses were in English. The boards of some public research institutes (such as Riken) and some national university corporations

38 While a legal possibility, we have no evidence of the scope of credit transfer or graduate entry.

39 In 2006, four United States higher education institutions operated in Japan (Bollag, 2006).

40 Useful discussions of internationalisation can be found in: Shimada (1984); Hood (2001); and Tsuruta (2003).

(such as the University of Hiroshima) contain members drawn from the global scientific and academic community, as do the University Accreditation Committee and the National University Education and Research Evaluation Committee of the NAID-UE. Their presence may play a key role in strengthening the international engagement of these bodies, and in helping to ensure international comparability in the quality of teaching and research.

In both planning documents and policy initiatives, the national policy framework developed by MEXT shows important signs of an increased international orientation. In its "Development of a New Foreign Student Policy" the Central Council for Education presented a student oriented report focusing on an increase in student exchange and the development of a well-conceived admissions system for ensuring the quality of overseas students. In response to the proposal the Japanese government merged in 2004 all relevant agencies into the Japanese Student Services Organisation (JASSO), which is responsible for the support activities for Japanese students and foreign students in Japan. More recently, MEXT has introduced (in 2005) an incentive system for internationalisation called the "Strategic Fund for International Headquarters in University". In the framework of this project 20 higher education institutions have received grants to be used for developing an internationalisation strategy.

Japan also participates in the University Mobility in Asia and the Pacific (UMAP) agreement and plays an important role in the UMAP credit transfer system and the promotion of short-term study abroad programmes within the UMAP framework.

Lastly, it is essential to recognise the key role that Japan has played in the sphere of cooperative and developmental internationalisation. Through the Japan International Cooperation Agency (JICA), Japan is one of the most important donors of higher education in developing countries. In Japan's development cooperation in the area of higher education, MEXT is responsible for the acceptance of foreign students and research assistance. Consequently, many of the student scholarships provided by Japan to foreign students are awarded to students from developing countries. In addition, Japan has invested a considerable part of its developing aid budget in institutional capacity building in countries such as Thailand, Kenya and Indonesia. Japan's positive record in development cooperation in the area of higher education makes it an attractive destination for students and academic staff from developing countries. Further, Japan has taken a leading role, for example, in the establishment of international quality assurance networks, in the development of Guidelines for Quality Provision in Cross-Border Education (OECD/UNESCO, 2005), and it hosted the drafting assembly for these guidelines in Tokyo.

8.3 Challenges

Japanese language and culture are deeply attractive, and embedded in the wider global culture - in gardening, cinema, *anime*, cuisine, and sumo. However, they can be an important barrier for foreign students who want to study in Japan, particularly those from North America and Europe. Even though the number of English language courses has grown, it is still almost impossible for regular foreign students to study a regular degree programme in Japan without knowledge of the Japanese language.

Facilities, such as housing and student support systems for foreign students, are underdeveloped compared to the best international practice. Only about 25% of international students have access to public dormitories provided by a higher education institution or other entities. Most, about 75%, live in private housing, which may be difficult and costly to obtain.

Graduate education, especially doctoral education in social sciences and humanities, has been less extensively developed in Japan than in some other OECD countries, such as the United Kingdom and the United States. More generally, there was in decades past no structure in place at the institutional or national level to promote graduate student recruitment, retention and success. (In recent years, however, there has been a host of graduate initiatives, including scholarship support for graduate study and targeted grant programmes such as the "Initiative on Attractive Graduate Education.")

The impediments facing foreign researchers who wish to make careers in Japanese tertiary education have been still greater than those facing foreign students. Only in 1982 did the Diet authorize the employment of foreign professors at Japanese national and prefectural/municipal universities on terms identical to those for regular Japanese academic staff; however, the law left the period of service to the discretion of each university. As the 2003 White Paper on Science and Technology acknowledged, "foreign researchers have found additional barriers, including the living environment for family members, the high price of goods and other economic conditions, and language barriers in everyday life" (MEXT, 2003). In comparison to many other OECD countries, foreign staff numbers are very small, even at globally ranked research universities. In 2005, about 1% of full professors and 3% of associate professors at the University of Tokyo were of foreign nationality. Hence, while Japanese higher education institutions are aiming to boost their recruitment of international researchers, they are doing so from a modest base.

Japan is strongly regionally oriented in its internationalisation activities in higher education, and it plays an important role in UMAP. However, the framework for regional integration does not yet extend, as it does in Europe, to the recognition of qualifications, the quality and status of higher education institutions, and the comparability of curricula.

Unlike the situation in other OECD countries, such as Denmark, Finland, and the Netherlands, there is no indication that an overall policy framework will be developed by MEXT within which all internationalisation and globalisation efforts of the higher education institutions can be stimulated, developed and interpreted. Given the lack of an internationalisation policy framework by MEXT it is not clear what kind of institutionally based activities this incentive system is expected to stimulate. Other OECD countries have more focused incentive systems that reward specific activities and results, such as the number of students studying abroad as part of an institutional exchange agreement; the number of foreign students that come to a university or college as part of exchange agreement, etc.

MEXT has indicated its desire to nurture wider institutional differentiation with Japanese tertiary education, identifying seven functions as the basis for the institutional differentiation within the university sector of tertiary education. Each university has to indicate the relative importance of each function, and to use these for developing a specific institutional profile. Apparently, despite its multi-dimensional character, the international dimension is not regarded as a diversifying function: it is merged and dispersed within the seven functions and is not made clearly distinctive, despite the indication that the differentiation process is a necessary response to the ongoing globalisation of society and economy.[41] Consequently, at the moment of the Review most higher education institutions do not have a clear and coherent internationalisation strategy, and the institutional internationalisation activities that can be observed are mainly the result of a bottom-up process.

Additionally, 490 million yen budget (2006) of 'the Strategic Fund for Establishing International Headquarters in Universities', which aims to enhance internationalisation at an organisational level, and 552.5 million yen (2006) for 'the Strategic Support for International Cooperation' are small given the challenges Japanese higher education faces in its efforts to strengthen its international and global dimensions - the small size of which can be seen when compared to a high priority initiative, such

41 MEXT (2006), Introduction, and p. 7, 8.

as the 38.2 billion yen budget (FY 2005) for the Centres of Excellence Programme.

It appears that the internationalisation of Japanese tertiary education is not embedded in a wider strategy of internationalisation on a permanent basis, and at an inter-ministerial level, as science and technology policy is, bringing together questions of immigration and naturalisation, labour policies, and higher education. For example, the Ministry of Health, Labour, and Welfare convened a 2002 Foreign Employment Problem Study Group and proposed a strategy aimed at recruiting "elite human resources" - those with high-level technical skills. However, we found no evidence that its internationalisation was joined up to that of higher education, or *vice versa*.

Lastly, we note that the national quality assurance framework has not fully engaged the international dimension of tertiary education. The delivery of educational services by Japanese universities operating in other countries appears not to be part of the standards for University evaluation (National Institution for Academic Degrees and University Evaluation, 2006).

8.4 Recommendations

The internationalisation of higher education is not relevant to all higher education institutions in the same way. In a large, mature and dynamic higher education system like that of Japan, a flexible and dynamic internationalisation policy is needed, including policies and instruments for stimulating a fitting internationalisation strategy of all institutions.

The current incentives are lacking direction and funding, and the international dimension is rather marginal in national higher policy making. For example, the 552.5 million yen budget (2006) for 'the Strategic Support for International Cooperation' is probably too small relative to investments in other tertiary priorities, or to the task at hand.

Japan should take the initiative to deepen and widen the existing framework of regional cooperation, building upon University Mobility in Asia and the Pacific (UMAP) and the UMAP credit transfer system. In addition, Japan could consider applying for membership or at least an observer status to the Bologna follow up group.

Japan should continue to strengthen the attractiveness of its graduate programmes for international students. Given the active recruitment activities of its main competitors, it makes sense for Japan to enter especially the upper end of the international graduate student market in a more direct and effective way. This also requires that the basic facilities for foreign graduate students coming to Japan should be improved. While many

universities have been working on this already, a specific support programme from the government for building foreign student housing and other facilities is needed in order to make Japan a more attractive destination for international students.

We recommend that NAID-UE along with other evaluation bodies develop guidelines and a suitable methodology for the evaluation of educational services provided by Japanese universities operating in other countries (National Institution for Academic Degrees and University Evaluation, 2006).

9. Assuring and Improving Quality[42]

9.1 Introduction

As we have noted throughout this report, Japanese tertiary education has traditionally been steered in detail by the government. Since the early 1990s careful attempts have been made to change the governance relationship between state and tertiary education through deregulation, market orientation, and increased institutional autonomy. Shifting the responsibility for quality assurance from the state to the universities and colleges is part of this changing governance relationship.

Prior to 2004, quality assurance was based chiefly upon ministerial control over the establishment of new higher education institutions. In 1947 the Japan University Accreditation Association (JUAA) was set up as a non-governmental organisation for the accreditation of the new post war universities, drawing upon the United States accreditation system as example. However, in 1956 the Japanese government took the responsibility for quality assessment of tertiary education by introducing detailed "Standards for the Establishment of Universities" (SEU). This resulted in a combined system of voluntary institutional accreditation by a 'membership organisation' (JUAA) and strict government regulations for the establishment of universities (Amano and Poole, 2005). The Standards for Establishment of Universities prescribed in detail the organisational conditions for establishing and running a university, such as the required space (school grounds and buildings) per student, the student-staff ratio, and the library holdings per student, as well as the pedagogical conditions, such as the names of schools, and departments, the organisation of the curriculum, and the courses that should be offered (Amano and Poole, 2005, p. 696).

42 The focus of this chapter is teaching quality; research quality is taken up in Chapter 7 on Research and Innovation.

The current system, introduced in 2004, aims at assuring and improving the quality of tertiary education through simplified university establishment standards, certified evaluations, corrective advice, and a variety of other initiatives (MEXT, 2006, p. 103). In comparison to the situation before 2004, the main new elements introduced are more flexible procedures for academic programme development and organisational adaptations of the universities and colleges, the introduction of a system of third party evaluations, and compulsory corrective measures demanded by the Minister of MEXT to institutions. Japan has not yet developed a national qualification framework.

The set of minimum standards to be met for the establishment of a university is included in the 'University Standards'. The School Education Law has been amended to encourage flexible restructuring of universities. The standards include basic requirements with respect to the organisation of the university, the selection of students, staff qualifications, student-faculty ratios, staff, enrolment capacity, the educational programmes, graduation requirements, campus and other facilities, and the organisation of the management and administrative structures. According to MEXT the current set of regulations is intended to strike a balance between promoting the establishment of new universities, protecting learners from poor provision, and maintaining the international validity of Japanese degrees.[43] Once established, a university will be accredited regularly by at least one of the certified evaluation organisations. While it is now easier and less costly to establish new universities (Ohmori, 2004), it remains to be seen whether this new regulatory regime has (or will) promote more competition and market orientation in the Japanese tertiary education system.

In a parallel policy development, in 2002 the Koizumi government introduced measures providing for "special zones for structural reform": areas in which government regulations would be eased or lifted for the purpose of economic revitalisation. Among the special zone measures proposed by MEXT was one in which private for-profit higher education institutions would be permitted to operate. For-profit institutions established by a corporation are obligated to fulfil all the basic establishment requirements that would apply to regular private universities. In February 2004 the establishment of the first for-profit institution, Tokyo Legal Mind University, was approved by MEXT. Two years later, by the end of 2006, nine corporations had applied, and seven were authorized to establish a for-profit university.[44]

43 MEXT: *www.mext.go.jp/english/org/struct/019.htm*

44 Information provided by MEXT.

A central element in the policy framework for quality enhancement is the system of certified evaluations. It consists of an evaluation at least once every seven years of each institution as a whole by certified evaluation organisations, with the exception of professional graduate schools that are evaluated separately at least once every five years. These certified evaluation organisations develop and use their own evaluation criteria and standards. As of March 2006 there are five organisations that are publicly certified by the Ministry of Education to undertake the evaluations, *i.e*. in addition to JUAA and NIAD-UE, also the Japanese Institution for Higher Education Evaluation (JIHEE), the Japanese Association for College Association (JACA), and the Japan Law Foundation (JLF). NIAD-UE is the only organisation certified to undertake evaluations of all types of higher education institutions, as well as professional graduate schools, while JUAA is certified to evaluate universities, junior colleges and professional law schools. The other organisations are certified only for the evaluation of one type of institution, or in the case of JLF, for the evaluation of professional law schools.[45]

MEXT decides which organisations will be licensed (or certified) to undertake evaluations. For this purpose MEXT has developed a regulatory framework that prescribes the conditions that evaluation organisations have to fulfil in order to become certified. In deciding upon applications the Ministry consults with the Central Council for Education. The certified evaluation system can be regarded as a multiple evaluation (or accreditation) system, in which ideally each higher education institution and professional graduate school chooses an evaluation (or accreditation) organisation to which it is best suited. The underlying assumption is that the diversity of the Japanese higher education system requires a diversified set of evaluation organisations, with choice options for the higher education institutions. Given the policy goal of strengthening the functional differentiation of the higher education system,[46] the multiple evaluation system may develop more publicly certified evaluations organisations.

The 2004 reforms turned the national universities and junior colleges into public corporations and national *kosen* into independent administrative institutions. In order to be able to assess the effectiveness of the reforms, the government requested the 'incorporated' national universities to produce a six-year plan to achieve the mid-term goals presented by MEXT. The National University Corporation Evaluation Committee evaluates the overall performance of the universities with respect to these plans. For that purpose

45 MEXT (2006), p. 104, 105 and 220.

46 MEXT (2006), p. 7 and 8.

the institutions have to report every year in detail their 'goal achievement' progress to MEXT. Also public universities and junior colleges that are incorporated on the basis of the same principles as national universities are being evaluated annually on the basis of their own mid-term (six-year) plans. In addition to its status as a certified evaluation organisation NIAD-UE is also involved in evaluation of the implementation of the 6-year plans of the national university corporations, as it is requested by the National University Corporation Evaluation Committee to undertake the 'goal achievement' evaluations on teaching and research. The reports of these evaluations are made public and thus provide information on the performance of the higher education institutions to the wider public, including consumers. This is expected to establish a high level of trust of the Japanese society in its higher education system.

Among the other policies concerning quality assessment MEXT has introduced are two incentive programmes for the stimulation of the quality of higher education, *i.e*. the "Support Programme for Distinctive University Education" and the "Support Programme for Contemporary Educational Needs". The former is aimed at selecting higher education programmes and projects contributing to the quality of higher education, while the latter is aimed at selecting specific education programmes according to certain social and other themes. In both cases the selected projects are expected to promote the quality of higher education through the principle of "good practice". They can be regarded as complementary to the centre of excellence programme with respect to research.

9.2 Strengths and challenges

Strengths

Since the 1950's Japanese higher education has been accustomed to assurance for the establishment of new universities and colleges. Thus quality assurance as such is not a new responsibility for Japanese higher education institutions. They can be expected to use their experience with the 'input oriented establishment accreditation' to meet expectations of the new quality assurance system satisfactorily.

Formal quality assurance of tertiary education is high on the political agenda of MEXT.[47] It is expected to be an important tool in promoting effective learning, ensuring the required skills and competencies of

47 MEXT (2006), p. 101.

graduates, providing useful information to incoming students and graduates' employers, making the verification of the international validity of Japanese tertiary education quality possible.

The quality assurance system introduced in 2004 has become accepted in a relatively short time. There is great awareness among the main higher education stakeholders in Japan of the need to assess and wherever possible improve the quality of higher education. Since 2004 a large number of higher education institutions have been evaluated and accredited by a certified evaluation organisation, or will be soon.

The rather late introduction of a formal quality assurance and improvement system in Japanese higher education can be an advantage, since Japanese higher education can learn from the experiences of other OECD countries that introduced such systems in the 1980s and 1990s. During the country visit the Review Team concluded that the Japanese higher education institutions and the certified evaluation agencies are indeed learning from the experience of other countries. Evidence of this is demonstrated by the many Japanese publications on quality assessment in the OECD countries, the cooperation of NIAD-UE with HEFCE and the Nordic evaluation agencies, the international study trips undertaken to examine other national quality assessment systems, and Japan's participation in international seminars and conferences on the topic. The overall impression is one of eagerness to learn and willingness to make up for the late arrival on the quality assurance scene.

MEXT has also created funding-based incentive systems to reward quality in higher education, including the "Support Programme for Distinctive University Education" and the "Support Programme for Contemporary Educational Needs."[48] The second of these, initiated in 2004, elicits more than 500 applications annually, and is publicised by participating institutions and MEXT through e-mail magazines, web sites, and public forums.

The Japanese higher education system has a number of international top research universities.[49] These universities have the capacity to act as 'movers' for the quality assurance and improvement system, determining the

48 MEXT (2006), p. 108.

49 The Universities of Tokyo and Kyoto have consistently been the highest ranked non-English language universities in the world, see, for example, the 2006 ranking of the Shanghai Jiao Tong University: *ed.sjtu.edu.cn/rank/2006/ranking2006.htm*.

nature of the quality assurance system.[50] This would, amongst other things, imply that they could take responsibility for developing a mission that would fit their status as world class research institutions through choices with respect to their undergraduate-graduate student number balance, the nature and importance of the international dimension in their quality assurance and improvement strategy, their funding situation, and the further strengthening and enlarging of their graduate programmes. If the leading institutions, which also inside Japan have a recognised and accepted high status in the higher education system, are willing and able to 'show the way' they will provide a framework that the other institutions can use for developing their own specific mission and quality assurance system.

No discussion of quality and its assurance is complete without some acknowledgement of the demographic challenges facing the Japanese system of tertiary education. Depending upon the strategic management of this situation by MEXT, the shrinking number of students may either impede the development of quality assurance in Japanese higher education, or further its development. As we have noted in the preceding chapters, falling enrolments result in a cascading effect: students who would have formerly attended less selective institutions are now able to gain entry into more selective institutions - while less selective institutions find that they must fill study places with either Japanese students who would not have previously gained entry to a university, or students from elsewhere in East Asia. In twenty private universities international students now exceed 20% of all undergraduate enrolments. In some private universities applicant numbers have dropped to a fraction of their level a decade ago, and in some private universities about half of entering students are admitted on the basis of recommendations, rather than on the basis of entrance examinations. Those who have knowledge of these institutions point to weakened motivation and preparation among entering students. Further, drop out rates are reported to be soaring (Goodman and Yonezawa, 2006). In some parts of the higher education market, but by no means all, competition among students for study places has been replaced by competition among universities for entrants.

Many kinds of competition among Japanese universities are beneficial for Japanese students and the wider society - including competition over prices (resulting in lower costs to students), competition over flexibility and convenience to learners (to better meet the needs of non-traditional students), and competition over the quality and relevance of teaching. In

50 See Riesman (1956). Riesman described this phenomenon as a snake-like academic procession in which the body would like to be where the head is now, but by the time it reaches that position the head has moved on.

Japan, as is true in the United States, institutions engage in little overt price competition, and compete on the basis of quality not by demonstrating outcomes, but instead by focusing on the quality of their inputs - *i.e.* their exclusivity.

MEXT can help competition to become a force for quality improvement by assisting Japanese universities in demonstrating the quality and relevance of their teaching to prospective students. We have outlined in Chapter 6 some ways in which we think this might be done. *If* Japanese universities were able to gain a competitive advantage in the market for fee-paying students by providing plausible evidence of their success in developing skills and promoting learning, then competition could winnow from the higher education market those institutions that are least successful in these regards, and reinforce formal processes of quality assurance.

Challenges

The current certified evaluation system is new, and any assessment of its effectiveness has to be made with care. Nonetheless, the certified evaluation has not fully developed into a system that supports institutions in maintaining and improving the quality of their academic activities through *ex-post* evaluations organised by a certified evaluation organisations. Indicators and criteria for improvement-oriented *ex-post* evaluations have yet to be fully developed.[51]

The existence of an internal quality culture is extremely important for higher education institutions. When it exists, quality improvement is the guiding principle of all internal actions and decisions of the institution, and maintaining and improving the quality of its programmes is seen to be a natural responsibility of the institution itself. The Review Team did not see evidence among the institutions that it visited that such a quality culture was sufficiently developed for the institution to take responsibility for quality assessment. Quality assessment in Japanese higher education institutions is to a large extent externally driven and steered, and it appears unlikely that this will change dramatically in the near future.

The 2004 *ex-post* accreditation system is of importance for providing the basic conditions for an improvement-oriented system of quality assurance. However, once an institution has been accredited - *i.e.* once it has been checked and confirmed that it fulfils the minimum standards that are

51 See, for example, NIAD-UE's presentation of the current university evaluation system indicating that until now NIAD-UE has only undertaken accreditation evaluations (*www.niad.ac.jp/index_e.html*).

expected for operating in the Japanese higher education system - there are no longer incentives for continuing improvement (Oba, 2006).

The current quality assurance and improvement system aims at certifying many organisations to evaluate the quality of universities and colleges. At the time of the Review there were already five organisations certified. The underlying assumption is that a differentiated system of higher education needs a diverse set of evaluation agencies. Each certified organisation will presumably develop its own set of evaluation criteria and indicators. While diversity is desirable, it is beneficial to share information about problems and good practices across the tertiary system. Institutions very different to one another in resources and missions may nonetheless have things to teach one another - about teaching, advising, internships, and other common practices. Under the arrangements now being developed, there is no provision for this sort of learning across different sectors, other than through the exchange of information among the certified agencies. The Review Team has not come across any indication that such cooperation is becoming an institutionalized part of the quality assurance and improvement system.

An important challenge for the higher education institutions is the small size of their graduate, especially doctoral programmes (see, for example, National Science Foundation, 2000). Doctoral education, particularly in the humanities and social sciences (MEXT, 2006, p. 137, 139 and 183), has traditionally been underdeveloped in Japanese higher education, both in the number of programmes and the number of students. In the past, Japanese graduate schools' only function was to train future academics (Ogawa, 1999). As a result of the limited and uneven development of graduate education, many Japanese students have enrolled in universities in North American and Europe. Some of the most talented Japanese students still prefer to undertake their graduate studies abroad rather than at Japanese graduate schools, despite the recent expansion of graduate level education in Japan. Further, data (discussed in Chapter 7) show that Japan's leading graduate schools do not attract foreign students in any way comparable to the top graduate schools of world-class research universities in other OECD countries.

Many aspects of the Japanese tertiary system demonstrate very high levels of quality, including its world-class research universities (see Yonezawa and Kim, 2006) and its excellent system of technical training in *Kosen*, or national colleges of technology. However, during its visits to higher education institutions the Review Team learned from faculty and students that the pedagogical approach used might not be up to best practices followed in many OECD tertiary education systems. We are not alone in this observation (see, for example, Amano, 1992; Amano, 2002;

and Eades *et al.*, 2005). Assessing the quality of undergraduate programmes *per se* clearly goes beyond the scope of this Review. However, we note that any system of quality assurance and improvement must squarely address this matter, and find ways to generate incentives for professors and students to be more fully engaged as teachers and learners.

9.3 Recommendations

As higher education institutions come to develop internal assessment abilities, we recommended shifting responsibility for the organisation and implementation of quality assessment to the higher education institutions themselves. The certified evaluation agencies could remain responsible for the accreditation of new institutions and professional graduate programmes, but gradually become responsible for the audit or meta-evaluation of institutional quality assessment. The external audit or meta-evaluation of these systems would be undertaken in relation to the aims of objectives of the institution (or programme).

Institutions should learn from one another. This should be encouraged by the system of quality assurance. This could be done through the establishment of an independent national centre for higher education quality aimed at supporting the universities and colleges in their own internal quality activities. Such a centre would have access to all institutional and programme evaluation reports, and would use these for identifying and spreading information on best practices in quality assessment, and common problem areas. A second possibility would be to invite the certified evaluation agencies to develop and institutionalize a form of structured information exchange and comparison. To foster such cooperation the agencies could be asked to jointly develop a set of core indicators and criteria to be used in any type of institutional accreditation.

To strengthen teaching and learning practices in undergraduate studies, MEXT - or university associations themselves - should consider the possibility of participating in assessments of student engagement or learning outcomes. These assessments could be developed under the auspices of international organisations, they could focus on international comparisons of disciplinary-based teaching and learning in key disciplines (*e.g.* engineering), or they could draw upon assessment techniques already underway on a pilot basis, such as the Japan College Study Survey.

10. Conclusion

There can be no doubt that the past few years have been a time of enormous change for Japan's system of tertiary education, both as a consequence of policy choices taken by its government, and as a result of developments far beyond its authority - including intense competitive pressures arising from shrinking youth cohorts, the demands of a global economy in which research-based innovation is crucially important, and the emergence of global rankings that challenge the purely domestic hierarchies of status.

We believe that the pressures for continued change are unlikely to abate. For Japan's research universities, global competition for highly skilled graduate students and faculty will not diminish in the years ahead, and global league tables of research performance, however unwelcome, will not recede in importance. Demographic pressures now bearing hard on private universities and junior colleges cannot be deterred, nor can state intervention be expected to diminish the financial challenges they pose. New generations of students, more concerned about the link between their studies and working life and newly empowered by a shifting balance of demand and supply may press tertiary institutions for wider flexibility in provision and greater relevance in teaching than they have heretofore. And, the nation's business establishment and political leaders appear to expect continued movement in the direction of greater agility, openness, and resourcefulness from its tertiary institutions.

As we have acknowledged throughout our report, much has been done to respond to these challenges, both by MEXT and the nation's tertiary institutions. A legal and administrative framework for the exercise of institutional autonomy has been put in place - not just for national universities, but also incorporated public universities and public research institutes, and this has had repercussions right through the entire tertiary sector, including the nation's private universities. New opportunities for administrative leadership and the professionalized management of financial and human resources were part of this new legal framework, and some institutions have clearly begun to make use of them in ways that reformers had hoped. Further, it is important to note that this work has been carried

through in an environment of fiscal austerity, at least with respect to the recurring operating budgets of public universities.

In spite of the pace and scope of change in recent years, much remains to be done. The Ministry of Education, Culture, Sports, Science, and Technology begun to change from an organisation accustomed to exercising detailed managerial and financial direction of higher education institutions into one that no longer does so. However, it has not yet fully worked out its new role within the tertiary system, nor has it fully equipped itself with the performance-based information and repertoire of incentives that it needs to monitor and shape the activities of newly autonomous institutions. And, for their part, some higher education institutions appear keen to operate as they long have done, holding fast to the Humboldtian vision of the university and to long-standing institutional practices - with respect to academic careers, to internal resource allocation, and institutional leadership.

As we have outlined in the report, we think university leaders and ministry officials have much to gain from embracing continued change; indeed, that it is the necessary condition for gaining wider public investment in the sector. And, we think that central government authorities and stakeholders outside of government have much to gain from enlisting their support. During the course of our visit we met with men and women - professors, administrators, and civil servants - who clearly grasped the new possibilities that deepened reform makes possible, and who are eager to press forward with change. Working together with patience, trust, and understanding they can ensure that Japan system of tertiary education stands as a model to the entire OECD, and, indeed, the wider world.

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Appendix 1. The OECD Review Team

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Thomas Johanneson has served as Senior Research Scientist and head of the Laboratory of Physical Metallurgy at Sandvik AB, Stockholm (1970-75); Associate Professor (1975-83) and Professor (1983-93) of Materials Engineering at Linköping and Lund University (1993-1996); as Dean and President of the Lund Institute of Technology (1996-2001); and as a President of STFI-Packforsk AB, an international research company owned by Nordic pulp and paper companies and the Swedish government.

Peter Maassen is Professor Higher Education and Director of HEDDA (Higher Education Development Association), Faculty of Education University of Oslo (2005-present); Senior Fellow (2000-2005) and Director (1997-2000) Centre for Higher Education Policy Studies (CHEPS), University of Twente, the Netherlands.

Sir Howard Newby is Vice-Chancellor of the University of Liverpool. He previously served as Vice-Chancellor of the University of the West of England, Chief Executive of the Higher Education Funding Council for England (2001-2006) and President of Universities UK (1999-2001). He has served as vice-chancellor of the University of Southampton, and Chairman (1988-94) and Chief Executive (1994) of the Economic and Social Research Council (ESRC). He served as rapporteur for the Review.

Thomas Weko was an Analyst in the OECD Directorate for Education, Education and Training Policy Division. He has served as higher education policy analyst for the United States federal and state governments, as a university professor, and as an Atlantic Fellow in Public Policy. He is now Associate Commissioner, Postsecondary Studies Division, National Center for Education Statistics, United States Department of Education. He served as chair of the Review.

Appendix 2. National Coordinator, National Advisory Committee, and Authors of the Country Background Report

National Coordinator for Japan:
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Appendix 3. Programme of the Review Visit

Monday 15 May, Tokyo

9:50-10:00	Meeting with National Coordinator, MEXT
10:00-12:00	Mr. SEIKI Takayoshi, Director, Higher Education Policy Planning Division, Higher Education Bureau Meeting with relevant officials from MEXT Mr. ISHIKAWA Akira, Director-General, Higher Education Bureau Mr. ISODA Fumio, Deputy Director-General, Higher Education Bureau, other officials
12:00-13:30	Working Lunch (with Mr. Ishikawa, Mr. Isoda, other officials)
14:00-16:30	Meeting with heads of certified evaluation organisations Mr. KIMURA Tsutomu, President, National Institution for Academic Degrees and University Evaluation Mr. SHIRAI Katsuhiko, President, Japan University Accreditation Association
17:00-17:15	Meeting with Minister of Education, Culture Sports, Science and Technology
17:30-17:45	Meeting with Vice Minister of Education, Culture Sports, Science and Technology

Tuesday 16 May, Tokyo

9:30-11:00	Meeting with the cooperators of the Country Background Report (Steering members) Dr. YAMAMOTO Kiyoshi, Professor, Financial Management Center for National University, Finance and Management Dr. IJICHI Tomohiro, Associate Professor, Hitotsubashi University Institute of Innovation Research Mr. YONEZAWA Akiyoshi, Associate Professor, NIAD-UE, Faculty of University Evaluation and Research Dr. KOSUGI Reiko, Senior Researcher, Japan Institute for Labour Policy and Training Dr. MITSUDA Yoshitaka, Professor, University of Tokyo
11:00-12:30	Working Lunch with the cooperators of Country Background Report
13:00-16:00	Visit to National University -University of Tokyo Meeting with Mr. KOMIYAMA Hiroshi, President of the University of Tokyo Meeting with the management and academic staff, and students Inspection
16:30-18:30	Visit to Private Junior College - Aoyama Gakuin Women's Junior College Meeting with President Meeting with the management and academic staff Inspection
19:00-	Dinner hosted by Vice Minister of MEXT

Wednesday 17 May, Tokyo

10:00-12:00	Meeting with committee members of Central Council for Education
12:00-13:30	Working Lunch (with the Committee Members)
13:45-15:15	Meeting with researchers who study Higher education
16:00-17:30	Visit to Specialized Training college - Nippon Institute of Technology *senmon gakko* Meeting with the President Inspection
18:00-	Dinner hosted by Director-General, Higher Education Bureau

Thursday 18 May, Matsue

15:30-18:30	Visit to National College of Technology - Matsue National College of Technology Meeting with Mr. MIYAMOTO Takeaki, President of Matsue National College of Technology Meeting with management and academic staff Inspection
19:30-21:30	Dinner hosted by Institute of National Colleges of Technology

Friday 19 May, Kyoto

14:00-16:45	Visit to National University - Kyoto University (Katsura Campus) Meeting with management and academic staff, and students Inspection
17:45-18:30	Clock Tower Centennial Hole, Kyoto University (Yoshida Campus) Meeting with Mr. OIKE Kazuo, President of the Kyoto University
18:30-20:30	Dinner hosted by President of the Kyoto University

Sunday 21 May

Review Team meetings

Monday 22 May, Shiga and Gifu

10:00-14:00	Visit to Public University - University of Shiga Prefecture Meeting With Mr. SOGA Naohiro, President of University of Shiga Prefecture Meeting with management and academic staff Inspection Lunch
15:30-18:20	Visit to National University - Gifu University Meeting with Mr. KUROKI Toshio, President of Gifu University Meeting with management and academic staff Inspection
Evening	Dinner hosted by President of Gifu University

Tuesday 23 May

Group A (Mr. Breneman, Mr. Maassen, Mr. Newby)

8:30-12:30	Transfer to Tokyo
15:45	Visiting to Private University - Keio University Meeting with Mr. ANZAI Yuichiro, President of Keio University Meeting with management and academic staff Working Lunch Inspection
16:30-17:30	Ministry of Finance Meeting with relevant officials

Group B (Mr. Johanneson and Mr. Weko)

8:30-12:00	Transfer to Shin-Yokohama
12:00-14:30	Visiting to RIKEN Yokohama Institute Meeting with management and academic staff Working Lunch Inspection
15:00-16:30	Visit to Private Company Inspection
16:30-18:00	Transfer to Tokyo
18:00-23:00	Discussion Time (Preparing Presentation)

Wednesday 24 May, Tokyo

11:00-12:30	Presentation for Director-General, Higher Education Bureau (MEXT)
12:30-14:00	Lunch
14:30-16:30	Question, Discussion, Exchanging Opinions, etc

Appendix 4. Comparative Indicators on Tertiary Education

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
OUTCOMES				
% of the population aged 25-64 with tertiary qualifications (2004)[i]				
Tertiary-type B – Total	17	-	-	-
Males	9	9	8/24	189
Females	24	10	2/24	240
Tertiary-type A – Total	21	-	-	-
Males	24	20	1/24	105
Females	11	18	20/24	61
% of the population aged 25-34 with tertiary qualifications (2004)[i]				
Tertiary-type B	25	11	1/24	227
Tertiary-type A and advanced research programmes	21	24	10/24	88
% of the population aged 55-64 with tertiary qualifications (2004)[i]				
Tertiary-type B	7	6	11/24	117
Tertiary-type A and advanced research programmes	12	13	12/24	92
% of the population aged 25-64 with tertiary qualifications – time trends				
1998	30	20	3/29	150
2003	37	24	3/30	154
% of the population aged 25-34 with tertiary qualifications – time trends				
1998	45	25	2/29	180
2003	52	29	2/30	179
Average years in formal education (2004)[3,i]	12.4	12.7	9/30	98
Survival rates in tertiary education (2004) Number of graduates divided by the number of new entrants in the typical year of entrance				
Tertiary-type A education	91	70	1/21	130
Tertiary-type B education	87	62	1/16	140
Advanced research programmes	89	67	1/12	133

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Average duration of tertiary studies (in years) (2003)[4]				
All tertiary education	4.07	3.94	9/22	103
Tertiary-type B education	2.11	2.38	13/18	89
Tertiary-type A and advanced research programmes	4.51	4.42	13/24	102
Tertiary graduates by field of study[5] (2003)				
Tertiary-type A				
Education	5.9	-	26/27	-
Humanities and arts	18.5	-	2/27	-
Social sciences, business and law	37.0	-	11/27	-
Science	4.5	-	25/27	-
Engineering, manufacturing and construction	20.8	-	3/27	-
Agriculture	3.1	-	5/27	-
Health and welfare	5.5	-	25/27	-
Services	1.8	-	20/27	-
Not known or unspecified	3.0	-	-	-
All fields	-	-	-	-
Tertiary-type B				
Education	8.7	-	11/20	-
Humanities and arts	12.9	-	6/25	-
Social sciences, business and law	6.9	-	2/24	-
Science	0.0	-	23/23	-
Engineering, manufacturing and construction	16.5	-	12/23	-
Agriculture	0.5	-	19/22	-
Health and welfare	21.8	-	7/22	-
Services	25.7	-	2/23	-
Not known or unspecified	7.0	-	-	-
All fields	-	-	-	-
Advanced research programmes				
Education	2.5	-	14/23	-
Humanities and arts	10.2	-	17/27	-
Social sciences, business and law	9.9	-	16/26	-
Science	15.6	-	23/27	-
Engineering, manufacturing and construction	22.1	-	5/26	-
Agriculture	7.5	-	8/26	-
Health and welfare	31.4	-	3/27	-
Services	0.3	-	18/22	-
Not known or unspecified	0.4	-	-	-
All fields	-	-	-	-

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Tertiary graduates by field of study[5] per 10 000 population (2003)				
Tertiary-type A				
Education	2.89	-	24/27	-
Humanities and arts	9.04	-	9/27	-
Social sciences, business and law	18.11	-	11/27	-
Science	2.19	-	25/27	-
Engineering, manufacturing and construction	10.19	-	3/27	-
Agriculture	1.52	-	5/27	-
Health and welfare	2.68	-	23/27	-
Services	0.88	-	17/27	-
Not known or unspecified	1.45	-	-	-
All fields	48.97	-	18/27	-
Tertiary-type B				
Education	2.74	-	7/20	-
Humanities and arts	4.08	-	3/25	-
Social sciences, business and law	2.16	-	15/24	-
Science	0.0	-	23/23	-
Engineering, manufacturing and construction	5.20	-	4/23	-
Agriculture	0.17	-	13/22	-
Health and welfare	6.87	-	3/22	-
Services	8.09	-	1/23	-
Not known or unspecified	2.21	-	-	-
All fields	31.53	-	6/26	-
Advanced research programmes				
Education	0.03	-	16/23	-
Humanities and arts	0.12	-	23/27	-
Social sciences, business and law	0.11	-	24/26	-
Science	0.18	-	24/27	-
Engineering, manufacturing and construction	0.25	-	15/26	-
Agriculture	0.09	-	12/26	-
Health and welfare	0.36	-	9/27	-
Services	0.0	-	18/21	-
Not known or unspecified	-	-	-	-
All fields	1.14	-	22/27	-

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Employment ratio and educational attainment[6] (2004)				
Number of 25 to 64-year-olds in employment as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	79	72	21/30	110
Females	53	49	11/30	108
Upper secondary education (ISCED 3A)				
Males	89	82	2/29	109
Females	60	65	24/29	92
Tertiary education, type B				
Males	92	-	-	-
Females	63	-	-	-
Tertiary education, type A and advanced research programmes				
Males	93	89	3/30	104
Females	67	79	28/30	85
Unemployment ratio and educational attainment[7] (2003)				
Number of 25 to 64-year-olds who are unemployed as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	8.0	9.8	13/28	82
Females	4.6	11.0	23/27	42
Upper secondary education (ISCED 3A)				
Males	5.5	7.1	10/23	77
Females	5.3	10.6	15/25	50
Post-secondary non-tertiary education				
Males	-	5.9	-	-
Females	-	6.9	-	-
Tertiary education, type B				
Males	4.8	3.9	7/18	123
Females	4.5	4.4	6/16	102
Tertiary education, type A and advanced research programmes				
Males	3.1	3.6	17/27	86
Females	3.3	4.1	14/27	80

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Ratio of the population not in the labour force and educational attainment (2002)				
Number of 25 to 64-year-olds not in the labour force as a % of the population aged 25 to 64				
Lower secondary education				
Males	13.8	19.9	21/30	69
Females	44.0	45.5	19/30	97
Upper secondary education (ISCED 3A)				
Males	5.8	12.7	29/29	46
Females	37.0	29.8	5/29	124
Post-secondary non-tertiary education				
Males	-	10.7	-	-
Females	-	22.0	-	-
Tertiary education, type B				
Males	2.0	8.9	25/25	22
Females	34.6	20.5	3/25	169
Tertiary education, type A and advanced research programmes				
Males	3.1	8.1	29/30	38
Females	29.5	18.6	3/30	159
PATTERNS OF PARTICIPATION				
Participation rates of all persons aged 15 and over by programme (2002)				
Per cent of all persons aged 15 and over in tertiary type-5A programmes	2.68	3.80	23/29	71
Per cent of all persons aged 15 and over in tertiary type-5B programmes	0.90	0.74	9/29	12
Per cent of all persons aged 15 and over in tertiary type-6 programmes	0.06	0.15	22/29	40
Per cent of all persons aged 15 and over in all tertiary programmes	3.64	4.59	21/29	79
Gender distribution of enrolments (2003)				
Females as a per cent of enrolments in tertiary type-5A programmes	39.7	53.2	28/29	75
Females as a per cent of enrolments in tertiary type-5B programmes	64.4	54.8	6/29	118
Females as a per cent of enrolments in tertiary type-6 programmes	27.9	44.0	28/28	63
Females as a per cent of total tertiary enrolments	45.6	53.2	26/29	86

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Net entry rates into tertiary education[8] (2004)[ii]				
Tertiary-type B				
Total	32	16	4/22	200
Males	24	14	5/20	171
Females	41	16	4/21	256
Tertiary-type A				
Total	43	53	18/26	81
Males	49	48	12/25	102
Females	36	59	22/25	61
Distribution of students in tertiary education by type of institution[9] (2004)				
Tertiary-type B education, public	8.8	64.9	27/27	14
Tertiary-type B education, government-dependent private	-	19.1	-	-
Tertiary-type B education, independent private	91.2	13.4	1/13	681
Tertiary-type A and advanced research programmes, public	27.6	76.7	25/26	36
Tertiary-type A and advanced research programmes, government-dependent private	-	12.0	-	-
Tertiary-type A and advanced research programmes, independent private	72.4	11.7	2/15	619
Distribution of students in tertiary education by mode of study (2004)				
Tertiary-type B education				
Full-time	97.2	72.1	9/25	135
Part-time	2.8	24.0	17/18	12
Tertiary-type A & advanced research programmes				
Full-time	89.9	80.7	12/27	111
Part-time	10.1	19.3	16/20	52
Foreign students as a percentage of all students (2004) (foreign and domestic students)[10]	2.9	7.3	18/27	40
Index of change in foreign students as a percentage of all students (2004) (foreign and domestic students) (2000 = 100)	177	161	4/28	110
National students enrolled abroad in other reporting countries relative to total tertiary enrolment[11] (2003)	1.6	4.0	23/29	40
Expected changes of the 20-29 age group by 2015 relative to 2005 (2005 = 100)[12]	79	97	26/30	81
Upper secondary attainment rates (2004)[i] % of persons aged 25-34 with at least upper secondary education	84	67	6/30	125

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
PATTERNS of PROVISION				
Ratio of students to teaching staff in tertiary education[13] (2004) Based on full-time equivalents, Public and private institutions.				
Type B	8.5	15.9	10/14	53
Type A and advanced research programmes	12.3	16.3	16/17	75
Tertiary education all	11.0	15.5	21/24	71
EXPENDITURE				
Annual expenditure on tertiary education institutions per student, public and private institutions (2002) In equivalent US dollars converted using PPPs, based on full-time equivalents				
All tertiary education (including R&D activities)	11556	11254	15/28	103
Tertiary-type B education (including R&D activities)	7638	-	-	-
Tertiary-type A and advanced research programmes (including R&D activities)	12913	-	-	-
All tertiary education excluding R&D activities	-	8093	-	-
Annual expenditure on tertiary education institutions per student relative to GDP per capita, public and private institutions (2003) Based on full-time equivalents				
All tertiary education (including R&D activities)	41	43	11/28	95
Tertiary-type B education (including R&D activities)	27	30	7/15	90
Tertiary-type A and advanced research programmes (including R&D activities)	46	44	5/15	105
All tertiary education excluding R&D activities	-	33	-	-
Cumulative expenditure on educational institutions per student over the average duration of tertiary studies[14] (2003) In equivalent US dollars converted using PPPs				
All tertiary education	47031	43030	8/20	109
Tertiary-type B education	16117	-	-	-
Tertiary-type A and advanced research programmes	58239	-	-	-

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Change in tertiary education expenditure per student relative to different factors				
Index of change between 1995 and 2003 (1995 = 100, 2003 constant prices)				
Change in expenditure	139	146	12/25	95
Change in the number of students	123	138	12/25	89
Change in expenditure per student	114	106	10/24	108
Change in tertiary education expenditure per student				
In equivalent US dollars converted using PPPs (2001 constant prices and 2001 constant PPPs)				
1995	9691	9284	11/22	104
2001	11164	10052	10/26	111
Expenditure on tertiary education institutions as a percentage of GDP, from public and private sources				
All tertiary education, 2003	1.3	1.4	13/29	93
Tertiary-type B education, 2003	0.2	0.2	5/12	100
Tertiary-type A education, 2003	1.0	1.2	12/18	83
All tertiary education, 1995	1.0	1.3	18/25	77
Relative proportions of public and private expenditure on educational institutions, for tertiary education				
Distribution of public and private sources of funds for educational institutions after transfers from public sources				
Public sources, 2003	39.7	76.4	27/28	50
Private sources, household expenditure, 2003	60.3	-	1/25	-
Private sources, expenditure of other private entities, 2003	-	-		-
Private sources, all private sources, 2003	60.3	23.6	2/28	256
Private sources, private, of which subsidised, 2003	-	1.5	-	-
Public sources, 1995	42.0	80.8	19/19	52
Private sources, household expenditure, 1995	58.0	14.4	1/15	403
Private sources, expenditure of other private entities, 1995	-	11.0	-	-
Private sources, all private sources, 1995	58.0	19.2	1/19	302
Private sources, private, of which subsidised, 1995	-	5.4	-	-

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Distribution of total public expenditure on tertiary education (2003)[iii] Public expenditure on tertiary education transferred to educational institutions and public transfers to the private sector, as a percentage of total public expenditure on tertiary education				
Direct public expenditure on public institutions	68.6	71.7	18/26	96
Direct public expenditure on private institutions	12.8	11.2	4/21	114
Indirect public transfers and payments to the private sector	18.6	17.4	10/28	107
Expenditure on tertiary education institutions as a proportion of total expenditure on all educational institutions (2002) Public and private institutions	23	24	12/23	96
Total public expenditure on tertiary education (2003)[iii] Direct public expenditure on tertiary institutions plus public subsidies to households (which include subsidies for living costs, and other private entities)				
As a percentage of total public expenditure[15]	1.8	3.1	20/22	58
As a percentage of GDP	0.6	1.3	28/29	46
Subsidies for financial aid to students as a percentage of total public expenditure on tertiary education (2003)				
Scholarships / other grants to households	2.4	9.8	24/28	24
Student loans	16.2	7.1	6/17	228
Scholarships / other grants to households attributable for educational institutions	-	1.6	-	-
Expenditure on tertiary education institutions by resource category (2003) Distribution of total and current expenditure on tertiary education institutions from public and private sources				
Percentage of total expenditure				
Current	83.6	89.7	24/27	93
Capital	16.4	10.3	4/27	159
Percentage of current expenditure				
Compensation of teachers	-	43.0	-	-
Compensation of other staff	-	23.4	-	-
Compensation of all staff	68.2	65.5	15/28	104
Other current	31.8	34.5	14/28	92

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
EXPECTATIONS OF 15-YEAR-OLD STUDENTS				
Students' expected educational levels (2003)				
Source: PISA 2003 (OECD, 2004)				
Per cent of 15-year-old students who expect to complete secondary education, general programmes (ISCED 3A)	33.0	48.9	22/28	67
Per cent of 15-year-old students who expect to complete secondary education, vocational programmes (ISCED 3B or C)	18.8	29.9	15/26	63
Per cent of 15-year-old students who expect to complete post-secondary non-tertiary education (ISCED 4)	-	16.4	-	-
Per cent of 15-year-old students who expect to complete tertiary-type B education (ISCED 5B)	25.2	20.5	9/26	123
Per cent of 15-year-old students who expect to complete tertiary-type A education or an advanced research qualification (ISCED 5A or 6)	49.8	44.0	12/29	113
RESEARCH AND DEVELOPMENT				
Gross domestic expenditure on Research and Development (R&D) as a percentage of GDP				
Source: OECD (2006)				
2004	3.13	2.26	2/20	138
1995	2.90	2.07	2/27	140
Higher education[16] expenditure on R&D as a percentage of GDP				
Source: OECD (2006)				
2004	0.42	0.39	8/19	108
1995	0.60	0.34	2/27	176
Percentage of gross domestic expenditure on R&D by sector of performance (2004)				
Source: OECD (2006)				
higher education	13.4	17.1	17/19	78
(higher education in 1995)	20.7	16.3	17/26	127
business enterprise	75.2	67.9	3/19	111
Government	9.5	12.5	13/19	76
private non-profit sector	1.9	2.5	3/14	76

	Japan	OECD mean	Japan's rank[1]	% to OECD mean[2]
Percentage of higher education expenditure on R&D financed by industry Source: OECD (2006)				
2004	2.8	-	11/14	
1995	2.4	6.2	21/27	39
Total researchers per thousand total employment Source: OECD (2006)				
2004	10.4	-	2/13	
1995	10.1	5.8	1/25	174
Researchers as a percentage of national total (full time equivalent) (2004) Source: OECD (2006)				
higher education	26.2	-	10/13	
(higher education in 1995)	36.1	26.9	14/26	134
business enterprise	67.3	-	3/13	
government	5.0	-	12/13	
Share in OECD total "triadic" patent families[17] (%) Source: OECD (2006)				
2003	26.21	-	2/30	-
1997	26.49	-	2/30	-
Foreign PhD students as a per cent of total PhD enrolments (2003)	-	13.7	-	-

Notes for the Tables

Sources:

All data are from Education at a Glance, OECD Indicators 2005 and 2006, unless indicated otherwise in the table.

Other sources:

OECD (2004), *Learning for Tomorrow's World, First Results from PISA 2003*, OECD, Paris.

OECD (2006), *Main Science and Technology Indicators, volume 2006/1*, OECD, Paris.

General notes:

1. "Japan's rank" indicates the position of Japan when countries are ranked in descending order from the highest to lowest value on the indicator concerned. For example, on the first indicator "% of the population aged 25-64 with tertiary qualifications, Tertiary-type B - Total", the rank "x/x" indicates that Japan recorded the xxst highest value of the xx OECD countries that reported relevant data. The symbol "=" means that at least one other country has the same rank.
2. "% to OECD mean" indicates Japan's value as a per cent of the OECD value. For example, on the first indicator *"% of the population aged 25-64 with tertiary qualifications, Tertiary-type B - Total"*, the percentage *"xx"* indicates that Japan's value is equivalent to xx% of the OECD mean.
3. The calculation of the average years in formal education is based upon the weighted theoretical duration of schooling to achieve a given level of education, according to the current duration of educational programmes as reported in the UOE data collection.
4. Two alternative methods were employed to calculate the average duration of tertiary studies: the approximation formula and the chain method. For both methods, it should be noted that the result does not give the average duration needed for a student to graduate since all students participating in tertiary education are taken into account, including drop-outs. Hence, the figure can be interpreted as the average length of time for which students stay in tertiary education until they either graduate or drop out.
5. This indicators show the ratio of graduates as a proportion to all fields of studies. The fields of education used follow the revised ISCED classification by field of education.
6. The employed are defined as those who during the survey reference week: *i)* work for pay (employees) or profit (self-employed and unpaid family workers) for at least one hour, or *ii)* have a job but are temporarily not at work (through injury, illness, holiday, strike or lockout, educational or training leave, maternity or parental leave, etc.) and have a formal attachment to their job.
7. The unemployed are defined as individuals who are without work, actively seeking employment and currently available to start work.
8. The net entry rates represent the proportion of persons of a synthetic age cohort who enter a certain level of tertiary education at one point during their lives.
9. Educational institutions are classified as either *public* or *private* according to whether a public agency or a private entity has the ultimate power to make decisions concerning the institution's affairs. An institution is classified as *private* if it is controlled and managed by a non-governmental organisation (*e.g.,* a Church, a Trade Union or a business enterprise), or if its Governing Board consists mostly of members not selected by a public agency. The terms "*government-dependent*" and "*independent*" refer only to the degree of a private institution's dependence on funding from government sources. A *government-dependent private institution* is one that receives more than 50 per cent of its core funding from government agencies. An *independent private institution* is one that receives less than 50 per cent of its core funding from government agencies.

10. Students are classified as foreign students if they are not citizens of the country for which the data are collected. Countries unable to provide data or estimates for non-nationals on the basis of their passports were requested to substitute data according to a related alternative criterion, *e.g.*, the country of residence, the non-national mother tongue or non-national parentage.
11. The number of students studying abroad is obtained from the report of the countries of destination. Students studying in countries which did not report to the OECD are not included in this indicator. This indicator covers residents in the country, regardless of citizenship and of educational or labour market status.
12. School expectancy (in years) under current conditions excludes all education for children younger than five years. It includes adult persons of all ages who are enrolled in formal education. School expectancy is calculated by adding the net enrolment rates for each single year of age.
13. "Teaching staff" refers to professional personnel directly involved in teaching students.
14. The estimates of cumulative expenditure on education over the average duration of tertiary studies were obtained by multiplying annual expenditure per student by an estimate of the average duration of tertiary studies.
15. Total public expenditure on all services, excluding education, includes expenditure on debt servicing (*e.g.* interest payments) that are not included in public expenditure on education.
16. "Higher Education" includes all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions. For detail, see OECD (2002), *Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development.*
17. "Triadic patent" means patents filed all together to the European Patent Office (EPO), the US Patent and Trademark Office (USPTO) and the Japanese Patent Office (JPO). This indicator shows each country's share in total triadic patents filed by OECD countries. Reference year is when the priority patent is filed. Data is estimated by the OECD Secretariat and provisional. Because a few countries share large proportion of triadic patents, other countries have small share.

Country specific notes:

[i] Year of reference 2003

[ii] Entry rate for tertiary-type A and B programmes calculated as gross entry rate

[iii] Post-secondary non-tertiary included in both upper secondary and tertiary education

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OECD Reviews of Tertiary Education

JAPAN

In many OECD countries, tertiary education systems have experienced rapid growth over the last decade. With tertiary education increasingly seen as a fundamental pillar for economic growth, these systems must now address the pressures of a globalising economy and labour market. Within governance frameworks that encourage institutions, individually and collectively, to fulfil multiple missions, tertiary education systems must aim for the broad objectives of growth, full employment and social cohesion.

In this context, the OECD launched a major review of tertiary education with the participation of 24 nations. The principal objective of the review is to assist countries in understanding how the organisation, management and delivery of tertiary education can help them achieve their economic and social goals. Japan is one of 14 countries which opted to host a Country Review, in which a team of external reviewers carried out an in-depth analysis of tertiary education policies. This report includes:

- an overview of Japan's tertiary education system;
- an account of trends and developments in tertiary education in Japan;
- an analysis of the strengths and challenges in tertiary education in Japan; and
- recommendations for future policy development.

This Review of Tertiary Education in Japan forms part of the *OECD Thematic Review of Tertiary Education*, a project conducted between 2004 and 2008 (***www.oecd.org/edu/tertiary/review***).

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